

**From:** s47F  
**To:** s47F  
**Cc:** s47F  
**Subject:** FW: Spending to save - product submission [SEC=OFFICIAL]  
**Date:** Wednesday, 26 June 2019 3:25:17 PM  
**Attachments:** [NESP Research Product Submission Form\\_costings.pdf](#)  
[ATT00001.htm](#)  
[Wintle et al - Spending to save Australian threatened species.pdf](#)  
[ATT00002.htm](#)  
[Table 1.docx](#)  
[ATT00003.htm](#)  
[Supporting Information S1-S3.docx](#)  
[ATT00004.htm](#)  
[Supporting Information S4.xlsx](#)  
[ATT00005.htm](#)  
[ATT00006.htm](#)

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FYI, as discussed.

Cheers,  
s47F

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The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

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**From:** Rachel Morgain [mailto:rachel.morgain@anu.edu.au]  
**Sent:** Wednesday, 26 June 2019 2:25 PM  
**To:** s47F @environment.gov.au; s47F @uq.edu.au  
**Cc:** Brendan Wintle <b.wintle@animelb.edu.au>; tsr\_publications@uq.edu.au  
**Subject:** Spending to save - product submission

Hi s47F

As discussed, please find attached a product submission form and submitted version of the

paper 'Spending to Save', as part of project 7.7.

This paper has recently been accepted pending minor revisions and should go through in the next few weeks. Please note, the revisions will slightly alter the final figures. We'll send the updated version as soon as we have it.

We plan to summarise this information in a science for policy summary, which we will send through soon. This may help with your briefings so I'll try to send some text through on that ASAP.

We are also planning some media on this. s47F will be in touch on that.

Thanks.

Cheers  
Rachel

**Dr Rachel Morgain** | Knowledge Broker | NESP Threatened Species Recovery Hub | Fenner School of Environment and Society | ANU College of Science | Room 3.06 Frank Fenner Building #141 | The Australian National University | Canberra ACT 2601 | Australia | T +612 6125 6775 | M s47F



## Research Product Submission Form

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### Project Information

Hub name	Threatened Species Recovery
Project number	7.7
Project title	Overlaying threat, threatened species ranges, threat mitigation and conservation actions
Product lead author/researcher	s47F
Program funding (NESP/NERP/CERF/Combination)	NESP

### Research Product Information

Select the type of research product	Journal Article
Other	
Title	Spending to save: what will it cost to halt Australia's extinction crisis?
Journal or location name	Conservation Letters
DOI	-
Citation	Wintle et al. (2019) Spending to save: what will it cost to halt Australia's extinction crisis? <i>Conservation Letters</i> (in review)
Synopsis	As with most governments world-wide, Australian governments list threatened species and proffer commitments to recovering them. Yet most of Australia's imperilled species continue to decline or go extinct and a likely cause is inadequate investment in conservation management. However, this has been difficult to evaluate because the extent of funding committed to such recovery in Australia, like in many nations
Media/other interest	
Keywords	budget funding recovery plathreatened governmer

### Research Product Accessibility

Date of publication	Awaiting final review
Date of product availability	Unknown
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1 **CONSERVATION LETTERS**

2

3 **Article title:** Spending to save: what will it cost to halt Australia's extinction crisis?

4

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26 **Short running title:** Spending to save Australia's threatened species

27 **Keywords:** budget; costs; Endangered Species Act; funding; government spending;  
28 recovery plan; resource allocation; threatened species; transparency; USA

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30 **Length abstract:** 150

31 **Length main article:** 2971

32 **References:** 30

33 **Figures and tables:** 2

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36

37 **ABSTRACT**

38 As with most governments world-wide, Australian governments list threatened species and  
39 proffer commitments to recovering them. Yet most of Australia's imperilled species continue  
40 to decline or go extinct and a likely cause is inadequate investment in conservation  
41 management. However, this has been difficult to evaluate because the extent of funding  
42 committed to such recovery in Australia, like in many nations, is opaque. Here, by collating  
43 disparate published budget figures of Australian governments, we show that annual  
44 spending on targeted threatened species recovery is around US\$90m (AU\$121m) which is  
45 around one tenth of that spent by the USA endangered species recovery program, and  
46 about 15% of what is needed to avoid extinctions and recover threatened species. Our  
47 approach to estimating funding needs for species recovery could be applied in any  
48 jurisdiction and could be scaled up to calculate what is needed to achieve international goals  
49 for ending the species extinction crisis.

## 50 1 | INTRODUCTION

51 The Anthropocene is characterized by species extinction rates between 100 and 1000 times  
52 higher than background rates (Barnosky et al. 2011). Humans are responsible for the vast  
53 majority of extinctions in the past 400 years due largely to habitat destruction and  
54 degradation, over-exploitation and the introduction of invasive species and diseases (Lewis  
55 & Maslin 2015). In Australia, the drivers of extinction broadly reflect the global profile,  
56 although invasive species have played a relatively larger role compared to most of the rest  
57 of the world (Kearney et al. 2018). A potent combination of rapid habitat destruction and  
58 introduced predators, herbivores and pathogens, has resulted in Australia losing more  
59 biodiversity than any other developed nation in the past 200 years (Waldron et al. 2017).

60 Australia's obligations under the Convention for Biological Diversity (CBD) include meeting  
61 the United Nation's Strategic Plan for Biodiversity Aichi Target 12: "...by 2020 the extinction  
62 of known threatened species has been prevented and their conservation status, particularly  
63 of those most in decline, has been improved and sustained" (CBD 2010). However, during  
64 the past decade, imperilled species in Australia have continued to decline and at least three  
65 species have been allowed to go extinct (Woinarski et al. 2017).

66 There is an urgent need to address the extinction crisis in Australia; the response will require  
67 regulatory reform, increased funding allocated to species security, protection and recovery,  
68 and more effective, targeted and enduring management (Walsh et al. 2013; Kearney et al.  
69 2018). This paper focuses on the funding shortcomings that have contributed to Australia's  
70 failure to meet the Aichi target. To date, arguments for increasing funding have not been  
71 backed by detailed analysis of the current situation (but see Howell & Rodger 2018 for an  
72 analysis of *research* investment). Such analysis has been hampered by poor information  
73 about what is currently spent on threatened species conservation and recovery in Australia.  
74 We provide the first published estimate of direct expenditure by Australian governments on  
75 threatened species recovery aggregated across the Commonwealth, states and territories,  
76 and estimate how much Australia *should* have been spending to meet its CBD obligations to

77 prevent further biodiversity loss. While the paper focuses on Australian spending, the  
78 approach we take to estimating funding needs could be applied in any country or jurisdiction  
79 from local governments to multi-country entities, such as the European Union. The approach  
80 could be scaled up to calculate spending required to achieve international commitments to  
81 ending the extinction crisis, recognising that adequate spending will need to be  
82 accompanied by regulatory and policy reform to curb habitat loss and over-exploitation.

83

#### 84 ***Australia's extinction crisis***

85 Australia has 1866 taxa listed as extinct or threatened with extinction under the *Environment*  
86 *Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia 1999),  
87 hereafter EPBC Act. Of these, the majority (1356) are plants, followed by birds (155),  
88 mammals (133), invertebrates (64), reptiles (63), fishes (58), and amphibians (33). These  
89 tallies are likely to severely under-estimate the numbers of species that are actually  
90 threatened with extinction: species that are undescribed, data deficient, or less charismatic  
91 (e.g. invertebrates) are much less likely to be listed (Walsh et al. 2013).

92 The proportional extent of known loss has been largest for endemic mammals: at least 34  
93 Australian mammal species – 10% of its mammalian fauna – have become extinct since  
94 European settlement (Figure 1) (Woinarski et al. 2015). Extinction of Australian reptiles is  
95 also notable. The three recent Australian reptile extinctions (Andrew et al. 2018) are the only  
96 known extinctions of reptiles in the world since the 1970s (IUCN 2018). Plants are the  
97 sleeping giant of the extinction crisis, with an order of magnitude more species listed at risk  
98 of extinction than in other groups (Keith et al. 2017).

99 The past decade has seen a rapid decline in expenditure on environmental management in  
100 Australia, with cuts of 37% to environmental investments in the Australian Government  
101 budget since 2013 (ACF 2018). The decline in expenditure and ongoing species loss has  
102 drawn sharp criticism from the international community (OECD 2008) and independent



103 domestic authorities (ANAO 2006; Cresswell & Murphy 2016). Relative to the scale of  
104 biodiversity loss, it has been asserted that Australia underspends on biodiversity  
105 conservation relative to other countries of comparable wealth (Waldron et al. 2017).  
106 However, detailed accounting of actual spending on threatened species recovery in Australia  
107 is currently lacking.

108

## 109 **2 | WHAT IS AUSTRALIA DOING?**

### 110 ***Funding for threatened species recovery in Australia***

111 Ideally an assessment of the effectiveness of funding to recover listed threatened species  
112 would be based on a collation of budgetary requirements foreshadowed in species' recovery  
113 plans, budgets actually allotted to such recovery efforts, and the extent to which this  
114 expenditure has led to recovery. However, all three of these components are difficult to  
115 assess in Australia, because many listed species do not have recovery plans; many  
116 recovery plans do not include budgets; budgets, where included, contain too little detail to  
117 assess whether the estimates are reasonable; there is little accounting of expenditure on  
118 individual species' recovery efforts; few Australian threatened species are monitored with  
119 sufficient statistical power (Legge et al. 2018); and few Australian threatened species have  
120 demonstrably recovered.

121 With the direct approach unavailable, we instead attempt to estimate the spending by  
122 Australian governments on conservation of threatened species and benchmark this rate of  
123 spending against a comparable nation that has achieved demonstrable recovery of  
124 threatened species.

125 Detailed analysis of Australia's current threatened species expenditure is hampered by the  
126 lack of specific reference to threatened species spending in Australian Government federal  
127 and state budget papers, and a lack of reporting on conservation expenditure for individual  
128 threatened species. To estimate government spending on threatened species, we examined

129 environment-relevant budgets from 2015/16–2018/19 across all Australian jurisdictions.  
130 Australian Government budgets report down to just a few program lines (Table S1), requiring  
131 further investigation beneath the program level to ascertain which components of program  
132 spending were either directly, indirectly, or not at all related to threatened species recovery.  
133 We classified each program line into targeted (direct), relevant, or non-relevant threatened  
134 species recovery components, justifying each breakdown with reference to program annual  
135 reports and other evidence obtained via grey literature or personal communications (Tables  
136 S1–S2). In all cases, we detailed assumptions and references to relevant documents, such  
137 as annual reports, for each budget line.

138 We estimate that targeted threatened species spending by the Australian Government  
139 amounts to US\$38.1m (AU\$49.6m) for the 2018/19 financial year (Table S1), down from  
140 US\$51.6m (AU\$67.4m) the previous year (Supporting Information S4). The newly released  
141 figures for 2019-20 show a slight increase of US\$3.8m (AU\$5m) (Supporting Information  
142 S4).

143 Including both targeted (direct) expenditure seeking to recover threatened species and other  
144 relevant expenditure, the estimated upper limit of investment by the Australian Government  
145 in biodiversity is about US\$293m (AU\$391m), down from US\$347m in 2017/18  
146 (Commonwealth of Australia 2018). The broad category of relevant but not targeted  
147 programs includes several programs that *may* contribute to some aspects of threatened  
148 species recovery. For example, expenditure under the Commonwealth Environmental Water  
149 Office might assist threatened species conservation by improving some habitats in some  
150 areas that contain threatened species; however, its activities are not *targeted* to deliver  
151 specific outcomes for particular threatened species (Table S1). Given the number of  
152 objectives outside of threatened species recovery that such programs set out to achieve, it is  
153 reasonable to assert that the Australian Government spends much less than this amount on  
154 targeted threatened species recovery actions.

155 A similar process was applied to obtain spending estimates for Australian states and  
156 territories. We stress that, because of the challenges with getting exact and comparable  
157 estimates of expenditure across jurisdictions for the period of interest, our figures are not to  
158 be considered precise estimates, but rather a reasonable approximation. Our best estimate  
159 of combined state and territory expenditure on targeted threatened species recovery is  
160 US\$53.3m/year (AU\$71.1m/year) over recent years (Table S2).

161 Summing across state, territory and commonwealth jurisdictions results in an estimated net  
162 public investment in targeted threatened species recovery in Australia of US\$90m/year  
163 (AU\$121m/year), or ca US\$51,000 per extant EPBC Act listed species per year.

164

### 165 **3 | WHAT SHOULD AUSTRALIA HAVE BEEN DOING?**

166 Current levels of government funding are inadequate to address Australia's extinction crisis.  
167 This is apparent in the ongoing species loss, the ongoing decline of most listed species, and  
168 the increasing number of species being identified as threatened every year. So, what should  
169 Australia be spending if it is to prevent any more species loss and maximise the chance that  
170 listed species recover? Significant uncertainty exists about exactly which actions should be  
171 taken to conserve species, and how effective those actions will be (Garnett et al. 2018b), so  
172 precise species-by-species costing is not possible. We looked to the USA where species  
173 recovery has been demonstrated for many species, where a similar number of species have  
174 been listed as threatened under a comparable threatened species protection legislation over  
175 a comparable land area. The USA also has a similar level of per-capita wealth, equivalent  
176 federalised administrative responsibility for threatened species, a strong judicial system, and  
177 a strong tradition of public investment in tackling environmental issues.

178 There is empirical evidence that the more a country spends on conservation, the fewer  
179 species it loses (Waldron et al. 2017). The USA provides a strong case in point. Funding for  
180 actions listed under recovery plans is mandated under the *Endangered Species Act 1973*

181 (U.S.C. 1973), and the USA has seen strong recovery in listed species. Money spent  
182 strategically on threatened species has achieved improvements in species' status (Taylor et  
183 al. 2005). For example, 85% of listed birds achieving a documented stabilization or recovery  
184 following listing.

185 From 2011–2016, the US Government spent at least US\$1.45b/year on direct threatened  
186 species conservation and recovery actions, equating to about US\$903k/species/year  
187 (USFWS 2016). This is augmented by between US\$60–100m/year in US State investments  
188 in threatened species recovery (USFWS 2016). The Federal (US Fish and Wildlife Service)  
189 reports expenditure on direct threatened species recovery projects and does not include  
190 land acquisition or administration costs of the major agencies. In 2018, 1662 species were  
191 listed as threatened and endangered under the US Endangered Species Act (ESA), about  
192 100 fewer than listed in equivalent categories under Australia's EPBC Act (1970, excluding  
193 extinct species).

194 Evidence for the effectiveness of US investment in threatened species recovery is strong.  
195 The US track record in recovery far exceeds Australia's, with 39 species de-listed due to  
196 recovery<sup>1</sup> and strong recovery trends observed in many species, including the iconic grey  
197 wolf, grizzly bear, and bald eagle (Taylor et al. 2005; Suckling et al. 2016). Suckling et al.  
198 (2016) found that birds listed under the US ESA increased in population size on average by  
199 624% since their listing, while unlisted birds declined by 24% on average over the 42 years  
200 since the inception of the Act. This comparison suggests that the recovery of listed birds in  
201 the USA can be attributed largely to the regulations, mandated funding, and recovery actions  
202 associated with listing a species.

203 Using the US species recovery expenditure figures for 2015 (Gerber 2016), we computed  
204 median and mean funding allocations to species within taxonomic groups across all listed  
205 species. Mean and median per-species costs were then multiplied by the number of species

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<sup>1</sup> <https://ecos.fws.gov/ecp0/reports/delisting-report>

206 in each taxonomic group listed under Australia's *EPBC Act 1999* to provide a preliminary  
207 estimate of targeted funding required to recover Australia's listed threatened species (see  
208 Supporting Information S3 & S4 for more detail). The total estimate ranges from US\$632m–  
209 1.87b/year (AU\$842m–2.49b/year) depending on whether median or mean USA funding  
210 figures were used for each taxonomic group. Funding Australian threatened species  
211 recovery at the taxonomic mean rate of funding provided to species recovery in the USA  
212 would result in an approximately 20-fold increase in funding in Australia compared with  
213 current expenditure. The relative merits of using mean versus median rates are discussed in  
214 Supplementary Information S3. Recovery here, as in the study by Gerber (2016), is defined  
215 as achieving security such that de-listing of the species under the EPBC Act is justified.

216

#### 217 **4 | WHAT AUSTRALIA NEEDS TO DO NOW**

218 Our estimates of recovery funding requirements based on the median cost of recovery in the  
219 USA may be optimistically low. Invasive animals, plants and pathogens play a larger role in  
220 Australian extinctions than they do in many other places (Garnett et al. 2018b; Kearney et al.  
221 2018), and many of these invasive species are extremely difficult to eradicate or suppress to  
222 the level required to allow threatened native species to persist (Burbidge & McKenzie 1989;  
223 Moseby et al. 2011). This is compounded by the logistical challenges of managing those  
224 threats over the immense area in which they manifest. Other caveats on our estimates  
225 include the fact that Australia's EPBC Act listing is incomplete and new species are likely to  
226 enter the list as more information accumulates and listing catches up with biodiversity loss.  
227 These and other deep uncertainties make any method of costing extremely challenging, and  
228 cross-jurisdictional comparisons of recovery costs should be made with care.

229 Taking these factors into account, it is likely that the actual cost of recovering Australia's  
230 listed threatened species is closer to the estimated US\$1.85b/year (AU\$2.4b/year) based on  
231 the mean per-species expenditure on recovery in the USA. Although governments may

232 consider this to be a large sum relative to current levels of funding, a useful context is that  
233 the Australian Government expects to pay US\$143.9 billion (AU\$191.8b) in social security  
234 and welfare payments in 2019–20, and will forego US\$735m (AU\$980m) tax revenue  
235 through fuel tax credits to coal mining companies in the same period (ACF 2018; Klapdor &  
236 Arthur 2018). Unfortunately, preventing extinction will cost more relative to GDP in Australia  
237 than it will in the USA.

238 Our estimates of recovery expenditure in Australia and the USA excludes the efforts of the  
239 private sector and NGOs, who undoubtedly make a significant contribution to the  
240 conservation of threatened species. Unfortunately for Australia, the relative contribution of  
241 private NGOs is much larger in the USA. For example, The Nature Conservancy operational  
242 budget in the USA is US\$1.2b/year, compared with the relatively modest ~US\$30m  
243 combined annual operating budget of Australia’s two large land management NGOs.

244

#### 245 ***Continuity, transparency, and accountability***

246 Threatened species management requires long-term (decadal scale) continuity and  
247 consistency to be effective (Garnett et al. 2018a). Many of Australia’s ecosystems are  
248 characterised by decadal drought and wet cycles and reliance on rare stochastic  
249 disturbances such as fires or floods for regeneration; consequently, opportunities to act to  
250 conserve species occur infrequently and unpredictably (Dickman et al. 2014). Committing to  
251 support the conservation of such species requires long-term and flexible funding  
252 arrangements in which funds can be deployed rapidly when the need or opportunity arises.  
253 Moreover, the capacity to report on what is achieved through management, or to identify and  
254 act on precipitous declines in species is severely compromised when funding is not  
255 committed to the establishment and implementation of powerful monitoring programs (Legge  
256 et al. 2018).

257 Improving the accountability and transparency of expenditure on conservation of threatened  
258 species in Australia would also enable a better understanding of the effectiveness of  
259 conservation investment (ANAO 2006). Clear reporting on expenditure, combined with  
260 measurement of conservation outcomes, provides a sound basis for analysing cost-  
261 effectiveness of conservation actions, and supports rational prioritisation of future  
262 investments to maximise conservation outcomes (Iacona et al. 2018). A feature of the US  
263 threatened species recovery system is a high degree of transparency on expenditure to  
264 recover each species listed under the ESA (USFWS 2016). Future reporting of threatened  
265 species conservation spending in Australia could be modelled on the annual endangered  
266 and threatened species expenditure report compiled by the US Fish and Wildlife Service  
267 (e.g. USFWS 2016).

268 Several of the targeted investments of the Australian Government represent good practice  
269 and national leadership in threatened species protection and recovery. Notably, the  
270 leadership and coordinated strategy for feral cat management provided through the national  
271 Threatened Species Strategy and a National Feral Cat Taskforce provides a model that  
272 could usefully be applied to managing other threats. The National Environmental Science  
273 Program provides a model for research designed specifically to inform environmental  
274 management and includes an US\$23m (AU\$30m) investment over six years (2015–2021) by  
275 the Australian Government on targeted threatened species recovery research.

276 Without adequate resourcing, strong governance of threatened species recovery, monitoring  
277 systems that can report species declines and recovery in a timely fashion, and strong  
278 regulation and management of threatening processes, we will leave a tragic legacy of  
279 extinction and fail in our obligations to future generations of Australians, and the international  
280 community. Clarifying our current targeted threatened species expenditure and setting out  
281 costing options to estimate long-term funding needs is a necessary first step towards  
282 supporting successful threatened species recovery program. We have set out an approach  
283 to provide preliminary estimates of funding needs to delist threatened species which could

284 be applied in any jurisdiction anywhere that there is a list of species to be conserved and  
285 recovered. We acknowledge that our approach should be used only as a first parse and  
286 does not substitute for detailed analysis of recovery costs that are sensitive to the particular  
287 needs of each species, the threats they face, and their local contexts, which are always  
288 somewhat unique. We have provided a defensible costing model and starting point for  
289 governments seeking to halt the extinction crisis.

290

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298



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383

384

385 **Figure 1.** The cumulative number of extinctions of Australian endemic mammal species since 1800.  
386 Note that, for some species, the dating of extinction is difficult to assess, so the graph does not  
387 include all extinct species. (Modified with permission from Woinarski et al. 2014).

388

389 **Table 1.** Annual average and median expenditure (across species within taxonomic groups) allocated  
390 to achieve recovery under the US *Endangered Species Act 1973* (amounts provided in USD) in 2015  
391 (Gerber 2016). Column four gives the number of species listed under Australia's *EPBC Act 1999* by  
392 taxonomic group. Columns five and six provide the product of the average or median expenditure and  
393 the number of species in each taxonomic group to provide an estimate of the total funding required to  
394 secure Australian threatened species within taxonomic groups. Amounts shown are in USD; total  
395 amounts in brackets are AUD#.

396

**Table 1.** Annual average and median expenditure (across species within taxonomic groups) allocated to achieve recovery under the US *Endangered Species Act 1973* (amounts provided in USD) in 2015 (Gerber 2016). Column four gives the number of species listed under Australia's *EPBC Act 1999* by taxonomic group. Columns five and six provide the product of the average or median expenditure and the number of species in each taxonomic group to provide an estimate of the total funding required to secure Australian threatened species within taxonomic groups. Amounts shown are in USD; total amounts in brackets are AUD#.

Taxon	USA Allocated funding US\$ '000		Number of species (EPBC Act*)	Estimated expenditure to recover  US\$ '000	Estimated expenditure to recover  US\$ '000
	Median	Mean		Based on median	Based on mean
Plants	\$84	\$567	1319	\$110,796	\$739,959
Invertebrates	\$158	\$604	63	\$9,950	\$38,046
Fish	\$132	\$1,298	57	\$7,498	\$74,013
Amphibians	\$247	\$409	29	\$7,176	\$11,849
Reptiles	\$570	\$3,171	63	\$35,925	\$199,766
Birds	\$2,583	\$3,516	133	\$343,534	\$467,571
Mammals	\$1,042	\$2,904	106	\$115,623	\$322,307
<b>TOTAL</b>				<b>\$519,706</b> <b>(AU\$841,922)</b>	<b>\$1,853,511</b> <b>(AU\$2,485,203)</b>

#Values converted between USD and AUD using 2018 year-long average (AU\$1 = US\$0.75).

\*excludes species listed as Extinct and Extinct in the Wild.

1 Supporting Information for:

2

3 Spending to save: what will it cost to halt Australia's extinction crisis

4

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9

10 **This PDF file includes:**

11

12 Supporting Information S1 – S3

13 Tables S1 – S3

14 References for Supporting Information

15

16 **Supporting Information S1: 2018/2019 Australian Government (federal) Budget breakdown for budget lines relevant to threatened**  
17 **species management.**

18

19 Table S1 provides a set of Budget breakdowns for threatened species conservation spending, by the Australian federal government, assessing  
20 whether individual programs include spending on threatened species recovery. The expenditure and budget lines are taken from the Australian  
21 Federal Budget 2018–19 (Commonwealth of Australia 2018a), and the spending allocations are as described below. We have categorized each  
22 budget line into proportions of three “streams” of funding relevance:

- 23 i. “Direct” spending, which is funding directly targeted at improving outcomes for threatened species.
- 24 ii. “Relevant” spending, which includes environmental spending which is not specifically designed to benefit threatened species but is  
25 likely to have positive indirect impacts on them. This includes actions such as generic habitat restoration and sustainable land  
26 management, as well as scientific research that is related to, but not focused on, improving threatened species outcomes.
- 27 iii. “Unknown” spending, which constitutes the remainder of funding for the sections of the Budget shown here. This is money that is  
28 either not likely to be immediately relevant to threatened species or was unable to be allocated to a specific project within the budget  
29 line. An example of the former might include the government’s “Solar program” which aims to increase use of reusable energy  
30 sources. This will hopefully have flow on effects for climate change, which impacts threatened species, but the pathway to impact for  
31 threatened species outcomes is highly indirect. The latter – those sections unable to be allocated to a specific project – comprises  
32 the parts of the budget that would benefit from more detailed description of the nature and purpose of the spending.



33

34 The information below was taken from the Environment and Energy Portfolio: Budget related paper no. 1.6 (Commonwealth of Australia 2018a)  
35 and the Prime Minister and Cabinet Portfolio: Budget related paper no. 1.14 (Commonwealth of Australia 2018b). Only certain sections of the  
36 Budget are displayed; broad sections that did not include any “direct” or “relevant” funding are not shown, for brevity. For example, within the  
37 Environment and Energy Portfolio only Outcomes 1–3 are shown, as Outcome 4 contained no expenses either directly or relevantly related to  
38 improving outcomes for threatened species. Note as well that only administered expenses are shown because categorizing departmental  
39 expenses into any of our three streams of funding relevance was not possible with the level of detail available. The purpose of departmental  
40 appropriations is to provide money for the annual operating costs of departments and the entities in their portfolios. This includes employee and  
41 supplier salaries, operational expenses, and certain non-operating costs such as ongoing infrastructure maintenance. The purpose of  
42 administered appropriations is funding the outcomes – broken down into programs/Budget lines – shown beside the appropriation amounts.  
43 Outcomes are the results, consequences or impacts of government actions. We acknowledge that including only administered amounts will  
44 leave some gaps in biodiversity-relevant environment funding, as clearly these programs require staff and equipment to be carried out, and, for  
45 example, certain entities like the Great Barrier Reef Marine Authority is funded largely through departmental expenses, and its activities are  
46 often relevant to threatened species. Similarly, support for the Threatened Species Scientific Committee, which processes EPBC Act listing  
47 recommendations, or the Environmental Standards Division, which processes applications for permits under the EPBC Act, might reasonably  
48 be considered expenditure on threatened species conservation and those are not included here. However, our approach is commensurate with  
49 the reporting approach taken in the USA in which their public reporting of threatened species spending doesn’t include land acquisition or  
50 administration costs of the major agencies, though the USFWS reporting of threatened species recovery expenditure does note; “...A portion of

51 the Service's funds for consultation, listing, and recovery are incorporated into salaries, operations, and maintenance costs. If these costs  
52 contributed to the conservation of listed species and are reasonably identifiable to specific species, they are included [in the expenditure  
53 reporting]" (USFWS 2016).

54

55 For our accounting of Australian expenditure, we have not included Special Account amounts in a given year as these do not represent actual  
56 spending in that financial year, but rather, provisioning of an account to allow payments for a Special Appropriation at some stage in the future  
57 when the responsible entity sees fit.

58

59 We have included only those corporate and non-corporate entities within the Environment and Energy Portfolio that are relevant. It should be  
60 noted that their budgets, as determined from both Budget Papers no. 1.6 and no. 4 (Commonwealth of Australia 2018a, 2018c), do not contain  
61 the same program-by-program lines as the Department of Environment and Energy and as such, are likely to be overestimates. For example, in  
62 the Director of National Parks budget, which represents Parks Australia's appropriations, it is not clear whether or not the funding reported  
63 includes some allocations to Parks Australia staff salaries, operational and administration costs.

64

65 All amounts within the tables are shown in AUD. Values were converted between the two currencies in-text here and in the main article using  
66 the 2018 year-long average (AU\$1 = US\$0.75).

67

68 From the table below (Table S1), it is possible to ascertain that the Australian Government will spend roughly US\$256m (AU\$341m) on  
69 activities that could be considered relevant to threatened species, and roughly US\$38m (AU\$50m) on funding directly targeted at improving  
70 Australia's threatened species outcomes in the 2018–19 fiscal year.

71

72 **Table S1.** Budget expenses for Australian Federal Government spending including all programs that could be relevant to threatened species conservation.  
73 This includes the Department of the Environment and Energy Outcomes 1, 2, and 3\* and Department of Prime Minister and Cabinet Outcome 2#. Note that  
74 the proportional amounts allocated to each column were calculated from the 2017-18 financial year 'actual' expenditure obtained from Budget documents and  
75 annual reports of key programs. More detailed information on the sources of each allocated proportion per Budget line can be found in the corresponding  
76 footnotes below. See Supporting Information S4 for excel version of table.

Table 2.1.1: Budgeted expenses for Outcome 1								Source/Notes
2018-19 Budget \$'000	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000		
Programs								
<b>Program 1.1: Sustainable Management of Natural Resources and the Environment</b>								
National Landcare Program:								
- Natural Heritage Trust (incl. Regional stream NRM group grants; Indigenous Protected Areas funding; Working on Country supplementation; World Heritage grants; Sustainable Agriculture National projects; Local programs such as Coastal river recovery and Keep Australia Beautiful campaign; other National programs such as the Threatened Species Recovery Fund; Target Area grants; and Emerging priorities funding)	176,518	0.08	0.91	0.01	14,121	160,631	1765	Allocated based on funding for streams and programs with in National Heritage Trust as stated in the Report on the Review of the National Landcare Program 2017. Available at: <a href="http://www.nrm.gov.au/publications/national-landcare-program-review-report">http://www.nrm.gov.au/publications/national-landcare-program-review-report</a> . Details on how programs were categorised available from sheet "Fed detailed table 2018-19".
- Environmental Stewardship Program	9,980	1	0	0	9,980	0	0	Aim of program is to improve outcomes for threatened ecological communities, so all spending should be directly improving threatened species.
Green Army*	-	-	-	-	-	-	-	No longer active (*See below). When active, the bulk of this program would be considered relevant to threatened species.
Reef 2050 Plan	80,709	0.07	0.75	0.18	5,325	60,582	14,802	Based on allocation of funding to Reef 2050 themes over 5 years from Figure 2 in "Reef 2050 Plan - Update of Progress, Commonwealth of Australia 2016" available at <a href="http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress">http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress</a> . Direct themes: Biodiversity; Relevant themes: Ecosystem Health, Water Quality, Governance; Unknown impact themes: Heritage, Community Benefits, Economic Benefits.
Commonwealth Marine Reserves	20,837	0.17	0.5	0.33	3,473	10,419	6,946	Coarse allocation based on Program management streams. The Marine Reserve System has 6 management programs: From the actions listed on their website, we consider 1 (Protection) to impact on threatened species directly, 3 to be Relevant (Compliance, Indigenous Engagement, Science) and 2 not immediately relevant (Authorisations and assessments, and Communication and tourism engagement). As funding between these programs was not readily available, proportions are based on equal allocation of funds between programs.
Improving your Local Parks and Environment	5436	0.01	0.26	0.72	76	1,439	3,921	Allocated from project descriptions & budgets in Appendix B of "Program guidelines" available at <a href="https://www.business.gov.au/assistance/improving-your-local-parks-and-environment">https://www.business.gov.au/assistance/improving-your-local-parks-and-environment</a>
Biodiversity Fund	-	1	0	0	-	-	-	No longer active. But when active all funds were assumed to have direct impact.

<b>Payments to corporate entities [Director of National Parks]</b>	47,434	0.17	0.50	0.33	7,906	23,717	15,811	Coarse allocation based on Program goals. Parks Australia has 6 goals, of which we consider 1 direct (1. Increase pops of threatened species), 3 relevant (2. Reduce pops of priority invasives, 3. Implement marine management plans, 4. Increase long-term marine monitoring sites) and 2 not immediately likely to impact threatened species (5. Increase no. indigenous employees, 6. Improve visitors to parks). As funding between these goals was not readily available, proportions are based on equal allocation of funds between them.
<b>Program 1.2: Environmental Information and Research</b>								
National Environmental Science Program	25,520	0.33	0.37	0.3	8,422	9,442	7,656	All Hub projects (from v4&5) classified into Direct, Relevant, or Unlikely, in sheet "NESP Research" under S4. Hub budgets from <a href="http://www.environment.gov.au/science/nesp">http://www.environment.gov.au/science/nesp</a>
Australian Biological Resources Study	2,030	0	0	1	0	0	2,030	Aims to support the discovery, naming and classification of Australia's living organisms. Unlikely to have relevant impacts on threatened species in the near future. Statement at: <a href="http://www.environment.gov.au/science/abrs">http://www.environment.gov.au/science/abrs</a>
Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining		0	0	1	0	0	1,035	Not immediately relevant to threatened species.
<b>Program 1.3: Commonwealth Environmental Water</b>								
MDB Environmental Knowledge and Research	1,900	0	1	0	0	1,900	0	Based on aims of program to support Commonwealth Env Water Office.
Commonwealth Environmental Water Office	33,292	0	1	0	0	33,292	0	Aims to re-introduce natural variability in river flows to reconnect Murray-Darling Basin rivers floodplains and wetlands for the benefit of the environment. This would have flow on impacts to threatened species, and is relevant spending.
<b>Program 1.4: Conservation of Australia's Heritage and Environment</b>								
Protected National Historic Sites	-	0	0	1	-	-	-	No longer active, but was not directly relevant to threatened species.
National Trusts Partnership Program	-	0	0	1	-	-	-	No longer active, but was not directly relevant to threatened species.
Australian Heritage Grants Program - establishment	5,347	0	0.5	0.5	0	2,674	2,674	Nominal figure, considering that the Program will incorporate a range of different types of heritage protection, some relevant to threatened species and some not. However, at time of publishing, the first round of successful grants had not yet been released, and without detailed information on proposed program spending, specific allocation is not possible. As such this figure represents an estimation made in lieu of more readily accessible spending figures.

Giant Pandas	1,284	0	0	1	0	0	1,284	Not an Australian threatened species.
<b>Program 1.5: Environmental Regulation</b>								
<i>Environment Protection and Biodiversity Conservation Act - Water Resources Amendment</i>	259	1	0	0	259	0	0	Relates directly to EPBC Act, so likely to directly impact threatened species. No detailed figures on spending readily available.
<b>Program 1.6: Management of Hazardous Wastes, Substances and Pollutants</b>								
National Environment Protection Council	496	0	0	1	0	0	496	Not immediately relevant to threatened species. Based on project descriptions available at <a href="http://www.nepc.gov.au/projects">www.nepc.gov.au/projects</a>
Biofuels - Monitoring, Compliance and Enforcement of Fuel Quality	100	0	0	1	0	0	100	Not immediately relevant to threatened species.
Surf Life Saving Cleaner Outboard Engines Scheme	375	0	0	1	0	0	375	Not immediately relevant to threatened species.
<b>Table 2.2.1: Budgeted expenses for Outcome 2</b>								
<b>Programs</b>								
<b>Program 2.1: Reducing Australia's Greenhouse Gas Emissions</b>								
Independent Scientific Committee in Wind Turbines	15	0	0	1	0	0	15	Not immediately relevant to threatened species.
Solar Programs	423	0	0	1	0	0	423	Not immediately relevant to threatened species.
<b>Program 2.2: Adapting to Climate change</b>								
Implementing the Finkel Review	1,950	0	0	1	0	0	1,950	Not immediately relevant to threatened species.
<b>Program 2.3: Renewable Energy Technology Development</b>								
Ordinary annual services (Appropriation Bill no. 1) [To corporate entity: Australian Renewable Energy Agency]	2,463	0	0	1	0	0	2463	Not immediately relevant to threatened species.
<b>Special appropriations</b> <b>Australian Renewable Energy Agency Act 2011 [To corporate entity: Australian Renewable Energy Agency]</b>	310,943	0	0	1	0	0	310943	Not immediately relevant to threatened species.
<b>Table 2.3.1: Budgeted expenses for Outcome 3</b>								
<b>Programs</b>								
<b>Program 3.1: Antarctica: Science, Policy and Presence</b>								

<i>Expenses not requiring appropriation in the Budget year</i>	12	0	0	1	0	0	12	This Budget line comprises depreciation expenses, amortisation expenses, audit fees and an approved operating loss. None of which constitutes direct or relevant spending on threatened species.
<b>DotEE Total</b>	<b>728,358</b>	<b>0.07</b>	<b>0.42</b>	<b>0.51</b>	<b>49,561</b>	<b>304,096</b>	<b>374,701</b>	

**DEPARTMENT OF THE PRIME MINISTER & CABINET**

<b>Table 2.1.1: Budgeted expenses for Outcome 2</b>	<b>2018-19 Budget</b>	<b>Direct TS proportion</b>	<b>Relevant to TS proportion</b>	<b>Unknown impact proportion</b>	<b>2018-19 Direct TS \$'000</b>	<b>2018-19 Relevant TS \$'000</b>	<b>2018-19 Unknown \$'000</b>	<b>Source/Notes</b>
<b>Programs</b>	<b>\$'000</b>							
<b>Program 2.1: Jobs, Land and Economy</b>								
<i>Ordinary annual services (Appropriation Bill No.1)</i>	658,894	0	0	1	0	0	658,894	The nominated proportion is an estimation made in lieu of more readily accessible spending figures. This program incorporates a large range of aims, based around the Indigenous Advancement Strategy, the vast majority of which are not environment related. None of the stated Objectives or Outcomes for the project were considered relevant to threatened species recovery. See IAS website for further detail on program & grant guidelines: <a href="https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy">https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy</a> .
<i>Special appropriations</i>								
<i>Aboriginal Land Rights (Northern Territory) Act 1976</i>	155,441	0	0.0	1	0	0	155,441	This spending is nominally a form of rental to ensure access for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.



Aboriginals Benefit Account Ranger Agreement									This spending is nominally a form of rental to ensure access to the Ranger Project area for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.
	1,013	0	0	1	0	0	1013		
<b>Payments to corporate entities</b>									These corporate entities are largely indigenous land & community councils (incl. the Indigenous Land and Sea Corporation). These councils have a wide range of aims, only some of which are likely to impact threatened species directly. The nominated proportion is an estimation made in lieu of more readily accessible spending figures, as each of these groups may allocate the funding as they see fit & the budgets are therefore highly diffuse. This may be an underestimate of the proportion spent on threatened species, but is consistent with our conservative approach to allocation.
	18,511	0	0.5	0.5	0	9,256	9,256		
<b>DMPC Total</b>	<b>833,859</b>	<b>0</b>	<b>0.011</b>	<b>0.989</b>	<b>0</b>	<b>9,256</b>	<b>824,604</b>		

**OTHER RELEVANT ENTITIES WITHIN THE ENVIRONMENT & ENERGY PORTFOLIO**

Agency Resourcing Table: Environment & Energy	2018-19 Budget \$'000	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000	Source/Notes
Director of National Parks	47,434	-	-	-	-	-	-	Counted above in "Payments to corporate entities [Director of National Parks]" within Program 1.1 of the Department of Environment & Energy budget. Listed as "Unlikely" here to avoid double counting.
Sydney Harbour Federation Trust	18,806	0	0	1	0	0	0	Anecdotally contains some threatened species spending but more detailed budget figures are not readily available & the majority of this Entity's spending is not relevant to threatened species.
Great Barrier Reef Marine Park Authority	41,772	0.0	0.66	0.33	0	27,570	13,785	The Entity operates 3 programs with different objectives, 2 of which are relevant (Ensure best knowledge to inform management; Environmental Regulation) and 1 unlikely to impact threatened species (Enhance

								engagement). Split equally in lieu of more detailed budget information. See sheet 'DoEE Portfolio Entities' for further details.
<b>Other Entities Total</b>	<b>108,012</b>	<b>0</b>	<b>0.26</b>	<b>0.13</b>	<b>0</b>	<b>27,570</b>	<b>13,785</b>	
<b>TOTAL</b>	<b>1,670,229</b>	<b>0.03</b>	<b>0.20</b>	<b>0.73</b>	<b>49,561</b>	<b>340,921</b>	<b>1,213,089</b>	

77

78

79 \*Within the Department of the Environment and Energy: Outcome 1 seeks to “Conserve, protect and sustainably manage Australia's  
80 biodiversity, ecosystems, environment and heritage through research, information management, supporting natural resource management,  
81 establishing and managing Commonwealth protected areas, and reducing and regulating the use of pollutants and hazardous substances.”  
82 Outcome 2 seeks to “Reduce Australia’s greenhouse gas emissions, adapt to the impacts of climate change, contribute to effective global  
83 action on climate change, and support technological innovation in clean and renewable energy, through developing and implementing a  
84 national response to climate change.” Outcome 3 seeks to “Advance Australia’s strategic, scientific, environmental and economic interests in  
85 the Antarctic region by protecting, administering and researching the region.” Outcome 4 has been excluded as it is not relevant.

86 #Within the Department of Prime Minister and Cabinet: Outcome 2 seeks to “Improve results for Indigenous Australians including in relation to  
87 school attendance, employment and community safety, through delivering services and programmes, and through measures that recognise the  
88 special place that Indigenous people hold in this Nation.”

89

90 Footnotes:

- 91 1. Allocated based on funding for streams and programs with in National Heritage Trust as stated in the Report on the Review of the National Landcare  
92 Program 2017. Available at: <http://www.nrm.gov.au/publications/national-landcare-program-review-report>. Details on how programs were categorised  
93 available from corresponding authors.
- 94 2. Aim of program is to improve outcomes for threatened ecological communities, so all spending should be directly improving threatened species.
- 95 3. No longer active. When active, much of this program would be considered relevant to threatened species.

- 96 4. Based on allocation of funding to Reef 2050 themes over 5 years from Figure 2 in "Reef 2050 Plan - Update of Progress, Commonwealth of Australia  
97 2016" available at <http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress>. Direct themes: Biodiversity; Relevant  
98 themes: Ecosystem Health, Water Quality, Governance; Unknown impact themes: Heritage, Community Benefits, Economic Benefits
- 99 5. Coarse allocation based on Program management streams. The Marine Reserve System has 6 management programs: From the actions listed on  
100 their website, we consider 1 (Protection) to impact on threatened species directly, 3 to be Relevant (Compliance, Indigenous Engagement, Science)  
101 and 2 not immediately relevant (Authorisations and assessments, and Communication and tourism engagement). As funding between these  
102 programs was not readily available, proportions are based on equal allocation of funds between programs.
- 103 6. Allocated from project descriptions & budgets in Appendix B of "Program guidelines" available at [https://www.business.gov.au/assistance/improving-](https://www.business.gov.au/assistance/improving-your-local-parks-and-environment)  
104 [your-local-parks-and-environment](https://www.business.gov.au/assistance/improving-your-local-parks-and-environment)
- 105 7. No longer active. But when active all funds were assumed to have direct impact.
- 106 8. Coarse allocation based on Program goals. Parks Australia has 6 goals, of which we consider 1 direct (1. Increase pops of threatened species), 3  
107 relevant (2. Reduce pops of priority invasive species, 3. Implement marine management plans, 4. Increase long-term marine monitoring sites) and 2  
108 not immediately likely to impact threatened species (5. Increase no. indigenous employees, 6. Improve visitors to parks). As funding between these  
109 goals was not readily available, proportions are based on equal allocation of funds between them.
- 110 9. Based on assumption that all NESP hubs undertake research that is 75% relevant or directly impacts threatened species & 25% "other" forms of  
111 research not likely to be directly relevant to threatened species, except the Threatened Species Recovery hub which is entirely relevant or direct. Hub  
112 budgets from <http://www.environment.gov.au/science/nesp>
- 113 10. Aims to support the discovery, naming and classification of Australia's living organisms. Unlikely to have relevant impacts on threatened species in  
114 the near future. Statement at: <http://www.environment.gov.au/science/abrs>
- 115 11. Not immediately relevant to threatened species.

- 116 12. Based on aims of program to support Commonwealth Environmental Water Office.
- 117 13. Aims to re-introduce natural variability in river flows to reconnect Murray-Darling Basin rivers floodplains and wetlands for the benefit of the  
118 environment. This would have flow on impacts to threatened species, and is relevant spending.
- 119 14. No longer active, but was not directly relevant to threatened species.
- 120 15. No longer active, but was not directly relevant to threatened species.
- 121 16. Nominal figure, considering that Program will incorporate a range of different types of heritage protection, some relevant to threatened species and  
122 some not. However, without detailed information on proposed program spending, specific allocation is not possible and this figure represents an  
123 estimation made in lieu of more readily accessible spending figures.
- 124 17. Not an Australian threatened species.
- 125 18. Relates directly to EPBC Act, so likely to directly impact threatened species. No detailed figures on spending readily available.
- 126 19. Not immediately relevant to threatened species. Based on project descriptions available at [www.nepc.gov.au/projects](http://www.nepc.gov.au/projects)
- 127 20. Not immediately relevant to threatened species.
- 128 21. Not immediately relevant to threatened species.
- 129 22. Not immediately relevant to threatened species.
- 130 23. Not immediately relevant to threatened species.
- 131 24. Not immediately relevant to threatened species.
- 132 25. Not immediately relevant to threatened species.
- 133 26. This Budget line comprises depreciation expenses, amortisation expenses, audit fees and an approved operating loss. None of which are relevant to  
134 threatened species.
- 135

136 **Supporting Information S2: State and territory targeted and biodiversity-relevant threatened species expenditure.**

137 Reporting of expenditure in the states and territories is highly variable, but has recently been augmented by a number of statutory audits which  
138 provide excellent data on expenditure in threatened species programs (Office of the Auditor General Western Australia 2017; Queensland Audit  
139 Office 2018). For states in which recent audit reports were not available, estimates were obtained either directly from the relevant government  
140 agencies, or through investigation of budget papers obtained from departmental websites (Table S2).

141 Some states and territories have recently increased funding for biodiversity conservation (ACF 2018). The New South Wales Saving Our  
142 Species program, established in 2013 (Office of Environment and Heritage 2013), sets a clear goal of maximizing the number of threatened  
143 species that can be secured in the wild in that jurisdiction for 100 years (Brazill-Boast et al. 2018). Under this program, the New South Wales  
144 State Government committed US\$75m (AU\$100m) over 5 years to actions directly benefiting threatened species, an average annual  
145 expenditure of US\$15m (AU\$20m). This is at the upper end of the targeted threatened species expenditure by Australia's state and territory  
146 governments (Table S2), though particular high-profile species such as the Leadbeater's possum *Gymnobelideus leadbeateri* have attracted  
147 significant recovery funding including US\$3.8m (AU\$5m) in Victoria in 2017 alone.

148 Amounts within the tables are shown in AUD, with the totals shown in USD as well. Values were converted between the two currencies in-text  
149 here and in the main article using the 2018 year-long average (AU\$1 = US\$0.75).

150

151 **Table S2.** State and Territory targeted and biodiversity-relevant threatened species expenditure across a range of years.

State/Territory	Targeted spending (AU\$m)	Relevant spending (AU\$m)	Year of spend	Source
Australian Capital Territory	2.8	3.5	2018-19	ACT Treasury and Economic Development Directorate 2018
New South Wales	24	72	2017-18	Pers. comm. 2018 (Provided by state)
Northern Territory	5.4	42.8	2017-18	NT Department of Treasury & Finance 2017
Queensland	6.9	42	2017-18	Queensland Audit Office 2018
South Australia*	9.6	38.6	2017-18	SA Department of Treasure & Finance 2018
Tasmania	3.4	15	2017-18	Tasmanian Department of Treasury & Finance 2017
Victoria	11.3	77	2018-19	Pers. comm. 2018 (Provided by state)
Western Australia	7.7	66	2015-16	Office of the Auditor General WA 2017
<b>TOTAL</b>	<b>71.1</b>	<b>356.9</b>		
	<b>(US\$53)</b>	<b>(US\$268)</b>		

\*Targeted versus relevant spending for threatened species unable to be portioned out from South Australian budget statements; in lieu of this information, the average targeted:relevant ratio across the remaining states and territories was calculated and this was used to allocate the spending for South Australia.

167 **Supporting Information S3: Further detailed information on calculating proposed annual expenditure on Australian threatened**  
168 **species using US species recovery expenditure figures.**

169 Using the US species recovery expenditure figures for 2016 (Gerber 2016), we computed median and mean funding allocations to species  
170 within taxonomic groups across all listed species. Mean and median per-species costs were then multiplied by the number of species in each  
171 taxonomic group listed under Australia's *EPBC Act 1999* to provide a preliminary estimate of targeted funding required to recover Australia's  
172 listed threatened species. The relative merits of using mean versus median rates are discussed below.

173 The mean expenditure for species within each taxonomic group for the USA is substantially higher than the median (Table 1, main text),  
174 indicating that the distribution of spending within each group is highly skewed such that a small number of species in each group require and  
175 receive significantly higher funding than the bulk of species. Some species receive much more funding than others because their status is so  
176 critical and the threats they face are so complex and difficult to remediate. Others receive more funding because they are charismatic and have  
177 influential advocates. The same situation applies in Australia, with charismatic species such as the koala *Phascolarctos cinereus*, Leadbeater's  
178 possum, helmeted honeyeater *Lichenostomus melanops cassidix*, and orange-bellied parrot *Neophema chrysogaster* receiving substantially  
179 more funding and public profile than other listed threatened species, including some that are at immediate risk of extinction in the next 10 years  
180 (e.g. the King Island brown thornbill *Acanthiza pusilla archibaldi*) (Geyle et al. 2018).

181 Working either with mean or median values yields significantly different end points in the estimate of how much funding is required to secure  
182 threatened species. Using mean species-level costs captures the reality that some species will require much more recovery effort and  
183 resources than others. For example, recovering the greater bilby *Macrotis lagotis* requires an immense effort to remove or reduce the key



184 threats (e.g. introduced predators and herbivores, mismanaged fire) from an extremely large area of remote Australia, working with many land  
185 managers, including Indigenous Traditional Owners. Other species, such as narrow range endemic plants, would require significantly less  
186 expenditure to recover and could be conserved through improved regulations that prevent further destruction of their habitats, actions that  
187 reduce grazing impacts in small areas, and a small number of translocations to create insurance populations (e.g. Southern Shepherd's Purse  
188 *Ballantinia antipoda* (Nevill & Camilleri 2010)). Conversely, managing the threats to bilbies over a large area would benefit many other species  
189 affected by the same threats (Burbidge & McKenzie 1989), bringing into play efficiencies arising from complementary management, which are  
190 not currently factored into our analysis.

191 See spreadsheet S4 for more information on the numbers used for each calculation.

192

193 **Supporting Information References**

194

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227

DEPARTMENT OF THE ENVIRONMENT & ENERGY								
Table 2.1.1: Budgeted expenses for Outcome 1	2018-19 Budget	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000	Source/Notes
Programs	\$'000							
<b>Program 1.1: Sustainable Management of Natural Resources and the Environment</b>								
National Landcare Program:								
- Natural Heritage Trust (incl. Regional stream NRM group grants; Indigenous Protected Areas funding; Working on Country supplementation; World Heritage grants; Sustainable Agriculture National projects; Local programs such as Coastal river recovery and Keep Australia Beautiful campaign; other National programs such as the Threatened Species Recovery Fund; Target Area grants; and Emerging priorities funding)	176,518	0.08	0.91	0.01	14,121	160,631	1,765	Allocated based on funding for streams and programs with in National Heritage Trust as stated in the Report on the Review of the National Landcare Program 2017. Available at: <a href="http://www.nrm.gov.au/publications/national-landcare-program-review-report">http://www.nrm.gov.au/publications/national-landcare-program-review-report</a> . Details on how programs were categorised available from sheet "Fed detailed table 2018-19".
- Environmental Stewardship Program	9,980	1	0	0	9,980	0	0	Aim of program is to improve outcomes for threatened ecological communities, so all spending should be directly improving threatened species.
Green Army*	-	-	-	-	-	-	-	No longer active (*See below). When active, the bulk of this program would be considered relevant to threatened species.
Reef 2050 Plan	80,709	0.07	0.75	0.18	5,325	60,582	14,802	Based on allocation of funding to Reef 2050 themes over 5 years from Figure 2 in "Reef 2050 Plan - Update of Progress, Commonwealth of Australia 2016" available at <a href="http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress">http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress</a> . Direct themes: Biodiversity; Relevant themes: Ecosystem Health, Water Quality, Governance; Unknown impact themes: Heritage, Community Benefits, Economic Benefits.
Commonwealth Marine Reserves	20,837	0.17	0.5	0.33	3,473	10,419	6,946	Coarse allocation based on Program management streams. The Marine Reserve System has 6 management programs: From the actions listed on their website, we consider 1 (Protection) to impact on threatened species directly, 3 to be Relevant (Compliance, Indigenous Engagement, Science) and 2 not immediately relevant (Authorisations and assessments, and Communication and tourism engagement). As funding between these programs was not readily available, proportions are based on equal allocation of funds between programs.
Improving your Local Parks and Environment	5436	0.01	0.26	0.72	76	1,439	3,921	Allocated from project descriptions & budgets in Appendix B of "Program guidelines" available at <a href="https://www.business.gov.au/assistance/improving-your-local-parks-and-environment">https://www.business.gov.au/assistance/improving-your-local-parks-and-environment</a>
Biodiversity Fund	-	1	0	0	-	-	-	No longer active. But when active all funds were assumed to have direct impact.
<b>Payments to corporate entities [Director of National Parks]</b>	47,434	0.17	0.50	0.33	7,906	23,717	15,811	Coarse allocation based on Program goals. Parks Australia has 6 goals, of which we consider 1 direct (1. Increase pops of threatened species), 3 relevant (2. Reduce pops of priority invasives, 3. Implement marine management plans, 4. Increase long-term marine monitoring sites) and 2 not immediately likely to impact threatened species (5. Increase no. indigenous employees, 6. Improve visitors to parks). As funding between these goals was not readily available, proportions are based on equal allocation of funds between them.
<b>Program 1.2: Environmental Information and Research</b>								
National Environmental Science Program	25,520	0.33	0.37	0.3	8,422	9,442	7,656	All Hub projects (from v4&5) classified into Direct, Relevant, or Unlikely, in sheet "NESP Research". Hub budgets from <a href="http://www.environment.gov.au/science/nesp">http://www.environment.gov.au/science/nesp</a>
Australian Biological Resources Study	2,030	0	0	1	0	0	2,030	Aims to support the discovery, naming and classification of Australia's living organisms. Unlikely to have relevant impacts on threatened species in the near future. Statement at: <a href="http://www.environment.gov.au/science/abrs">http://www.environment.gov.au/science/abrs</a>
Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining	1,035	0	0	1	0	0	1,035	Not immediately relevant to threatened species.
<b>Program 1.3: Commonwealth Environmental Water</b>								
MDB Environmental Knowledge and Research	1,900	0	1	0	0	1,900	0	Based on aims of program to support Commonwealth Env Water Office.
Commonwealth Environmental Water Office	33,292	0	1	0	0	33,292	0	Aims to re-introduce natural variability in river flows to reconnect Murray-Darling Basin rivers floodplains and wetlands for the benefit of the environment. This would have flow on impacts to threatened species, and is relevant spending.
<b>Program 1.4: Conservation of Australia's Heritage and Environment</b>								
Protected National Historic Sites	-	0	0	1	-	-	-	No longer active, but was not directly relevant to threatened species.
National Trusts Partnership Program	-	0	0	1	-	-	-	No longer active, but was not directly relevant to threatened species.
Australian Heritage Grants Program - establishment	5,347	0	0.5	0.5	0	2,674	2,674	Nominal figure, considering that the Program will incorporate a range of different types of heritage protection, some relevant to threatened species and some not. However, at time of publishing, the first round of successful grants had not yet been released, and without detailed information on proposed program spending, specific allocation is not possible. As such this figure represents an estimation made in lieu of more readily accessible spending figures.
Giant Pandas	1,284	0	0	1	0	0	1,284	Not an Australian threatened species.
<b>Program 1.5: Environmental Regulation</b>								
<i>Environment Protection and Biodiversity Conservation Act - Water Resources Amendment</i>	259	1	0	0	259	0	0	Relates directly to EPBC Act, so likely to directly impact threatened species. No detailed figures on spending readily available.
<b>Program 1.6: Management of Hazardous Wastes, Substances and Pollutants</b>								

National Environment Protection Council									Not immediately relevant to threatened species. Based on project descriptions available at <a href="http://www.nepc.gov.au/projects">www.nepc.gov.au/projects</a>
Biofuels - Monitoring, Compliance and Enforcement of Fuel Quality	496	0	0	1	0	0	496	100	Not immediately relevant to threatened species.
Surf Life Saving Cleaner Outboard Engines Scheme	100	0	0	1	0	0	100	375	Not immediately relevant to threatened species.
<b>Table 2.2.1: Budgeted expenses for Outcome 2</b>									
<b>Programs</b>									
<b>Program 2.1: Reducing Australia's Greenhouse Gas Emissions</b>									
Independent Scientific Committee in Wind Turbines	15	0	0	1	0	0	15	100	Not immediately relevant to threatened species.
Solar Programs	423	0	0	1	0	0	423	375	Not immediately relevant to threatened species.
<b>Program 2.2: Adapting to Climate change</b>									
Implementing the Finkel Review	1,950	0	0	1	0	0	1,950		Not immediately relevant to threatened species.
<b>Program 2.3: Renewable Energy Technology Development</b>									
Ordinary annual services (Appropriation Bill no. 1) [To corporate entity: Australian Renewable Energy Agency]	2,463	0	0	1	0	0	2463		Not immediately relevant to threatened species.
<b>Special appropriations</b>									
Australian Renewable Energy Agency Act 2011 [To corporate entity: Australian Renewable Energy Agency]	310,943	0	0	1	0	0	310943		Not immediately relevant to threatened species.
<b>Table 2.3.1: Budgeted expenses for Outcome 3</b>									
<b>Programs</b>									
<b>Program 3.1: Antarctica: Science, Policy and Presence</b>									
<b>Expenses not requiring appropriation in the Budget year</b>									This Budget line comprises depreciation expenses, amortisation expenses, audit fees and an approved operating loss. None of which constitutes direct or relevant spending on threatened species.
	12	0	0	1	0	0	12		
<b>DotEE Total</b>	<b>728,358</b>	<b>0.07</b>	<b>0.42</b>	<b>0.51</b>	<b>49,561</b>	<b>304,096</b>	<b>374,701</b>		

DEPARTMENT OF THE PRIME MINISTER & CABINET									
Table 2.1.1: Budgeted expenses for Outcome 2	2018-19 Budget	Direct TS proportion	Relevant to TS proportion	Unknown impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown \$'000	Source/Notes	
Programs	\$'000								
<b>Program 2.1: Jobs, Land and Economy</b>									
<b>Ordinary annual services (Appropriation Bill No.1)</b>	658,894	0	0	1	0	0	658,894		The nominated proportion is an estimation made in lieu of more readily accessible spending figures. This program incorporates a large range of aims, based around the Indigenous Advancement Strategy, the vast majority of which are not environment related. None of the stated Objectives or Outcomes for the project were considered relevant to threatened species recovery. See IAS website for further detail on program & grant guidelines: <a href="https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy">https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy</a> .
<b>Special appropriations</b>									
Aboriginal Land Rights (Northern Territory) Act 1976	155,441	0	0.0	1	0	0	155,441		This spending is nominally a form of rental to ensure access for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.
Aboriginals Benefit Account Ranger Agreement	1,013	0	0	1	0	0	1013		This spending is nominally a form of rental to ensure access to the Ranger Project area for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.
<b>Payments to corporate entities</b>									
	18,511	0	0.5	0.5	0	9,256	9,256		These corporate entities are largely indigenous land & community councils (incl. the Indigenous Land and Sea Corporation). These councils have a wide range of aims, only some of which are likely to impact threatened species directly. The nominated proportion is an estimation made in lieu of more readily accessible spending figures, as each of these groups may allocate the funding as they see fit & the budgets are therefore highly diffuse. This may be an underestimate of the proportion spent on threatened species, but is consistent with our conservative approach to allocation.
<b>DMPC Total</b>	<b>833,859</b>	<b>0</b>	<b>0.011</b>	<b>0.989</b>	<b>0</b>	<b>9,256</b>	<b>824,604</b>		

OTHER RELEVANT ENTITIES WITHIN THE ENVIRONMENT & ENERGY PORTFOLIO

Agency Resourcing Table: Environment & Energy Budget Paper no. 4 pg. 70 - 74		Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000	Source/Notes
Director of National Parks	47,434	-	-	-	-	-	-	Counted above in "Payments to corporate entities [Director of National Parks]" within Program 1.1 of the Department of Environment & Energy budget. Listed as "Unlikely" here to avoid double counting. Anecdotal contains some threatened species spending but more detailed budget figures are not readily available & the majority of this Entity's spending is not relevant to threatened species. The Entity operates 3 programs with different objectives, 2 of which are relevant (Ensure best knowledge to inform management; Environmental Regulation) and 1 unlikely to impact threatened species (Enhance engagement). Split equally in lieu of more detailed budget information. See sheet 'DoEE Portfolio Entities' for further details.
Sydney Harbour Federation Trust	18,806	0	0	1	0	0		
Great Barrier Reef Marine Park Authority	41,772	0.0	0.66	0.33	0	27,570	13,785	
<b>Other Entities Total</b>	<b>108,012</b>	<b>0</b>	<b>0.26</b>	<b>0.13</b>	<b>0</b>	<b>27,570</b>	<b>13,785</b>	
<b>TOTAL</b>	<b>1,670,229</b>	<b>0.03</b>	<b>0.20</b>	<b>0.73</b>	<b>49,561</b>	<b>340,921</b>	<b>1,213,089</b>	

\*Between July 2014 & December 2017, the Green Army program constituted roughly \$134M, much of which was relevant to threatened species.

^Only the relevant portions of the budget amounts are shown in this column. For further detail see Budget Paper no. 4.

State/Territory	Targeted TS spending (AU\$m)	Relevant TS spending (AU\$m)	Year of spend	Source	Notes
Australian Capital Territory	2.8	3.5	2018-19	ACT Treasury and Economic Development Directorate 2018	State Budget E: Environment, Planning and Sustainable Development Directorate   City Renewal Authority   Suburban Land Agency
New South Wales	24	72	2017-18	Pers. comm. 2018 (Provided by state)	From pers. comm. with BAW
Northern Territory	5.4	42.8	2017-18	NT Department of Treasury & Finance 2017	Agency Budget Statements 2017-18: Budget Paper No. 3
Queensland	6.9	42	2017-18	Queensland Audit Office 2018	Figures obtained from the 2018 Qld Audit report: "Conserving Threatened Species. Report 7: 2018-19"
South Australia*	9.6	38.6	2017-18	SA Department of Treasury & Finance 2018	Budget paper no. 4: Agency Statements vols. 2 & 3. No direct spending able to be portioned out; direct estimate calculated from the average proportion of total (direct plus relevant) spending that consists of direct spending (i.e. D/(D+R))
Tasmania	3.4	15	2017-18	Tasmanian Department of Treasury & Finance 2017	Budget 2017-18 Government Services: Budget Paper No. 2
Victoria	11.3	77	2018-19	Pers. comm. 2018 (Provided by state)	Combined info from pers. comm. With DELWP and assessment of State Budget 2018-19 docs nos. 3 & 4
Western Australia	7.7	66	2015-16	Office of the Auditor General WA 2017	Figures obtained from the 2017 WA Auditor General's report: "Rich and Rare: Conservation of Threatened Species Follow-up Audit. Report 16"
<b>TOTAL</b>	<b>71.09</b>	<b>356.86</b>			

Average proportion of D:R spending 0.3  
Average proportion of D:(D+R) spending 0.2

Detailed budget breakdowns can be found on subsequent sheets. Where a state or territory does not have a separate sheet, either the source material referenced here has detailed & clear information, so no breakdowns were needed, or the information was provided through pers. comm.





This Budget was released 1st April 2019

DEPARTMENT OF THE ENVIRONMENT & ENERGY									
Table 2.1.1: Budgeted expenses for Outcome 1									
Programs	2018-19 Budget*	2019-20 Budget	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000	Source/Notes
<b>Program 3.1: Sustainable Management of Natural Resources and the Environment</b>									
<b>National Landcare Program:</b>									
- Natural Heritage Trust (incl. Regional stream NRM group grants; Indigenous Protected Areas funding; Working on Country supplementation; World Heritage grants; Sustainable Agriculture National projects; local programs such as Coastal river recovery and Keep Australia Beautiful campaign; other National programs such as the Threatened Species Recovery Fund; Target Area grants; and Emerging priorities funding)	165,264	176,419	0.08	0.91	0.01	14,114	160,541	1,764	Allocated based on funding for streams and programs with in National Heritage Trust as stated in the Report on the Review of the National Landcare Program 2017. Available at: <a href="http://www.nrm.gov.au/publications/national-landcare-program-review-report">http://www.nrm.gov.au/publications/national-landcare-program-review-report</a> . Details on how programs were categorised available from sheet "Ted detailed table 2018-19"
- Environmental Stewardship Program	9,980	9,713	1	0	0	9,713	0	0	Aim of program is to improve outcomes for threatened ecological communities, so all spending should be directly improving threatened species.
Reef 2050 Plan	72,382	40,000	0.07	0.75	0.18	2,639	30,025	7,336	Based on allocation of funding to Reef 2050 themes over 5 years from Figure 2 in "Reef 2050 Plan - Update of Progress, Commonwealth of Australia 2018" available at <a href="http://www.environment.gov.au/marine/gba/publications/reef-2050-plan-update-on-progress">http://www.environment.gov.au/marine/gba/publications/reef-2050-plan-update-on-progress</a> . Direct themes: Biodiversity, Relevant themes: Ecosystem Health, Water Quality, Governance; Unknown impact themes: Heritage, Community Benefits, Economic Benefits.
Australian Marine Parks (previously Commonwealth Marine Reserves)	20,837	7,496	0.17	0.5	0.33	1,249	3,748	2,499	Course allocation based on Program management streams. The Marine Reserve System has 6 management programs. From the actions listed on their website, we consider 1 (Protection) to impact on threatened species directly, 3 to be Relevant (Compliance, Indigenous Engagement, Science) and 2 not immediately relevant (Authorisations and assessments, and Communication and tourism engagement). As funding between these programs was not readily available, proportions are based on equal allocation of funds between programs.
Improving your Local Parks and Environment	5,436	2,073	0.01	0.26	0.72	29	549	1,495	Allocated from project descriptions & budgets in Appendix B of "Program guidelines" available at <a href="https://www.business.gov.au/assistance/improving-your-local-parks-and-environment">https://www.business.gov.au/assistance/improving-your-local-parks-and-environment</a>
Communities Environment Program	-	22,650	0.20	0.40	0.40	4,530	9,060	9,060	Course allocation based on stated priorities. This program is new in 2018 & few details are yet available. Of the 5 priorities mentioned, 1 is likely to Target threatened species, 2 are likely Relevant (pest management & restoration), and the remaining 2 focus on human impacts. See: <a href="https://www.environment.gov.au/cep">https://www.environment.gov.au/cep</a>
Environment Restoration Fund	-	20,090	0.33	0.33	0.33	6,630	6,630	6,630	Course allocation based on stated priorities. This program is new in 2018 & few details are yet available. Of the 3 priorities mentioned, 1 will target threatened species, 1 is highly relevant (coastal restoration), and the remaining 1 less so. See: <a href="https://www.environment.gov.au/environment-restoration-fund">https://www.environment.gov.au/environment-restoration-fund</a>
<b>Payments to corporate entities (Director of National Parks)</b>	47,438	45,805	0.17	0.50	0.33	7,634	22,903	15,268	Course allocation based on Program goals. Parks Australia has 6 goals, of which we consider 1 direct (1. Increase pops of threatened species), 3 relevant (2. Reduce pops of priority invasives, 3. Implement marine management plans, 4. Increase long-term marine monitoring sites) and 2 not immediately likely to impact threatened species (5. Increase no. indigenous employees, 6. Improve visitors to parks). As funding between these goals was not readily available, proportions are based on equal allocation of funds between them.
<b>Program 3.2: Environmental Information and Research</b>									
<b>National Environmental Science Program</b>									
Australian Biological Resources Study	25,520	25,520	0.33	0.37	0.3	8,422	9,442	7,656	All Hub projects (from v4&5) classified into Direct, Relevant, or Unlikely, in sheet "NESP Research". Hub budgets from <a href="https://www.environment.gov.au/science/nepo">https://www.environment.gov.au/science/nepo</a>
Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining	2,030	2,030	0	0	1	0	0	2,030	Aims to support the discovery, naming and classification of Australia's living organisms. Unlikely to have relevant impacts on threatened species in the near future. Statement at: <a href="http://www.environment.gov.au/science/abrs">http://www.environment.gov.au/science/abrs</a>
Harry Butler Environment Education Centre	1,035	1,035	0	0	1	0	0	1,035	Not immediately relevant to threatened species.
National Centre for Coasts, Environment and Climate	1,000	1,000	0.1	0.5	0.4	100	500	400	Course allocation based on Centre research themes. Of the 6 themes, 2 are Relevant to threatened species (Eco-engineering & Habitat Restoration) and the other 4 are focused on human impacts. See: <a href="https://ncc.edu.au/">https://ncc.edu.au/</a>
<b>Program 3.3: Commonwealth Environmental Water</b>									
<b>MDB Environmental Knowledge and Research</b>									
Commonwealth Environmental Water Office	1,900	1,900	0	1	0	0	1,900	0	Based on aims of program to support Commonwealth Environmental Water Office.
<b>Program 3.4: Conservation of Australia's Heritage and Environment</b>									
<b>Australian Heritage Grants Program</b>									
Grant Ponds	7,173	5,347	0	0.5	0.5	0	2,674	2,674	Aims to re-introduce natural variability in river flows to reconnect Murray-Darling Basin rivers floodplains and wetlands for the benefit of the environment. This would have flow on impacts to threatened species, and is relevant spending.
<b>Program 3.5: Environmental Regulation</b>									
<b>Environment Protection and Biodiversity Conservation Act - Water Resources Amendment</b>									
<b>Program 3.6: Management of Hazardous Wastes, Substances and Pollutants</b>									
<b>National Environment Protection Council</b>									
Biofuels - Monitoring, Compliance and Enforcement of Fuel Quality	456	517	0	0	1	0	0	517	Not immediately relevant to threatened species. Based on project descriptions available at <a href="http://www.nepc.gov.au/projects">www.nepc.gov.au/projects</a>
Surf Life Saving Cleaner Outboard Engines Scheme	100	100	0	0	1	0	0	100	Not immediately relevant to threatened species.
Per- and Poly-fluorinated Alkyl Substances Research Grant	1,271	1,282	0	0	1	0	0	1,282	Not immediately relevant to threatened species.
Securing the Future of Jabiru Township	1,001	1,001	0	0	1	0	0	1,001	Not immediately relevant to threatened species.

**Table 2.2.1: Budgeted expenses for Outcome 2**

**Programs**

**Program 2.1: Reducing Australia's Greenhouse Gas Emissions**

Independent Scientific Committee in Wind Turbines
 15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | Not immediately relevant to threatened species. |

Solar Programs
 624 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | Not immediately relevant to threatened species. |

**Program 2.2: Adapting to Climate Change**

Implementing the Finkel Review
 1,950 | 1,950 | 0 | 0 | 1 | 0 | 0 | 1,950 | Not immediately relevant to threatened species. |

**Program 2.3: Renewable Energy Technology Development**

Ordinary annual services (Appropriation Bill no. 1) [To corporate entity: Australian Renewable Energy Agency]
 2,463 | 2,868 | 0 | 0 | 1 | 0 | 0 | 2,868 | Not immediately relevant to threatened species. |

**Special appropriations**

Australian Renewable Energy Agency Act 2011 [To corporate entity: Australian Renewable Energy Agency]
 248,178 | 279,093 | 0 | 0 | 1 | 0 | 0 | 279,093 | Not immediately relevant to threatened species. |

**Table 2.3.1: Budgeted expenses for Outcome 3**

**Programs**

**Program 3.1: Antarctica: Science, Policy and Presence**

Expenses not requiring appropriations in the Budget year
 12 | 12 | 0 | 0 | 1 | 0 | 0 | 12 | This budget line comprises depreciation expenses, amortisation expenses, audit fees and an approved operating loss. None of which constitutes direct or relevant spending on threatened species. |

**DotE Total**

702,838 690,526 0.08 0.41 0.50 55,318 281,593 345,489

**DEPARTMENT OF THE PRIME MINISTER & CABINET**

**Table 2.1.1: Budgeted expenses for Outcome 2**

**Programs**

**Program 2.1: Jobs, Land and Economy**

Ordinary annual services (Appropriation Bill No.1)
 658,894 | 685,422 | 0 | 0 | 1 | 0 | 0 | 685,422 | The nominated proportion is an estimation made in lieu of more readily accessible spending figures. This program incorporates a large range of aims, based around the Indigenous Advancement Strategy, the vast majority of which are not environment related. None of the stated Objectives or Outcomes for the project were considered relevant to threatened species recovery. See IAS website for further detail on program & grant guidelines: <https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy> |

**Special appropriations**

Aboriginal Land Rights (Northern Territory) Act 1976
 440,000 | 318,000 | 0 | 0 | 1 | 0 | 0 | 318,000 | This spending is nominally a form of rental to ensure access for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment. |

Ranger Agreement (previously "Aboriginal Benefits Account Ranger Agreement")
 1,021 | 1,043 | 0 | 0 | 1 | 0 | 0 | 1,043 | This spending is nominally a form of rental to ensure access for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment. |

**Payments to corporate entities**

These corporate entities are largely indigenous land & community councils (incl. the Indigenous Land and Sea Corporation). These councils have a wide range of aims, only some of which are likely to impact threatened species directly. The nominated proportion is an estimation made in lieu of more readily accessible spending figures, as each of these groups may allocate the funding as they see fit & the budgets are therefore highly diffuse. This may be an underestimation of the proportion spent on threatened species, but is consistent with our conservative approach to allocation.

**DMPC Total**

1,124,908 1,022,669 0 0.01 0.99 0 9,256 9,102 1,013,567

**OTHER RELEVANT ENTITIES WITHIN THE ENVIRONMENT & ENERGY PORTFOLIO\***

**Agency Resourcing Table: Environment & Energy**

Director of National Parks
 47,438 | 45,805 | - | - | - | - | - | - | Counted above in "Payments to corporate entities (Director of National Parks)" within Program 1.1 of the Department of Environment & Energy budget. Listed as "unlikely" here to avoid double counting. |

Sydney Harbour Federation Trust
 17,630 | 18,359 | 0 | 0 | 1 | 0 | 0 | 18,359 | Anecdotally contains some threatened species spending but more detailed budgeting figures are not readily available & the majority of this Entity's spending is not relevant to threatened species. |

Great Barrier Reef Marine Park Authority
 41,472 | 34,826 | 0.0 | 0.66 | 0.33 | 0 | 22,985 | 11,493 | The Entity operates 3 programs with different objectives, 2 of which are relevant (Ensure best knowledge to inform management; Environmental Regulation) and 1 unlikely to impact threatened species (Enhance engagement). Split equally in lieu of more detailed budget information. See sheet "DoE Portfolio Entities" for further details. |

**Other Entities Total**

109,540 88,990 0.0 0.23 0.30 0 22,985 29,852

**TOTAL**

1,234,448 1,111,659 0.08 0.17 0.77 55,318 313,834 1,343,419

\*Tallies show estimated actual spending that differs from 2018-19 Budget projections

\*Only the relevant portions of the budget amounts are shown in this table. For further detail see Budget Paper no. 4 and the relevant portfolio budget pages.

DEPARTMENT OF THE ENVIRONMENT & ENERGY									
	2017-18 Budget	2018-19 Budget	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2017-18 Direct TS \$'000	2017-18 Relevant TS \$'000	2017-18 Unknown or unlikely \$'000	Source/Notes
<b>Table 2.1.1: Budgeted expenses for Outcome 1</b>									
<b>Programs</b>									
<b>Program 1.1: Sustainable Management of Natural Resources and the Environment</b>									
National Landcare Program:									
- Natural Heritage Trust (incl. Regional stream NRM group grants; Indigenous Protected Areas funding; Working on Country supplementation; World Heritage grants; Sustainable Agriculture National projects; Local programs such as Coastal river recovery and Keep Australia Beautiful campaign; other National programs such as the Threatened Species Recovery Fund; Target Area grants; and Emerging priorities funding)	594	176,518	0.08	0.91	0.01	48	541	6	Allocated based on funding for streams and programs with in National Heritage Trust as stated in the Report on the Review of the National Landcare Program 2017. Available at: <a href="http://www.nrm.gov.au/publications/national-landcare-program-review-report">http://www.nrm.gov.au/publications/national-landcare-program-review-report</a> . Details on how programs were categorised available from corresponding authors.
- Environmental Stewardship Program	9,918	9,980	1	0	0	9,918	0	0	Aim of program is to improve outcomes for threatened ecological communities, so all spending should be directly improving threatened species.
Green Army	24,377	-	0.28	0.7	0.02	6,826	17,064	488	Based on a sample of 50 projects that were approved in the last round of funding (Round 4) for the program. Taken from the DoEE Green Army website: <a href="https://www.environment.gov.au/land/green-army/projects/approved">https://www.environment.gov.au/land/green-army/projects/approved</a>
Reef 2050 Plan	486,792	80,709	0.07	0.75	0.18	32,117	365,397	89,278	Based on allocation of funding to Reef 2050 themes over 5 years from Figure 2 in "Reef 2050 Plan - Update of Progress, Commonwealth of Australia 2016" available at <a href="http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress">http://www.environment.gov.au/marine/gbr/publications/reef-2050-plan-update-on-progress</a> . Direct themes: Biodiversity; Relevant themes: Ecosystem Health, Water Quality, Governance; Unknown impact
Commonwealth Marine Reserves	-	20,837	0.17	0.5	0.33	-	-	-	Not active in 2017-18 Budget year.
Improving your Local Parks and Environment	5,982	5436	0.01	0.26	0.72	83	1,584	4,315	Allocated from project descriptions & budgets in Appendix B of "Program guidelines" available at <a href="https://www.business.gov.au/assistance/improving-your-local-parks-and-environment">https://www.business.gov.au/assistance/improving-your-local-parks-and-environment</a>
Biodiversity Fund	1,997	-	1	0	0	1,997	0	0	No longer active. But when active all funds were assumed to have direct impact.
<b>Payments to corporate entities [Director of National Parks]</b>	46,548	47,434	0.17	0.50	0.33	7,758	23,274	15,516	Coarse allocation based on Program goals. Parks Australia has 6 goals, of which we consider 1 direct (1. Increase pops of threatened species), 3 relevant (2. Reduce pops of priority invasives, 3. Implement marine management plans, 4. Increase long-term marine monitoring sites) and 2 not immediately likely to impact threatened species (5. Increase no. indigenous employees, 6. Improve visitors to parks). As funding between these goals was not readily available, proportions are based on equal allocation of funds between them.
<b>Program 1.2: Environmental Information and Research</b>									
National Environmental Science Program	25,520	25,520	0.33	0.37	0.3	8422	9442	7,656	All Hub projects (from v4&5) classified into Direct, Relevant, or Unlikely, in sheet "NESP Research". Hub budgets from <a href="http://www.environment.gov.au/science/nesp">http://www.environment.gov.au/science/nesp</a>
Australian Biological Resources Study	2,030	2,030	0	0	1	0	0	2,030	Aims to support the discovery, naming and classification of Australia's living organisms. Unlikely to have relevant impacts on threatened species in the near future. Statement at: <a href="http://www.environment.gov.au/science/abrs">http://www.environment.gov.au/science/abrs</a>
Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining	1,035	1,035	0	0	1	0	0	1,035	Not immediately relevant to threatened species.
<b>Program 1.3: Commonwealth Environmental Water</b>									
MDB Environmental Knowledge and Research	1,900	1,900	0	1	0	0	1,900	-	Based on aims of program to support Commonwealth Env Water Office.
Commonwealth Environmental Water Office	16,568	33,292	0	1	0	0	16,568	-	Aims to re-introduce natural variability in river flows to reconnect Murray-Darling Basin rivers floodplains and wetlands for the benefit of the environment. This would have flow on impacts to threatened species, and is relevant spending.
<b>Program 1.4: Conservation of Australia's Heritage and Environment</b>									
Protected National Historic Sites	4,420	-	0	0	1	0	0	4,420	No longer active, but was not directly relevant to threatened species.
National Trusts Partnership Program	927	-	0	0	1	0	0	927	No longer active, but was not directly relevant to threatened species.
Australian Heritage Grants Program - establishment	-	5,347	0	0.2	0.8	-	-	-	Not active in 2017-18 Budget year.
Giant Pandas	1,308	1,284	0	0	1	0	0	1,308	Not an Australian threatened species.
<b>Program 1.5: Environmental Regulation</b>									
<i>Environment Protection and Biodiversity Conservation Act</i> -Water Resources Amendment	259	259	1	0	0	259	0	0	Relates directly to EPBC Act, so likely to directly impact threatened species. No detailed figures on spending readily available.
<b>Program 1.6: Management of Hazardous Wastes, Substances and Pollutants</b>									
National Environment Protection Council	502	496	0	0	1	0	0	502	Not immediately relevant to threatened species. Based on project descriptions available at <a href="http://www.nepc.gov.au/projects">www.nepc.gov.au/projects</a>
Biofuels - Monitoring, Compliance and Enforcement of Fuel Quality	100	100	0	0	1	0	0	100	Not immediately relevant to threatened species.
Surf Life Saving Cleaner Outboard Engines Scheme	205	375	0	0	1	0	0	205	Not immediately relevant to threatened species.
<b>Table 2.2.1: Budgeted expenses for Outcome 2</b>									
<b>Programs</b>									
<b>Program 2.1: Reducing Australia's Greenhouse Gas Emissions</b>									
Independent Scientific Committee in Wind Turbines	29	15	0	0	1	0	0	29	Not immediately relevant to threatened species.

Solar Programs	3,649	423	0	0	1	0	0	3,649	Not immediately relevant to threatened species.
<b>Program 2.2: Adapting to Climate change</b>									
Implementing the Finkel Review	-	1,950	0	0	1	-	-	-	Not immediately relevant to threatened species.
<b>Program 2.3: Renewable Energy Technology Development</b>									
Ordinary annual services (Appropriation Bill no. 1) [To corporate entity: Australian Renewable Energy Agency]	2,073	2,463	0	0	1	0	0	2,073	Not immediately relevant to threatened species.
<b>Special appropriations</b>									
Australian Renewable Energy Agency Act 2011 [To corporate entity: Australian Renewable Energy Agency]	245,235	0	0	0	1	-	0	245,235	Not immediately relevant to threatened species.
<b>Table 2.3.1: Budgeted expenses for Outcome 3</b>									
<b>Programs</b>									
<b>Program 3.1: Antarctica: Science, Policy and Presence</b>									
<b>Expenses not requiring appropriation in the Budget year</b>									This Budget line comprises depreciation expenses, amortisation expenses, audit fees and an approved operating loss. None of which constitutes direct or relevant spending on threatened species.
	12	12	0	0	1	0	0	12	
<b>DotEE Total</b>	<b>881,980</b>	<b>417,415</b>	<b>0.08</b>	<b>0.49</b>	<b>0.43</b>	<b>67,427</b>	<b>435,770</b>	<b>378,783</b>	

<b>DEPARTMENT OF THE PRIME MINISTER &amp; CABINET</b>									
Table 2.1.1: Budgeted expenses for Outcome 2	2017-18 Budget	2018-19 Budget	Direct TS proportion	Relevant to TS proportion	Unknown impact proportion	2017-18 Direct TS \$'000	2017-18 Relevant TS \$'000	2017-18 Unknown or unlikely \$'000	Source/Notes
Programs	\$'000	\$'000							
<b>Program 2.1: Jobs, Land and Economy</b>									
<i>Ordinary annual services (Appropriation Bill No.1)</i>	646,286	658,894	0.00	0.0	1	0.00	0.00	646,286	The nominated proportion is an estimation made in lieu of more readily accessible spending figures. This program incorporates a large range of aims, based around the Indigenous Advancement Strategy, the vast majority of which are not environment related. None of the stated Objectives or Outcomes for the project were considered relevant to threatened species recovery. See IAS website for further detail on program & grant guidelines: <a href="https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy">https://www.pmc.gov.au/indigenous-affairs/indigenous-advancement-strategy</a> .
<i>Special appropriations</i>									
Aboriginal Land Rights (Northern Territory) Act 1976									This spending is nominally a form of rental to ensure access for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.
Aboriginals Benefit Account Ranger Agreement	195,820	155,441	0.00	0.0	1	0.00	0.00	195,820	This spending is nominally a form of rental to ensure access to the Ranger Project area for the purposes of mining on Aboriginal land in the Northern Territory. The money is distributed to a variety of indigenous-led non-corporate Commonwealth entities under the DMPC Portfolio. While portions of the money are likely subsequently spent on projects relevant to threatened species, there are no requirements for spending on threatened species, and the entities themselves have a range of priorities far beyond the environment.
<i>Payments to corporate entities</i>	998	1,013	0.00	0.00	1	0.00	0.00	998	These corporate entities are largely indigenous land & community councils (incl. the Indigenous Land and Sea Corporation). These councils have a wide range of aims, only some of which are likely to impact threatened species directly. The nominated proportion is an estimation made in lieu of more readily accessible spending figures, as each of these groups may allocate the funding as they see fit & the budgets are therefore highly diffuse. This may be an underestimate of the proportion spent on threatened species, but is consistent with our conservative approach to allocation.
	19,061	18,511	0.00	0.2	0.8	0.00	3,812	15,249	
<b>DMPC Total</b>	<b>862,165</b>	<b>833,859</b>	<b>0</b>	<b>0.004</b>	<b>0.996</b>	<b>0</b>	<b>3,812</b>	<b>858,353</b>	

<b>OTHER RELEVANT ENTITIES WITHIN THE ENVIRONMENT &amp; ENERGY PORTFOLIO</b>									
Agency Resourcing Table: Environment & Energy Budget Paper no. 4 pg. 70 - 74	2017-18 Budget	2018-19 Budget	Direct TS proportion	Relevant to TS proportion	Unknown or unlikely impact proportion	2018-19 Direct TS \$'000	2018-19 Relevant TS \$'000	2018-19 Unknown or unlikely \$'000	Source/Notes
	\$'000	\$'000							
Director of National Parks									Counted above in "Payments to corporate entities [Director of National Parks]" within Program 1.1 of the Department of Environment & Energy budget. Listed as "Unlikely" here to avoid double counting.
Sydney Harbour Federation Trust	46,548	47,434	-	-	-	-	-	-	Anecdotally contains some threatened species spending but more detailed budget figures are not readily available & the majority of this Entity's spending is not relevant to threatened species.
	18,477	18,806	0	0	1	0	0	18,477	

Great Barrier Reef Marine Park Authority

	27,697	41,772	0.0	0.66	0.33	0	18,280	9,140
<b>Other Entities Total</b>	<b>92,722</b>	<b>108,012</b>	<b>0</b>	<b>0.20</b>	<b>0.30</b>	<b>0</b>	<b>18,280</b>	<b>27,617</b>
<b>TOTAL</b>	<b>1,836,867</b>	<b>1,359,286</b>	<b>0.04</b>	<b>0.25</b>	<b>0.69</b>	<b>67,427</b>	<b>457,862</b>	<b>1,264,753</b>

The Entity operates 3 programs with different objectives, 2 of which are relevant (Ensure best knowledge to inform management; Environmental Regulation) and 1 unlikely to impact threatened species (Enhance engagement). Split equally in lieu of more detailed budget information. See sheet 'DoEE Portfolio Entities' for further details.

**AUSTRALIAN CAPITAL TERRITORY**

Source: ACT Budget 2018-19 Statement E - Environment Planning & Sustainable Development Directorate

**Department of Environment, Planning and Sustainable Development Directorate Budget Statement E 2018-19**

Section of Dept	Amount (2018-19) \$m	Type	Notes
<b>Changes to appropriation - Controlled Recurrent Payments</b>			
<b>2018-19 Budget Policy Decisions</b>			
Better Government:			
Better telecommunication licensings	0.142		
Carbon Neutral ACT Government Program improvements	0.814		
Engineer Registration Scheme – early planning	0.035		
Keeping our city moving:			
Antill st sewer - design works	0.184		
National Capital city design review panel	0.248		
More jobs for our growing city:			
Aboriginal and Torres Strait Islander Arts Officer – Contribution to CMTEDD	-0.006		
Protecting the Murrumbidgee River Corridor	0.075		
Supporting a sustainable community	-0.661		
Urban renewal in Kenny – early planning	0.3		
More services for our suburbs:			
Aerial imagery for better planning	0.41		
Better public places	0.1		
Cleaning up carp	0.153		
Due diligence for urban renewal	1.499		
Ecotourism Woodlands Learning Centre	0.2		
Equestrian infrastructure	0		
Establishing the Molonglo River Reserve	0		
Healthier catchments through better water management	0.12		
Improved conservation management	0.091		
Protecting local catchments	0.352		
Protecting Mulligans Flat Woodland Sanctuary from pests	0.255		
Protecting native species	0.3		
Sullivans Creek Flood Management Plan	0.15		
Urban renewal in Dickson	1.006		
More support for families and the vulnerable:			
Innovation in housing choices	0.3		
Innovation to boost affordable housing	0.5		
<b>2018-19 Budget Technical Adjustments</b>			
Cessation – University of Canberra – Support for Student Accommodation Projects			
Comcare Premium Reduction	0		
Commonwealth Grant - Established Pest and Weed Management	-0.021		
General Savings	-3.415		
Revised Funding Profile – Better services in your community – Community participation in net zero emissions			
Revised Funding Profile – Better services in your community – Implementation of ACT Climate Change Adaptation Strategy	0.1		
Revised Funding Profile – Better services in your community – Improving sustainability through innovative financing	0.05		
Revised Funding Profile – Better services in your community – Managing native wildlife	0.198		
Revised Funding Profile – Better services in your community – Reviewing the ACT energy rating disclosure scheme	0.2		
Revised Funding Profile – Better support when it matters – Housing Innovation Fund	0.5		
Revised Funding Profile – Better support when it matters – Public Housing Renewal – New and better properties	-1.288		
Revised Funding Profile – Building a better city – Building Regulation Reform	0.225		
Revised Funding Profile – Building a better city – Bindubi Street extension – Early planning	0.195		
Revised Funding Profile – Building a better city – Building audits	0.6		
Revised Funding Profile – Building a better city – Molonglo East-West arterial road – Early planning	-0.002		
Revised Funding Profile – Building a better city - William Hovell Drive upgrade – Early planning	-0.1		
Revised Funding Profile – Caring for our Country Complimentary Investment	0.25		
Revised Funding Profile – Implementing Water Reform in the Murray-Darling Basin	0.4		
Revised Funding Profile - Loose-fill Asbestos Eradication Scheme	3.843		
Revised Funding Profile – Molonglo Valley – Implementation of Commitments in the NES Plan	0.089		
Revised Funding Profile – More and better jobs – Ensuring sustainable commercial development	0.125		
Revised Funding Profile – Progressing Actions on Climate Change	0.1		
Revised Funding Profile - Supporting Aboriginal and Torres Strait Islander Peoples – Kickstarting careers by connecting to culture	0.055		
Revised Funding Profile – Threatened Species Conservation	0.35		

Revised Indexation Parameters	0	
Revised Superannuation Guarantee Rate	0.093	
Revised Superannuation Parameters	0.041	
Revised Wage Parameters	0.707	
Transfer – Australian Building Code Board membership contribution from CMTEDD	-0.12	
Transfer – Better Services – Weston Creek and Stromlo swimming pool and leisure centre to CMTEDD	0	
Transfer – More and better jobs – New Canberra Theatre (Early Planning) (formerly City to the Lake – New Canberra Theatre (Feasibility)) to CMTEDD	0	
Transfer – Strategy and Program Design from CMTEDD	3.129	
Transfer – Transport Planning to TCCS	-0.583	
<b>Change to appropriation - Expenses on Behalf of the Territory</b>		
FMA Section 16B Rollovers from 2016-17		
Environmental Grants	0	
Heritage Grants	0	
Office of the Commissioner for Sustainability and the Environment (Operations)	0	
18-19 Budget Technical Adjustments		
Revised Funding Profile – Commissioner for Sustainability and the Environment (Operations)	0.2	
Revised Funding Profile – Environmental Grants	0.002	
<b>Change to appropriation - Capital injections, Controlled</b>		
2018-19 Budget Policy Decisions (condensed)		
More services for our suburbs:		
Best of Canberra mountain bike experience – Design	0.074	
Establishing the Molonglo River Reserve	1.044	
Improved conservation management	0.232	
18-19 Budget Technical Adjustments (condensed)		
Revised Funding Profile – Caring for our Environment – Establishing the Molonglo River Reserve Stage	0.15	
Revised Funding Profile – Caring for our Environment – Water Quality Improvement – Contributions to the ACT Healthy Waterways Project	1.3	
Revised Funding Profile – Enhancing the Protection of Endangered Species and Habitat	1.2	
<b>Summary of 2018-19 Infrastructure Program</b>		
Works in Progress		
Caring for our Environment – Establishing the Molonglo River Reserve Stage	0	
Caring for our Environment – Improving species and habitat protection	0.257	
Caring for our Environment – Water Quality Improvement – Contributions to the ACT Healthy Waterways Project	0	
Enhancing the Protection of Endangered Species and Habitat	0	
New Work		
More services for our suburbs:		
Establishing the Molonglo River Reserve	0.8	
Improved conservation management	0.065	
Sullivans Creek Flood Management Plan	0	
Better Infrastructure Fund		
Parks and Conservation	0.557	Probably human infrastructure

<b>TOTAL</b>	<b>18.18</b>
<b>Direct<sup>^</sup></b>	<b>2.76</b>
<b>Indirect</b>	<b>3.50</b>
<b>Irrelevant</b>	<b>11.67</b>

\*This is a condensed table, so quite a meaningless "total"

<sup>^</sup>These calculations involve some negatives, which should really be considered zeros here because it's just balances from previous years, but amounts are negligible

**NOTHERN TERRITORY**

Source: NT 2017-18 Agency Budget Statements

Department of Environment and Natural Resources Agency Budget Statements 2017-18				
Section of Dept	Amount (2017-18)	Type	Official description	Notes
<b>NATURAL RESOURCES</b>				
Flora & fauna	\$10.808m	Direct & Indirect	Scientific assessment and monitoring of the Territory's native flora and fauna, delivery of policy advice and support relating to the conservation and sustainable use of wildlife, and management of feral animals.	Some of this is likely to be relevant & some direct. In lieu of better figures, assume 50:50 split. This change was made after concerns from co-authors that the state is unlikely to direct all \$10m to TS spending.
Rangelands	\$11.638m	Indirect	Scientific assessment and monitoring of the Territory's land and delivery of extension services, policy advice and regulation of use and threats to the land resource.	Land management, does include monitoring etc.
Water resources	\$17.326m	Indirect	Scientific assessment and monitoring of the Territory's water resources, support for community engagement in the allocation of water resources for sustainable use, and the delivery of flood forecasting services.	Probably not super relevant, but includes waterway/ecosystem health reporting
Bushfires	\$8.415m	Indirect	Support landholders in the management and mitigation of wildfire, and assisting volunteer brigades in fire management and suppression outside the Territory's urban centres.	Mostly people/safety related, but no doubt that fire management is a he issue for TS in NT, so include as indirect
<b>ENVIRONMENT</b>				
Env Management & Policy	\$7.473m	Unlikely	Provide services that support the NT Env Protection Authority (below) in assessing and regulating the environmental impacts of development, and advise Government in relation to NTEPA assessment reports. Manage the regulatory framework to reduce the impacts of waste and pollution on the NT's environment. Develop and implement strategic policy to ensure environmentally sustainable practises & behaviour.	Mostly pollution related
<b>STATUTORY AUTHORITY</b>				
NT Env Protection Authority	\$0.574m	Unlikely	Provide staff & facilities to enable the NTEPA to properly exercise its power & perform its function.	Mostly pollution related
<b>CORPORATE &amp; GOVERNANCE</b>				
Corporate & governance	\$5.071m	Unlikely	Provide executive leadership, corporate support and management to the Department of Env & Nat Resources	Business side of Dept

<b>TOTAL</b>	
Direct	5.41
Indirect	42.78
Irrelevant	13.12

Note: In the NT Agency Budget Statement, the relevant table is on page187

**QUEENSLAND**

Source: Queensland Audit Office (2018). Conserving threatened species. Report 7:2018-2019. Queensland Government

**CSS spend on threatened species activities**

Activity description	FTE	Actual spend (% of total spend)	
<b>Activities directly aimed at protecting threatened species</b>			
Recovery of threatened species	28	3.9	7
Protect species and landscapes	27	3	6
<b>Activities related to protecting threatened species</b>			
Conservation by traditional owners	12	10.9	20
Wildlife-human interactions	67	9.2	17
Conservation sustainability grants	8	6.8	12
Protected areas**	31	6.3	12
Native biodiversity	23	4.9	9
Develop and maintain legislative framework	14	1.6	3
Develop partnerships and networks	5	1	2
Offsets	12	1.3	2
<b>Other expenditure</b>			
Other*	42	5.7	10
<b>Total</b>	<b>268</b>	<b>54.6</b>	<b>100</b>

\*\* Note: The department allocated an additional budget of \$7.9m in 2017-18 to the Protected Area Innovation Engagement Policy team, which sits outside CSS. This is not included in the total for protected areas.

\* Note: Includes allocation of costs of executive directors and the Deputy Director General that cannot be charged directly to an operational activity; includes spend on the management of world heritage sites.

TOTAL	AU\$m
Direct	6.90
Indirect	42.00
Irrelevant	5.7



**SOUTH AUSTRALIA**

Source: SA 2018-19 Budget Paper no. 4: Agency statement vols. 2-4

Department of Environment and Water Agency Budget Statements 2017-18				
Section of Dept	Amount (2017-18)	Type	Official description	Notes
<b>1. SUSTAINABILITY</b>				
1.1 Sustainable NRM	\$32.343m	Indirect	Ensure the sustainability of South Australia's natural resources through the administration of legislation, planning, and the delivery of natural resources management programs.	Probably a mix of direct (eg. Protection of high priority biodiv areas in Mt Lofty ranges) & indirect (eg. Offsets, Bill preparation). Difficult to parse out, so take conservative estimate of all indirect.
1.2 Preparing for climate change	\$1.721m	Unlikely	Respond to the challenges of climate change to improve the wellbeing and resilience of SA's economy, community and natural resources.	Not including climate change spending in Fed or state budgets as they are often focused on human preparedness.
1.3 Animal welfare	\$1.547m	Unlikely	To ensure the humane treatment of animals, and manage dogs and cats.	Mostly domestic animals.
<b>2. WATER</b>				
2.1 Water resource management	(\$2.847m)		Ensure that SA has water for its environment, its communities and its economy.	A lot of the costs are covered by the Commonwealth MDB Authority, so can't just use the Expenses (instead of net costs as with others).
2.2 MDB	(\$30.896m)		Manage the River Murray system to ensure a healthy functioning river that supports resilient and productive industries, communities & ecosystems.	A lot of the costs are covered by the Commonwealth MDB Authority, so can't just use the Expenses (instead of net costs as with others)
<b>3. PARKS &amp; PUBLIC ASSETS</b>				
3.1 Visitor experiences & services	\$53.129m	Unlikely		Clearly about people.
3.2 Mitigate impacts of bushfires	\$15.827m	Indirect	Improve SA's capability to prevent, prepare for, respond to and recover from bushfire on public lands in order to contribute to a safer and more resilient community and environment.	Mostly about people/safety - not a whole lot about burning for biodiversity. Even indirect is a stretch, but it seems likely that some of this is at least indirectly relevant.
3.3 Management of public & listed assets	\$10.838m	Irrelevant	Manage SA's Crown lands and heritage places.	A lot of lease & heritage listing stuff. Not very environmentally focused.
3.4 Botanic gardens	\$9.208m	Irrelevant	Manage the Botanic Gardens and State Herbarium as a collections based cultural and scientific institution, linking plants, people and culture and encouraging their use for conservation, education, tourism, recreation and cultural events.	While the Bot Gardens are useful for plant conservation, most of the spending highlights look like they were about collections management & visitor experience.
<b>ADMINISTERED ITEMS</b>				
NRM Fund				
Pastoral board				
Qualco sunlands ground water control trust				
Surplus land & property sales account				
Appropriation transfers to various authorities				

<b>TOTAL</b>	<b>AU\$m</b>
Direct	??
Indirect	\$48.17m
Unlikely/Unknown	+ \$76m

This amount includes everything - employee salaries, etc. So it's vastly overestimated because we aren't including that in the other Budgets

Note: The PDF with this info has been marked up with highlights and comments, relevant info on page 158-178.

**Other SA agencies reviewed:**

Section of Dept	Amount (2017-18)	Type	Official description	Notes
SA Country Fire Service (vol 2)	\$19.3m	Unlikely	Key agency outputs are all human & property focused. Budget lines are about equipment & property upgrades.	
SA Fire & Emergency Services Commission (vol 2)	\$1.6m	Unlikely	Objective is to create a safer community; no mention of environment. Budget lines are system upgrades	
Environmental Protection Authority (vol 3)	\$1.5m	Unlikely	Made up of an Env program & a Radiation program. Even within the Env program, however, it's mostly related to regulation, monitoring & enforcement of env waste, pollution etc. In the Fed budget we considered these things too indirect to be relevant, so do the same here.	
Green Industries SA (vol 3)	\$0.4m	Unlikely	Administered by Minister for Env, but about waste management.	
Department of PM&C (vol 4)	?	Unknown	Program 7: Aboriginal Affairs & Reconciliation was investigated for payments to ranger groups, but the budget wasn't explicit enough to deduce any budget for such.	Page 85 (vol 4) has additional administered items for DPMC which includes APY Land "additional services" outflows of ~\$6.8m for both Grants & subsidies and Intra-govt transfers. I don't know what to do about that.

VICTORIA

Source: Pers. comm. between BAW and DELWP

Summary of threatened species investment (FTE and \$) in Victoria from DELWP and CMA programs - 2015-15 through 2017-18

Activities directly aimed at protection of threatened species

Program	FTE				(\$M)				
	2014-15	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	
DELWP Regional Core Services	9.00	9.45	9.50	9.50	0.90	0.95	0.95	0.95	
Biodiversity On Ground Action (BOGA) urgent action			1.00				1.00		
BOGA - Targeted Action for Threatened Species				1.00				1.00	
Icon Species Project				2.00				0.50	
Threatened Species Protection Initiative (TSPI)						2.60	2.60		
Leadbeaters Possum Recovery Fund	0.21	3.99	0.67	1.16	1.44	2.97	3.30	5.42	
CMA state-wide - personnel	10.00	10.00	10.00	10.00	Refer to program funding below				We're not counting personnel costs
CMA Australian Govt Programs	Refer to CMA FTE program figures above				2.88	2.49	2.76	2.66	Funded by Feds; don't double count
CMA Vic Govt Programs	Refer to CMA FTE program figures above				2.64	3.59	3.44	3.47	
<b>Sub Totals</b>	<b>19.21</b>	<b>23.44</b>	<b>21.17</b>	<b>23.66</b>	<b>7.86</b>	<b>12.60</b>	<b>14.05</b>	<b>14.00</b>	<b>11.34</b> TOTAL DIRECT SPENDING

Activities related to protecting threatened species

Program	FTE				(\$M)				
	2014-15	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	
Biodiversity On Ground Action Tranche 1			2.47				6.81		
Biodiversity On Ground Action Tranche 2				4.96				6.69	
Weeds and Pests on Public Land (WPPL) program	6.58	12.72	8.88	10.41	1.54	3.55	3.20	3.09	
ARI Programs (per email correspondence from Kim Lowe)	17.20	10.56	15.40	18.90	1.72	1.06	1.54	1.89	Research
CMA state-wide personnel	5.00	5.00	5.00	5.00	Refer to program funding below				We're not counting personnel costs
CMA Australian Govt Programs	Refer to CMA FTE program figures above				5.75	4.99	5.24	5.32	Funded by Feds; don't double count
CMA Vic Govt Programs	Refer to CMA FTE program figures above				7.91	10.76	10.33	10.40	
<b>Sub Totals</b>	<b>28.78</b>	<b>28.28</b>	<b>31.75</b>	<b>39.27</b>	<b>16.92</b>	<b>20.35</b>	<b>27.12</b>	<b>27.39</b>	<b>22.07</b> TOTAL RELEVANT SPENDING

Notes:

1. Figures above do not include the Biodiversity Response Planning (BRP) program, which will fund 89 projects at a value of \$34.77M for implementation between 2018-19 through to 2021. Many of these projects would be considered as directly aimed at protection of threatened species. This investment is also part of the larger Protecting Victoria's Environment - Biodiversity 2037 program.

2. Figures presented for CMA investment have been gathered from annual reports and attributed based on the conservative application of associated historical threatened species investment practices in regional NRM organisations. Victorian Government programs for CMA's noted above includes a range of waterway health on ground works programs and environmental watering programs.

3. Figures above do not include investment through a range of other organisations undertaking threatened species conservation works within Victoria, other than where they have been funded in-part through the initiatives listed.

VICTORIA

Source: Pers. comm. (see Vic (DEWLP) sheet & Victorian Budget Paper 3

Section of Dept	Amount (2018-19) \$m	Type	Notes
<b>From DELWP:</b>			
Direct	11.34		See Vic (DELWP) spreadsheet
Indirect	22.07		See Vic (DELWP) spreadsheet
<b>Things they appear not to have included:</b>			
<b>Service Delivery - Output initiatives</b>		See table below for further details	
<b>Effective Water Management and Supply</b>		<b>Budget Paper 3: Table 1.13 (pg. 59)</b>	
Victoria's contribution to the Murray-Darling Basin Authority	6.3		
Yarra River Action Plan – Next steps	1.3		
<b>Management of Public Land and Forests</b>			
Delivering greater community value from our forests	12.8		Deliver modernised RFAs - objective is not solely TS but hopefully this will make improvements to TS outcomes
<b>Parks Victoria</b>			
Securing the benefits of parks for all Victorians	14.4		Mixed objectives. "Maintain 130 existing park ranger positions in regional Victoria to manage natural resources and provide services, helping visitors enjoy Victoria's comprehensive parks estate." Includes lots of infrastructure works...
<b>Aboriginal Affairs (Whole of Govt output)</b>			
Walking together – A partnership to improve community connection and access to country	0.4		Improvements will be undertaken at 2 PV sites to improve visitation and biodiversity outcomes through intensive land and natural resource management. This initiative includes funding for dedicated Traditional Owner ranger positions.
<b>Statutory Activities and Environment Protection</b>			
Bringing the Environment Protection Authority into the modern era	19.9		Might be a bit of a push to consider relevant. "Ensure the EPA can meet its obligations & protect Victoria's environment and health from pollution and waste. This includes preventing harm to the community, providing timely and accessible information on the condition of our environment, enforcing compliance with environmental obligations and responding to pollution and emergency incidents."

<b>TOTAL</b>	<b>88.51</b>
<b>DIRECT</b>	<b>11.34</b>
<b>RELEVANT</b>	<b>77.17</b>

NESP PROGRAM			Cons research		
CAUL HUB			Direct \$	Indirect \$	Irrelevant \$
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>			
Western Air-Shed and Particulate Study for Sydney (WASPSS)	University of Wollongong	\$1,334,538			1334936
Urban Greening for Livability and Biodiversity	University of Melbourne	\$922,347		892342	
Improved Urban Systems for Livability	RMIT University	\$1,131,232			1131232
The Shared Urban Habitat	University of Melbourne and University of Western Australia	\$972,255	972255		
Network of Shared Study Sites	RMIT University	\$128,070		128070	
Air Quality in Australia	University of Melbourne	\$202,263			202262
<b>Funding for approved projects</b>	<b>CAUL HUB TOTAL</b>	<b>\$4,641,697</b>	<b>\$972,255</b>	<b>\$1,620,412</b>	<b>\$2,668,430</b>
<b>MARINE HUB</b>			<b>0.21</b>	<b>0.22</b>	<b>0.57</b>
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>			
Northern Australian hotspots for the recovery of threatened euryhaline species	Charles Darwin University	\$846,509	846509		
A national population assessment of white sharks	CSIRO	\$764,000		764000	
The status of human-shark interactions and initiatives to mitigate risk in Australia	CSIRO	\$50,000			50000
Defining connectivity of Australia's hammerhead sharks	Australian Institute of Marine Science	\$688,947		688947	
Prioritisation of research and management needs for Australian elasmobranch species	Australian Institute of Marine Science	\$86,463	86463		
Monitoring the population dynamics of the south-west population of Right Whales	The Western Australian Museum	\$240,000		240000	
Exploring the status of Western Australian sea crocodiles	Australian Institute of Marine Science	\$453,015			453015
Grey Nurse Shark Ch-MR Population Estimate - East Coast	CSIRO	\$115,000	115000		
Conservation of Spotted Handfin and their habitat	CSIRO	\$499,743	499743		
Shark action plan	Australian Institute of Marine Science	\$206,990		206990	
Australia's Northern Seascapes: assessing status of threatened and migratory marine species	Charles Darwin University	\$643,066	643066		
Estimation of population abundance and mixing of Southern Right Whales in the Australian and New Zealand regions	CSIRO	\$200,758		200758	
Reef trading decision support tools via case study applications	Australian Institute of Marine Science	\$657,949	557840		62942
Analysis and validation to support State of the Environment reporting for the full spectrum of data availability	University of Tasmania	\$65,942			
Enhancing access to relevant marine information - a pilot service for searching, aggregating and filtering collections of in-situ ocean marine data	Geoscience Australia	\$91,750			91750
Underpinning the repair and conservation of Australia's threatened coastal-marine habitats - phase II	James Cook University	\$520,000	520000		
Improving our understanding of pressures on the marine environment	CSIRO	\$552,278	552278		
Continental-scale tracking of trends to inform Australian reef ecosystems	University of Tasmania	\$857,147		807147	
Change detection and monitoring of key marine and coastal environments - application of the Australian Geoscience Data Cube	Geoscience Australia	\$56,500			56500
National Coastal Database project	Coastal Ocean Foundation	\$400,000			400000
Quantification of risk from shipping to large marine fauna across Australia	CSIRO	\$287,000			367000
National Data Catalogue: Systematic Evaluation to Support Sustainable Use, Management and Monitoring of Marine Assets	Australian Institute of Marine Science	\$1,596,230			1599900
Standard Operating Procedures (SOP) for survey design, condition assessment and trend detection	CSIRO	\$578,061			578061
Implementing monitoring of Australian Marine Parks and the status of marine biodiversity assets on the continental shelf	University of Tasmania	\$4,728,000		4738000	
Expanding our spatial knowledge of marine biodiversity to support future best-practice reviews	Museum Victoria	\$640,000		640000	
Guidelines for analysis of cumulative impacts and risks to the Great Barrier Reef	CSIRO	\$350,000	350000		
Characterising anthropogenic sedimentary noise to improve understanding and management of acoustic impact to marine wildlife	CSIRO	\$491,845			491845
Recreational fishing in Commonwealth waters	CSIRO	\$153,983		401855	153883
The role of restoration in conserving Matters of National Environmental Significance	James Cook University	\$171,750	171750		
<b>Funding for approved projects</b>	<b>MARINE HUB TOTAL</b>	<b>\$16,832,914</b>	<b>\$6,140,978</b>	<b>\$7,869,212</b>	<b>\$2,728,936</b>
<b>ESSCC HUB</b>			<b>0.35</b>	<b>0.47</b>	<b>0.16</b>
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>			
Current Capability and Future Directions Assessment	CSIRO	\$72,453			72453
Preparing ACCESS for CMRPs	CSIRO	\$975,000			975000
Enhancing Australia's capacity to manage climate variability and climate extremes in a changing climate	Bureau of Meteorology	\$1,533,000			1833000
Towards an ACCESS seasonal prediction system	CSIRO	\$410,000			410000
Changing oceans and Australia's future climate	CSIRO	\$1,102,500		1102500	
Improving Australia's Climate Model (ACCESS)	CSIRO	\$1,635,000		1635000	
Regional Climate Projections Information and Services	CSIRO	\$1,668,750		1668750	
Refining Australia's Water Futures	CSIRO	\$600,000			600000
Extreme Weather Projections	Bureau of Meteorology	\$1,526,250		1526250	
Risk assessment of future carbon sources and sinks	CSIRO	\$900,000			900000
Coastal Hazards in a Variable and Changing Climate	University of Melbourne	\$1,236,000			1290000
Establishment of the National Centre for Coasts and Climate - Phase 1	CSIRO	\$1,050,000			1050000
Sea Level Projections for MCCARE	CSIRO	\$35,000			25000
<b>Funding for approved projects</b>	<b>ESSCC HUB TOTAL</b>	<b>\$13,087,963</b>	<b>\$0</b>	<b>\$6,372,880</b>	<b>\$7,715,483</b>
<b>NORTHERN HUB</b>			<b>0.00</b>	<b>0.41</b>	<b>0.59</b>
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>			
Identifying critical knowledge gaps in the understanding of environmental resources in northern Australia to be prioritised for government investment	University of Western Australia	\$450,000			450000
Review of integrated models, frameworks and decision support tools to guide management and planning in northern Australia	James Cook University	\$90,000			90000
Critical water needs to sustain freshwater ecosystems and aquatic biodiversity in the Mitchell River	Griffith University	\$205,000		905000	
Environmental Water Requirements for the Daly River, Northern Territory	Charles Darwin University	\$630,000		630000	
Environmental Water Requirements for the Fitzroy River, Western Australia	University of Western Australia	\$1,080,000		1080000	
Contribution of rivers to the productivity of floodplains and coastal areas of the southern Gulf of Carpentaria	Griffith University	\$851,000			851000
Indigenous water requirements: Methods for the determination of Indigenous water requirements and incorporation into water planning in the Fitzroy Catchment, Kimberley	James Cook University	\$1,057,100			498400
Multidisciplinary planning in northern Australia: on-benefits and tradeoffs between environmental, economic, and cultural outcomes	North Australian Indigenous Land and Sea Management Alliance Limited (NAILSMA)	\$100,000		1057100	
Addressing management of waste and marine debris in remote northern-Australian communities including Cape York	CSIRO	\$100,000	100000		100000
Wetland, fire, and ecosystem health: catchment scale scenario modelling to improve planning and management	Charles Darwin University	\$789,214		789214	
Support for an Emissions Reduction Fund carbon sequestration methodology: dead organic matter dynamics in semi-arid landscapes	CSIRO	\$187,000			187000
Defining metrics of success for forest animal management in northern Australia	CSIRO	\$814,200		814200	
Guidelines for the management of threats to savanna riparian zones	University of Western Australia	\$146,200	1046200		
A method for identifying high-priority areas in northern Australia for threat abatement and species recovery investment	James Cook University	\$50,000		50000	
Adaptive management of fire and forest animals to improve conservation of threatened species in Kakadu National Park	Northern Territory Department of Land Resource	\$390,000	390000		
Securing the future for the Billy in the Fitzroy Catchment/West Kimberley	Department of Biodiversity Conservation and Attractions	\$720,000		720000	
Northern Australia eDNA program - revolutionising aquatic monitoring and field surveys in tropical waters	James Cook University	\$670,000		570000	
Investigating the role of feral cats in small mammal decline in Kakadu National Park	Northern Territory Department of Land Resource	\$130,000		130000	
Prioritising threatened species and threatening processes across northern Australia	James Cook University	\$437,800	437800		
Remote environmental monitoring in northern Australia: scaling key research needs	Charles Darwin University	\$100,000		100000	
Current status of the methods and techniques used to estimate temporal changes in soil carbon	Charles Darwin University	\$100,000			100000
Research priorities for Indigenous Protected Areas (IPAs) across northern Australia	CSIRO	\$150,000		150000	
Identifying lessons learned from the incorporation of Top End Indigenous fire knowledge into fire management to inform the incorporation of Indigenous knowledge in fire management and carbon abatement planning nationally	CSIRO	\$165,000			165000
Multiple benefits and knowledge systems of ELMs - economic perspectives	James Cook University	\$469,800		490800	
Knowledge brokering for Indigenous land management	North Australian Indigenous Land and Sea Management Alliance Limited (NAILSMA)	\$885,000		985000	
Indigenous natural resource management in Kakadu National Park	University of Western Australia	\$140,400			740400
Assessing the Gulf of Carpentaria mangrove dieback	James Cook University	\$200,000			200000
Ecophysiology and sensitivity of riparian vegetation	Charles Darwin University	\$330,000			330000
Rehabilitation of sand dunes of the Great Barrier Reef	Charles Darwin University	\$80,000		80000	
Effects of surface and ground water seepage of mining-related solutes on aquatic ecological communities: Moola Oolite	Charles Darwin University	\$359,500			359500
Management Options for High Biomass Grass Management in Cape York Conservation Areas	CSIRO	\$268,000			268000
The Vulnerability of Food Supplies for Migratory Shorebirds to Altered Flow in the Southern Gulf of Carpentaria	Griffith University	\$210,000	210000		
Trailing New Techniques for Assessing Terrestrial Biodiversity in Data Poor Environments	NT Department of Environment and Natural Resources	\$140,000		140000	
Environmental Economic Accounting for Interconnected Ecosystem Assets and Ecosystem Services in the Mitchell Catchment: Old	Charles Darwin University	\$360,000		360000	
Integrated performance and impact assessment for guiding on-government investment into Indigenous cultural and natural resource management enterprises	CSIRO	\$200,000			200000
A Flow Synthesis Project: enhancing skills of environmental flow research for improved water planning in northern Australia	Griffith University	\$170,000		270000	
Transdisciplinary environmental research	University of Western Australia	\$195,000			195000
NESP Output Synthesis and Transferability	Charles Darwin University	\$600,000		500000	
<b>Funding for approved projects*</b>	<b>NORTHERN HUB TOTAL</b>	<b>\$16,771,914</b>	<b>\$3,164,906</b>	<b>\$16,882,114</b>	<b>\$2,728,989</b>
<b>TROPICAL WATER HUB</b>			<b>0.19</b>	<b>0.65</b>	<b>0.16</b>
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>			
Establishing the Future NESP Crown-of-Thorns Starfish (CTS) research framework including an ecologically-based approach to the management of CTS at multiple scales	CSIRO	\$100,000		100,000	
Developing an approach to evaluate the effectiveness of interventions in riparian management in the Great Barrier Reef catchments	CSIRO	\$99,972		99,972	
A validation of coral geochemical records to reconstruct suspended sediment loads to the Great Barrier Reef lagoon	James Cook University	\$22,500			22,500
Legacy of the Lower Barkley Water Quality Tenders	James Cook University	\$38,795			38,795
Multiple and cumulative impacts on the Great Barrier Reef: assessment of current status and development of improved approaches for their assessment	Australian Institute of Marine Science	\$99,944		99,944	
Reducing sediment sources to the Reef: testing the effectiveness of managing algal gully erosion	Griffith University	\$100,000		100,000	
Sub-catchment scale monitoring, modelling and extension design to support reef water quality improvement	James Cook University	\$100,000			100,000
Establishment of a future NESP diverging research investment framework	Australian Institute of Marine Science	\$25,000			25,000
Identification, impacts, and proliferation of emerging contaminants present in the Great Barrier Reef and Torres Strait marine environments	Australian Institute of Marine Science	\$150,000			150,000
Assessing the cumulative impacts of climate disturbances on inshore Great Barrier Reef coral reefs, identifying key refuges and testing the viability of manipulative reef restoration	James Cook University	\$85,000	85,000		
A tradeable permit scheme for cost-effective reduction of nitrogen runoff in the sugarcane catchments of the Great Barrier Reef	Griffith University	\$99,721			99,721
Seagrass mapping synthesis - a resource for marine park and coastal management	James Cook University	\$38,000		38,000	
Improving historical estimates of abundance and distribution of Dugongs and large Green Turtles in western and central Torres Strait	James Cook University	\$97,874		97,874	
Light thresholds for seagrasses of the Great Barrier Reef: a synthesis and guiding document for managing seagrass	James Cook University	\$29,755	29,755		
Development and refining biological indicators for seagrass condition assessments in an integrated monitoring program	James Cook University	\$68,584		68,584	
Assessment of key Dugong and turtle seagrass resources in the northern Torres Strait	James Cook University	\$99,696		99,696	
Establishing a research framework for future NESP investment to better understanding of the presence of bio-fouling threats and risks in the Great Barrier Reef	James Cook University	\$30,000			30,000
Monitoring the effects of zoning on coral reefs and their associated fish communities in the Great Barrier Reef Marine Park	Australian Institute of Marine Science	\$100,000		100,000	
Towards an integrated monitoring program: identifying indicators and existing monitoring programs to cost effectively evaluate the Long Term Sustainable Plan	Australian Institute of Marine Science	\$100,000		100,000	
Indigenous capacity building and increased participation in management of Queensland sea country	NAILSMA	\$100,000			100,000
Benchmarking costs of NRM improvements for the Great Barrier Reef	Central Queensland University	\$29,487			29,487
Monitoring and adaptively reducing system wide governance risks facing the Great Barrier Reef	James Cook University	\$55,537		55,537	
Development of an offset financial contribution calculator for Reef Trust	University of Queensland	\$80,956			80,956
Atlas 2015 - NESP data management, Torres Strait NRM plan delivery platform and Torres Strait reef monitoring	Australian Institute of Marine Science	\$98,040			98,040
Integrated Past Management of Crown-of-Thorns Starfish	CSIRO	\$604,722		604,722	
The application and adaptation of mine site rehabilitation approaches to algal gully rehabilitation in the Bowen Catchment	Griffith University	\$100,000		100,000	
Striving options for low-flying marginal cane land to reduce dissolved nitrogen nitrogen (DN) in priority reef inshore catchments	James Cook University	\$84,000			84,000
Restoring the balance of social metabolism and behaviour change for improved water quality in the Great Barrier Reef: an action research project	James Cook University	\$480,000			480,000
Demonstration and evaluation of gully remediation on downstream water quality and agricultural production in Great Barrier Reef catchments	CSIRO	\$600,000			600,000
What's really damaging the Reef? Tracing the origin and fate of the environmentally detrimental sediment	James Cook University	\$600,000			600,000
From evidence to risk: novel experimental approaches to analyse cumulative impacts and determine thresholds in the Great Barrier Reef World Heritage Area	Australian Institute of Marine Science	\$410,165		410,165	
Engaging with farmers and demonstrating water quality outcomes to create confidence in on-farm decision-making via Project 271	James Cook University	\$600,000			600,000
Improving water quality outcomes from on-farm nitrogen management	University of Queensland	\$700,000			570,000
Risk assessing emerging activities	Australian Institute of Marine Science	\$515,808			515,808
Identifying the water quality and ecosystem health threats to the high diversity Torres Strait and Far Northern Great Barrier Reef from land use change	James Cook University	\$360,000			360,000
Impacts of mine-derived pollution on Torres Strait environments and communities	CSIRO	\$206,000			206,000
Early warning systems to minimize the risk of sea jellyfish stings by empowering stakeholders	CSIRO	\$250,000			250,000
Benthic light as ecologically-mediated Great Barrier Reef-wide indicator for water quality drivers, thresholds and cumulative risks	Australian Institute of Marine Science	\$466,471			466,471
"Human sensors" for monitoring Great Barrier Reef environmental changes and quality of water meters through hyperspectral Bio Data analysis	Griffith University	\$227,145			227,145
Building Indigenous livelihood and co-management opportunities in the Northern Great Barrier Reef -ecosystems services and conservation governance for water quality	CSIRO	\$250,000		250,000	
Working with traditional owners and local citizens to better manage Great Barrier Reef estuarine wetlands	James Cook University	\$450,000			450,000

\* Rerouted \$480,000 in PhD top-ups from the original amount listed on the web, since we're not counting any personnel costs, it shouldn't go into determining proportions.

eAids - Data management for environmental research	Australian Institute of Marine Science	\$450,000		\$450,000
Implementation of the crown of thorns starfish research strategy - regional strategies	CSIRO	\$662,542	\$662,542	
Improving water quality for the Great Barrier Reef and wetlands by better managing irrigation in the sugarcane farming system	James Cook University	\$468,103		\$468,103
Harvesting the science of social marketing in communication materials development and behaviour change for improved water quality in the Great Barrier Reef - a research review	James Cook University	\$19,000		\$19,000
Optimising the management of riparian zones to improve the health of the Great Barrier Reef	CSIRO	\$178,491	\$178,491	
Ecotoxicology of pesticides on the Great Barrier Reef for guideline development and risk assessments	Australian Institute of Marine Science	\$602,839		\$602,839
Exploring trading in water quality credits as a cost-effective approach for managing water quality in the Great Barrier Reef	Griffith University	\$316,837		\$316,837
Reducing sediment loads to the Great Barrier Reef - developing optimal approaches for treating algal gully erosion	Griffith University	\$600,000		\$600,000
Innovative economic levers - a system for underwriting risk of practice change in cane-farming	CSIRO	\$400,000		\$400,000
Defining ecologically resilient land targets to meet desired ecosystem condition for the Great Barrier Reef - a case study for assessing measures in the Burdekin region	James Cook University	\$497,765	\$497,765	
The 180° 2000 Human Dimensions Project - cost-effective indicators and metrics for key Great Barrier Reef World Heritage Area human dimensions	James Cook University	\$150,000		\$150,000
Monitoring authenticity - use of the Great Barrier Reef by using artificial intelligence to score photos and videos	Griffith University	\$99,038		\$99,038
Defining, assessing and monitoring Great Barrier Reef aesthetics	CSIRO	\$165,036		\$165,036
Testing and implementation of the water quality metric for the 2017 and 2018 reef report cards	Australian Institute of Marine Science	\$140,000		\$140,000
Quantifying the linkages between water quality and the thermal tolerance of Great Barrier Reef coral reefs	Australian Institute of Marine Science	\$590,264	\$590,264	
Science evaluation of coastal wetland systems repair projects across Great Barrier Reef catchments	James Cook University	\$536,932	\$536,932	
Defining the values of the ecological systems that influence the Great Barrier Reef and lie outside the marine park and world heritage area boundaries	James Cook University	\$256,000		\$256,000
Crown-of-Thorns Starfish: surveillance and life history	CSIRO	\$467,500	\$467,500	
Oceanographic drivers of bleaching in the Great Barrier Reef - from observations to prediction	Australian Institute of Marine Science	\$537,852	\$537,852	
Best practice coral restoration for the Great Barrier Reef	James Cook University	\$607,000	\$607,000	
The health of corals that survived recent bleaching events	Australian Institute of Marine Science	\$562,218	\$562,218	
Guidance system for resilience-based management of the Great Barrier Reef	University of Queensland	\$638,037	\$638,037	
Recommendations to maintaining functioning of the Great Barrier Reef	University of Queensland	\$209,583	\$209,583	
Indigenous coral reef tourism	Central Queensland University	\$100,000		\$100,000
Project 2F: Farmers, water quality and on-farm decision-making	James Cook University	\$600,000		\$600,000
Guidance system for resilience-based management of the Great Barrier Reef	Griffith University	\$53,439		\$53,439
Evaluating the Costs and Benefits of Agricultural Land Conversion to Wetlands	James Cook University	\$482,947	\$482,947	
Source, transformations and fate of particulate and dissolved organic carbon - implications for the Great Barrier Reef	Griffith University	\$26,470		\$26,470
Measuring cost-effectiveness and identifying key barriers and enablers of lasting behavioural change in the cane industry	Griffith University	\$404,985		\$404,985

<b>Funding for approved projects</b>		<b>\$18,208,166</b>	<b>\$896,035</b>	<b>\$8,888,148</b>	<b>\$10,263,627</b>	**The listed projcs don't add up to the approved funding amount, so proportions are based on actual totals, not cell F185
	<b>TROPICAL WATER HUB TOTAL</b>		<b>0.05</b>	<b>0.44</b>	<b>0.52</b>	
	<b>TSR HUB</b>					
<b>Project Title</b>	<b>Lead Organisation</b>	<b>NESP Funding*</b>				
All direct conservation spending	UG					
	<b>TSR HUB TOTAL</b>	<b>\$28,980,000</b>	<b>1</b>	<b>0</b>	<b>0</b>	

More detailed breakdown (to go into paper)

			Proportions		Spending	
CALL		\$8,890,000	0.21	0.22	\$1,833,586	\$1,026,505
MARINE		\$23,880,000	0.36	0.47	\$8,705,927	\$11,307,853
ESCC		\$22,300,000	0.00	0.43	0.00	\$9,310,759
WATERWAYS		\$23,880,000	0.39	0.65	\$4,564,933	\$15,994,850
TROPICAL WATER		\$11,880,000	0.05	0.44	\$1,699,000	\$14,079,200
TSR		\$28,980,000	1	0	\$28,980,000	0
					\$46,829,466	\$24,610,468

	<b>Direct</b>	<b>Relevant</b>	<b>Unlikely</b>
Research proportions	0.33	0.37	0.30

Programs	2017-18 Direct spending \$	2017-18 Indirect spending \$	2017-18 Research (relevant or direct) spending \$	2017-18 Unknown or Unlikely spending \$	2017-18 Total accounted for spending \$	2017-18 Estimated actual \$	2017-18 Proportion accounted for	Direct spending proportion	Indirect spending proportion	Cons research spending proportion	Unknown or unlikely spending proportion	2018-19 Budget \$'000	Notes
<b>Program 1.1: Sustainable Management of Natural Resources and the Environment</b>													
<b>Administered expenses</b>													
<b>Ordinary annual services (Appropriation Bill No.1)</b>													
National Landcare Program:													
Natural Heritage Trust (a)	2,311,499	19,407,866	349,837	0	22,069,202	243,480,000	0.09	0.10	0.88	0.02		176,518	The lines in italics below are breakdowns of the NHT program. The details below account for a ~10% proportion of the budget.
Regional stream (payments to NRM groups)		109,500,000			109,500,000	109,500,000							This is money that gets given to NRM groups. The fed gov doesn't say how they have to spend it, just that it has to work towards meeting one of the 4 objectives, which are all very land management focused & unlikely to result in any substantial amounts of direct TS spending.
Emerging priorities	8,250,000				8,250,000								All the projs are generally environmentally focussed (with the exception of one historic fossil site). Details & project listing at: <a href="http://www.nrm.gov.au/national/continuing-investment/world-heritage-grants">http://www.nrm.gov.au/national/continuing-investment/world-heritage-grants</a>
World Heritage grants		7,450,000				7,450,000		0	1	0			
IPAs		15,975,000			3,195,000	12,780,000		0.20	0.80				
Reef program & Reef 2050 plan	25,125,000												
Working on Country supplementation		8,675,000		2,125,000		8,675,000		0	1				
Sustainable Agriculture National projects								0	0	0			1
Local programs and other National Stream projects	8,500,000				2,125,000	6,375,000		0.25	0.75				Details of programs avail at: <a href="http://www.nrm.gov.au/national/local">http://www.nrm.gov.au/national/local</a>
vvv													
- Clean up & Keep Australia Beautiful				200,000									1
													Focused on community littering; too indirect to be relevant to TS. More info at: <a href="http://www.nrm.gov.au/national/local/clean-australia-and-keep-australia">http://www.nrm.gov.au/national/local/clean-australia-and-keep-australia</a>
- Cumberland conservation corridor		5,000,000											
- Kimberley cane toad clean up programme		250,000											
- Dandenong ranges		1,000,000											
- Coastal rivers recovery		2,325,000											
- Whales and dolphin protection plan		466,667											
													Clearly direct spending on TS. <a href="http://www.environment.gov.au/system/files/resources/12d8d25-0169-46d6-8c72-dfe204c444c/files/threatened-species-strategy-progress-report.pdf">http://www.environment.gov.au/system/files/resources/12d8d25-0169-46d6-8c72-dfe204c444c/files/threatened-species-strategy-progress-report.pdf</a>
- Threatened Species Recovery Fund (National)	3,000,000												<a href="http://www.nrm.gov.au/system/files/pages/9d130a47-9239-4694-9392-9fee1d57cd76/files/tsrf-approved-projects.pdf">http://www.nrm.gov.au/system/files/pages/9d130a47-9239-4694-9392-9fee1d57cd76/files/tsrf-approved-projects.pdf</a>
Target Areas grants		6,475,000				6,475,000			1.00				All projs seem relevant but indirect, except one direct one on bettongs. <a href="http://www.nrm.gov.au/system/files/pages/f11e2739-bb5b-4b9d-95bb-8005e0c3b89/files/tag-2013-14-approved.pdf">http://www.nrm.gov.au/system/files/pages/f11e2739-bb5b-4b9d-95bb-8005e0c3b89/files/tag-2013-14-approved.pdf</a>
													All the projects funded in 2017-18 had identified species for which the reveg would help. <a href="http://www.nrm.gov.au/system/files/pages/6e78753e-ac05-48d3-a56e-980c4e84073/files/20mt-round-three-approved-projects.pdf">http://www.nrm.gov.au/system/files/pages/6e78753e-ac05-48d3-a56e-980c4e84073/files/20mt-round-three-approved-projects.pdf</a>
20 Million Trees		12,500,000				12,500,000			1.00				0

**From:** s47F  
**To:** [Beth Brunoro](#); [Nicholas Post](#); s47F  
**Cc:** s47F  
**Subject:** Fwd: pathway for working together on "spending to save"  
**Date:** Thursday, 27 June 2019 5:04:51 PM  
**Attachments:** [image001.png](#)

---

Hi,

Please see below from Brendan a proposed approach to next steps on the 'spending to save' paper, shaped by some rethinking around the TSR approach more generally.

We have had discussions around getting better outcomes by changing tack - starting with open discussions on objectives to figure out mutually agreed aims, then collaboratively deciding on actions with the benefit of both science and APS perspectives.

Retrofitting required on this occasion, but a good opportunity to have a go at building a more effective approach. Happy to elaborate/discuss.

Please let me know your thoughts. Happy to steward once we've agreed the way forward.

Cheers

s47F

Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
**To:** s47F <[redacted]@environment.gov.au>  
**Subject:** pathway for working together on 'spending to save'

Dear s47F,

Thanks for the chat just then providing some context for discussion about our draft manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work

and policy implications.

4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, S47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland<sup>[1]</sup>  
ph. +61 3 8344 3306  
skype: brendan.wintle  
[http://brendanwintle.wordpress.com/about/google scholar brendan wintle](http://brendanwintle.wordpress.com/about/google-scholar-brendan-wintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----



**From:** [Beth Brunoro](#)  
**To:** s47F; [Nicholas Post](#); s47F  
**Cc:** s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 12:35:14 PM  
**Attachments:** [image006.png](#)

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Thanks s47F

This is not an approach I will support. I think the best course of action is a discussion with Brendan next week when Nick is back on deck. We should have a huddle internally ahead of that.

I will send an email to Brendan. No need for you to further contact him ahead of that discussion. Thanks for your efforts with Brendan to date, there seems to be a fundamental difference of perspectives on the role of the hub.

Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Thursday, 27 June 2019 5:05 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F  
s47F @environment.gov.au  
**Cc:** s47F @environment.gov.au  
**Subject:** Fwd: pathway for working together on 'spending to save'

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Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
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**Subject:** pathway for working together on 'spending to save'

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National Environmental Science Programme

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-----

**From:** [Beth Brunoro](#)  
**To:** "Brendan Wintle"  
**Cc:** [Nicholas Post](#); s47F  
**Subject:** FW: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 12:38:55 PM  
**Attachments:** [image001.png](#)

---

Hi Brendan

I have asked my EA s47F to reach out to you to set up a meeting as early as we can next week to discuss a way forward. Best to do this when Nick is back on deck – he is on his way back from NY as I type.

I understand there is no imminent deadline re the paper so we can wait until we can find a time?

cheers

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



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Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
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[http://brendanwintle.wordpress.com/about/  
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National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** s47F  
**Subject:** FW: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:08:16 PM  
**Attachments:** [image006.png](#)  
[nesp-research-priorities-2017.docx](#)  
s22  
**Importance:** Low

---

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

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[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

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The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 12:35 PM

**To:** s47F @environment.gov.au>; Nicholas Post

<Nicholas.Post@environment.gov.au>; s47F

s47F @environment.gov.au>

**Cc:** s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

**Importance:** Low

Thanks s47F

This is not an approach I will support. I think the best course of action is a discussion with Brendan next week when Nick is back on deck. We should have a huddle internally ahead of that.

I will send an email to Brendan. No need for you to further contact him ahead of that discussion. Thanks for your efforts with Brendan to date, there seems to be a fundamental difference of perspectives on the role of the hub.

Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Thursday, 27 June 2019 5:05 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** Fwd: pathway for working together on 'spending to save'

Hi,

Please see below from Brendan a proposed approach to next steps on the 'spending to save' paper, shaped by some rethinking around the TSR approach more generally.

We have had discussions around getting better outcomes by changing tack - starting with open discussions on objectives to figure out mutually agreed aims, then collaboratively deciding on actions with the benefit of both science and APS perspectives.

Retrofitting required on this occasion, but a good opportunity to have a go at building a more effective approach. Happy to elaborate/discuss.

Please let me know your thoughts. Happy to steward once we've agreed the way forward.

Cheers

s47F

Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Date:** 27 June 2019 at 3:18:37 pm AEST

**To:** s47F <[REDACTED]@environment.gov.au>

**Subject:** pathway for working together on 'spending to save'

Dear s47F,

Thanks for the chat just then providing some context for discussion about our draft manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work and policy implications.
4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

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-----

# National Environmental Science Programme

## RESEARCH PRIORITIES FOR 2017

### Context

The NESP Research Priorities (Priorities) are determined by the Minister for Environment and Energy and the Department of the Environment and Energy (Department) in consultation with the NESP Hubs and stakeholders. The Priorities aim to guide and contribute to the on-going dialogue between the hubs, the Department and other end-users to develop a program of research, described in hub annual research plans, which is targeted towards the needs of NESP stakeholders.

The Research Priorities for 2017 ('2017 Priorities') are the outcome of an engagement process across the hubs, the Department and other stakeholders in early 2017. The 2017 Priorities build on previous iterations (2015 and 2016), with amendments to clarify and emphasise new initiatives and management challenges, and removal of previous priorities that are no longer a focus.

### Interpreting the 2017 Research Priorities

A set of priorities is presented for each hub, arranged under higher-level groups or themes. Some of these priorities are specific and some are more general in nature. The priorities in **bold** are 'focus priorities' for Research Plan version 4, based on stakeholder feedback that these are particularly important to their existing and future decision-making needs. Each hub will work with stakeholders to understand the nature and extent of effort required under Research Plan version 4 to respond to the set of priorities, taking into consideration research projects which are already underway.

The 2017 Priorities identify four 'cross-cutting issues' that are relevant across multiple hubs. Highlighting these issues supports their integration across the NESP. Responses to the cross-cutting issues will vary between hubs, and may benefit from collective consideration across the hubs.

### CROSS-CUTTING ISSUES RELEVANT TO ALL HUBS

Research undertaken under all hub priorities should:

1. consider current and future climate risks in the research design, delivery and recommendations, as appropriate, as recommended by the State of the Environment Report 2016
2. consider the social and economic value of the environmental asset/s and research outcomes, as appropriate
3. where possible, and where other considerations are equal, be targeted at areas with high conservation value such as National and World Heritage places and Ramsar wetlands
4. be designed with consideration of how it may intersect and integrate with the priorities of other NESP hubs.

## **HUB RESEARCH PRIORITIES**

[CLEAN AIR AND URBAN LANDSCAPES: RESEARCH PRIORITIES](#)

[EARTH SYSTEMS AND CLIMATE CHANGE: RESEARCH PRIORITIES](#)

[MARINE BIODIVERSITY: RESEARCH PRIORITIES](#)

[NORTHERN AUSTRALIA ENVIRONMENTAL RESOURCES: RESEARCH PRIORITIES](#)

[THREATENED SPECIES RECOVERY: RESEARCH PRIORITIES](#)

[TROPICAL WATER QUALITY: RESEARCH PRIORITIES](#)

*Note: Numbering of priorities may not be consecutive - original priority numbering has been retained for continuity and easy reference.*

## CLEAN AIR AND URBAN LANDSCAPES: RESEARCH PRIORITIES

### ***Increasing our understanding of the environmental and social impacts of air pollution in urban and peri-urban areas to inform management actions (Group A)***

#### **Contribute to the design of, and inform the development of, a programme for monitoring and reducing atmospheric particulate matter levels in Western Sydney (1).**

Identify and prioritise significant sources of air pollution and their impact on the environment and public health to better target government investment (2).

Identify key sources of emissions of air pollutants, including sulphur dioxide and particulate matter, in Australian urban centres and the risks they pose to the environment and human health. This work should complement the current reviews of the National Environment Protection (Ambient Air Quality) Measure relating to a) PM standards and b) the standards for sulphur dioxide, nitrogen dioxide and ozone, as well as other efforts underway to reduce point source emissions of these pollutants (3).

Identify features of Australian urban landscapes that influence the impact of air pollution on humans and the environment (e.g. landform, local climatic conditions, urban design) (5).

Quantify the co-benefits for air quality, human health, biodiversity and the environment of measures to reduce greenhouse gas emissions in urban and peri-urban areas. Such measures could include active transport, improved public transport, increased energy efficiency of buildings and changes to the urban form (6).

Study the exposure and risks to the environment and human health of chemicals and persistent organic pollutants arising in everyday products, including chemicals newly listed under the Stockholm Convention, in the urban environment – from indoor and outdoor sources, flows and use through to disposal via current urban infrastructure such as sewers and landfills (8).

Identify and evaluate effective systems and tools for detecting and managing air pollution in urban areas, including a focus on monitoring, reporting and forecasting systems, strategic planning in infrastructure and urban development, and measures to reduce point source emissions (10).

Assess existing and identify new information systems and processes needed to achieve air quality objectives, identify trends and evaluate outcomes (11).

Support existing and emerging cross-government clean air initiatives such as the Clean Air Agreement (12).

### ***Quantifying the benefits of urban greening for humans and other species in cities to inform Australian Government policy and programmes, and management actions by all levels of government, the community and industry (Group B)***

Work with major cities to assess the effectiveness of various current and new approaches to managing urban ecosystems, such as greening plans, and how these can be incorporated into greening plans to maximise positive outcomes for biodiversity including threatened species, air and water quality, and human health. These outcomes could support the development of a framework for greening cities which would consider multiple benefits such as absorption of atmospheric pollutants, sequestration of carbon, mitigation of the urban heat-island effect, provision of habitat and landscape connectivity for biodiversity, strengthening of social capital, and the reconnection of humans with nature in urban areas (13).

Demonstrate the relative cost effectiveness of different approaches to planting and managing urban green spaces for air and water quality and human well-being. These approaches could include the choice of species to be planted, the location and configuration of plantings, irrigation of plantings with stormwater to improve survival and growth rates and reduce runoff to local streams, and preservation of upland drainage lines in new developments to provide green space and a range of environmental and health benefits for residents (14).

Prioritise climate adaptation measures for managing the impacts of climate change on environmental quality and human health in urban areas, such as expanding urban forests and improving the even distribution of tree cover across our major cities for equity of access (15).

# EARTH SYSTEMS AND CLIMATE CHANGE: RESEARCH PRIORITIES

## ***Building the utility of Earth Systems and Climate Change information (a)***

Work with our Partners and NESP to establish and collaborate with the National Centre for Coasts and Climate as it undertakes climate change research and activities, including Blue Carbon research (a1).

Engage with stakeholders to ensure that the information is being provided in a manner which supports decision-making and is meeting the needs of end users including business, government and Indigenous people. This includes contributing Australian and Southern Hemisphere climate information, analysis and expertise to global initiatives such as the Intergovernmental Panel on Climate Change and climate modelling projects (e.g. Coupled Model Intercomparison Project) to ensure that Australia benefits from the international analysis efforts that shape global discussions on climate change (a2).

Collaborate across National Environmental Science Programme Hubs to ensure that Earth systems and climate change research informs the broader Programme. This would include provision of nationally consistent and targeted regional climate projections and information relevant to specific issues, such as threats to marine and terrestrial ecosystems and ocean acidification and the cumulative impacts of climate change and other environmental pressures (a3).

Develop and enhance Australia's national capability in Earth system and climate simulation through ongoing improvement of the Australian Climate Community Earth System Simulator (ACCESS) in the areas of accessibility and simulation performance (a4).

## ***Improving our understanding of how the climate system may change in the future (b)***

Investigate how human activities will continue to influence the carbon cycle and change the chemistry and physical state of our oceans, atmosphere and terrestrial systems (b1).

Improve understanding and simulation of Southern Hemisphere climate drivers<sup>1</sup> in our climate models (especially ACCESS) to increase our confidence in projections of likely future climate change at multi-annual to multi-decadal time scales. Improve our understanding of how climate variability (e.g. the El Niño-Southern Oscillation) and the frequency, intensity and extent of extreme events (e.g. tropical cyclones and droughts) may change in the future (b2).

Further develop our ability to simulate and provide regional information on future climate, from years to decades (b3).

Consider low likelihood but high impact consequences of climate change for Australia to improve risk management decisions (b4).

Use improved climate projections and understanding of the drivers of climate to inform understanding of climate and coastal interactions (b5).

## ***Improving our understanding of past and current climate (c)***

Use observations of greenhouse gases and the Australian regional carbon budget to track changes and improve our understanding of how the different components of the natural and human elements of the carbon cycle interact and influence each other (c1).

Identify how the different scale drivers<sup>1</sup> of the climate system interact in the Southern Hemisphere to generate our past and current climate (c2).

---

<sup>1</sup> The term "climate drivers" is used here to mean the main modes of variability and change, such as El Niño–Southern Oscillation and radiative forcing and its response

Improve analysis methods used for Australian climate change research, and examine the current and past patterns and trends in climate variability and extremes in the Southern Hemisphere, with an emphasis on the Australian region, including the ocean (c3).

Analyse robust observational records of our atmosphere, oceans, cryosphere and terrestrial systems to undertake 'detection and attribution' studies in order to identify and explain significant changes in our current climate (c4).

## MARINE BIODIVERSITY: RESEARCH PRIORITIES

*Noting the broad nature of these priorities, the following areas are of particular importance to the Department of the Environment and Energy:*

- 1. Contribute to management and monitoring of the Commonwealth Marine Reserves.*
- 2. Matters of national environmental significance – areas of particular interest are listed species and communities, informing environmental assessments and domestic research which demonstrates that you do not need to kill whales in order to study them.*
- 3. Marine debris – supporting implementation of the Threat Abatement Plan.*

### **Maximising the efficacy of managing Australia's marine environment (1)**

#### **Identifying hot spots and management strategies for top order marine predators, including research to identify effective non-lethal measures to manage human-shark interactions (1.1).**

Improve the management of marine and coastal biodiversity by evaluating and quantifying the results of management interventions (1.2).

#### **Identify key social and economic values of the marine environment to build better stakeholder support and engagement in the management of marine and coastal environments (1.3).**

Develop and trial decision making tools that will support policy makers and managers to identify options, and prioritise activities (1.4).

#### **Identify and trial methods to restore degraded habitats such as oyster and mussel beds, seagrass, and intertidal habitats to underpin on-ground management actions (1.5).**

### **Improving our understanding of pressures on the marine environment (2)**

Define the impact of sewerage outfalls and stormwater runoff on Australia's marine environment to identify real actions to improve outcomes for marine water quality. This is to be informed on a national scale by the completion of a national ocean outfall database (2.1).

Identify past and current pressures on the marine environment, and understand their impact to better target policy and management actions. For example, identify the impact of cetacean ship strike (2.2).

Determine the causes of, and relationships between, pressures, including cumulative pressures, on the marine and coastal environment to inform government investment, regulation and best practice industry operations (2.3).

Improve prediction of likely future pressures and their potential impacts on marine and coastal biodiversity and economic and social values to enable the mitigation of avoidable impacts (2.4).

### **Improving our understanding of the marine environment including biophysical, economic and social aspects (3)**

Determine and trial practical and repeatable methods for monitoring the status and trends of key coastal and marine species and environments (3.1).

#### **Meaningful and accessible information on the status and trends of key social and economic values associated with the marine environment (3.2).**

Better understand issues that are common to the fishing industry and the environment including identifying solutions of mutual benefit (3.3).



Improve our knowledge of key marine species and ecosystems to underpin their better management and protection (3.4).

Identify key opportunities to collaborate and build Indigenous participation and knowledge into the management and protection of marine species (3.5).

The role of citizen science in the management of marine biodiversity (3.6).

# NORTHERN AUSTRALIA ENVIRONMENTAL RESOURCES: RESEARCH PRIORITIES

## ***Effective management of northern Australia's environmental resources (A)***

Identify lessons learned from the incorporation of Top End Indigenous fire knowledge into fire management, to inform the incorporation of Indigenous knowledge in fire management and carbon abatement planning nationally (A1).

Identify high-priority areas in northern Australia for threatened species and ecosystems to better target threat abatement and species recovery investments (A2).

The development and direct trial of practical techniques that underpin on-ground management for the recovery of identified threatened species, including Kakadu National Park and adjacent Indigenous Protected Areas (A3).

Develop and trial spatially explicit tools to guide planning and management decisions that support a mix of multiple uses and protected areas while maintaining environmental values (A4).

Identify evidence-based methods for the assessment of development impact on species and ecosystems which can be better integrated into planning processes and EPBC Act approvals (A5).

Develop management practices for rainforests which minimise the impact of extreme weather events (A6).

Identify management actions to address the management of waste and debris in remote locations. This includes the issue of ocean rubbish and debris washing up on Australia's northern coastline and the management of hard waste in remote locations such as Cape York (A7).

## ***Understanding the pressures and impacts on environmental resources in northern Australia (B)***

**Identify biodiversity impacts from changed land and water use (e.g. agricultural, development and infrastructure) to support best practice land management (B1).**

**Demonstrate the benefits and constraints of landscape and river connectivity to better manage biodiversity outcomes (B2).**

**Determine the impacts, including cumulative impacts, of natural stressors and current management regimes on biodiversity loss and landscape degradation to underpin on-ground management actions (B3).**

Identify critical knowledge gaps in the understanding of environmental resources in northern Australia to better prioritise government investment (B4).

## ***Understanding and measuring the condition and trends of environmental, social and economic resources in northern Australia (C)***

Develop methods, and techniques to reduce the cost of estimating changes in soil carbon over time (C1).

**Participation of Indigenous people in environmental management across northern Australia, including Indigenous Protected Areas (C2).**

Develop better capacity to predict ecosystem failure to improve planning and management practice (C3).

Determine the economic contribution of environmental resources across northern Australia in supporting effective policy and planning decisions (C4).

Demonstrate how to better measure environmental drivers, pressures, stressors and responses in northern Australia, taking into account remoteness and limited specialist skills base within the region, including approaches to environmental accounting (C5).

# THREATENED SPECIES RECOVERY: RESEARCH PRIORITIES

## ***Effective on-ground responses to reduce threats and promote recovery of threatened species (D1)***

The development and direct trial of practical techniques for the recovery of identified threatened species to underpin on-ground management. Including the development and trial of practical actions for recovery of at least 10 of the highest priority threatened species and the trial of exclusion/enclosure methods (D1.1).

The development and direct trial of practical techniques for the restoration of degraded habitat and re-establishing natural succession processes (D1.2).

Demonstrate the costs/benefits and effectiveness of methods to mitigate the impact of invasive animals, plants and disease (D1.3).

Improved information on management techniques to recover threatened freshwater and estuarine species and ecosystems (D1.4).

## ***Better understanding, measuring and reporting on the condition and trend of threatened species (D2)***

Meaningful and accessible information on trends in threatened species, to inform the targeting of Government investment and build community awareness and support (D2.1).

Early warning tools for extinction risk and identification of the most at risk species (D2.2).

Better prediction of threatened species trajectories, for example using indicators, proxies, triggers and thresholds (D2.3).

Improved information on the distribution of threatened species and ecological communities to better pinpoint their location. Including the review of current species distribution models, and incorporating the capacity for species to adapt to climate change (D2.4).

## ***Using social and economic opportunities for threatened species recovery (D3)***

Identifying better ways to use offsets under the EPBC Act to conserve threatened species (D3.1).

Identifying better methods for communication and community buy-in to threatened species issues including threatened species listing, and initiatives to engage the community in the protection of our threatened species, including the development of flying fox management options in urban/township areas (D3.2).

Opportunities for mutual benefit to threatened species and business in a streamlined regulatory environment (D3.3).

Collaborations with, and participation of, Indigenous people in threatened species research and management (D3.4).

The role of citizen science in threatened species conservation and in building greater community support for threatened species management (D3.5).

## TROPICAL WATER QUALITY: RESEARCH PRIORITIES

### ***Improved understanding of the impacts, including cumulative impacts, and pressures on priority freshwater, coastal and marine ecosystems and species (Theme 1)***

**Further development of a systematic approach to Crown of Thorns (COTS) control. Identify and trial risk abatement, and prioritisation strategies in response to Crown of Thorns outbreaks, extreme events and biosecurity threats. Develop and implement a plan to reduce Crown of Thorn numbers by two million (1.1).**

**Develop practical improvements to land management practices that will influence behavioural change and improve outcomes for tropical water quality and ecosystem health (1.2).**

**Improve our knowledge of cumulative pressures on environmental and social values of the Great Barrier Reef to determine more effective management actions (1.4).**

Evaluate the practicalities of restoring connectivity to freshwater, coastal and marine ecosystems and the resilience of dependent species (1.6).

### ***Maximise the resilience of vulnerable species to the impacts of climate change and climate variability by reducing other pressures, including poor water quality (Theme 2)***

**Improve our understanding of the consequences of climate change for the health and resilience of vulnerable freshwater, coastal and marine species, and ecosystems (2.1).**

Develop practical, cost-effective, climate change adaptation options that are accessible to the managers of coastal and marine ecosystems and their catchments (2.2).

**Identify practical management actions capable of protecting and improving water quality on the Great Barrier Reef. Including evaluating actions with the potential to protect highest priority ecosystems and species or to reinstate severely impacted ecosystems and species (2.3).**

Investigate the feasibility of water quality improvement where reduced nitrogen use on cane farms can be turned into a credit that can be traded (2.5).

Identify sustainable populations and the effectiveness of zoning on the health and resilience of target fish species and tropical ecosystem biodiversity (2.6).

### ***Natural resource management improvements based on sound understanding of the status and long term trends of priority species and systems (Theme 3)***

**Identify and trial practical methods to improve reef resilience, such as the transplantation of coral and coral genetics (3.1).**

Understand trends in Dugong and turtle populations, including breeding cycles and trends in seagrass and habitats. Develop better methods for the protection of important habitat for Dugong and turtles (3.2).

Combine existing indicators and monitoring programmes to develop a cost-effective integrated monitoring programme to support natural resource management, evaluate results and communicate trends (3.3).

**Identify regionally-specific management interventions to achieve or maintain realistic desired states for tropical environmental, social, cultural and economic values (3.4).**

Develop and implement better tools, including spatial information, to support the prioritisation of on-ground investments and interventions and assess their success (3.5).

Explore the opportunities for citizen science and Indigenous participation to improve tropical water quality awareness and outcomes (3.6).

**From:** s47F  
**To:** [Nicholas Post](#)  
**Subject:** RE: Hope the move goes ok today. [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:08:35 PM

---

Not especially.

The TSR hub 'spending to save' paper has caused us all some concern. As you will have seen Beth is engaging directly on the matter. The analysis isn't a deliverable under our agreement with them and I don't think it is helpful in providing any evidence base for policy development as it isn't looking at the right question, i.e. how do you target your spend for best results, but we have to work with the hub on managing the way forward. I have some ideas on this that we can discuss on Monday, but it probably starts with re-stating and perhaps reshaping our objectives with the hub.

s22

s22

**From:** s47F  
**To:** s47F  
**Subject:** FW: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:14:44 PM  
**Attachments:** [image006.png](#)  
**Importance:** Low

---

FYI.

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

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**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 12:35 PM

**To:** s47F ; Nicholas Post ; s47F

**Cc:** s47F

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

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Thanks s47F

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Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

**Beth Brunoro**

First Assistant Secretary

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GPO Box 787, Canberra ACT 2601

T 02 6159 7504

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Professor Brendan Wintle  
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ph. +61 3 8344 3306  
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[http://brendanwintle.wordpress.com/about/google scholar brendan wintle](http://brendanwintle.wordpress.com/about/google-scholar-brendan-wintle)  
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-----

**From:** [Nicholas Post](#)  
**To:** s47F  
**Subject:** Re: Hope the move goes ok today. [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:18:59 PM

---

Thanks.

Pt 1 - frustrating and agree requires some focus.



s22

Sent from my iPhone

> On 27 Jun 2019, at 8:08 pm, s47F @environment.gov.au> wrote:  
>  
> Not especially.  
>  
> The TSR hub 'spending to save' paper has caused us all some concern. As you will have seen Beth is engaging directly on the matter. The analysis isn't a deliverable under our agreement with them and I don't think it is helpful in providing any evidence base for policy development as it isn't looking at the right question, i.e. how do you target your spend for best results, but we have to work with the hub on managing the way forward. I have some ideas on this that we can discuss on Monday, but it probably starts with re-stating and perhaps reshaping our objectives with the hub.  
>



s22

s22

**From:** [Beth Brunoro](#)  
**To:** "Brendan Wintle"  
**Cc:** [Nicholas Post](#); s47F ; s47F ; s47F ; s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:19:07 PM  
**Attachments:** [image014.png](#)

---

Great – s47F will ring you this afternoon.

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



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**From:** Brendan Wintle [mailto:[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)]  
**Sent:** Friday, 28 June 2019 1:09 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>  
**Cc:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F  
<s47F @environment.gov.au>; s47F <s47F  
s47F @environment.gov.au>; s47F  
s47F @environment.gov.au>; s47F  
<s47F @environment.gov.au>  
**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,  
Absolutely. When Nick is back and everyone is available. Not a screaming rush.

Cheers,  
Brendan

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**From:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>  
**Date:** Friday, 28 June 2019 at 12:39 pm  
**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Cc:** Nick Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, s47F  
<s47F @environment.gov.au>, s47F <s47F  
s47F @environment.gov.au>, s47F  
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**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
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**From:** s47F  
**To:** [Beth Brunoro](#); [Nicholas Post](#); s47F  
**Cc:** s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:20:00 PM  
**Attachments:** [image005.png](#)  
[nesp-research-priorities-2017.docx](#)  
s22

---

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s47F

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**From:** Beth Brunoro  
**Sent:** Friday, 28 June 2019 12:35 PM  
**To:** s47F <s47F@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>  
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I will send an email to Brendan. No need for you to further contact him ahead of that discussion. Thanks for your efforts with Brendan to date, there seems to be a fundamental difference of perspectives on the role of the hub.

Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

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**From:** s47F  
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**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
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**To:** s47F ; [Nicholas Post](#); s47F  
**Cc:** s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 1:58:55 PM  
**Attachments:** [image005.png](#)

---

Thanks for these

**Beth Brunoro**  
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Department of the Environment and Energy

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**From:** s47F  
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**To:** "Brendan Wintle"  
**Cc:** s47F; s47F; s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 2:24:45 PM  
**Attachments:** [image009.png](#)

---

Good afternoon Brendan,

Do you have availability for a phone call with Beth and Nick at 4:30pm on Tuesday, 2 July?

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F [@environment.gov.au](mailto:s47F@environment.gov.au)

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Beth Brunoro  
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**To:** 'Brendan Wintle' <b.wintle@unimelb.edu.au>  
**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F  
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[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST

To: s47F <s47F@environment.gov.au>

**Subject: pathway for working together on 'spending to save'**

Dear s47F

Thanks for the chat just then providing some context for discussion about our draft manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work and policy implications.
4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.



**From:** s47F  
**To:** Beth Brunoro; s47F; Nicholas Post; s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 2:37:47 PM  
**Attachments:** [image012.png](#)  
[Milestone 12\\_RPV3\\_TSR\\_AttD-Comms Strategy V3.pdf](#)

---

Hi all,

I think another useful document to provide context to the current discussion is the Hub's communications plan (attached). The Department approved this strategy as part of Research Plan Version 3 at the end of 2016.

Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*

[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** Beth Brunoro  
**Sent:** Friday, 28 June 2019 1:59 PM  
**To:** s47F <s47F@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]  
**Importance:** Low

Thanks for these

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Friday, 28 June 2019 1:20 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Agreed there is a difference of opinion on the role of the Hub that needs to be resolved. I encouraged Brendan to change the approach to start with conversations about objectives in an attempt to start to shift the culture and nature of interactions, plus develop a better understanding within the Hub of the points we raise, but agree the roles issue is fundamental and perhaps what we need to be direct about.

Happy to help where I can and agreed both some internal discussion and conversation with Brendan is necessary.

Please find attached the documents you requested.

s47F

---

**From:** Beth Brunoro  
**Sent:** Friday, 28 June 2019 12:35 PM  
**To:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks s47F

This is not an approach I will support. I think the best course of action is a discussion with Brendan next week when Nick is back on deck. We should have a huddle internally ahead of that.

I will send an email to Brendan. No need for you to further contact him ahead of that discussion. Thanks for your efforts with Brendan to date, there seems to be a fundamental difference of

perspectives on the role of the hub.

Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Thursday, 27 June 2019 5:05 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** Fwd: pathway for working together on 'spending to save'

Hi,

Please see below from Brendan a proposed approach to next steps on the 'spending to save' paper, shaped by some rethinking around the TSR approach more generally.

We have had discussions around getting better outcomes by changing tack - starting with open discussions on objectives to figure out mutually agreed aims, then collaboratively deciding on actions with the benefit of both science and APS perspectives.

Retrofitting required on this occasion, but a good opportunity to have a go at building a more effective approach. Happy to elaborate/discuss.

Please let me know your thoughts. Happy to steward once we've agreed the way forward.

Cheers

s47F



Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
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different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland<sup>SEP</sup>  
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National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

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Photo: D. Harley (Flickr CC BY-SA 2.0)

# Communication & Engagement

Version 3

19 September 2016



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## 1. Context

The Threatened Species Recovery Hub (TSR) of the National Environmental Science Programme (NESP) undertakes a wide range of research activities (mostly defined in a series of approved projects) aimed at building knowledge to enhance management and policy for the recovery of Australia's threatened species (and threatened ecological communities). It involves researchers from many different institutions, working in collaboration with multiple stakeholder groups. The Hub is largely funded by, and reports to, the Australian Government, with particular oversight by the Department of the Environment and Energy (DoEE) and the Minister for the Environment and Energy, who approves the Hub's Research Plan annually.

The overall NESP initiative places explicit priority on communications and engagement:

“The key objective of the NESP is to improve our understanding of Australia's environment through collaborative research that delivers accessible results and informs decisions. The NESP seeks to achieve its objective by supporting research that *inter alia*:

- has a strong public-good focus;
- is end-user focused and addresses the needs of the Australian Government and other stakeholders in developing evidence-based policy and improving management of the Australian environment;
- is collaborative and builds critical mass by drawing on multiple disciplines, research institutions and organisations to address challenging research questions;
- produces meaningful results accessible to government, industry and the community; and
- builds relationships between scientists and policy-makers to encourage collaborative problem solving on environmental issues.” (National Environmental Science Programme guidelines 2014: communications and engagement considerations underlined).

Given the substantial government investment and reporting requirements, the wide spread of Hub personnel, and the breadth of stakeholders, a diverse, timely, engaging, credible and effective communications program is essential for the functioning and reputation of the Hub.

This communication plan updates a strategy presented in the Hub's initial (2015) Research Plan. It provides the direction, objectives and rationale for the communications program, describes its mechanisms, defines its organisational structure including expectations and responsibilities, outlines its mode of implementation, and describes an approach to monitor, refine and report on its performance.

## 2. Objectives

Effective and strategic communication is pivotal for the Hub's functioning. The main objectives of the Hub's communication are to:

- **report on and interpret the evidence resulting from its approved research, to the Department of the Environment and Energy and other key stakeholder groups (*program reporting*);**
- **connect the community of researchers and other personnel engaged in Hub activities (*internal coordination*);**
- **establish a distinctive and cohesive identity as an authority on matters relating to the conservation of threatened species (*identity*);**
- **engage with the Australian community to help foster an informed interest in and awareness of threatened species, and involvement in their conservation (*community engagement*);**
- **craft a constructive dialogue with stakeholders, including being receptive to new priorities for research emerging from key stakeholders, and valuing and respecting the knowledge and perspectives of others, including Indigenous Australians (*receptivity*);**
- **build an enduring legacy of knowledge, and strong relationships amongst different parts of the conservation sector, that have long-term value for policy-makers, managers and the community generally to enhance the conservation outlook for Australia's threatened species and ecological communities (*legacy*).**

### 3. Audience and dialogue

Many people, organisations, sectors and agencies are interested in threatened species or involved in their conservation. Mechanisms for the most effective engagement and communication will differ among these groups. The Hub will seek to engage with all such interests, but will also need to prioritise its communications to particular primary stakeholder groups. The following tables indicate the Hub's main stakeholder groups, the rationale for communicating with these groups, and the proposed communications and engagement mechanisms for these groups.

#### *Primary stakeholders*

<b>Group</b>	<b>Why communicate?</b>	<b>How to communicate?</b>
Department of the Environment and Energy (including Threatened Species Commissioner)	major funder; major end-user; opportunities for responses to emerging priorities; contractual obligations	annual reports; workshops; web; magazine; e-newsletter and social media; regular meetings at range of levels; shared media; knowledge broker; steering committee; scientific publications and reports
Minister for the Environment and Energy	major funder; major end-user; opportunities for responses to emerging priorities; contractual obligations	annual reports; web; magazine; e-newsletter; knowledge broker
Hub funding partners (universities and AWC)	Hub cohesion and identity; contractual obligations	steering committee; web; leadership group; project leader meetings; scientific publications and reports; knowledge broker; media
Hub personnel	Hub cohesion and identity; project complementarity	regular meetings (including of Hub administration staff); knowledge broker; web; magazine; e-newsletter and social media; workshops & conferences; scientific publications and reports; media
Hub steering committee	to provide advice and updates on Hub activities; and to respond to SC advice	drafts of annual research plans, progress reports and other strategic documents; regular meetings
Hub-level collaborators	sense of engagement; opportunities for responses to emerging priorities; end-users	involvement in planning and research; web; magazine; e-newsletter; workshops & conferences; scientific publications and reports; knowledge broker; media
Stakeholders involved in individual projects	sense of engagement; shared outcomes; end-users	involvement in project activities; regular project-level meetings; project advisory groups; web; magazine; e-newsletter and social media; workshops & conferences; scientific publications and reports

Indigenous groups	major end-user (managers of a high proportion of Australia's threatened species); major holders of knowledge; distinctive interests and communications characteristics	Indigenous liaison officer; Indigenous reference group; targeted reporting and media; workshops; invitations to be involved in research, tailored project outputs
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*Other main stakeholders*

<b>Group</b>	<b>Why communicate?</b>	<b>How to communicate?</b>
Scientific community	exchange information; Hub status	scientific papers; conferences
General public	foster (and assess) interest in threatened species conservation; share information; apply management advice	web; media; responses to queries from the public; invitations to be involved in research; e-newsletter and social media, magazine, project outputs tailored for this group
Conservation NGOs	foster interest in threatened species conservation; share information; end-users; potential supporters	web; media; invitations to be involved in research; magazine; e-newsletter and social media
Other NESP Hubs	complementarity of interests, opportunity to learn from each other	occasional meetings; collaborative projects, e-newsletter, Indigenous community of practice
Other state and federal agencies	end-users (as some activities affect threatened species)	web; media; magazine; e-newsletter; targeted reporting



## 4. Mechanisms for communication and engagement

The Hub will communicate and engage with stakeholders using a diverse set of mechanisms, including media strategically selected to optimise the delivery to different audiences. The Hub's main means for communication and engagement will include:

*Primarily for internal communications and engagement:*

### 1. Online portal.

Hub personnel will have privileged access to all relevant protocols, research and data management plans, etc. on the Hub's website. The Hub's communications manager will ensure that such material is appropriately stored, and that all Hub personnel are aware of how to access it. Each project has the ability to house central documents within this secure accessed area of the website.

### 2. Annual project leaders' meeting.

The Hub will hold a meeting of all project leaders (and other key personnel) annually, to provide opportunities for shared understanding of the Hub's progress, and to help hone project complementarity. The Hub director will be responsible for ensuring that these meetings occur.

### 3. Project team.

All project personnel will meet regularly (as simple phone link-ups or more formal workshops) to discuss project progress, outcomes, analyses, reporting, funding, challenges, etc. Project leaders will be responsible for ensuring that these meetings occur, and for maintaining appropriate records of them.

### 4. Social media.

Posting on the Hub facebook page will provide an opportunity for researchers to update each other on an informal basis of day-to-day activities within each project. Using the Hub twitter handle will provide an opportunity to share news and research updates with stakeholders and interested public. The Hub accounts will be administered by the Communications team with researchers encouraged to actively contribute – two tweets per project (or subproject) per month, one facebook post per project each month. The Hub Social Media Protocol sets out expectations and requirements.

*External communications; and communications generally*

### 5. Project team

In most cases, the project team will include representatives of DoEE and other end users, and this direct involvement will facilitate communications and expectations at project-level. Given this project team involvement, mechanisms for project team communications described above for internal engagement also apply for external engagement.

### 6. Website.

The Hub's website will include ready public access to all Hub communications products, and include engaging descriptions of Hub activities. It will provide for some opportunity for public input or queries. It will include a mechanism to subscribe to the e-news and access the magazine. The website content, and its regular update, will be overseen by the Hub's communications manager.

### 7. Magazine.

The Hub will produce a regular (nominally, quarterly) magazine, highlighting a series of non-technical articles about selected Hub research. It will mainly be disseminated online, but with some limited hardcopy. All recipients of the Hub's e-news will be alerted to magazine release. The Hub's communications support officer (at ANU) will be responsible for its compilation and production, under the supervision of the Hub communications manager. As an online channel, it has the opportunity to include video and interactive content.

### 8. E-newsletter.

The monthly e-newsletter will be distributed to a broad audience and aims to communicate the latest updates from Hub projects – both internally, and with collaborators. Stories will be contributed by every project. Individuals are able to subscribe to, and share, the newsletter, and all stories are linked back to articles on the website, which will provide more in depth information on the project.

#### 9. Social media.

The TSR Hub twitter handle's purpose is to reach beyond the e-newsletter database, share news snippets and drive readers back to the website and magazine. Updates on workshop outcomes can be communicated quickly via links to videos, and more detailed stories housed on the website. The TSR Hub's facebook site is to provide a platform for sharing day-to-day activities of individual projects. Its content is largely driven by researchers. Both platforms are managed by the communications team.

#### 10. Conferences and workshops.

The Hub will host meetings that engage with researchers and stakeholders about project planning, progress, outcomes, and implications at project and other level. These will be fit-for-purpose, varying in style and size according to need. Some may be tailored for specific stakeholder sectors, such as Indigenous groups. Some will result in the production of workshop proceedings or books, and all will be appropriately documented.

#### 11. Media.

The Hub will use and respond to print and electronic media to help disseminate its research results and their implications, to maintain and enhance its public profile, and to contribute effectively to public interest and engagement in issues relating to threatened species. Protocols for media engagement are described in section 7, and Appendix B. Where required, the Hub will assist with media training for researchers.

#### 12. Scientific publications and reports.

Results from Hub research will be disseminated through books, scientific papers, technical reports and articles in more general media outlets. All such articles will be collated, with ready and free access via the Hub website. Authors will be responsible for supplying these articles in appropriate format, and the Hub's communications support officer will be responsible for managing their online collation and access.

#### 13. Early views.

In some cases, highly topical research will warrant the development of an 'Early view', prior to formal publication of the research results. These factsheets (a synopsis of the research) will be developed in conjunction with the communications team, and housed on the Hub website.

#### 14. Showcase.

Highlights of the Hub's research will be showcased at least annually through a collated set of talks delivered to DoEE and other end-users.

## 5. Communication ethics

The Hub's communications and engagement program will be guided by a set of principles and obligations, which will help shape its messaging and mode of delivery. The primary purpose of the Hub is to create and interpret knowledge that will help enhance the conservation outlook for threatened species and ecological communities, and wherever possible this purpose will contextualise all communication products.

Other principles and guidelines are that:

- **The Hub's research is publicly funded, and researchers have an obligation to convey results from their research in a manner that will optimise the dissemination and practical benefits of that research;**
- **Wherever possible, key stakeholders should be given advance notice of media and where appropriate given opportunity to provide input to any proposed media;**
- **Key stakeholders should be given early notification of research results that may affect them,**
- **Collaboration is pivotal to the Hub's functioning, and key collaborators and funders should be appropriately acknowledged in (or given the opportunity to co-author) all relevant communication products;**
- **NESP support must be appropriately acknowledged in all Hub research products (see Appendix C);**
- **The Hub and its researchers will make a concerted effort to communicate in appropriate format to all interested stakeholders;**
- **The Hub will seek to respond appropriately to all queries from stakeholders, media and the community;**
- **Wherever possible, the Hub will seek to involve stakeholders and the community in research activities;**
- **The Hub, and its personnel, will engage in public conversations about topical issues in a manner that is orderly and objective, and does not bring disrepute to the Hub;**
- **Wherever appropriate, Hub communication products will appropriately acknowledge animal welfare and ethics considerations related to its research;**
- **Where relevant, Hub communication products will note any policy and management shortcomings relating to threatened species in a manner that is constructive and open, and designed to improve such practice;**
- **Wherever possible, Hub communication opportunities will be widely shared;**
- **Hub and project leaders will help mentor early- and mid-career researchers and Indigenous partners in media and communications.**

## **6. Structure: responsibilities, coordination and accountability**

The Hub's communication program will depend upon the engagement of all Hub researchers and other personnel. However, it will require effective coordination and clarity of responsibilities among a small set of key communications and engagement personnel, and those engaged in associated roles (notably the Indigenous Liaison Officer and Knowledge Broker).

A communications and engagement coordination committee (see Attachment A) will coordinate the Hub's communications program, to oversee its implementation, and generally to approve most of the Hub's most substantial communications material. That committee will include the Hub's director, designated members of the Hub's leadership group, and the Hub's communications personnel.

Many individuals and positions associated with the Hub will contribute to this communications and engagement program. Expectations *relevant to this program* associated with these positions include:

### **Director**

- **Approve key recruitments of communications personnel;**
- **Approve budget allocation to communications (noting some overall approvals may lie with DoEE);**
- **Approve membership of Hub communications coordination team;**
- **Oversee process of review of Hub communications program**

### **Leadership group**

- **Undertake or coordinate reviews of Hub communications plan and program;**
- **Identify higher-level key messaging, and distil this to all personnel and communication products;**
- **Facilitate coordination among key Hub communications and related personnel;**
- **Be represented on communications coordination group**

### **Hub steering committee**

- **Provide advice on communications plan and its implementation;**
- **Endorse communications plans;**
- **Report on stakeholder satisfaction**

### **Chief Administration Officer**

- **Oversee Hub communications budget;**
- **Oversee, or advise on, recruitment of Hub communications personnel;**
- **Coordinate the preparation of annual report;**
- **Be on communications coordination group**

### **Communications and engagement committee**

[see separate Terms of Reference – Appendix A]

### **Communications manager**

- **Manage the communications and engagement program and personnel;**
- **Manage media engagement for projects;**
- **Develop and enhance media opportunities to disseminate the Hub outputs effectively to the diverse mix of stakeholders, especially key stakeholder groups;**
- **Oversee the 'marketing' of all Hub communications products;**
- **Contribute to the preparation of annual report and other Hub-level products;**

- Help develop and overview project-level communications planning;
- Regularly liaise with key stakeholders;
- Compile much of the Hub's communications material;
- Conduct an annual review of the communications plan, and develop and update its implementation plan;
- Review and enhance distribution lists, and stakeholder satisfaction and engagement;
- Monitor and refine communications impact;
- Manage the Hub's communications budget;
- Be on, and administer, the communications coordination group;
- Regularly report on communications matters to the communications committee and the Hub's leadership group.

### **Communications support officer (UQ)**

- Gather relevant visual and written material from projects;
- Maintain website;
- Maintain resource portal and output pages;
- Maintain, enhance and monitor distribution lists, including stakeholder database;
- Distribute e-newsletter, magazine;
- Maintain photo library from project teams and external sources;
- Assist with production of all communications products, including drafting of written material;
- Layout annual reports and other hub level products;
- Serve as a primary response point for public feedback;
- Be on communications coordination group;
- Monitor media.

### **Communications support officer (ANU)**

- Produce quarterly magazine, including text drafting, photo sourcing, layout and production management;
- Be on communications coordination group;
- Contribute texts for e-newsletter and web posts.

### **Knowledge broker**

- Enhance the awareness, and effective delivery, of Hub communications and other related products among key stakeholders;
- Review and report on the uptake of, and degree of satisfaction with, Hub communications and other related products among key stakeholders;
- Identify current and emerging research priorities of key stakeholders, and identify opportunities for Hub response;
- Be on communications coordination group;
- Link key Hub researchers with key stakeholders, to help effectively address stakeholder priority needs;
- Participate in regular communications and knowledge brokering catch-ups with DoEE.

### **Indigenous Liaison Officer**

- Enhance the Hub's profile among Indigenous groups, and increase engagement of those groups in the Hub's activities;
- Facilitate Hub communications with Indigenous groups, including through appropriate design, messaging and medium of Hub communications products;

- Foster an increased cultural awareness and engagement capability among Hub research personnel;
- Alert the Hub's communications program to relevant issues that Indigenous groups want Hub support for or engagement in;
- Be on communications coordination group;
- Advise on the presentation, communication and use of Indigenous knowledge where sought or provided in research activities.

### **Theme leaders**

- Contribute to internal communications (e.g. by regular networking with project leaders, and encouraging them to provide communications products);
- Review communications products provided by project leaders.

### **Project leaders**

- Alert all associated researchers to the Hub's media protocols;
- Mentor project personnel who may require coaching in communications or media;
- Facilitate effective networking and communications among project personnel;
- Facilitate effective networking and communications with stakeholders involved in the project, and in particular seek to understand and provide the project outputs sought by stakeholders;
- Engage regularly with relevant DoEE personnel with interests in the project, and in particular seek to understand and provide the project outputs sought by them;
- Provide timely reports on project progress;
- Identify all relevant stakeholders to the project and provide contact details to administration and communications teams;
- Identify communications opportunities for the project, and work with communications personnel to disseminate project information effectively;
- Develop a brief project communication plan (which identifies at least the key target audiences, messages, and appropriate means of communication);
- Contribute relevant images and other material for use in communications;
- Enhance opportunities for community and other engagement in the project.

### **All Hub researchers** (nb this includes project and theme leaders, etc.)

- Conform to the Hub's branding (and other protocols) for publications, presentations, etc;
- Conform to the Hub's media protocols;
- Conform to the NESP's 'no surprises' policy of providing all research products to DoEE at least 5 days before their release;
- Contribute effectively to internal and external communications;
- Alert project leaders and communications staff to communication opportunities, and provide advice on effective delivery of message;
- Respond appropriately to requests for content from communications personnel;
- Contribute to the broad and effective dissemination of Hub communications products, such as by helping build distribution lists;
- Raise community interest in and awareness of the Hub and of threatened species generally.

The following two groups are not bound by Hub obligations, but may contribute significantly to the communication program of the Hub:

### **(Collaborators and stakeholders involved in Hub projects**

- Where appropriate, help disseminate Hub content within their organisation or networks;
- Contribute to Hub communications products;

- **Bring key perspectives, knowledge or other issues to relevant Hub researchers, including communication of the outcomes and outputs sought by stakeholders from Hub research. )**

**(Existing communications teams at individual Hub nodes, e.g. UQ**

- **Help coordinate and disseminate Hub content within their organisation or networks;**
- **Where appropriate, provide general advice on communications and media matters.)**

## 7. Communications protocols

The Hub will establish and implement protocols for some communications and engagement components. The purposes of such protocols are to help build the Hub's identity and brand; to help monitor communications outputs and effectiveness; and to provide some consistent and shared understanding with stakeholders relating to communications matters. Hub personnel will be expected to respect those protocols.

### *Media*

The Hub's media protocols are detailed in Appendix B. These are designed to help ensure that researchers can be guided through the media process, that media opportunities are optimised, that messaging will be as effective as possible, and that all relevant stakeholders are aware of, and where appropriate acknowledged in, media engagements.

### *Branding and acknowledgements*

Contractual agreements with the Department of the Environment and Energy provide specific stipulations relating to acknowledgements in, and branding of, Hub products. These apply, with some variations, to scientific papers, reports, social media, and presentations. In many cases, there will similar expectations for acknowledgement and branding of collaborating organisations in Hub products. The Hub's protocols for branding are detailed in Appendix C.

### *Scientific papers and reports*

Contractual agreements with the Department of the Environment and Energy stipulate that all scientific papers and reports will be readily and freely accessible online (see also the Hub's data management plan). The Hub will alert the Department at least five days in advance for all such products, using a standard template (detailed in Appendix D, provided by DoEE).

### *Copyright for images and text*

Copyright for images and text will conform with the data management strategy. Written permission (at least via an email) must be obtained for images that are used, and images will be appropriately credited for all use. Especially for images involving Indigenous people, permission to use such images should also be obtained from those individuals shown. Otherwise where relevant, communications material will use creative commons images.



## 8. Monitoring and review

The Hub's communications and engagement program will be subject to ongoing monitoring and regular review, aimed particularly at assessing progress towards its key objectives. Reporting on Hub communications outputs and their value will be annual, at a time when review of this monitoring can be considered for annual iterations in the Hub's research plan, or to identify need for further iteration of this communications and engagement plan. A more substantial final year review will be undertaken, largely to assess the legacy built by the Hub, and the extent to which the Hub's communications and engagement program contributed to that legacy. Annual and Hub-lifetime target levels for these measures will be set by June 2017.

### *Objective: program reporting*

Outcome measures	Annual reports and other key documents satisfy key stakeholders
	Ongoing investment in Hub activities
	Research impact is appropriately measured and reviewed
Other relevant measures	Hub personnel contribute appropriately to timely production of annual reports and other key documents
	Annual reports and other key documents are disseminated appropriately to all collaborators and relevant interested groups
	An annual showcasing of the Hub's research outcomes is favourably received by DoEE and other key stakeholders
	Any impediments to expected project progress are well explained and understood by key stakeholders

### *Objective: internal coordination*

Outcome measures	Hub personnel have interest in, and are aware of, Hub activities, outcomes and protocols. Hub personnel feel part of a Hub team
	The Hub's communication coordination team provides effective delivery of its communications and engagement plan, particularly the effective coordination of communications and other relevant personnel
Other relevant measures	All Hub personnel contribute effectively and appropriately to workshops, virtual and face-to-face meetings, and the communications program (e.g. by contributing material to the program).
	All Hub personnel can readily access all Hub communications material of interest to them
	Project-level communications planning is fit-for-purpose and effectively delivered

### *Objective: identity*

Outcome measures	The Hub (its personnel and communications products) is routinely used as a trusted primary source of information about threatened species by key stakeholders, the media, and the community
	Hub communications products and other outputs reinforce or reiterate key messaging
Other relevant measures	All Hub products are clearly branded, and readily accessible on the Hub's website. All Hub personnel routinely follow approved protocols for communications and engagement

	Hub is widely recognised as an entity amongst the broader conservation community
	Media describing Hub products or information includes specific recognition of NESP TSR
	Metrics describing the extent of access to or use of all Hub communications products are monitored, including by different stakeholder groups

*Objective: community engagement*

Outcome measures	Overall, and in individual research projects, key stakeholder groups feel well connected to the Hub, aware of its activities, and satisfied that it delivers useful outcomes
	Stakeholders improve management or policy due to awareness of Hub research
Other relevant measures	Hub communications products are frequently downloaded, accessed or otherwise disseminated. Stakeholders are keen to follow updates in Hub research
	Hub communications products reach all target audiences, and their message is effectively conveyed
	Hub provides opportunities for engagement in research and other activities to key stakeholder groups and the community generally
	All Hub communications products appropriately also recognise collaborating stakeholder groups

*Objective: receptivity*

Outcome measures	Hub appropriately responds to notification of emerging priorities flagged by key stakeholders
Other relevant measures	Hub regularly engages in forums or information exchanges in appropriate format with key stakeholder groups
	Hub appropriately responds to information requests from at least primary stakeholders
	Stakeholders are satisfied with their interactions with the Hub
	Hub activities are characterised by a high level of collaboration with a diverse set of stakeholders
	Hub monitors uptake of communications products and material to assess preferred means of communication to different stakeholder groups, and responds accordingly to maximise outreach and its effectiveness

*Objective: legacy*

Outcome measures	Knowledge generated by the Hub serves to enhance policy and management, and improves the conservation outlook for threatened species
	Strong connections are forged between different parts of the conservation sector (universities, agencies, NGOs, government, Indigenous landholders, etc)
	The communications skills of all Hub personnel, and especially early- and mid-career researchers, are enhanced and effective

Other relevant measures	Key Hub research outcomes and communications outputs will be readily accessible into the future
	Hub research outcomes are translated effectively to policy and management advice

## **TSR HUB SOCIAL MEDIA Guide – for RESEARCHERS**

### **Social media objectives**

This protocol outlines how TSR Hub researchers can best use Threatened Species Recovery Hub Twitter and Facebook accounts to share updates about their TSR Hub research.

TSR Hub social media aims to:

- Raise awareness of the TSR Hub and its research
- Build and maintain a dialogue with diverse stakeholder groups
- Heighten public understanding and participation in conservation of threatened species

### **Social media profiles**

**Twitter handle:** @TSR\_Hub

**Facebook page:** [www.facebook.com/nespthreatenedspecies](http://www.facebook.com/nespthreatenedspecies)

## 1. Generating content for social media

TSR Hub researchers needn't wait for a translocation to occur or some major activity to take place to post to Twitter or Facebook. There are many activities that researchers might consider 'routine' that other researchers, and the general public, are likely to take an interest in.

Remember your audiences are largely going to be urban: people will respond to imagery of the wild that is uncommon in their lives.

### Consider sharing

- On the ground updates/photos from Project Leaders
- Testimonials from researchers about project progress
- Links to relevant media articles on Hub projects
- Links to new web content
- Links to other relevant online media content – e.g. partners/topical subjects/tie-ins with conservation milestones
- Sharing updates from key stakeholders and individual researchers.

### Social media appointee and approvals

Anyone connected with the TSR\_Hub is encouraged to post about TSR\_Hub projects; the more people contributing to the account, the richer the content and the greater 'shareability'. But it is useful to have one person in particular to help drive social media activity, so we encourage each project to nominate a 'social media' appointee.

This person will work with the TSR Hub Project leader to:

- Post updates directly to Twitter
- Send updates to the communications team to post to Facebook
- Keep the Communications Coordinator in the loop with their social media activities, to ensure that news is maximised.

Regular usage and engaging content is the best way to broadcast your research, and as such, each team is encouraged to post regularly – for example, once per month to Facebook and twice a month to Twitter.

### Tone

Keep messages and interactions friendly, polite and professional – show the human personality of the TSR Hub. Posts should always be professional, and consider the interests and sensitivities of partners and stakeholders.

### More information

If you are new to Twitter or Facebook and would like some advice, tips or tricks when using the platforms, please feel free to get in touch with Susan McNair, Communications Coordinator:  
[susan@curriecommunications.com.au](mailto:susan@curriecommunications.com.au) or +61 3 9670 6599

## 2. Twitter (@TSR\_Hub)



### 2.1 Purpose

Twitter is the primary avenue for TSR Hub researchers to share quick project updates and raise awareness of TSR Hub projects, maintain links with like-minded agencies across the globe, and build a 'community of interest'. Twitter should also be considered a media relations tool.

Twitter can be used to provide links back to news articles on the TSR Hub website or elsewhere; give short updates with an image; call for a person or organisations' attention, or contribute to a relevant conversation.

Anyone can sign-up for a free account; often the hardest part is getting started!

### 2.2 Basic terminology

Twitter can be confronting for new users, there is a lot of terminology to learn. To assist, we've put together a list, as well as some 'best-practice' behaviours, that will help researchers to make the most out of the platform.

A **tweet** is the name of the message broadcast to other users of Twitter. It is limited to just 140 characters – making it difficult for users to write more than one sentence at time. (You might think of a tweet like an SMS message on your mobile phone: a tweet is your broadcast on the internet).

A **handle** (i.e. @TSR\_Hub) identifies another user's Twitter account. By including a handle in your tweet, you 'mention' that user. They get notified of this, and it appears in their feed as well as their followers' feeds.

When a tweet begins with a handle, it becomes a message sent directly to that user. Unlike a standard tweet, only the users that follow both you and the person you tweeted at will also be able to see this message.

A **follower** is a person or account that has expressed interest in what another account is tweeting, and has indicated that they would like to hear more tweets from that user by 'following' them.

A **hashtag** (i.e. #threatenedspecies) is used to group tweets around a certain topic. A hashtag becomes a link to the conversation people are having about that topic, providing they include the hashtag themselves. People on Twitter use hashtags to find other users who share the same interests. It usually a good idea to spend some time viewing other messages that use the hashtag before using it.

### 2.3 Example tweet

Below is an excellent example from TSR Hub researcher Elisa Bayraktarov of how to use Twitter to inform people about TSR Hub research – as well as achieve a project objective at the same time!

**Hot tip:**

-Using a wide range of hashtags creates better engagement for your tweets (we can help with this)

-Remember to only use the handle “@TSR\_Hub” in the Hub’s research projects! When in doubt, use a hashtag instead.

You can tag other Twitter accounts with their “handle”, i.e. @TSR\_Hub. They get notified of this, and it comes up in their followers’ feed.

Your name and Twitter handle appear here

Date

These are hashtags, i.e. #threatenedspecies. These are good for connecting in to conversations others are having on twitter about the same topic. #youcancreateyourown! Or you can use the ones we provide:

- #ThreatenedSpecies
- #Conservation
- #ClimateChange
- #uncharismaticspecies



This shows the amount of “retweets” (where others send forward your tweet because they liked it or thought it was important)

If someone clicks this button, they’ve “favourited” your tweet. Similar to the Facebook “Like”, this shows they like it!

Because Elisa has included the @TSR\_Hub handle in her tweet, the communications team will receive a notification that alerts them to her message.

**N.B.** Images take up space in a tweet, just like characters. It’ll vary what ‘size’ or how many characters the image will use. Remember to take account of this when drafting the text.

Also, you can only use images that you own or have the right to use. For images you find online, check the copyright details from the image’s original website. If you don’t own the image, it’s likely you’ll have to credit the owner: [follow this link to find out more.](#)

## 2.4 Using the @TSR\_Hub Twitter account - best practice

Below you'll find how to best contribute to the @TSR\_Hub Twitter account. Researchers are encouraged to mention the @TSR\_Hub handle in any tweet relevant to their role as a TSR Hub researcher and team member.

TSR Hub researchers needn't wait for the conclusion of their project and their paper to be published in a journal to tweet. There are many activities that researchers might consider 'routine' that the general public are likely to take an interest in.

Consider sharing:

- Preliminary insights
- Key facts or figures
- Discerning quotes

The following hashtags are recommended for you to use:

- #threatenedspecies
- #conservation
- #climatechange
- #uncharismaticspecies

The TSR Hub community is encouraged to post to the @TSR\_Hub account to promote TSR Hub projects and research, TSR Hub researchers, partner organisations and collaborators only.

While Hub researchers are often working on multiple projects, with multiple partner organisations, and have interests in a range of threatened species topics – not all of these are relevant to the TSR Hub. Researchers should refrain from including @TSR\_Hub in tweets if they are not talking about TSR Hub research or projects. The @TSR\_Hub is monitored by the communications team and does not use a personal voice or offer its own opinions.



### 3. Facebook

[www.facebook.com/nespthreatenedspecies](http://www.facebook.com/nespthreatenedspecies)



#### 3.1 Purpose

Facebook can be used to provide updates and visuals on research activity, links back to news articles on the TSR Hub website. It can be used to connect on-ground research activity on a day to day basis, share TSR Hub photos and promote TSR Hub research impacts more broadly.

#### 3.2 Basic terminology

##### **Facebook Account:**

In order to view posts or, in turn, post to Facebook you must create a Facebook account and begin adding people as Friends. This is your personal account and is the basis through which you'll use Facebook.

##### **Posts:**

A post is the primary way to broadcast your message to Facebook. It will appear to your friends and, in some cases, to the public (and be searchable via Google).

##### **Facebook friend:**

Two accounts that connect become 'Facebook Friends'. Your Facebook Friend can see your posts (unless you specify otherwise in your privacy settings), and you can see theirs in your feed.

##### **Feed:**

Your feed is the collection of your friends' posts displayed together. You can run through the posts from all of your Facebook Friends that you follow – this is often referred to as 'scrolling'. If you do not wish to see the posts from a person, you can remain Friends with them but 'unfollow' them, meaning you will no longer see their content.

##### **Like:**

At the bottom left-hand side of each post is a small icon of a 'thumbs up'. This is the Like button and is used to show support for something that has been said, or for the person/ organisation doing the saying.

##### **Share:**

As its name suggests, sharing a post means that you 're-post' it onto your feed. Sharing is the ultimate way your peers can endorse your posts. It means that not only did your Friend 'Like' your post, but they wanted more people to see it. Posts from other Facebook pages will be liked or shared where the content is specifically relevant to the TSR Hub.

##### **Viral:**

In biology, a 'virus' infects a host and manipulates the host cell to replicate the virus, in order to then pass it on. In social media, a post 'going viral' is much the same: a viral post encourages the host to pass it on. Getting a post to 'go viral' is very difficult, with some people arguing that it is not possible to deliberately pull off. But as a principle it is nonetheless useful: the principle is to get your post not just in front of your friends' eyes, but in front of their friends' eyes. Have a go and use your creativity: the world is your oyster.

##### **Tag:**

You can tag a person or organisation that you follow on Facebook by using the '@' symbol in front of the name they use of Facebook. Once you've typed the word, Facebook will give you a number of options from

your Friends to choose from. Your Friend will then get notified of this event, in addition to their followers plus your own. People use this method to give credit or bring awareness to that person – ‘Happy Birthday @John Smith’.

**Page:**

While people create Facebook Accounts, organisations can create Facebook Pages. Public Figures like Kylie Minogue and Barack Obama have Pages from which they (or their team) will broadcast messages on topics relevant to their work. The TSR Hub has a Facebook Page too, and this is the primary way we ask that you engage with TSR on Facebook. Rather than ‘Friending’, people can ‘Like’ Pages (which means they will see the posts from the page in their feed).

To engage with the TSR Hub Page, you could:

1. Tag the TSR Hub in a Facebook post on your personal page
2. Open the TSR Hub Facebook Page and post a message to that page (and all its followers)
3. Send photos to the communications team so they can post from the TSR Hub Facebook page.

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### 3.3 TSR Facebook page – example post

The image shows a screenshot of a Facebook post from the 'Threatened Species Recovery Hub'. The post features a main image of three people holding tortoises, with three smaller thumbnail images below it. The text of the post describes the release of 24 western swamp tortoises in Australia. The post has 366 people reached, 2 shares, and a comment section. Several callout boxes with arrows point to specific parts of the post, explaining their function:

- Here the Page's name appears**: Points to the top header of the post.
- Here a brief description of the action (i.e. post or share) appears.**: Points to the text 'Threatened Species Recovery Hub added 4 new photos to the album: Tortoises (slowly) running wild!'. Below this, it says 'Published by Callum Lobb · August 12 ·'. The main text of the post reads: 'In an Australian first, 24 western swamp tortoises were released into wildlife reserves in WA. The tortoises were released outside of their historic range with the aim of pre-empting likely future climate change conditions.'
- Here the Page's profile picture appears**: Points to the profile picture of the page on the left.
- Here the photos you upload appear.**: Points to the main image and the three smaller thumbnail images.
- Here you can enter concise words describing the central idea or message of the post. This should relate to any images you upload.**: Points to the main text of the post.
- Here you can see how many people have viewed your post. The game is to see how many you can get!**: Points to the '366 people reached' metric.
- Here you can see how many people have liked, commented or shared your post.**: Points to the interaction icons (Like, Comment, Share) and the '2 shares' count.
- Here you can see how many people have shared your post.**: Points to the '2 shares' count.
- Here you can see comments on your post.**: Points to the 'Write a comment...' input field.

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### 3.4 TSR Facebook posting instructions

1. If you haven't already, create a personal Facebook account for yourself (see [www.facebook.com](http://www.facebook.com))
2. Once you've signed in, you'll be able to open the TSR Hub Page. Like the TSR Hub Page by clicking the "like" button (see [www.facebook.com/nespthreatenedspecies](http://www.facebook.com/nespthreatenedspecies)).
3. Post to this Page about your research.

#### What to write about on Facebook

Facebook can be used to tell non-experts about your research. You can tell them about your research directly – by explaining your methodology or research questions. Or you can do it indirectly, by sharing images and stories from your day-to-day projects. We've listed some topics that will likely be popular to Facebook audiences:

- Videos or images from when you release a species
- When you make a field trip
- When you visit a nesting box

Remember your audiences are largely going to be urban: people will respond to imagery of the wild that is uncommon in their lives.

#### Submitting photos to the communications team for the TSR Hub Facebook page

You might like to post a photo that depicts your research or research subjects to the TSR Hub Facebook page. You can post the photo to your personal page, and tag the TSR Hub in that post. This will appear to the Hub's followers in its feed.

Or you can send the photos to the TSR Hub communications team. Facebook formats these images as mini-albums – consider including a mix of the following:

- Photos of the species you are researching
- Photos of the landscapes you are working in
- Photos of you and your colleagues at work
- Describing your research activity: "Today I am collecting samples of x"
- Sharing an interesting fact or figure that is relevant to your Hub project

Include a caption with each photograph that helps to tell a story about your project.

Example:

1. Dr **Yourname** is measuring the **height/weight/numbers** of **plant/animal** as part of **his/her** work on the **TSR Hub's Project Title/Number**.
2. The **plant/animal** is particularly **interesting/threatened** because it is **beautiful/rare/delicious**.
3. Dr **Yourname** is working with **projectpartners/collaborators/departments** to achieve better **understanding/secure habitat** in **location of project**.
4. **Dr Yourname** is feeling **happy/sad/optimistic/pessimistic** about the **species/project** because...  
"Quote"

#### Photo permissions

The TSR Hub communications team will make every effort to credit photographers and will assume that the subjects of the photos have given their permission. Any complaints received by the Hub from subjects in photographs will lead to the images being removed from the Hub Facebook Page.

#### Frequency

Ideally, one post should come through from each project per month. This includes shared posts – posts you've seen elsewhere that is applicable to your research. This could include photos from fieldwork. Or this could include project updates. The goal is to encourage the TSR Hub's network to 'like' the page and share content on their pages to increase exposure.

**Please**

Reach out to like-minded Facebook contacts. We can build support by liking pages and updates and sharing any that are relevant to the TSR Hub's audience.

**Further information:**

If you are new to Facebook or Twitter and would like any advice, tips or tricks when using the platforms, please feel free to get in touch with Susan McNair, Communications Coordinator:  
[susan@curriecommunications.com.au](mailto:susan@curriecommunications.com.au) or +61 3 9670 659

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## **Appendices**

These are also available on the researcher-privileged section of the TSR Hub website.

Appendix A: Terms of reference for Hub communications coordination committee.

Appendix B: Hub media and social media protocols.

Appendix C: Branding and acknowledgements protocols.

Appendix D: Protocols and template for summarising and logging papers and other research products with DoEE.

## **Terms of Reference: NESP TSR Hub Communications Coordination Committee**

### **Background**

The Threatened Species Recovery Hub (TSR) of the National Environmental Science Programme (NESP) undertakes a wide range of research activities aimed at enhancing knowledge, management outcomes and the policy context for the recovery of Australia's threatened species and threatened ecological communities. It involves researchers from many different institutions, working in collaboration with many different stakeholder groups. The Hub is largely funded, and reports to, the Australian government, with particular oversight by the Department of the Environment, the Minister for the Environment and the Threatened Species Commissioner.

### **Purpose**

To provide guidance to the TSR Hub Communication Manager, and report to the TSR Hub's leadership group, in the development and implementation of a communications program that is timely, engaging, credible, and effective, and suitably tailored to a large and diverse suite of stakeholders.

### **Responsibilities of the Committee**

- 1. Work closely with the Communications Manager to**
  - a. Revise the Communications Strategy (first developed in early 2015) by December 2016.**
  - b. Develop an accompanying operational/implementation plan that will define the key communication outputs required, their audiences and content styles, their frequency, and who is responsible for each component, as well as broader strategic communication tasks.**
  - c. Ensure that project leaders are actively engaged with the TSR Hub communications program, so that**
    - i. the communications team are made aware of newsworthy project activities;**
    - ii. opportunities for promoting project activities through any TSR Hub communications output (web, magazine etc) are realised;**
    - iii. media engagement is appropriately managed;**
    - iv. internal communication within the TSR Hub is facilitated; and**
    - v. key stakeholder groups are engaged, and aware of, Hub projects.**
- 2. Provide advice to the Communications Manager on matters of strategic communications, including with the various parts of the DotE, key stakeholder groups, and broader media interest.**
- 3. Be actively involved in the production of the key regular communication outputs (newsletter, magazine, website posts).**
  - a. Identify and plan the content of regular communications outputs before production of each edition starts.**
  - b. Approve the final content of these outputs.**
  - c. Help to refine distribution lists.**
- 4. Provide input and guidance to the media strategy (including social media), and approve content of high profile products such as press releases, as required.**

5. **Provide guidance and input to the production and application of internal communications material, logos, templates, etc.**
6. **Ensure the Communications Manager engages effectively with the Knowledge Broker and the Indigenous Liaison Officer to optimise communications and engagement with relevant stakeholder groups, and internally among TSR Hub researchers and other personnel.**
7. **Review regular monthly reports produced by Communication Manager to ensure the communications program is meeting its targets.**
8. **Ensure the Hub Leadership Group is kept aware of the progress of the communications program, and that they are informed of any high-profile, high-risk, or otherwise notable communications events.**
9. **Develop monitoring for, and provide an annual review of, the components of, and the overall communications program.**

### **Scope**

The TSR Hub Communications Coordination Committee has oversight over the objectives, strategic direction, and content of the communications program. However, this Coordination Committee is not responsible for the direct implementation of the communications program (this is carried out by the Communications Manager, who reports to a designated member of the Hub's Leadership Group).

### **Meetings**

Communication within the Coordination Committee will mostly be by phone and email, organised by the Communications Manager and/or the Chair of the Coordination Committee. A regular meeting will occur at least monthly. Face to face meetings may occur opportunistically.

### **Membership**

- **John Woinarski (Chair of Coordination Committee)**
- **Brendan Wintle (Hub Director)**
- **Martine Maron (Internal Communications; UQ node leader; supervises Communications Manager)**
- **David Lindenmayer (Research Director; ANU node leader; supervises Knowledge Broker and ANU Comms Support Officer)**
- **Sarah Legge (Research Coordination)**

Meetings would also generally include the Communications Manager, Indigenous Liaison Officer and Knowledge Broker, and (where relevant) other communications personnel. Where appropriate, relevant communication personnel from the Department of the Environment may be invited.

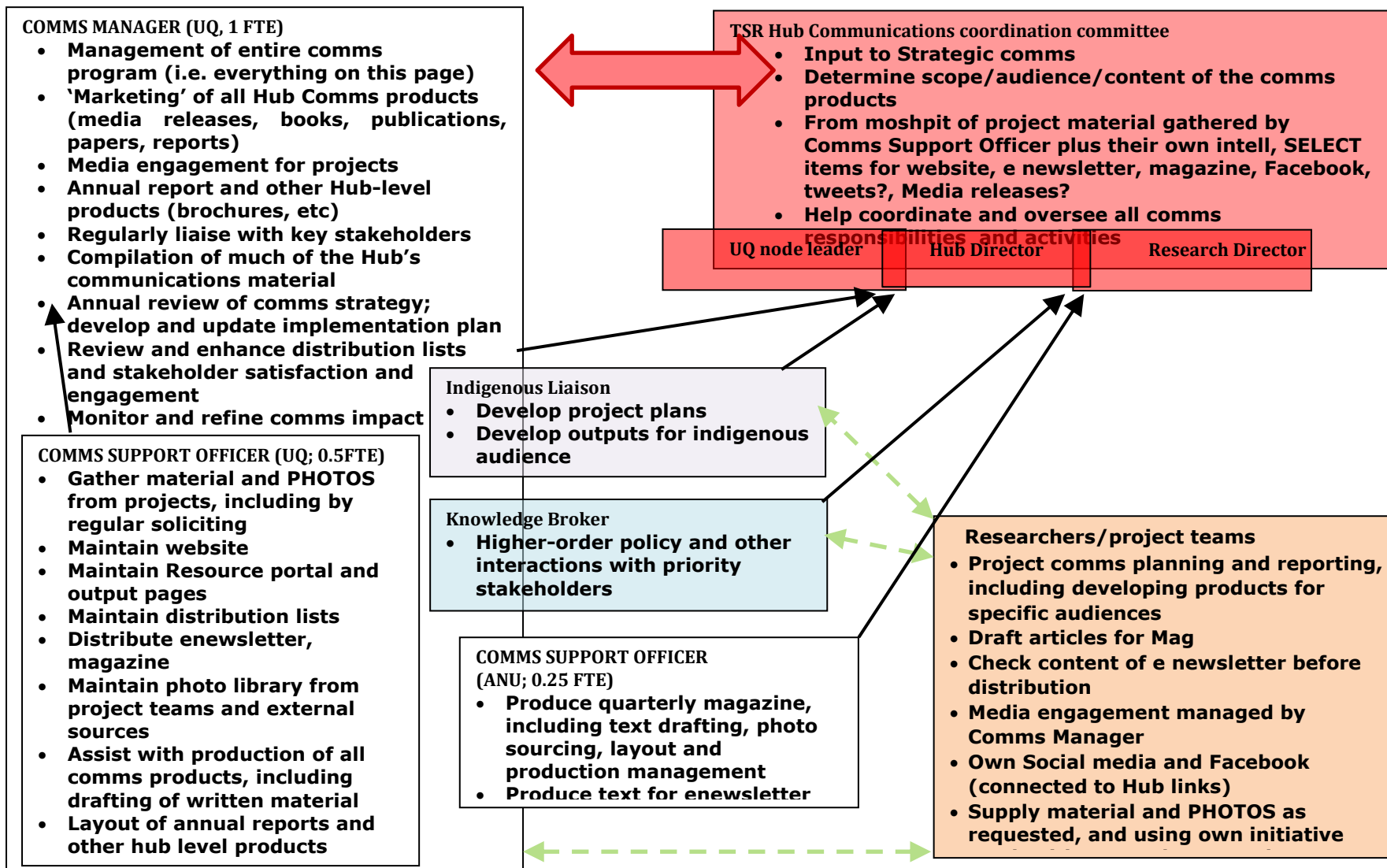
### *Process for selecting members*

The Coordination Committee membership is determined via consensual discussion with the Hub Leadership Group.

### **Reporting**

No reporting requirements, but see Responsibility 8 above.





Black arrow = direct reporting line

Green = no reporting responsibility (interaction only)

**COMMS TEAM = 2 PEOPLE, 2 FTE**

**Organisational chart showing personnel, FTEs, reporting lines, and their contributions/tasks**

## **Threatened Species Recovery Hub Media Protocol:**

**Requirements below are mandatory.**

**To be considered in the context of the TSR Hub communications strategy.**

### **Branding:**

TSR Hub logo, relevant partner logos

### **About TSR Hub:**

*The Threatened Species Recovery Hub is supported by the Australian Government's National Environmental Science Programme.*

### **Boilerplate:**

- Reference to all partners and contributing organisations**
- The following paragraphs**

*The Threatened Species Recovery Hub brings together Australia's leading conservation scientists to help develop better management and policy for conserving Australia's threatened species. It is supported by the Australian Government's National Environmental Science Programme (NESP), a long-term commitment to support environmental and climate research.*

[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au)

### **Contact:**

Susan McNair, TSR Hub Communications Coordinator, phone s47F or 03 9670 6599.

### **Approvals and credits:**

All TSR Hub media releases will be provided to the Department for the Environment and Energy at least five days prior to dissemination.

Every attempt will be made to ensure reactive media is also communicated to the Department in a timely manner.

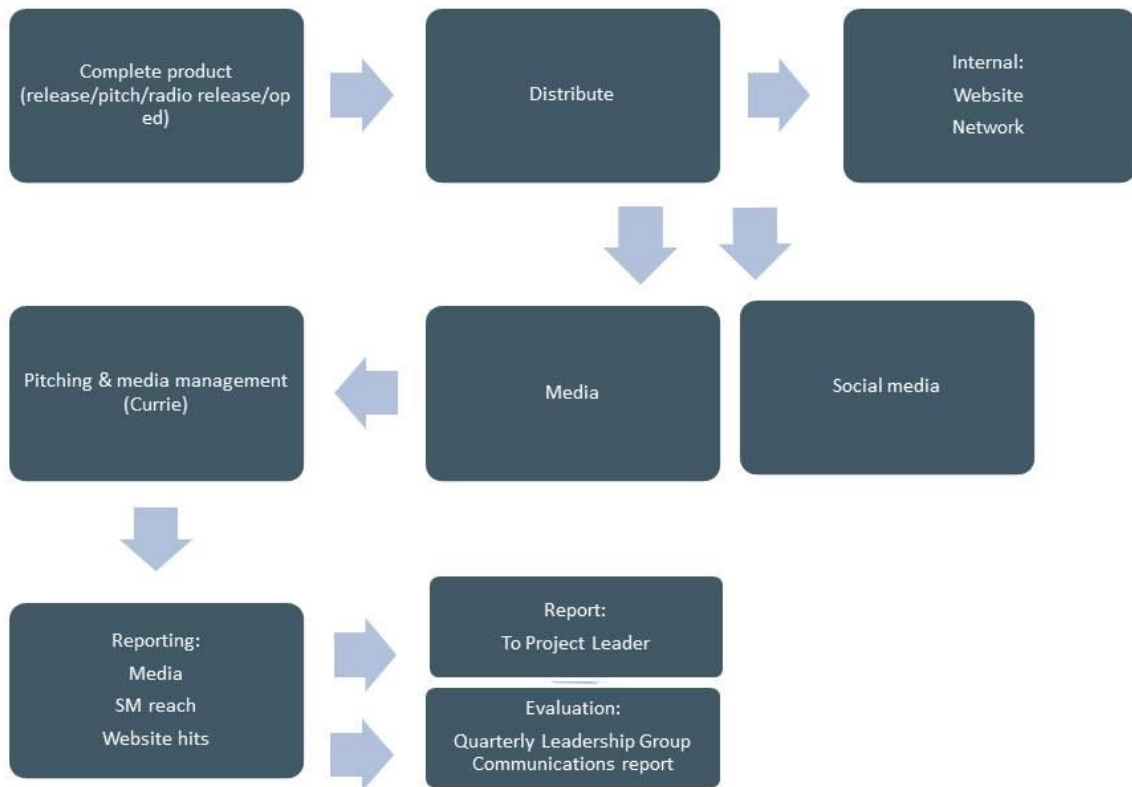
### **Management and reporting:**

All TSRH media releases are managed and distributed via the TSRH communications coordinator. Refer page 2.

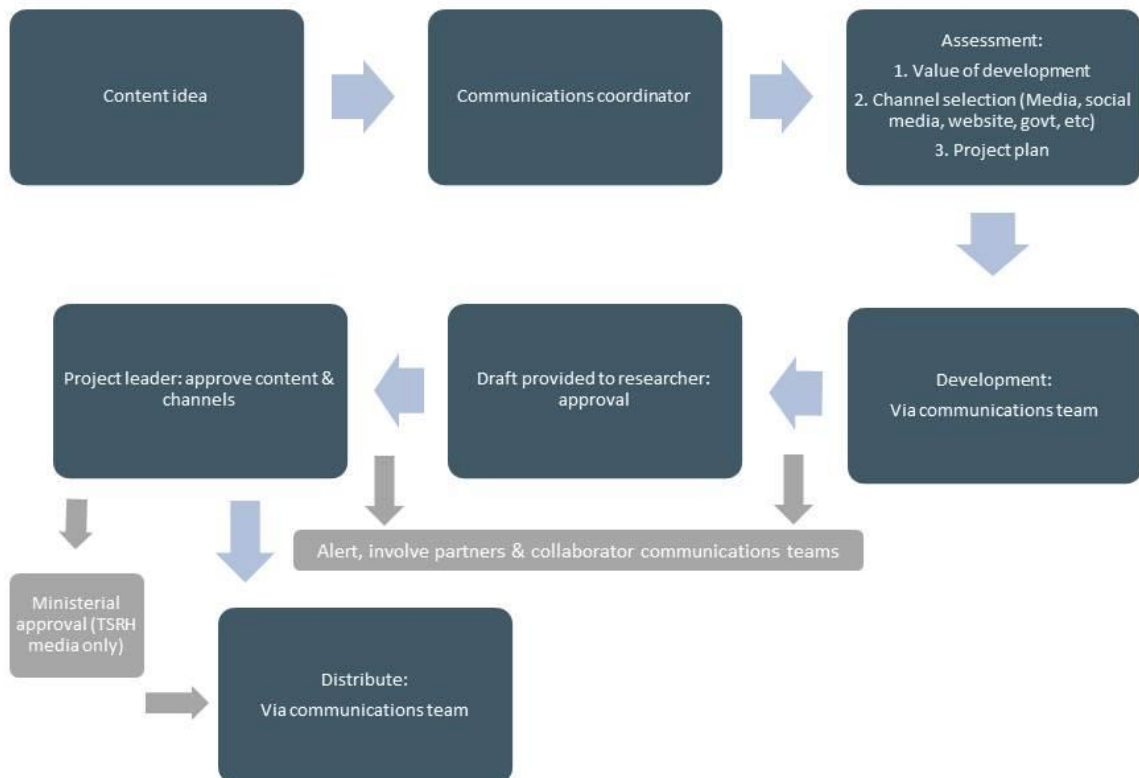
### **Structure:**

No more than 1.5 A4 pages including contact details.

## Media distribution process



## Communications (including media) development process





# Brand and Attribution Guidelines

July 2015 Edition



National Environmental Science Programme



National Environmental Science Programme

Logo Usage



National Environmental Science Programme

## Logo reproduction

The logo must only be used as it appears above. The colour is the Threatened Species Recovery Hub corporate green, Pantone 446 C.

The logo's colour, shape, form, font or design must not be modified in any way. It should never be placed over an image or heavily textured background or as a tint of colour.

Standard Australian Government logo guidelines apply:

[http://www.dpmc.gov.au/sites/default/files/publications/Australian\\_Government\\_Branding\\_Design\\_Guidelines.pdf](http://www.dpmc.gov.au/sites/default/files/publications/Australian_Government_Branding_Design_Guidelines.pdf)


## Minimum width and exclusion

The TSR Hub logo should be printed at least 50mm wide to ensure readability of the National Environmental Science Programme text. A 10mm exclusion zone, free from other images, elements or graphics, should be maintained around the logo.

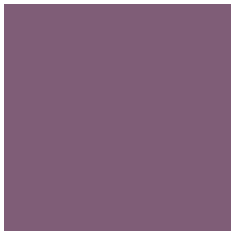
When used in conjunction with the Coat of Arms, the minimum width of the logo is determined by the Coat of Arms being at least 20mm wide as printed, or 65 pixels for screen-based publishing, with the rest of the logo in proportion as supplied. Some exceptions may apply to items that physically demand a smaller logo. It can only be used to show recognition of the Australian Government's support for a NESP hub or research project, it must not be used to give the impression the Australian Government has published a product or endorsed another organisation.

## Associated Design

The colour of the logo (including tints) should be used as the primary design element on hub communication materials. It is intended that the logo be reproduced in full colour CMYK wherever possible. The CMYK breakdown should take precedence over the Pantone solid for full-colour printing.



PMS 3298  
C89 M36 Y73 K25



PMS 7658  
C60 M90 Y40 K0



PMS 221  
C10 M90 Y0 K15



PMS 703  
C0 M90 Y60 K15



PMS 446  
C100 M60 Y100 K10



PMS 547  
C100 M60 Y50 K30



PMS 549  
C60 M20 Y15 K0



PMS 577  
C40 M10 Y80 K0



National Environmental Science Programme

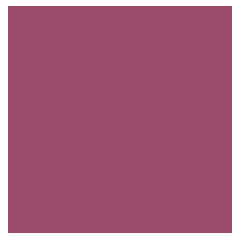
Colours – Web



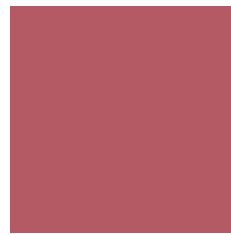
HEX 387469  
R56 G116 B105



HEX 7c5e77  
R124 G94 B119



HEX 9e4c6e  
R158 G76 B110



HEX b45a65  
R180 G90 B101



HEX 636968  
R99 G105 B104



HEX 415866  
R65 G88 B102



HEX 6899ae  
R104 G153 B174



HEX 93b479  
R147 G180 B121



## External use

For use in all print documents and online applications by external communications specialists, graphic and web designers.

### Body copy

Museo Sans 100

Museo Sans 300

**Museo Sans 700**

*Museo Sans 100 Italic*

*Museo Sans 500 Italic*

### Headlines

Museo Slab 300

**Museo Slab 500**

**Museo Slab 700**

## Internal use

**For use in all documents when  
Museo Sans or Slab is unavailable**

Arial Light

Arial Regular

**Arial Bold**

*Arial Light Italic*

*Arial Italic*





Museo Slab 300 14.2 pt/15 pt

Museo Sans 100 7 pt/9 pt

#### Intro Paragraph

**Harum in eatent maximi, aspid mincia nam conseditibus nimende rument et vendicit ressi doluptatet por sent ea sam, quidell andignam aut ullendit qui to cusam laborro et, cus, quibust ruptatiur sit ullameni adistestis mil estemol uptatet volorro rpossitatis molorem idem sequis quia consequodisi imi, es eium vendae**

Museo Slab 700 8.5 pt/10.5 pt

#### Body copy

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Ut apelesti voluptas dolore seque la non pelis abo. Invente cum et dolupta quiatque veniminus et fugit quaernatusam core estoreperum apis vendist

Museo Sans 300 8.5 pt/10.5 pt

#### Pull out text

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Square edge



Contoured



Science for saving  
threatened species



National Environmental Science Programme



**Mountain  
Pygmy  
Possum**  
(Picture: Parks Australia)

**Tackling an unabated challenge**

**A land of vast natural landscapes with extraordinarily rich flora and fauna, Australia is home to more species than any other developed country. Most of our wildlife is found nowhere else in the world.**

But Australia's track record in protecting its unique animals and plants is poor.

The conservation of our biodiversity is founded on an extensive reserve system, good environmental legislation and stable governance. Our community is relatively affluent and interested, and our human population density is comparatively low.

Yet, more plant and mammal species have been rendered extinct in Australia than any other country.



**Community  
plays a vital  
role in bird  
monitoring**  
(Picture: Dave Blair)

**Research with purpose**

**The Threatened Species Recovery Hub tackles this ongoing ecological challenge through science focused on informing policy and improving on-ground management of Australia's threatened species.**

It brings together leading ecological experts to work on the ground for Australia's threatened species and ecological communities by:

- Developing better, more efficient responses to threats
- Testing novel strategies for rescuing species on the brink
- Developing strategies to provide an early warning about extinction risk
- Ensuring the best tools and most up-to-date information to monitor conservation status
- Involving communities in threatened species conservation and sharing the benefits of healthy ecosystems.

**A \$60 million partnership, world-class expertise**

The \$60 million Threatened Species Recovery Hub is supported by funding through the Australian Government's National Environmental Science Programme (NESP), and matched by contributions from 10 of the country's leading academic institutions and the Australian Wildlife Conservancy. Established in June 2015, it will conclude in June 2021.

Led by Professor Hugh Possingham (The University of Queensland), and supported by deputy directors Associate Professor Brendan Wintle (University of Melbourne), Professor David Lindenmayer (Australian National University), Dr Sarah Legge, Professor Stephen Garnett and Professor John Woinarski (Charles Darwin University), and Associate Professor Martine Maron (University of Queensland), the research team of 48 includes some of the world's foremost conservation science experts.

It works closely with more than two dozen collaborating organisations, including management agencies and conservation groups, to ensure Threatened Species Recovery Hub research has an on-ground impact in threatened species management.



The Greening Green Frog breed is threatened under the Environment Protection and Biodiversity Conservation Act 2000.  
(Picture: Geoff Heard)



Endangered Macbrack  
Barkha Shrestha  
curatorial (Picture  
www.flickr.com/  
photos/lee\_horn)

Cover example

Layout example

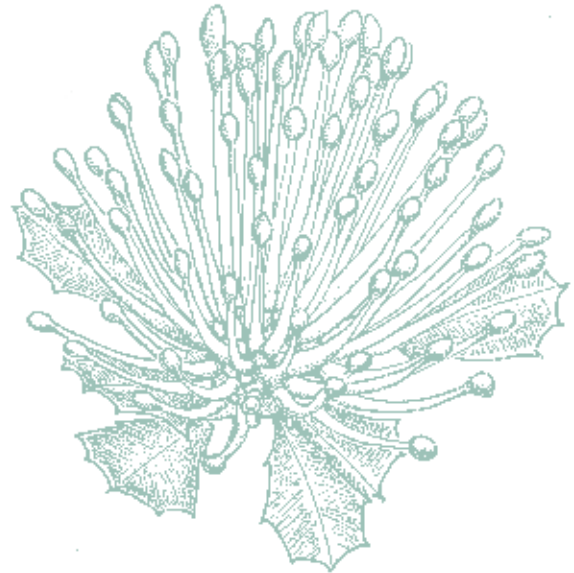


National Environmental Science Programme

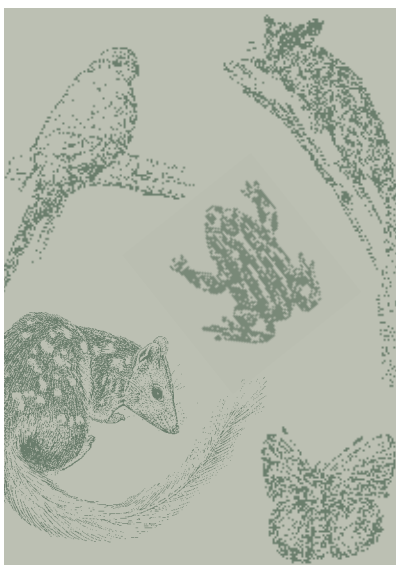
## Watermark Guidelines

Communication products under each of the TSR Hub research themes are to use visual indicators as watermarks within the design. The visual indicators assigned to each theme are:

- Theme #1 – Banksia Cuneata
- Theme #2 – Orange Bellied Parrot
- Theme #3 – Leadbeater’s Possum
- Theme #4 – Corrobee Frog
- Theme #5 – Northern Quoll
- Theme #6 – Bathurst Purple Copper Butterfly
- Theme #7 – TBC



Corporate watermark



Back of printed letterhead



Watermark example on coloured background eg. brochure



**Threatened  
Species  
Recovery  
Hub**

National Environmental Science Programme

Letterhead



**First page**

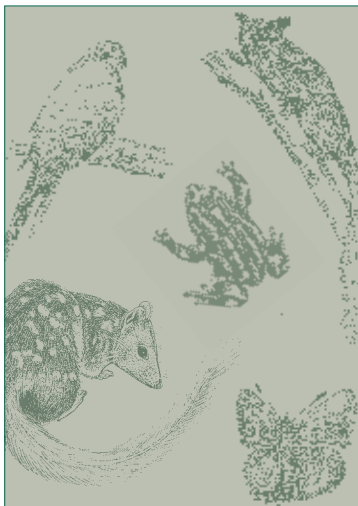
All documents must include this first page with funding partners logo footer

Funding partners logo footer



**Follower**

Subsequent pages in document to use this page



**Back of printed letterhead ONLY**

(not included in Word file)

**What to include:**

	Logo	Funding partners	Funding partners (logos by discretion)	Collaborating organisations
Tier 1		✓		
Tier 2	✓			
Tier 3	✓		✓	
Tier 4	✓		✓	✓
Tier 5	✓			

**Tier 1: Science publication/paper**

This study was supported by funding from the Australian Government’s National Environmental Science Programme.

Funding partners include:

*(include)*

Institution of researcher/s

*(include relevant)*

The University of Queensland	Australian Wildlife Conservation
Australian National University	University of New South Wales
University of Melbourne	Monash University
Charles Darwin University	University of Sydney
RMIT University	University of Tasmania
University of Western Australia	



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Attribution Protocols

## Tier 2: Generic

*(include logo)*



National Environmental Science Programme

This project / The Threatened Species Recovery Hub is supported by funding from the Australian Government's National Environmental Science Programme.

## Tier 3: Hub products

*(include logo)*



National Environmental Science Programme

This project / The Threatened Species Recovery Hub is supported by funding from the Australian Government's National Environmental Science Programme.

Funding partners include:

*(include relevant, logos by discretion)*

The University of Queensland	Australian Wildlife Conservation
Australian National University	University of New South Wales
University of Melbourne	Monash University
Charles Darwin University	University of Sydney
RMIT University	University of Tasmania
University of Western Australia	



National Environmental Science Programme

Attribution Protocols

### Tier 4: Project specific products

*(include logo)*



National Environmental Science Programme

This project/study is supported by funding from the Australian Government’s National Environmental Science Programme.

Funding partners:

*(include relevant, logos by discretion)*

The University of Queensland	Australian Wildlife Conservation
Australian National University	University of New South Wales
University of Melbourne	Monash University
Charles Darwin University	University of Sydney
RMIT University	University of Tasmania
University of Western Australia	

Collaborating organisations:

*(include relevant, no logos)*

- |  |  |
|--|--|
| ACT Government, Environment and Planning                                 | Department of Primary Industries, Parks, Water and Environment (TAS) |
| Department of Parks and Wildlife (WA)                                    | The PEW Charitable Trusts  |
| Birdlife Australia   | Department of Environment, Water & Natural Resources (SA)            |
| Department of Land Resource Management (NT)                              | Royal Botanic Gardens Melbourne                                      |
| Booderee National Park   | Taronga Conservation Society Australia                               |
| Department of Environment and Heritage Protection (QLD)                  | Woodlands and Wetlands Trust   |
| Bush Heritage Australia  | Tasmanian Land Conservancy   |
| Greening Australia   | WWF Australia  |
| CSIRO Publishing   | Threatened Plants Tasmania (Wildcare Inc)                            |
| NSW Office of Environment and Heritage                                   | Royal Zoological Society of SA Inc                                   |
| Department of Environment, Land, Water and Planning (VIC) Parks Victoria | The Nature Conservancy   |





National Environmental Science Programme

Attribution Protocols

## Tier 5: Media releases

*(include logo)*



National Environmental Science Programme

This project / The Threatened Species Recovery Hub is supported by funding from the Australian Government's National Environmental Science Programme.

All media releases will include in the text:

1. Reference to all relevant partners and contributing organisations.
2. The following paragraphs

The Threatened Species Recovery Hub brings together Australia's leading conservation scientists to help develop better management and policy for conserving Australia's threatened species.

It is supported by the Federal Department of Environment's National Environmental Science Programme, a long-term commitment to environmental and climate research.

For all branding and attribution queries and files,  
please contact the Communications Coordinator:

**Susan McNair**  
03 9670 6599  
susan@curriecommunications.com.au



**Threatened  
Species  
Recovery  
Hub**

National **Environmental Science** Programme

Coated

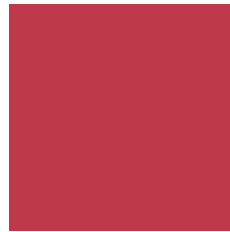
PMS 3298  
C100 M40 Y80 K0



PMS 7658  
C70 M100 Y50 K0



PMS 221  
C2 M100 Y10 K40



PMS 703  
C0 M90 Y40 K15



PMS 446  
C90 M50 Y70 K30



PMS 547  
C100 M80 Y60 K40



PMS 549  
C60 M20 Y15 K0



PMS 577  
C15 M0 Y40 K5



The Department requires NESP funding recipients to provide data and information products produced using program funds. To support this activity, the Department has developed a PDF Research Product Submission Form. The PDF form contains embedded information to assist researchers in completing the form. Instructions for completing the form are provided below for researchers completing the form outside of Adobe and/or experiencing compatibility issues.

### Research Product Submission Form

The Australian Government will use the research product and information provided in this form to share the knowledge generated under the NESP, support its adoption and identify opportunities to promote NESP research.  
**Hold the cursor over each answer field for instructions on completing this form.**

Project Information	
Hub name	Select from the options below
Project number	
Project title	
Product lead author/researcher	
Program funding (NESP/NERP/CERF/Combination)	

Research Product Information	
Select the type of research product	Select from the options below
Other	
Title	
Journal or location name	
DOI	
Citation	
Synopsis	
Media/other interest	
Keywords	

Research Product Accessibility	
Date of publication	
Date of product availability	
Location of product availability	
Version of product attached	

I certify that I have attached the copy of the publication that can be provided to and used within the Australian Government in accordance with the specific publisher copyright restrictions that relate to this product.

Email Form

Functionality may be limited unless opened in Adobe. If the instructions do not appear or the above button does not work, visit [www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) for instructions and email the form to your Hub Communications or Administration Officer.

The project number is the number used to identify the project. For NESP Hubs, this will be the number assigned to the project in the Research Plan. For Emerging Priorities projects please put N/A

This field requires the full title of the project

This field can reference more than one program if multiple programs contributed funding to support the development of this specific product

This is the name of the overall publication or database of which your work is a part i.e. name of the journal, database, book title, synthesis product, report title. If relevant, provide volume and page numbers

This is the citation that should be used when referencing the research product or dataset

This field requires information on whether or not this product is likely to generate media interest or controversy amongst stakeholders. If you do not believe this product will generate media interest, mark the box as N/A. If you are unsure, speak to your Communications Officer or contact the Department

This is the date on which the research product was published by a journal, Hub website or other medium. If the exact date is not known, please provide the most likely date as advised by the publisher of the product

Include a description of the location where this research product can be located and openly accessed. Please insert web address to your publication e.g. URL, DOI, journal portal, meta data location, data location, hub website, Google books etc

This button can only be clicked once all fields have been completed. Once clicked, Adobe will launch an email with this form as an attachment. Please attach your product to the email and send to your Communications/Administration Officer for submission to the Department

This box must be checked in order to confirm that the submitted publication is the version that can be used by the Australian Government

This is the name of the work you have produced, i.e. the title of the journal article, data record, book chapter, report, synthesis product etc

This is the Digital Object Identifier that can be used to access the research product or datasets

Please provide a 100-200 word plain English summary of your publication, including implications for government policies or programs. This should be cleared by your hub Communications Officer prior to submission

Keywords are words that were identified in your project plan to assist with the search functionality of your research

This is the date from which the research product will be freely and openly available to the public

Are you attaching a pre/post/re-print version of a journal article or a final version of a published chapter, online version of a management tool etc

This field requires the name of the lead author(s) of this product. Please note that the name may be different to that of the Project Leader

*Providing discoverable, accessible and re-usable data and information products derived under the National Environmental Science Programme will provide up-to-date, high quality data and information to decision-makers, environmental managers, other scientists and the community. This will increase the capacity of the program to support a more collaborative, informed approach to managing Australia's environment.*



## Funding partners:



## Collaborating organisations:

ACT Government, Environment and Planning

BirdLife Australia

Booderee National Park

Bush Heritage Australia

CSIRO Publishing

Department of Environment, Land, Water and Planning (VIC)

Department of Primary Industries, Parks, Water and Environment (TAS)

Department of Environment, Water & Natural Resources (SA)

Taronga Conservation Society Australia

Tasmanian Land Conservancy

Threatened Plants Tasmania (Wildcare Inc)

The Nature Conservancy

Department of Parks and Wildlife (WA)

Department of Land Resource Management (NT)

Department of Environment and Heritage Protection (QLD)

Greening Australia

NSW Office of Environment and Heritage

Parks Victoria

The PEW Charitable Trusts

Royal Botanic Gardens Melbourne

Woodlands and Wetlands Trust

WWF Australia

Royal Zoological Society of SA Inc

## Further information:

<http://www.nespthreatenedspecies.edu.au/>

## Contact:

Professor John Woinarski  
Charles Darwin University  
c/o Centre for Biodiversity and Conservation Science  
Room 532, Goddard Building  
The University of Queensland  
St Lucia, QLD 4072, Australia  
M s47F  
E [john.woinarski@cdu.edu.au](mailto:john.woinarski@cdu.edu.au)

**From:** [Beth Brunoro](#)  
**To:** s47F; s47F; [Nicholas Post](#); s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 28 June 2019 2:39:51 PM  
**Attachments:** [image007.png](#)

---

Agree – thanks s47F

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Friday, 28 June 2019 2:36 PM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F@s47F@environment.gov.au>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <s47F@environment.gov.au>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Hi all,

I think another useful document to provide context to the current discussion is the Hub's communications plan (attached). The Department approved this strategy as part of Research Plan Version 3 at the end of 2016.

Cheers,

s47F

s47F  
Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*  
Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** Beth Brunoro  
**Sent:** Friday, 28 June 2019 1:59 PM  
**To:** s47F <s47F@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]  
**Importance:** Low

Thanks for these

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F  
**Sent:** Friday, 28 June 2019 1:20 PM  
**To:** Beth Brunoro <Beth.Brunoro@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Agreed there is a difference of opinion on the role of the Hub that needs to be resolved. I encouraged Brendan to change the approach to start with conversations about objectives in an attempt to start to shift the culture and nature of interactions, plus develop a better understanding within the Hub of the points we raise, but agree the roles issue is fundamental and perhaps what we need to be direct about.

Happy to help where I can and agreed both some internal discussion and conversation with Brendan is necessary.

Please find attached the documents you requested.

s47F

---

**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 12:35 PM

**To:** s47F <s47F@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks s47F

This is not an approach I will support. I think the best course of action is a discussion with Brendan next week when Nick is back on deck. We should have a huddle internally ahead of that.

I will send an email to Brendan. No need for you to further contact him ahead of that discussion. Thanks for your efforts with Brendan to date, there seems to be a fundamental difference of perspectives on the role of the hub.

Can you or s47F send around the most recent version of the research priorities for the hub and the soft copy of their contract please

cheers

**Beth Brunoro**

First Assistant Secretary

Knowledge and Technology Division

Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** s47F

**Sent:** Thursday, 27 June 2019 5:05 PM

**To:** Beth Brunoro <Beth.Brunoro@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>

**Subject:** Fwd: pathway for working together on 'spending to save'

Hi,

Please see below from Brendan a proposed approach to next steps on the 'spending to save' paper, shaped by some rethinking around the TSR approach more generally.

We have had discussions around getting better outcomes by changing tack - starting with open discussions on objectives to figure out mutually agreed aims, then collaboratively deciding on actions with the benefit of both science and APS perspectives.

Retrofitting required on this occasion, but a good opportunity to have a go at building a more effective approach. Happy to elaborate/discuss.

Please let me know your thoughts. Happy to steward once we've agreed the way forward.

Cheers

s47F

Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
**To:** s47F <s47F@environment.gov.au>  
**Subject:** pathway for working together on 'spending to save'

Dear s47F,

Thanks for the chat just then providing some context for discussion about our draft manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work



and policy implications.

4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, S47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland <sup>(11)</sup><sub>(11)</sub>  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?hl=en&user=bwintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)



National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the*

*Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Nicholas Post](#)  
**To:** s47F  
**Subject:** Re: Hope the move goes ok today. [SEC=OFFICIAL]  
**Date:** Saturday, 29 June 2019 5:20:16 AM

---

s22

>  
>  
> -----Original Message-----  
> From: Nicholas Post  
> Sent: Friday, 28 June 2019 1:19 PM  
> To: s47F <s47F@environment.gov.au>  
> Subject: Re: Hope the move goes ok today. [SEC=OFFICIAL]  
>  
> Thanks.  
>  
> Pt 1 - frustrating and agree requires some focus.

s22

> Sent from my iPhone  
>  
>> On 27 Jun 2019, at 8:08 pm, s47F <s47F@environment.gov.au> wrote:  
>>  
>> Not especially.  
>>  
>> The TSR hub 'spending to save' paper has caused us all some concern. As you will have seen Beth is engaging directly on the matter. The analysis isn't a deliverable under our agreement with them and I don't think it is helpful in providing any evidence base for policy development as it isn't looking at the right question, i.e. how do you target your spend for best results, but we have to work with the hub on managing the way forward. I have some ideas on this that we can discuss on Monday, but it probably starts with re-stating and perhaps reshaping our objectives with the hub.  
>>

s22

s22

**From:** s47F  
**To:** "Brendan Wintle"  
**Cc:** s47F; s47F; s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Tuesday, 2 July 2019 10:21:23 AM

---

Good morning Brendan,

My apologies but I am hoping we can move your phone call with Beth and Nick until Friday afternoon? Are you available from 2-2:30pm?

Sorry for the late notice.

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary

Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Friday, 28 June 2019 4:37 PM

**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F <Lee-

s47F@environment.gov.au>; s47F

<s47F@environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Yes. Thanks s47F .

From phone

On 28 Jun 2019, at 2:24 pm, s47F <s47F@environment.gov.au> wrote:

Good afternoon Brendan,

Do you have availability for a phone call with Beth and Nick at 4:30pm on Tuesday, 2 July?

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 1:19 PM

**To:** 'Brendan Wintle' <b.wintle@unimelb.edu.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Great – s47F will ring you this afternoon.

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

[<image001.gif>](#) [<image002.gif>](#) [<image003.gif>](#) [<image004.gif>](#)

---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

**Sent:** Friday, 28 June 2019 1:09 PM

**To:** Beth Brunoro <Beth.Brunoro@environment.gov.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Absolutely. When Nick is back and everyone is available. Not a screaming rush.

Cheers,  
Brendan

---

**From:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>  
**Date:** Friday, 28 June 2019 at 12:39 pm  
**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Cc:** Nick Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, s47F  
<s47F @environment.gov.au>, s47F <s47F  
s47F @environment.gov.au>, s47F  
<s47F @environment.gov.au>, s47F  
<s47F @environment.gov.au>

**Subject:** FW: pathway for working together on 'spending to save'  
[SEC=OFFICIAL]

Hi Brendan

I have asked my EA s47F to reach out to you to set up a meeting as early as we can next week to discuss a way forward. Best to do this when Nick is back on deck – he is on his way back from NY as I type.

I understand there is no imminent deadline re the paper so we can wait until we can find a time?

cheers

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy  
  
GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

[<image005.gif>](#) [<image006.gif>](#) [<image007.gif>](#) [<image008.gif>](#)

Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
**To:** s47F <s47F  
s47F @environment.gov.au>  
**Subject:** pathway for working together on 'spending to save'

Dear s47F,

Thanks for the chat just then providing some context for discussion about our drat manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in

our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work and policy implications.
4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.



Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland   
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?user=9111111111111111)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
<image009.png>

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

s47C

**s47C**

s47C

**s47C**

**From:** [Nicholas Post](#)  
**To:** [Kylie Jonasson](#); [Sally Box](#)  
**Cc:** [Beth Brunoro](#); s47F  
**Subject:** Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Tuesday, 2 July 2019 5:19:41 PM  
**Attachments:** [Wintle et al - Spending to save Australian threatened species\\_forDoEE.PDF](#)  
[Figure 1.jpg](#)

---

Kylie and Sally,

I understand that Beth has reached out to you in regard to a paper prepared by the TSR Hub leadership team entitled 'Spending to save Australian threatened species'. The paper (attached) has been submitted to the Conservation Letters Journal and unfortunately provides commentary on a range of policy issues, however, we have been reassured that publication is not imminent. Beth and I are meeting with Brendan Wintle later this week to remind him of the importance of focusing on science rather than policy matters. We will also provide an update on our standing guidance on science communication. I will ensure that you are both updated on developments and have an opportunity to engage as we move forward

Regards

Nick

-----  
**Dr Nick Post**

Assistant Secretary Environmental Accounts and Science Branch  
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1 **CONSERVATION LETTERS**

2

3 **Article title:** Spending to save: what will it cost to halt Australia's extinction crisis?

4

5 **Authors:** Brendan A. Wintle<sup>1</sup>, Natasha C.R. Cadenhead<sup>1</sup>, Rachel A. Morgain<sup>2</sup>, Sarah M.

6 Legge<sup>2,3</sup>, Sarah A. Bekessy<sup>4</sup>, Hugh P. Possingham<sup>3,5</sup>, James E.M. Watson<sup>3,6</sup>, Martine

7 Maron<sup>3</sup>, David A. Keith<sup>7</sup>, Stephen T. Garnett<sup>8</sup>, John C. Z. Woinarski<sup>8</sup>, David B. Lindenmayer<sup>2</sup>

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24 david.keith@unsw.edu.au; stephen.garnett@cdu.edu.au; john.woinarski@cdu.edu.au;  
25 david.lindenmayer@anu.edu.au

26 **Short running title:** Spending to save Australia's threatened species

27 **Keywords:** budget; costs; Endangered Species Act; funding; government spending;  
28 recovery plan; resource allocation; threatened species; transparency; USA

29 **Type of article:** Policy perspective

30 **Length abstract:** 150

31 **Length main article:** 2971

32 **References:** 30

33 **Figures and tables:** 2

34 **Corresponding author:** Professor Brendan A. Wintle; School of Biosciences, University of  
35 Melbourne, Victoria, 3010, Australia; b.wintle@unimelb.edu.au

36



37 **ABSTRACT**

38 As with most governments world-wide, Australian governments list threatened species and  
39 proffer commitments to recovering them. Yet most of Australia's imperilled species continue  
40 to decline or go extinct and a likely cause is inadequate investment in conservation  
41 management. However, this has been difficult to evaluate because the extent of funding  
42 committed to such recovery in Australia, like in many nations, is opaque. Here, by collating  
43 disparate published budget figures of Australian governments, we show that annual  
44 spending on targeted threatened species recovery is around US\$90m (AU\$121m) which is  
45 around one tenth of that spent by the USA endangered species recovery program, and  
46 about 15% of what is needed to avoid extinctions and recover threatened species. Our  
47 approach to estimating funding needs for species recovery could be applied in any  
48 jurisdiction and could be scaled up to calculate what is needed to achieve international goals  
49 for ending the species extinction crisis.

## 50 1 | INTRODUCTION

51 The Anthropocene is characterized by species extinction rates between 100 and 1000 times  
52 higher than background rates (Barnosky et al. 2011). Humans are responsible for the vast  
53 majority of extinctions in the past 400 years due largely to habitat destruction and  
54 degradation, over-exploitation and the introduction of invasive species and diseases (Lewis  
55 & Maslin 2015). In Australia, the drivers of extinction broadly reflect the global profile,  
56 although invasive species have played a relatively larger role compared to most of the rest  
57 of the world (Kearney et al. 2018). A potent combination of rapid habitat destruction and  
58 introduced predators, herbivores and pathogens, has resulted in Australia losing more  
59 biodiversity than any other developed nation in the past 200 years (Waldron et al. 2017).

60 Australia's obligations under the Convention for Biological Diversity (CBD) include meeting  
61 the United Nation's Strategic Plan for Biodiversity Aichi Target 12: "...by 2020 the extinction  
62 of known threatened species has been prevented and their conservation status, particularly  
63 of those most in decline, has been improved and sustained" (CBD 2010). However, during  
64 the past decade, imperilled species in Australia have continued to decline and at least three  
65 species have been allowed to go extinct (Woinarski et al. 2017).

66 There is an urgent need to address the extinction crisis in Australia; the response will require  
67 regulatory reform, increased funding allocated to species security, protection and recovery,  
68 and more effective, targeted and enduring management (Walsh et al. 2013; Kearney et al.  
69 2018). This paper focuses on the funding shortcomings that have contributed to Australia's  
70 failure to meet the Aichi target. To date, arguments for increasing funding have not been  
71 backed by detailed analysis of the current situation (but see Howell & Rodger 2018 for an  
72 analysis of *research* investment). Such analysis has been hampered by poor information  
73 about what is currently spent on threatened species conservation and recovery in Australia.  
74 We provide the first published estimate of direct expenditure by Australian governments on  
75 threatened species recovery aggregated across the Commonwealth, states and territories,  
76 and estimate how much Australia *should* have been spending to meet its CBD obligations to

77 prevent further biodiversity loss. While the paper focuses on Australian spending, the  
78 approach we take to estimating funding needs could be applied in any country or jurisdiction  
79 from local governments to multi-country entities, such as the European Union. The approach  
80 could be scaled up to calculate spending required to achieve international commitments to  
81 ending the extinction crisis, recognising that adequate spending will need to be  
82 accompanied by regulatory and policy reform to curb habitat loss and over-exploitation.

83

#### 84 ***Australia's extinction crisis***

85 Australia has 1866 taxa listed as extinct or threatened with extinction under the *Environment*  
86 *Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia 1999),  
87 hereafter EPBC Act. Of these, the majority (1356) are plants, followed by birds (155),  
88 mammals (133), invertebrates (64), reptiles (63), fishes (58), and amphibians (33). These  
89 tallies are likely to severely under-estimate the numbers of species that are actually  
90 threatened with extinction: species that are undescribed, data deficient, or less charismatic  
91 (e.g. invertebrates) are much less likely to be listed (Walsh et al. 2013).

92 The proportional extent of known loss has been largest for endemic mammals: at least 34  
93 Australian mammal species – 10% of its mammalian fauna – have become extinct since  
94 European settlement (Figure 1) (Woinarski et al. 2015). Extinction of Australian reptiles is  
95 also notable. The three recent Australian reptile extinctions (Andrew et al. 2018) are the only  
96 known extinctions of reptiles in the world since the 1970s (IUCN 2018). Plants are the  
97 sleeping giant of the extinction crisis, with an order of magnitude more species listed at risk  
98 of extinction than in other groups (Keith et al. 2017).

99 The past decade has seen a rapid decline in expenditure on environmental management in  
100 Australia, with cuts of 37% to environmental investments in the Australian Government  
101 budget since 2013 (ACF 2018). The decline in expenditure and ongoing species loss has  
102 drawn sharp criticism from the international community (OECD 2008) and independent

103 domestic authorities (ANAO 2006; Cresswell & Murphy 2016). Relative to the scale of  
104 biodiversity loss, it has been asserted that Australia underspends on biodiversity  
105 conservation relative to other countries of comparable wealth (Waldron et al. 2017).  
106 However, detailed accounting of actual spending on threatened species recovery in Australia  
107 is currently lacking.

108

## 109 **2 | WHAT IS AUSTRALIA DOING?**

### 110 ***Funding for threatened species recovery in Australia***

111 Ideally an assessment of the effectiveness of funding to recover listed threatened species  
112 would be based on a collation of budgetary requirements foreshadowed in species' recovery  
113 plans, budgets actually allotted to such recovery efforts, and the extent to which this  
114 expenditure has led to recovery. However, all three of these components are difficult to  
115 assess in Australia, because many listed species do not have recovery plans; many  
116 recovery plans do not include budgets; budgets, where included, contain too little detail to  
117 assess whether the estimates are reasonable; there is little accounting of expenditure on  
118 individual species' recovery efforts; few Australian threatened species are monitored with  
119 sufficient statistical power (Legge et al. 2018); and few Australian threatened species have  
120 demonstrably recovered.

121 With the direct approach unavailable, we instead attempt to estimate the spending by  
122 Australian governments on conservation of threatened species and benchmark this rate of  
123 spending against a comparable nation that has achieved demonstrable recovery of  
124 threatened species.

125 Detailed analysis of Australia's current threatened species expenditure is hampered by the  
126 lack of specific reference to threatened species spending in Australian Government federal  
127 and state budget papers, and a lack of reporting on conservation expenditure for individual  
128 threatened species. To estimate government spending on threatened species, we examined

129 environment-relevant budgets from 2015/16–2018/19 across all Australian jurisdictions.  
130 Australian Government budgets report down to just a few program lines (Table S1), requiring  
131 further investigation beneath the program level to ascertain which components of program  
132 spending were either directly, indirectly, or not at all related to threatened species recovery.  
133 We classified each program line into targeted (direct), relevant, or non-relevant threatened  
134 species recovery components, justifying each breakdown with reference to program annual  
135 reports and other evidence obtained via grey literature or personal communications (Tables  
136 S1–S2). In all cases, we detailed assumptions and references to relevant documents, such  
137 as annual reports, for each budget line.

138 We estimate that targeted threatened species spending by the Australian Government  
139 amounts to US\$38.1m (AU\$49.6m) for the 2018/19 financial year (Table S1), down from  
140 US\$51.6m (AU\$67.4m) the previous year (Supporting Information S4). The newly released  
141 figures for 2019-20 show a slight increase of US\$3.8m (AU\$5m) (Supporting Information  
142 S4).

143 Including both targeted (direct) expenditure seeking to recover threatened species and other  
144 relevant expenditure, the estimated upper limit of investment by the Australian Government  
145 in biodiversity is about US\$293m (AU\$391m), down from US\$347m in 2017/18  
146 (Commonwealth of Australia 2018). The broad category of relevant but not targeted  
147 programs includes several programs that *may* contribute to some aspects of threatened  
148 species recovery. For example, expenditure under the Commonwealth Environmental Water  
149 Office might assist threatened species conservation by improving some habitats in some  
150 areas that contain threatened species; however, its activities are not *targeted* to deliver  
151 specific outcomes for particular threatened species (Table S1). Given the number of  
152 objectives outside of threatened species recovery that such programs set out to achieve, it is  
153 reasonable to assert that the Australian Government spends much less than this amount on  
154 targeted threatened species recovery actions.

155 A similar process was applied to obtain spending estimates for Australian states and  
156 territories. We stress that, because of the challenges with getting exact and comparable  
157 estimates of expenditure across jurisdictions for the period of interest, our figures are not to  
158 be considered precise estimates, but rather a reasonable approximation. Our best estimate  
159 of combined state and territory expenditure on targeted threatened species recovery is  
160 US\$53.3m/year (AU\$71.1m/year) over recent years (Table S2).

161 Summing across state, territory and commonwealth jurisdictions results in an estimated net  
162 public investment in targeted threatened species recovery in Australia of US\$90m/year  
163 (AU\$121m/year), or ca US\$51,000 per extant EPBC Act listed species per year.

164

### 165 **3 | WHAT SHOULD AUSTRALIA HAVE BEEN DOING?**

166 Current levels of government funding are inadequate to address Australia's extinction crisis.  
167 This is apparent in the ongoing species loss, the ongoing decline of most listed species, and  
168 the increasing number of species being identified as threatened every year. So, what should  
169 Australia be spending if it is to prevent any more species loss and maximise the chance that  
170 listed species recover? Significant uncertainty exists about exactly which actions should be  
171 taken to conserve species, and how effective those actions will be (Garnett et al. 2018b), so  
172 precise species-by-species costing is not possible. We looked to the USA where species  
173 recovery has been demonstrated for many species, where a similar number of species have  
174 been listed as threatened under a comparable threatened species protection legislation over  
175 a comparable land area. The USA also has a similar level of per-capita wealth, equivalent  
176 federalised administrative responsibility for threatened species, a strong judicial system, and  
177 a strong tradition of public investment in tackling environmental issues.

178 There is empirical evidence that the more a country spends on conservation, the fewer  
179 species it loses (Waldron et al. 2017). The USA provides a strong case in point. Funding for  
180 actions listed under recovery plans is mandated under the *Endangered Species Act 1973*

181 (U.S.C. 1973), and the USA has seen strong recovery in listed species. Money spent  
182 strategically on threatened species has achieved improvements in species' status (Taylor et  
183 al. 2005). For example, 85% of listed birds achieving a documented stabilization or recovery  
184 following listing.

185 From 2011–2016, the US Government spent at least US\$1.45b/year on direct threatened  
186 species conservation and recovery actions, equating to about US\$903k/species/year  
187 (USFWS 2016). This is augmented by between US\$60–100m/year in US State investments  
188 in threatened species recovery (USFWS 2016). The Federal (US Fish and Wildlife Service)  
189 reports expenditure on direct threatened species recovery projects and does not include  
190 land acquisition or administration costs of the major agencies. In 2018, 1662 species were  
191 listed as threatened and endangered under the US Endangered Species Act (ESA), about  
192 100 fewer than listed in equivalent categories under Australia's EPBC Act (1970, excluding  
193 extinct species).

194 Evidence for the effectiveness of US investment in threatened species recovery is strong.  
195 The US track record in recovery far exceeds Australia's, with 39 species de-listed due to  
196 recovery<sup>1</sup> and strong recovery trends observed in many species, including the iconic grey  
197 wolf, grizzly bear, and bald eagle (Taylor et al. 2005; Suckling et al. 2016). Suckling et al.  
198 (2016) found that birds listed under the US ESA increased in population size on average by  
199 624% since their listing, while unlisted birds declined by 24% on average over the 42 years  
200 since the inception of the Act. This comparison suggests that the recovery of listed birds in  
201 the USA can be attributed largely to the regulations, mandated funding, and recovery actions  
202 associated with listing a species.

203 Using the US species recovery expenditure figures for 2015 (Gerber 2016), we computed  
204 median and mean funding allocations to species within taxonomic groups across all listed  
205 species. Mean and median per-species costs were then multiplied by the number of species

---

<sup>1</sup> <https://ecos.fws.gov/ecp0/reports/delisting-report>

206 in each taxonomic group listed under Australia's *EPBC Act 1999* to provide a preliminary  
207 estimate of targeted funding required to recover Australia's listed threatened species (see  
208 Supporting Information S3 & S4 for more detail). The total estimate ranges from US\$632m–  
209 1.87b/year (AU\$842m–2.49b/year) depending on whether median or mean USA funding  
210 figures were used for each taxonomic group. Funding Australian threatened species  
211 recovery at the taxonomic mean rate of funding provided to species recovery in the USA  
212 would result in an approximately 20-fold increase in funding in Australia compared with  
213 current expenditure. The relative merits of using mean versus median rates are discussed in  
214 Supplementary Information S3. Recovery here, as in the study by Gerber (2016), is defined  
215 as achieving security such that de-listing of the species under the EPBC Act is justified.

216

#### 217 **4 | WHAT AUSTRALIA NEEDS TO DO NOW**

218 Our estimates of recovery funding requirements based on the median cost of recovery in the  
219 USA may be optimistically low. Invasive animals, plants and pathogens play a larger role in  
220 Australian extinctions than they do in many other places (Garnett et al. 2018b; Kearney et al.  
221 2018), and many of these invasive species are extremely difficult to eradicate or suppress to  
222 the level required to allow threatened native species to persist (Burbidge & McKenzie 1989;  
223 Moseby et al. 2011). This is compounded by the logistical challenges of managing those  
224 threats over the immense area in which they manifest. Other caveats on our estimates  
225 include the fact that Australia's EPBC Act listing is incomplete and new species are likely to  
226 enter the list as more information accumulates and listing catches up with biodiversity loss.  
227 These and other deep uncertainties make any method of costing extremely challenging, and  
228 cross-jurisdictional comparisons of recovery costs should be made with care.

229 Taking these factors into account, it is likely that the actual cost of recovering Australia's  
230 listed threatened species is closer to the estimated US\$1.85b/year (AU\$2.4b/year) based on  
231 the mean per-species expenditure on recovery in the USA. Although governments may



232 consider this to be a large sum relative to current levels of funding, a useful context is that  
233 the Australian Government expects to pay US\$143.9 billion (AU\$191.8b) in social security  
234 and welfare payments in 2019–20, and will forego US\$735m (AU\$980m) tax revenue  
235 through fuel tax credits to coal mining companies in the same period (ACF 2018; Klapdor &  
236 Arthur 2018). Unfortunately, preventing extinction will cost more relative to GDP in Australia  
237 than it will in the USA.

238 Our estimates of recovery expenditure in Australia and the USA excludes the efforts of the  
239 private sector and NGOs, who undoubtedly make a significant contribution to the  
240 conservation of threatened species. Unfortunately for Australia, the relative contribution of  
241 private NGOs is much larger in the USA. For example, The Nature Conservancy operational  
242 budget in the USA is US\$1.2b/year, compared with the relatively modest ~US\$30m  
243 combined annual operating budget of Australia's two large land management NGOs.

244

#### 245 ***Continuity, transparency, and accountability***

246 Threatened species management requires long-term (decadal scale) continuity and  
247 consistency to be effective (Garnett et al. 2018a). Many of Australia's ecosystems are  
248 characterised by decadal drought and wet cycles and reliance on rare stochastic  
249 disturbances such as fires or floods for regeneration; consequently, opportunities to act to  
250 conserve species occur infrequently and unpredictably (Dickman et al. 2014). Committing to  
251 support the conservation of such species requires long-term and flexible funding  
252 arrangements in which funds can be deployed rapidly when the need or opportunity arises.  
253 Moreover, the capacity to report on what is achieved through management, or to identify and  
254 act on precipitous declines in species is severely compromised when funding is not  
255 committed to the establishment and implementation of powerful monitoring programs (Legge  
256 et al. 2018).

257 Improving the accountability and transparency of expenditure on conservation of threatened  
258 species in Australia would also enable a better understanding of the effectiveness of  
259 conservation investment (ANAO 2006). Clear reporting on expenditure, combined with  
260 measurement of conservation outcomes, provides a sound basis for analysing cost-  
261 effectiveness of conservation actions, and supports rational prioritisation of future  
262 investments to maximise conservation outcomes (Iacona et al. 2018). A feature of the US  
263 threatened species recovery system is a high degree of transparency on expenditure to  
264 recover each species listed under the ESA (USFWS 2016). Future reporting of threatened  
265 species conservation spending in Australia could be modelled on the annual endangered  
266 and threatened species expenditure report compiled by the US Fish and Wildlife Service  
267 (e.g. USFWS 2016).

268 Several of the targeted investments of the Australian Government represent good practice  
269 and national leadership in threatened species protection and recovery. Notably, the  
270 leadership and coordinated strategy for feral cat management provided through the national  
271 Threatened Species Strategy and a National Feral Cat Taskforce provides a model that  
272 could usefully be applied to managing other threats. The National Environmental Science  
273 Program provides a model for research designed specifically to inform environmental  
274 management and includes an US\$23m (AU\$30m) investment over six years (2015–2021) by  
275 the Australian Government on targeted threatened species recovery research.

276 Without adequate resourcing, strong governance of threatened species recovery, monitoring  
277 systems that can report species declines and recovery in a timely fashion, and strong  
278 regulation and management of threatening processes, we will leave a tragic legacy of  
279 extinction and fail in our obligations to future generations of Australians, and the international  
280 community. Clarifying our current targeted threatened species expenditure and setting out  
281 costing options to estimate long-term funding needs is a necessary first step towards  
282 supporting successful threatened species recovery program. We have set out an approach  
283 to provide preliminary estimates of funding needs to delist threatened species which could

284 be applied in any jurisdiction anywhere that there is a list of species to be conserved and  
285 recovered. We acknowledge that our approach should be used only as a first parse and  
286 does not substitute for detailed analysis of recovery costs that are sensitive to the particular  
287 needs of each species, the threats they face, and their local contexts, which are always  
288 somewhat unique. We have provided a defensible costing model and starting point for  
289 governments seeking to halt the extinction crisis.

290

## 291 **ACKNOWLEDGEMENTS**

292 This work was developed from a submission made to a senate inquiry called by the  
293 Australian Government. Many people helped with the original submission, so a large thanks  
294 goes to Ben Scheele, Beth Crase, Diana Fisher, Ayesha Tulloch, Natasha Robinson, Justine  
295 Shaw, Elisa Bayraktarov, Georgia Garrard, Natalie Briscoe, Alex Kusmanoff, Heather Keith,  
296 Chris Dickman, Dave Duncan, Chris Johnson, Salit Kark, Katherine Selwood, Ram Pandit,  
297 Brett Murphy, Luke Kelly, Peter Vesk, Michael Kearney, and Libby Rumpff.

298

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303 [\\_bare\\_bones\\_while\\_fossil\\_fuel\\_subsidies\\_continue](https://www.acf.org.au/budget_2018_19_investment_in_a_healthy_environment_cut_to_bare_bones_while_fossil_fuel_subsidies_continue)
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383

384

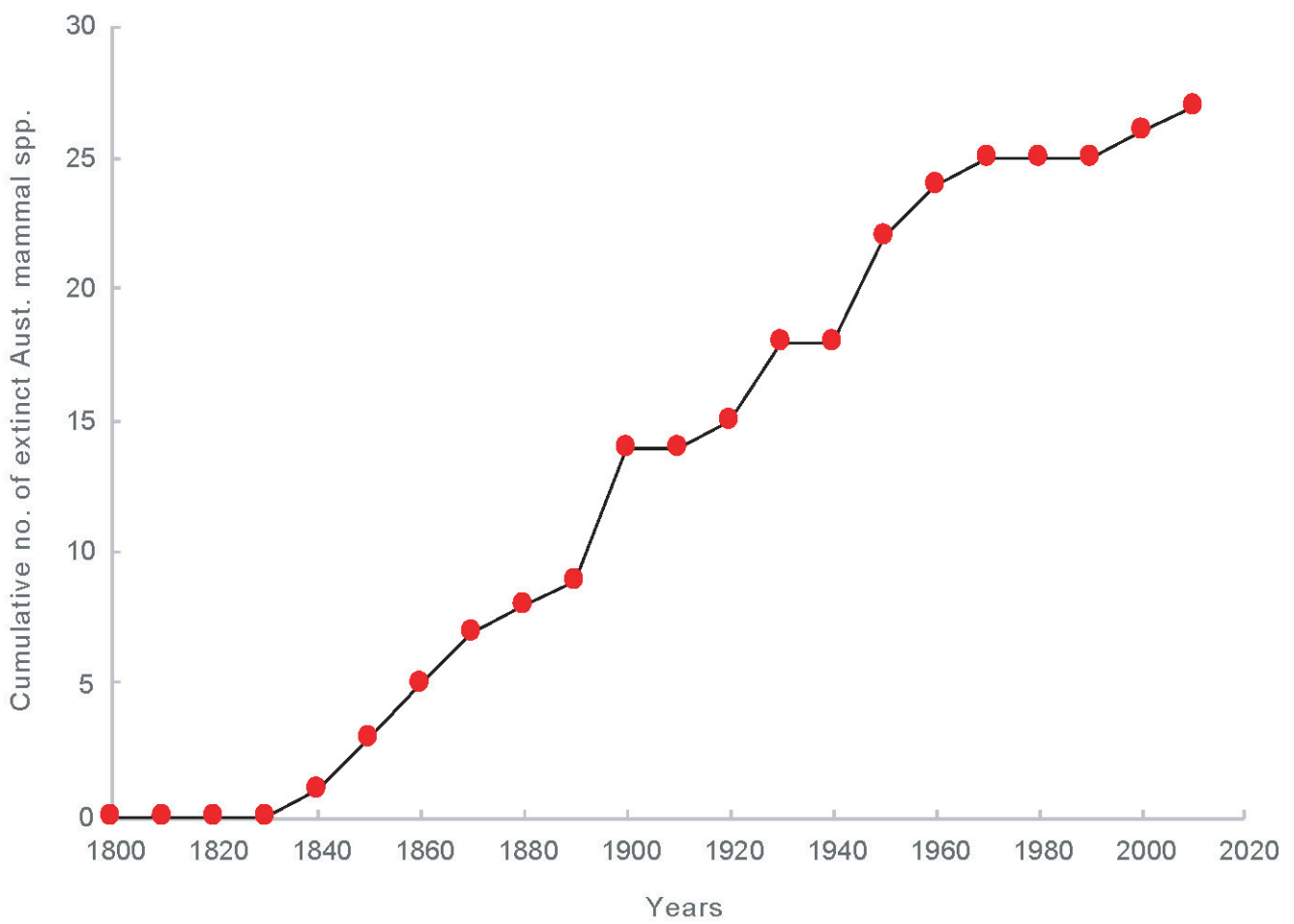
385 **Figure 1.** The cumulative number of extinctions of Australian endemic mammal species since 1800.  
386 Note that, for some species, the dating of extinction is difficult to assess, so the graph does not  
387 include all extinct species. (Modified with permission from Woinarski et al. 2014).

388

389 **Table 1.** Annual average and median expenditure (across species within taxonomic groups) allocated  
390 to achieve recovery under the US *Endangered Species Act 1973* (amounts provided in USD) in 2015  
391 (Gerber 2016). Column four gives the number of species listed under Australia's *EPBC Act 1999* by  
392 taxonomic group. Columns five and six provide the product of the average or median expenditure and  
393 the number of species in each taxonomic group to provide an estimate of the total funding required to  
394 secure Australian threatened species within taxonomic groups. Amounts shown are in USD; total  
395 amounts in brackets are AUD#.

396





**From:** [Kylie Jonasson](#)  
**To:** [Nicholas Post](#)  
**Cc:** [Sally Box](#); [Beth Brunoro](#); s47F  
**Subject:** Re: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Tuesday, 2 July 2019 5:31:09 PM

---

Thanks you for the update Nick. Look forward to feedback on the meeting.

Kylie

On 2 Jul 2019, at 5:19 pm, Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)> wrote:

Kylie and Sally,

I understand that Beth has reached out to you in regard to a paper prepared by the TSR Hub leadership team entitled 'Spending to save Australian threatened species'. The paper (attached) has been submitted to the Conservation Letters Journal and unfortunately provides commentary on a range of policy issues, however, we have been reassured that publication is not imminent.

Beth and I are meeting with Brendan Wintle later this week to remind him of the importance of focusing on science rather than policy matters. We will also provide an update on our standing guidance on science communication. I will ensure that you are both updated on developments and have an opportunity to engage as we move forward

Regards

Nick

---

**Dr Nick Post**

Assistant Secretary Environmental Accounts and Science Branch  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6274 1990  
[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

**From:** [Beth Brunoro](#)  
**To:** "Brendan Wintle"; s47F  
**Cc:** s47F; s47F; s47F; [Nicholas Post](#)  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Tuesday, 2 July 2019 8:50:57 PM  
**Attachments:** [image022.png](#)

---

Thanks for agreeing to move the meeting. Happy for Martine to join us.

regards

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** Brendan Wintle [mailto:[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)]

**Sent:** Tuesday, 2 July 2019 10:22 AM

**To:** s47F; Beth Brunoro

**Cc:** s47F; s47F; s47F

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Hi Beth,

Martine is head of our Comms subcommittee and involved in the costings work – is keen to join us today. Are you okay with that, and if so are you able to dial her and I in on our mobiles as we're both out of office?

Brendan – s47F

Martine – s47F

Best,

Bw.

---

**From:** s47F <s47F@environment.gov.au>

**Date:** Friday, 28 June 2019 at 2:24 pm

**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Cc:** s47F <s47F@environment.gov.au>, s47F <s47F

s47F@environment.gov.au>, s47F

<s47F@environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Good afternoon Brendan,

Do you have availability for a phone call with Beth and Nick at 4:30pm on Tuesday, 2 July?

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary

Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F@environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders

both past and present

s47F

---

**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 1:19 PM

**To:** 'Brendan Wintle' <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Cc:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Great – s47F will ring you this afternoon.

**Beth Brunoro**

First Assistant Secretary

Knowledge and Technology Division

Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

**Sent:** Friday, 28 June 2019 1:09 PM

**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>

**Cc:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Absolutely. When Nick is back and everyone is available. Not a screaming rush.

Cheers,

Brendan

---

**From:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>

**Date:** Friday, 28 June 2019 at 12:39 pm

**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Cc:** Nick Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** FW: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Hi Brendan

I have asked my EA s47F to reach out to you to set up a meeting as early as we can next week to discuss a way forward. Best to do this when Nick is back on deck – he is on his way back from NY as I type.

I understand there is no imminent deadline re the paper so we can wait until we can find a time?

cheers

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Date:** 27 June 2019 at 3:18:37 pm AEST  
**To:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** pathway for working together on 'spending to save'

Dear s47F,

Thanks for the chat just then providing some context for discussion about our draft manuscript – 'spending to save'.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work and policy implications.
4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying

key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland<sup>[1]</sup><sub>[SEP]</sub>  
ph. +61 3 8344 3306  
skype: brendan.wintle  
[http://brendanwintle.wordpress.com/about/  
google scholar brendan wintle](http://brendanwintle.wordpress.com/about/google-scholar-brendan-wintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National **Environmental Science** Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** s47F  
**Cc:** s47F  
**Subject:** Fwd: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Wednesday, 3 July 2019 3:03:30 PM

---

Sorry - had just assumed you were copied in & didn't check

Begin forwarded message:

**From:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>  
**Date:** 2 July 2019 at 5:31:08 pm AEST  
**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, s47F <s47F@environment.gov.au>  
**Subject:** Re: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

Thanks you for the update Nick. Look forward to feedback on the meeting.

Kylie

On 2 Jul 2019, at 5:19 pm, Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)> wrote:

Kylie and Sally,

I understand that Beth has reached out to you in regard to a paper prepared by the TSR Hub leadership team entitled 'Spending to save Australian threatened species'. The paper (attached) has been submitted to the Conservation Letters Journal and unfortunately provides commentary on a range of policy issues, however, we have been reassured that publication is not imminent.

Beth and I are meeting with Brendan Wintle later this week to remind him of the importance of focusing on science rather than policy matters. We will also provide an update on our standing guidance on science communication. I will ensure that you are both updated on developments and have an opportunity to engage as we move forward

Regards  
Nick

---

**Dr Nick Post**  
Assistant Secretary Environmental Accounts and Science Branch  
Knowledge and Technology Division

Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6274 1990

[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

<Wintle et al - Spending to save Australian threatened  
species\_forDoEE.PDF>

<Figure 1.jpg>



**From:** s47F  
**To:** "Brendan Wintle"  
**Cc:** s47F ; s47F ; s47F  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Thursday, 4 July 2019 9:00:15 AM  
**Importance:** Low

---

Good morning Brendan,  
Nick is now travelling to Brisbane tomorrow. I am hoping to get him on an earlier flight home. Would it be possible to change your phone call to 12:30pm? I will include Martine in the invite if this time suits you both.

My apologies for any inconvenience.

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Tuesday, 2 July 2019 10:24 AM

**To:** s47F

**Cc:** s47F ; s47F ; s47F

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Ha! We must've just crossed in cyberspace – yes, that's fine. Catch you 2pm Friday.

Bw

---

**From:** s47F <s47F @environment.gov.au>

**Date:** Tuesday, 2 July 2019 at 10:21 am

**To:** Brendan Wintle <b.wintle@unimelb.edu.au>

**Cc:** s47F <s47F @environment.gov.au>, s47F <s47F @environment.gov.au>, s47F <s47F @environment.gov.au>

s47F @environment.gov.au, s47F

<s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Good morning Brendan,

My apologies but I am hoping we can move your phone call with Beth and Nick until Friday afternoon? Are you available from 2-2:30pm?

Sorry for the late notice.

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Friday, 28 June 2019 4:37 PM

**To:** s47F <s47F @environment.gov.au>

**Cc:** s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Yes. Thanks s47F .

From phone

On 28 Jun 2019, at 2:24 pm, s47F <s47F @environment.gov.au> wrote:

Good afternoon Brendan,

Do you have availability for a phone call with Beth and Nick at 4:30pm on Tuesday, 2 July?

Kind regards,

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary

Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

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s47F

---

**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 1:19 PM

**To:** 'Brendan Wintle' <b.wintle@unimelb.edu.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>; s47F <s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Great – s47F will ring you this afternoon.

**Beth Brunoro**

First Assistant Secretary

Knowledge and Technology Division

Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

**Sent:** Friday, 28 June 2019 1:09 PM

**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>

**Cc:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F  
<s47F @environment.gov.au>; s47F <s47F  
s47F @environment.gov.au>; s47F  
<s47F @environment.gov.au>; s47F  
<s47F @environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Absolutely. When Nick is back and everyone is available. Not a screaming rush.

Cheers,

Brendan

---

**From:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>

**Date:** Friday, 28 June 2019 at 12:39 pm

**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Cc:** Nick Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, s47F  
<s47F @environment.gov.au>, s47F <s47F  
s47F @environment.gov.au>, s47F  
<s47F @environment.gov.au>, s47F  
<s47F @environment.gov.au>

**Subject:** FW: pathway for working together on 'spending to save'  
[SEC=OFFICIAL]

Hi Brendan

I have asked my EA <sup>s47F</sup> to reach out to you to set up a meeting as early as we can next week to discuss a way forward. Best to do this when Nick is back on deck – he is on his way back from NY as I type.

I understand there is no imminent deadline re the paper so we can wait until we can find a time?

cheers

**Beth Brunoro**

First Assistant Secretary

Knowledge and Technology Division

Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

Begin forwarded message:

**From:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Date:** 27 June 2019 at 3:18:37 pm AEST

**To:** s47F <s47F

s47F @environment.gov.au>

**Subject:** pathway for working together on 'spending to save'

Dear s47F ,

Thanks for the chat just then providing some context for discussion about our draft manuscript – ‘spending to save’.

Here are some key points about how I think we can move forward in our aim of working with the Department on this.

Objective of the work:

1. To represent, in a cool and factual way, the current expenditure on targeted threatened species recovery activities in Australia and contrast that with expenditure in the USA where threatened species recovery is being successfully achieved for listed threatened species.
2. Using the results of (1) to trigger high level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved.
3. Using the paper as a discussion starter, be in a position to provide a briefing to Department Exec and the Ministers office about the findings of the work and policy implications.
4. To highlight the need and opportunity for transparent reporting of threatened species recovery expenditure, using the USFWS reporting process as a model.
5. To work with the Dept about how accounting of threatened species expenditure could be undertaken in order to support such reporting.

In the short term, there are two key questions to address:

1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F , Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I’m open to any suggested alternatives.

Best,

Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland<sup>SEP</sup>  
ph. +61 3 8344 3306  
skype: brendan.wintle

<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](#)

<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** "Brendan Wintle"  
**Cc:** s47F; s47F; s47F; [Martine Maron](#); [Beth Brunoro](#)  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 5 July 2019 12:17:36 PM

---

Hi Brendan and Martine,

The teleconference line is in the invite. As Nick and Beth are in different locations on their mobiles, can I please ask you both to dial the below. Beth will host this teleconference.

s47E(d)

Any problems please give me a call.

Thank you!

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F [@environment.gov.au](#)

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s47F

---

**From:** Brendan Wintle [mailto:[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)]

**Sent:** Friday, 5 July 2019 12:07 PM

**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

<s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Martine Maron <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>; Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Hi s47F

To make sure I don't drop out during the call, I've arranged to use s47F's phone – s47F – it has better reception here.

And here is Martine's number again - s47F

Cheers,  
Brendan.

---

**From:** s47F <s47F@environment.gov.au>  
**Date:** Thursday, 4 July 2019 at 9:00 am  
**To:** Brendan Wintle <b.wintle@unimelb.edu.au>  
**Cc:** s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>  
**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Good morning Brendan,

Nick is now travelling to Brisbane tomorrow. I am hoping to get him on an earlier flight home. Would it be possible to change your phone call to 12:30pm? I will include Martine in the invite if this time suits you both.

My apologies for any inconvenience.

Kind regards,

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s47F

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]  
**Sent:** Tuesday, 2 July 2019 10:24 AM  
**To:** s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>  
**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Ha! We must've just crossed in cyberspace – yes, that's fine. Catch you 2pm Friday.

Bw

---

**From:** s47F <s47F@environment.gov.au>

**Date:** Tuesday, 2 July 2019 at 10:21 am

**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>

**Cc:** s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

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Sorry for the late notice.

Kind regards,

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s47F

---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

**Sent:** Friday, 28 June 2019 4:37 PM

**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

s47F <s47F@environment.gov.au>

<s47F@environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Yes. Thanks s47F

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Kind regards,

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s47F

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**From:** Beth Brunoro

**Sent:** Friday, 28 June 2019 1:19 PM

**To:** 'Brendan Wintle' <b.wintle@unimelb.edu.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** RE: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Great s47F will ring you this afternoon.

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[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

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---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

**Sent:** Friday, 28 June 2019 1:09 PM

**To:** Beth Brunoro <Beth.Brunoro@environment.gov.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F <s47F

s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>; s47F

<s47F @environment.gov.au>

**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Thanks Beth,

Absolutely. When Nick is back and everyone is available. Not a screaming rush.

Cheers,  
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---

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**Date:** Friday, 28 June 2019 at 12:39 pm

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[<image005.gif>](#) [<image006.gif>](#) [<image007.gif>](#) [<image008.gif>](#)

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ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
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ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
<image009.png>

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**From:** s47F  
**To:** "Brendan Wintle"  
**Cc:** s47F; s47F; s47F; Martine Maron; Beth Brunoro  
**Subject:** RE: pathway for working together on "spending to save" [SEC=OFFICIAL]  
**Date:** Friday, 5 July 2019 12:17:58 PM

---

Thanks Brendan! 😊

s47F

Executive Assistant to:

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Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

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s47F

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**Cc:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Martine Maron <m.maron@uq.edu.au>; Beth Brunoro <Beth.Brunoro@environment.gov.au>  
**Subject:** Re: pathway for working together on 'spending to save' [SEC=OFFICIAL]

Sorry All,

I see we actually have a teleconference number on the calendar invite – Martine – here is the number and passcode –

s47E(d)

Bw.

---

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**Date:** Friday, 5 July 2019 at 12:07 pm  
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s47F

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**Sent:** Tuesday, 2 July 2019 10:24 AM

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**Cc:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

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<s47F @environment.gov.au>, s47F <s47F

s47F @environment.gov.au>, s47F

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<s47F @environment.gov.au>

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<image005.gif> <image006.gif> <image007.gif> <image008.gif>

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1. How do we work with the Department to achieve the broader aims outlined above?
2. How do we evolve the paper, including wording and fact-checking of budget analysis so that it best serves the objectives outlined above?

I propose that as a first step, Brendan, s47F, Nick and Beth (if she is available) meet to discuss (i) the level of comfort within the Department around the objectives and settle on a plan for working together on achieving agreed objectives (recognising that they may not remain exactly as stated above), and (ii) undertake a preliminary analysis of the current text of the manuscript with a view to

identifying key areas of concern and possible changes to wording or approach that would maximize the chances of achieving the overall objectives.

Ideally we would identify a key contact who could be responsible for working through with me the methods and accounting used in the paper, and (possibly a different person) to work through wording and language.

Please let me know if this sounds like a suitable pathway. I'm open to any suggested alternatives.

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland   
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?hl=en&user=brendanwintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
<image009.png>

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Nicholas Post](#)  
**To:** [Kylie Jonasson](#); [Sally Box](#)  
**Cc:** [Beth Brunoro](#); s47F  
**Subject:** RE: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Tuesday, 9 July 2019 12:09:24 PM

---

Kylie/Sally,

Beth and I spoke to Brendan last Friday and he confirmed that:

- his top priority was to work with the Department to resolve any issues of concern; and
- the paper would not be published in the next few months so we had time to review and adjust as required.

Brendan was apologetic that he had not consulted the Department earlier and agreed that there would be value in better defining the research scope and communication guidelines for the Threaten Species Recovery Hub (TSRH). Our intent is to engage Brendan on the operational principles of the TSRH before we commence detailed revision of the proposed research paper. I have suggest to Beth that Sally should be involved in our next meeting to ensure it is clear to the TSRH that our research requirements are aligned and consistent across the Department.

Regards

Nick

**Dr Nick Post**

Assistant Secretary Environmental Accounts and Science Branch  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6274 1990  
[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

---

**From:** Nicholas Post

**Sent:** Tuesday, 2 July 2019 5:20 PM

**To:** Kylie Jonasson ; Sally Box

**Cc:** Beth Brunoro ; s47F

**Subject:** Update: Brendan Wintle - 'Spending to save Australian threatened species'  
[SEC=OFFICIAL:Sensitive]

Kylie and Sally,

I understand that Beth has reached out to you in regard to a paper prepared by the TSR Hub leadership team entitled 'Spending to save Australian threatened species'. The paper (attached) has been submitted to the Conservation Letters Journal and unfortunately provides commentary on a range of policy issues, however, we have been reassured that publication is not imminent. Beth and I are meeting with Brendan Wintle later this week to remind him of the importance of focusing on science rather than policy matters. We will also provide an update on our standing guidance on science communication. I will ensure that you are both updated on developments and have an opportunity to engage as we move forward

Regards

Nick

-----  
**Dr Nick Post**

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Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6274 1990  
[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

**From:** [Beth Brunoro](#)  
**To:** [Nicholas Post](#)  
**Subject:** RE: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Wednesday, 24 July 2019 6:04:54 PM

---

Sounds sensible

---

**From:** Nicholas Post  
**Sent:** Wednesday, 24 July 2019 4:42 PM  
**To:** Beth Brunoro  
**Cc:** s47F ; s47F ; s47F  
**Subject:** Re: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
Will do - need to try to link a few elements together to maximise impact in the region...

Sent from my iPhone

On 24 Jul 2019, at 2:55 pm, Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)> wrote:

Can you think about when we should proceed with this meeting and trip to Melbourne, and then work s47F and s47F to get organised.

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)

---

**From:** Nicholas Post  
**Sent:** Tuesday, 9 July 2019 12:09 PM  
**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F@s47F@environment.gov.au>

**Subject:** RE: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

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Nick

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**Sent:** Tuesday, 2 July 2019 5:20 PM

**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box  
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**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F  
s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>

**Subject:** Update: Brendan Wintle - 'Spending to save Australian threatened species'  
[SEC=OFFICIAL:Sensitive]

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Nick

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T 02 6274 1990

[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

**From:** s47F  
**To:** s47F  
**Subject:** Fwd: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Thursday, 25 July 2019 7:27:23 PM

---

FYI

Begin forwarded message:

**From:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
**Date:** 24 July 2019 at 4:41:53 pm AEST  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>  
**Cc:** s47F <s47F@environment.gov.au>, s47F  
s47F <s47F@environment.gov.au>, s47F  
s47F <s47F@environment.gov.au>  
**Subject:** Re: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

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Knowledge and Technology Division  
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GPO Box 787, Canberra ACT 2601  
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**Sent:** Tuesday, 9 July 2019 12:09 PM  
**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F  
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**Subject:** RE: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

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Regards

Nick

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Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6274 1990  
[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

---

**From:** Nicholas Post

**Sent:** Tuesday, 2 July 2019 5:20 PM

**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>

**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F  
s47F <s47F@environment.gov.au>

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Regards

Nick

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[nicholas.post@environment.gov.au](mailto:nicholas.post@environment.gov.au)

**From:** s47F  
**To:** s47F  
**Subject:** FW: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]  
**Date:** Wednesday, 31 July 2019 1:37:15 PM

---

Hi s47F,

Has Nick touched base with you about this trip to Melbourne? Just wanted to work on dates.

Btw, I hope s47F's appointment is going well. 😊

Cheers!

s47F

Executive Assistant to:

**Beth Brunoro** – First Assistant Secretary  
Knowledge and Technology Division

**Department of the Environment and Energy**

JGB | GPO Box 787, Canberra ACT 2601

T: s47F | E: s47F @environment.gov.au

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present

s47F

---

**From:** Beth Brunoro

**Sent:** Wednesday, 24 July 2019 2:56 PM

**To:** Nicholas Post <Nicholas.Post@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Subject:** FW: Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

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Department of the Environment and Energy

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**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>

**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F@environment.gov.au>

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---

**From:** Nicholas Post

**Sent:** Tuesday, 2 July 2019 5:20 PM

**To:** Kylie Jonasson <[Kylie.Jonasson@environment.gov.au](mailto:Kylie.Jonasson@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>

**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F@environment.gov.au>

**Subject:** Update: Brendan Wintle - 'Spending to save Australian threatened species' [SEC=OFFICIAL:Sensitive]

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Nick

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s47C



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**s47C**

s47C

**s47C**

**From:** [Beth Brunoro](#)  
**To:** [Brendan Wintle](#)  
**Cc:** [Nicholas Post](#); s47F ; s47F ; [Rachel Morgain](#); [Martine Maron](#); [Anthony Bennie](#); s47F ; s47F  
**Subject:** RE: Next steps for the TSR Hub Horizon Summit [SEC=OFFICIAL]  
**Date:** Wednesday, 7 August 2019 6:50:52 PM  
**Attachments:** s22  
[image006.png](#)

---

Hello Brendan,

s22

I would like to discuss this and broader communications and engagement matters (including the spending to save paper) in the conversation we committed to taking forward a few weeks back. This would allow us to work through the issues to arrive at the clarity on roles and responsibilities of the Hub that we both agreed was needed in that phone conversation. s22

I will be in Melbourne for an all-day meeting on Thursday 29 August and it would be good if we could have a half day catch up with you the day before or after – my preference would be the Friday. Both Nick and I will come down and I want Sally to also join us. Do you have time available either of those days?

s22

Please don't hesitate to give Nick or I a call if you would like to discuss.

Best,

Beth

**Beth Brunoro**

First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601

T 02 6159 7504

[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** Brendan Wintle

**Sent:** Friday, 2 August 2019 4:12 PM

**To:** Beth Brunoro ; Nicholas Post ; s47F ; s47F ; Rachel Morgain ; Martine Maron

**Subject:** Next steps for the TSR Hub Horizon Summit

**Importance:** High

Dear Beth, Nick, s47F , s47F ,

Hope you had a great break, Beth.

s22

# s22

Cheers,  
Brendan

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
[http://brendanwintle.wordpress.com/about/  
google scholar brendan wintle](http://brendanwintle.wordpress.com/about/google-scholar-brendan-wintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National **Environmental Science** Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** s47F; [Sally Box](#)  
**Cc:** s47F  
**Subject:** RE: FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]  
**Date:** Friday, 23 August 2019 5:49:06 PM

---

Thanks s47F – we’ll have a look and happy to assist craft. I think a chat would be useful but I’ll let Sally advise as she may already have spoken to Beth/Nick. Sally what do you think?

Cheers s47F

---

**From:** s47F  
**Sent:** Friday, 23 August 2019 5:30 PM  
**To:** s47F <s47F@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]

Hi s47F and Sally,

I am preparing a meeting brief for Nick, Beth and yourself Sally, ahead of the meeting with Brendan Wintle and Martine Maron in Melbourne next Friday.

One topic for discussion is the next steps for the Spending to Save paper.

I am including some dot points around our concerns with the approach they have taken on this paper in terms of achieving their desired objective, which according to Brendan was to “trigger high-level policy and political discussion about the need to increase spending on threatened species recovery”. (i.e. they would’ve been better off coming straight to us to discuss their objectives, with the most efficient way of ‘triggering a discussion with policy makers’ being to come and have one!)

I would also like to include a dot point or two about the Dept’s concerns with the actual content of the paper (which presumably include how they have come up with the figures on the Aust Govt’s spending on threatened species).

Would you be happy to help me craft a couple of dot points around our key concerns with the content of the paper?

Happy to have more of a chat about this on Monday if you’d like.

Many thanks.

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F



s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*  
Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** s47F [mailto:s47F@unimelb.edu.au]  
**Sent:** Thursday, 27 June 2019 12:16 PM  
**To:** Brendan Wintle <b.wintle@unimelb.edu.au>; Rachel Morgain <rachel.morgain@anu.edu.au>; s47F <s47F@environment.gov.au>; s47F @uq.edu.au  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** RE: Spending to save - product submission

Hi s47F & s47F (others cc'ed),

Please find attached the version of the paper without the NESP affiliation. Supplementary materials also attached. As mentioned below by Rachel, this version will be undergoing minor changes before publication & we will send you the updated version as soon as it's done.

Please let me know if there's anything else you'd like.

Kind regards,

s47F

s47F  
Research assistant  
[Quantitative and Applied Ecology lab](#)  
The University of Melbourne

Ph: s47F  
Email: s47F@unimelb.edu.au  
Website: s47F.wordpress.com

---

**From:** Brendan Wintle  
**Sent:** Thursday, 27 June 2019 11:57 AM

**To:** Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>; s47F [REDACTED] <[REDACTED]@environment.gov.au>; s47F [REDACTED] <[REDACTED]@uq.edu.au>  
**Cc:** s47F [REDACTED] <[REDACTED]@environment.gov.au>; s47F [REDACTED] <[REDACTED]@unimelb.edu.au>  
**Subject:** Re: Spending to save - product submission

Hi Rachel, s47F [REDACTED], could one of you please email s47F [REDACTED] and s47F [REDACTED] a version of the paper *without* the NESP affiliation and acknowledgement for their internal consultations?

Thanks  
Brendan.

---

**From:** Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>  
**Date:** Wednesday, 26 June 2019 at 2:25 pm  
**To:** s47F [REDACTED] <[REDACTED]@environment.gov.au>, s47F [REDACTED] <[REDACTED]@uq.edu.au>  
**Cc:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>, "[tsr\\_publications@uq.edu.au](mailto:tsr_publications@uq.edu.au)" <[tsr\\_publications@uq.edu.au](mailto:tsr_publications@uq.edu.au)>  
**Subject:** Spending to save - product submission

Hi s47F [REDACTED],

As discussed, please find attached a product submission form and submitted version of the paper 'Spending to Save', as part of project 7.7.

This paper has recently been accepted pending minor revisions and should go through in the next few weeks. Please note, the revisions will slightly alter the final figures. We'll send the updated version as soon as we have it.

We plan to summarise this information in a science for policy summary, which we will send through soon. This may help with your briefings so I'll try to send some text through on that ASAP.

We are also planning some media on this. s47F [REDACTED] will be in touch on that.

Thanks.

Cheers  
Rachel

s47F

**From:** [Sally Box](#)  
**To:** s47F  
**Cc:** s47F ; s47F  
**Subject:** Re: FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]  
**Date:** Friday, 23 August 2019 6:15:00 PM

---

Hi all

I think a chat would be good. My conversations with Nick and Beth haven't been about the concerns with numbers or the way they have approached calculations. Perhaps we could catch up on this aspect first. I would then appreciate a pre-meet with Beth and Nick to talk about how we are going to handle the actual meeting.

Cheers  
Sally

Sent from my iPhone

On 23 Aug 2019, at 5:49 pm, s47F <s47F@environment.gov.au> wrote:

Thanks s47F – we'll have a look and happy to assist craft. I think a chat would be useful but I'll let Sally advise as she may already have spoken to Beth/Nick. Sally what do you think?

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s47F

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Phone: s47F

s47F

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**Sent:** Thursday, 27 June 2019 12:16 PM

**To:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>; Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>; s47F

<s47F@environment.gov.au>; s47F@uq.edu.au

**Cc:** s47F <s47F@environment.gov.au>

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s47F

Research assistant

[Quantitative and Applied Ecology lab](#)

The University of Melbourne

Ph: s47F

Email: s47F@unimelb.edu.au

Website: s47F [research.wordpress.com](#)

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**Date:** Wednesday, 26 June 2019 at 2:25 pm

**To:** s47F <s47F@environment.gov.au>; s47F

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**Cc:** Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>,  
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**From:** s47F  
**To:** s47F  
**Subject:** RE: FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]  
**Date:** Sunday, 25 August 2019 9:35:31 PM

---

Thanks for reaching out on this s47F. Happy for you to arrange the pre meet with Nick and Beth. My diary is awful this week. If I can't attend but you can I am happy with that – just put me as optional and I'll do my best.

Cheers

---

**From:** Sally Box  
**Sent:** Friday, 23 August 2019 6:15 PM  
**To:** s47F <s47F@environment.gov.au>  
**Cc:** s47F s47F@environment.gov.au; s47F s47F s47F@environment.gov.au  
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<image001.jpg>

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**From:** s47F  
**To:** [Sally Box](#); s47F  
**Cc:** s47F  
**Subject:** RE: FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]  
**Date:** Monday, 26 August 2019 10:44:34 AM

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**Sent:** Friday, 23 August 2019 6:15 PM

**To:** s47F

**Cc:** s47F ; s47F

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**From:** [Sally Box](#)  
**To:** [Emma Campbell](#)  
**Subject:** FW: FOR YOUR INPUT: Our key concerns with the Wintle et al Spending to Save paper [SEC=OFFICIAL]  
**Date:** Monday, 26 August 2019 11:22:12 AM  
**Attachments:** [Wintle et al - Spending to save Australian threatened species\\_forDoEE.PDF](#)  
[Figure 1.jpg](#)  
[Supporting Information S1-S3.docx](#)  
[Supporting Information S4.xlsx](#)

---

Hi Emma

Attached is a copy of the Wintle paper 'Spending to Save' that Beth, Nick and I will be discussion with Brendan and NESP leadership on Friday.

Sally

**Dr Sally Box**  
**Threatened Species Commissioner**  
Biodiversity Conservation Division  
Department of the Environment and Energy  
P: +61 2 6274 1646  
M: s47F  
E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

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**Sent:** Monday, 26 August 2019 10:43 AM  
**To:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
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s47C

**s47c**

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**MEETING WITH BRENDAN WINTLE AND MARTIN MARON, TSR HUB**  
**Friday 30 August**  
*with Nicholas Post, Sally Box*

**What we want**

- s22 [REDACTED]
- To decide on a way forward on the Spending to Save paper
- s22 [REDACTED]

**What they want**

- s22 [REDACTED]
- To decide on a way forward on the Spending to Save paper
- s22 [REDACTED]
- s22 [REDACTED]

**Key points**

s22

## 2. 'Spending to Save' paper

### **Background**

The Wintle et al paper '*Spending to save: what will it cost to halt Australia's extinction crisis?*', which has been submitted to Conservation Letters, (**Attachment B**) builds on the Hub's analysis of the comparison between Australian and US spending on threatened species, which they undertook for their submission to the Senate Inquiry into Faunal Extinctions. Brendan also referred to these figures in his interview for the Four Corners 'Extinction Nation' program.

The Hub originally submitted this paper to us as an output under synthesis Project 7.7 – *Overlaying threat, threatened species ranges, threat mitigation and conservation options – a knowledge synthesis to inform a national approach to fighting extinction*. The project plan for Project 7.7 doesn't mention a paper or study like this as an output. There is some mention in the project plan about costs of conservation strategies for threatened species, but this is referring to the costs of particular actions to feed into recovery plans and plan allocation of investments.

After subsequent discussions with s47F, Brendan has agreed that it is a stretch to classify this paper as a Hub product and agreed to remove Hub branding/affiliation from the paper.

In his discussion with s47F at the time, Brendan explained that the objective of this paper was to trigger high-level policy and political discussion about the need to increase spending on threatened species recovery and how this could be achieved. The intention was then to use this paper as a discussion starter to brief exec and the Minister's Office on the findings of the work and policy implications. Brendan said they wanted to highlight the need for transparent reporting of threatened species recovery expenditure and to work with the Department on how we could account for threatened species expenditure in order to support such reporting.

### **Department's concerns with approach**

- If the authors' objective was to trigger a discussion with policy makers, a more appropriate and constructive way of achieving this would have been to come directly to the Department to have this discussion, rather than trying to 'trigger' it through a publication (and the media).
- 'Triggering political discussions' is not one of the roles, responsibilities or objectives of NESP Hubs.
- Adopting an advocacy-type approach can make a Hub appear to have political bias, which undermines credibility of both the Hub and program as a provider of unbiased-science.

### **Options**

Option 1: The authors publish the paper without hub affiliation, after consulting the Department on their calculations of Australian Government spending on Threatened Species.

Option 2: They don't publish the paper.

Option 3: They publish the paper with a different set of authors, individuals who do not represent the Hub leadership and/or knowledge brokering team.

In discussing the options for this paper, we should focus on the objectives the authors were trying to achieve, and discuss whether this paper is likely to be the most effective way to achieve those. Given we have now agreed with the hub that this paper is not a hub product, it



is not really within our remit to instruct them not to publish it or to drastically change the authorship, but we may mutually arrive at this point through a discussion of how best to achieve their objectives.

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# s22

## ATTACHMENTS

s22

B. 'Spending to Save' paper

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**From:** [Nicholas Post](#)  
**To:** s47F  
**Cc:** s47F; s47F; s47F  
**Subject:** TSR meeting brief [SEC=OFFICIAL]  
**Date:** Wednesday, 28 August 2019 4:07:57 PM  
**Attachments:** s22  
[Wintle et al - Spending to save Australian threatened species forDoEE.pdf](#)  
[Meeting brief\\_BB NP meeting with BWintle\\_30 August 2019.docx](#)  
**Importance:** Low

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s47F

Please find attached background from the SPS team for the meeting with Brendan on Friday.

Cheers  
Nick

---

**From:** s47F  
**Sent:** Tuesday, 27 August 2019 5:05 PM  
**To:** Nicholas Post <Nicholas.Post@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** FW: FOR YOUR REVIEW: TSR meeting brief [SEC=OFFICIAL]  
**Importance:** Low

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I've left a hard copy on s47F's desk.

Cheers,  
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Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

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**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
**Cc:** s47F <s47F@s@environment.gov.au>  
**Subject:** FOR YOUR REVIEW: TSR meeting brief [SEC=OFFICIAL]  
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Hi Nick,

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s47F will provide a hard copy. Beth has requested we provide this briefing to her by COB Wednesday.

Thank you to s47F for her work on this.

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**From:** s47F  
**To:** [Sally Box](#)  
**Cc:** s47F; [Nicholas Post](#); [Beth Brunoro](#); s47F  
**Subject:** FW: TSR meeting brief [SEC=OFFICIAL]  
**Date:** Thursday, 29 August 2019 11:39:54 AM  
**Attachments:** s22  
[Wintle et al - Spending to save Australian threatened species forDoEE.pdf](#)  
[Meeting brief\\_BB NP meeting with BWintle\\_30 August 2019.docx](#)  
s22  
**Importance:** Low

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Hi Sally,

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**From:** Nicholas Post

**Sent:** Wednesday, 28 August 2019 4:08 PM

**To:** s47F

**Cc:** s47F; s47F; s47F

**Subject:** TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

s47F,

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Cheers

Nick

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**From:** s47F  
**To:** [EA TS Commissioner](#)  
**Subject:** FW: TSR meeting brief [SEC=OFFICIAL]  
**Date:** Thursday, 29 August 2019 11:45:53 AM  
**Attachments:** s22  
[Wintle et al - Spending to save Australian threatened species forDoEE.pdf](#)  
[Meeting brief\\_BB NP meeting with BWintle\\_30 August 2019.docx](#)  
s22  
**Importance:** Low

---

Hi s47F/s47F,

Sorry, meant to include you on this in case Sally would like a printed copy ahead of her 1pm meeting.

Apologies for the short lead-time.

Cheers,

s47F

s47F

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**To:** Sally Box <Sally.Box@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; Beth Brunoro <Beth.Brunoro@environment.gov.au>; s47F <s47F@environment.gov.au>  
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**Importance:** Low

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**Cc:** s47F <s47F@environment.gov.au>; s47F

<s47F@environment.gov.au>; s47F

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**Cc:** s47F; s47F; s47F; [EA TS Commissioner](#)  
**Subject:** Additional documents for TSR meeting brief [SEC=OFFICIAL]  
**Date:** Thursday, 29 August 2019 3:28:55 PM  
**Attachments:** [nesp-research-priorities-2017.pdf](#)  
[TSR Project 7.7 Project Plan\\_RPV5.docx](#)

---

Hi Nick, Beth and Sally,

Please find attached the following additional documents as discussed in our meeting:

- NESP Research Priorities, 2017
- Project 7.7 Project Plan. The project plan does mention 'estimating the costs of conservation actions' a few times, so I imagine this is why Brendan was suggesting the link between the spending to save paper and this project. However, the plan certainly doesn't flag an analysis and commentary of the sufficiency of current government spending on threatened species as a project activity or output.

s22

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## Project 7.7 - Overlaying threat, threatened species ranges, threat mitigation and conservation options – a knowledge synthesis to inform a national approach to fighting extinction

Project length: 2 Years  
 Project start date: 01 January 2019  
 Project end date: 31 December 2020  
 Project current status: New project submitted for approval

Project Leader: s47F (FTE - 0.2)  
 s47F (FTE - 0.2)  
 Lead research organisation: University of Queensland  
 Project leader contact details: s47F @uq.edu.au; s47F  
 s47F @csiro.au; s47F

### PROJECT FUNDING AND EXPENDITURE

#### Project funding table

	2015 <i>Actual</i>	2016 <i>Actual</i>	2017 <i>Actual</i>	2018	2019	2020	2021	TOTAL
NESP Funding	0	0	0	0	90,648	62,347	0	152,995
Cash Contributions	0	0	0	0	18,138	20,072	0	38,210
In-Kind Support	0	0	0	0	178,751	183,303	0	362,055
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>287,537</b>	<b>265,723</b>	<b>0</b>	<b>553,260</b>

#### Expenditure statement

Funding will support a Postdoctoral research fellow for 12 months. It also includes funding for two workshops: One workshop will be focussed on generating the threat-action abatement framework with the second workshop focussing on improvement trajectories based on investment. It also provides co-funding for a TSSC workshop aimed at species conservation planning which will help guide this research.

### PROJECT DESCRIPTION

#### Project Summary

Thanks to concerted investment in research on Australia's threatened species, including through the NESP TSR Hub, we now have a wealth of knowledge about

where and how to improve the outlook for threatened species. However, work is needed to draw this knowledge together into a coordinated assessment of options for mitigating key threats to threatened species. We propose to synthesise research and expertise across threatened species in Australia to generate and evaluate options for ensuring the persistence of all threatened species, using the best available scientific and policy knowledge.

## **Project Description**

### **What conservation problem the project will address:**

This proposal addresses priorities and needs for a broad range of stakeholders in threatened species recovery across governments, NGOs, Indigenous organisations and the intra-governmental IUCN. It will provide strategic input for coordinated action of threat mitigation and species recovery actions, prioritise options to support management of protected areas, identify priority areas for further reserves to support reserve planning, investment and strategic assessments, and contribute to frameworks for identifying measures of success in threatened species recovery.

### **How the research will help/address the problem and expected benefits:**

This project will synthesise existing information and generate new information. Our project will provide a benchmark for adequate conservation responses for imperilled species based on the best available expert knowledge for ensuring species survival.

It will highlight the management and policy options required to achieve various outcomes for threatened species. Importantly, we will provide an approach for understanding how investments in threat management and species recovery will help us to progress towards a future where Australia's threatened species persist.

This will be an essential resource for future planning and decision making, including identifying priority areas for investment and directly informing on-ground management. It will aim to inform policy processes across different jurisdictions and help identify opportunities for investments that benefit multiple species and achieve broader environmental outcomes.

### **How the research will be undertaken (research activities), and what is in and out of scope:**

This project will (i) create an integrated assessment (and mapping) of the primary threats to all listed threatened species (including key interactions among threats) in a threats by species matrix, (ii) outline the actions needed to mitigate threats and secure species, and (iii) engage core stakeholders in collating relevant information and providing a basis for a national roadmap toward ensuring protection and recovery of Australia's threatened species.

We will bring this information together to determine the collective extent of the actions required for securing all threatened species by intersecting species needs, species ranges, threats and current management.

In doing so, we will provide the science to answer key questions for threatened species survival, including:

- What are the conservation response needs of different types of threatened species?
- Which actions for threat abatement are required to ensure all species persist?

*Therefore we will provide the data, knowledge and science to support a comprehensive strategy for all Australian threatened species, but writing the strategy is outside the scope.*

**Will there be a trial or case study? If so please describe:**

This research is focused on delivering comprehensive strategies for all threatened species across Australia, therefore we will not focus on a specific case study or trial.

**Details of related prior research, if relevant**

This work will synthesise all relevant TSR Hub projects and areas of work. These cover all six themes in the Hub. For example:

- work from Theme 1 will provide us with information on the best understandings of how to best manage feral herbivores and predators, and which threatened species this will benefit.
- work from Theme 2 will highlight the species most at risk and what needs to be done most urgently to protect them
- work from Theme 6 will help us to estimate the costs of undertaking the required actions for protecting threatened species

Existing work outside of the Hub will also be drawn upon, including:

- National and state level policies and strategies, including species recovery plans and action plans
- Cutting edge science on threat mapping, species distribution modelling and estimating the costs and benefits of conservation strategies

**How the project links to other research and/or the work of other Hubs:**

Discussions are underway with the Department of the Environment and Energy, Terrestrial Threatened Species Section, ERIN and Parks Australia, with the TSSC, and with Wildlife Conservation Society and The Nature Conservancy (including with respect to international processes).

A component of this project will involve working with state and territory governments and the Commonwealth to support collaborative approaches to developing measures of effectiveness and return on investment of management actions. More broadly, this project will inform the development of measures for threatened species recovery, which is a high priority for the Threatened Species Strategy, State of the Environment reporting and international reporting.

The work will link with international discussions when it comes to national and international reporting for threatened species recovery, including reporting against the current Aichi Targets outlined in the Strategic Plan for Biodiversity and also the Sustainable Development Goals. It will also inform intra-governmental efforts for generating measures for species Green Listing (via the International Union for Conservation of Nature, IUCN).

This project will link with work undertaken under NAER Hub Project 3.3 (s47F ) for Northern Australia.

**How will (or can) the research be applied to improve decision-making and on-ground action:**

This is proposed as a key TSR Hub legacy product. It will bring together current research and expertise from within and outside the Hub and including DoEE and other key agency and conservation stakeholders. The end product will provide information that can be applied by governments and other investors within their existing and potential future initiatives, including for directing investment effectively and for measuring progress from investment in threatened species recovery and threat abatement.

This project aims to identify the effective approaches to recover threatened species , strongly aligned with the goals of Threatened Species Commissioner. It will provide strategic overview information to enhance management of threats and threatened species and ecological communities, including identifying applied research needs, to deliver more significant outcomes, more cost-effectively.

In addition, it will inform policy, management and processes for recovery planning by providing an enhanced outlook for Australia's threatened terrestrial plant and animal species and ecological communities. It will incorporate the NESP biodiversity research into the development and implementation of the DoEE on-ground programs.

**NESP 2017 Research Priority Alignment**

This project aligns with NESP cross-cutting issue:

- 2. consider the social and economic value of the environmental asset/s and research outcomes, as appropriate

- 3. where possible, and where other considerations are equal, be targeted at areas with high conservation value such as National and World Heritage places and Ramsar wetlands.

This project aligns with the following research priorities:

- Meaningful and accessible information on trends in threatened species, to inform the targeting of Government investment and build community awareness and support (D2.1).
- Early warning tools for extinction risk and identification of the most at risk species (D2.2).
- Better prediction of threatened species trajectories, for example using indicators, proxies, triggers and thresholds (D2.3).
- Improved information on the distribution of threatened species and ecological communities to better pinpoint their location. Including the review of current species distribution models, and incorporating the capacity for species to adapt to climate change (D2.4).

#### PATHWAY TO IMPACT

<b>Outcomes</b>			
This research will improve the outlook for Australia’s threatened species by providing information to help identify priority areas for investment, reserve design, management action and/or further research. It will inform recovery planning, planning for threat mitigation and policy on managing threatened species, and could be integrated into future strategic policy work for threatened species.			
<b>Research-user</b>	<b>Engagement and communication</b>	<b>Impact on management action</b>	<b>Outputs</b>
DoEE Protected Species Branch Areas, Threatened Species Commissioner’s Office, Threatened Species Scientific Committee, state/territory managers of conservation and threatened species,	The project team will community directly with key Commonwealth and state/territory government stakeholders through regular email updates. This project will also work closely with government and NGO partners through updates and discussions with the Hub’s Stakeholder Reference Group. The project postdoctoral	A matrix of listed threatened species and typology of threatened species could be used to assist in conservation prioritisation research and practice, and may also update the SPRAT database with information on threat severity for each species.	Outputs may include:  A matrix of listed threatened species vs their most important threats (and the relevant management action), using the SPRAT data along with expert knowledge.  A typology of threatened species and their conservation planning needs, e.g.

<p>science managers of Parks agencies, science managers of management NGOs including Bush Heritage, Birdlife and Australian Wildlife Conservancy, and international bodies (including IUCN, The Nature Conservancy and Wildlife Conservation Society), ERIN, Decision Support and Analysis Section (s47F [redacted], s47F [redacted], s47F [redacted], s47F [redacted], s47F [redacted], s47F [redacted], s47F [redacted])</p>	<p>researcher and Hub CIs will also work with government and other data custodians to discuss scope, source relevant data and provide information as available.</p> <p>Final data, maps and reports will be made publically available online and will be communicated through the Hub, the conversation, and directly with DoEE, state/territory governments and key NGO's.</p>	<p>Maps of the historical and current distributions of threatened species will inform conservation planning efforts across the Australian continent, including potentially updating the current Species of National Environmental Significance range maps held by the Dept of Environment and Energy.</p> <p>Maps summarising distribution and severity of threats will inform conservation planning efforts across the Australian continent. This will inform planning for threatened species but also identify locations where the management of threats is synergistic with other industries, such as agriculture.</p>	<p>based on their distribution and abundance, which affects the spatial scale and nature of conservation planning. (eg. an orchid species surviving in a 2 ha patch of habitat; night parrot living at very low density across a very large area; redbfin blue-eye bluefin living in spatially discrete mound springs).</p> <p>Maps of the historical and current distributions of threatened species – this is complete for approximately two thirds of species, we we will use suitable habitat as a proxy where necessary (this is complete for approximately two thirds of species).</p> <p>Maps summarising the distribution and severity of threats impacting species across Australia, using modelling based on the best available information</p>
--	---	---	---



		<p>Information on response curves identifying measurable actions and associated costs could be a useful potential source of information for recovery plans, action plans and offsets. It could also inform the allocation of future investment in threatened species under national and state/territory funding programs and strategies (e.g. future iterations of the National Landcare Program).</p>	<p>Response curves or 'targets' for each species or species group, linking the persistence of each species to a set of measurable actions</p> <p>Costs of conservation strategies for threatened species</p>
<p>Indigenous stakeholders, TBC</p>	<p>Indigenous stakeholders will be identified in the early stages of the project. Consultations made on the design and threat mitigation actions will be undertaken with willing Indigenous stakeholder participants.</p>	<p>It is anticipated that this project will generate collaborative knowledge to support strategic investment for species recovery which we will aim to deliver in a way that can support Indigenous managers and decision makers in achieving their conservation goals and other related objectives. A deeper understanding of how to best achieve positive impacts from this project for Indigenous stakeholders will be developed in</p>	<p>Where applicable, the generation of culturally appropriate material will be considered in collaboration with Indigenous participants.</p>

		collaboration once participants are involved.	
<b>Additional outputs</b>			
1. Multiple peer-reviewed papers focussed on both the methodology generated and the results.			

#### INDIGENOUS CONSULTATION AND ENGAGEMENT

Indigenous people have been custodians of Australia’s biota for many millennia, and continue to practice their cultural responsibilities for looking after country, including by maintaining native species.

Indigenous groups are directly responsible for managing part (or most) of the ranges of a large proportion of threatened species; they are a key participant in species conservation and recovery, for example through declaration of IPAs and threat management.

This project will support the conservation management by Indigenous people, by providing a national-scaled context for their conservation programs, which, in turn will guide and support strategic investment for species recovery.

The project will involve Indigenous stakeholders in the design of threat mitigation actions, taking advice from the Hub Indigenous Liaison Officer and the Hub’s Indigenous Reference Group about which Indigenous bodies would be available and interested in providing input to the project.

#### PROJECT MILESTONES

Milestones	Due date	Milestone Status
Milestone 1 - appointment of postdoctoral fellow	April 2019	
Milestone 2 - Identification of relevant Indigenous stakeholders. Discussions with relevant co-contributors and stakeholders around collaboration for the project.	July 2019	
Milestone 3 - matrix of species by threats developed	Oct 2019	
Milestone 4 - expert synthesis of species responses	Feb 2020	
Milestone 5 - final report integrating the actions and, where possible, costs of securing all of Australia’s threatened species	June 2020	

#### DATA MANAGEMENT AND ACCESSIBILITY

<b>Project output</b>	<b>Data Management and Accessibility</b>
-----------------------	--

Matrix, typology, maps, spatial layers, reports, fact sheets, key findings, costings and other aggregate information	All aggregate information will be made publicly available through the Hub website, legacy sites and other channels.
Data informing production of synthesised outputs	Much of the data used to derive synthesised products will be garnered from open-access sources or other Hub projects (and will therefore follow Hub data accessibility plans for those projects). Any additional relevant data will be made publicly available, except where this has been provided by third parties or involves sensitive information, e.g. threatened species locations.

#### LOCATION OF RESEARCH

Location	Threatened Species/Ecological Community/Threats
Nationally	All threatened species.

#### PROJECT SPECIFIC RISKS

- Data access and compilation. Will be addressed through regular updates between project staff and project leadership group. Involvement of CSIRO and ERIN will help reduce risk

#### PROJECT KEYWORDS

Strategic Investment, Threat Mitigation, Distribution of Species, Mapping Distribution,

#### PROJECT CONTACTS

#### RESEARCHERS AND STAFF

Name	Organisation	Project Role	FTE
s47F	University of Queensland	Project Leader	0.2
s47F	CSIRO	Project Leader	0.2
Martine Maron	University of Queensland	Project Contributor	0.05
Brendan Wintle	University of Melbourne	Project Contributor	0.1
s47F	Australian National University	Project Contributor	0.01
s47F	University of Queensland & Australian National University	Project Contributor	0.05
s47F	University of Queensland	Project Contributor	0.1

s47F	Charles Darwin University	Project Contributor	0.1
s47F	Charles Darwin University	Project Contributor	0.1
Rachel Morgain	Australian National University	Project Contributor	Informal
s47F	Charles Darwin University / Australian National University	Project Contributor	Informal
TBC	University of Queensland	Project postdoctoral researcher	1

#### DATA MANAGEMENT

Name	Organisation	Email	Phone
s47F	University of Queensland	s47F@uq.edu.au	s47F

#### CO-CONTRIBUTORS

Name	Organisation/	Contribution
s47F	NAER	Collaboration and guidance on data and analysis approaches

#### KEY PARTNERS AND RESEARCH END USERS

Key Partners (organisation/program)	Name/s	Email (optional)
TSSC	s47F	s47F@jcu.edu.au
DoEE:		
Parks Australia	s47F	s47F@environment.gov.au
ERIN, Decision Support and Analysis Section	s47F s47F, s47F, s47F, s47F, s47F	s47F@environment.gov.au
Terrestrial Threatened Species Section	s47F	s47F@environment.gov.au
Threatened Species Commissioners Office	s47F	s47F@environment.gov.au
Biosecurity	s47F	s47F@environment.gov.au
Hub Indigenous Reference Group		

Other partners, including state/territory government partners and other data custodians, will be engaged through the project		
--	--	--

<b>Research Users (program/section/branch/organisation)</b>	<b>Name/s</b>	<b>Email (optional)</b>
Wildlife Conservation Society	s47F [REDACTED]	s47F [REDACTED]@wcs.org
The Nature Conservancy	s47F [REDACTED]	s47F [REDACTED] @TNC.ORG
DoEE:		
Parks Australia	s47F [REDACTED]	s47F [REDACTED]@environment.gov.au
ERIN, Decision Support and Analysis Section	s47F [REDACTED], s47F [REDACTED], s47F [REDACTED], s47F [REDACTED], s47F [REDACTED], s47F [REDACTED]	s47F [REDACTED]@environment.gov.au
Terrestrial Threatened Species Section	s47F [REDACTED]	s47F [REDACTED]@environment.gov.au
Threatened Species Commissioners Office	s47F [REDACTED]	s47F [REDACTED]@environment.gov.au
Biosecurity	s47F [REDACTED]	s47F [REDACTED]@environment.gov.au
Other research users to be engaged through project		

**From:** [Sally Box](#)  
**To:** s47F  
**Subject:** FW: Additional documents for TSR meeting brief [SEC=OFFICIAL]  
**Date:** Thursday, 29 August 2019 6:53:24 PM  
**Attachments:** [nesp-research-priorities-2017.pdf](#)  
[TSR Project 7.7 Project Plan\\_RPV5.docx](#)

---

**Dr Sally Box**

**Threatened Species Commissioner**

Biodiversity Conservation Division  
Department of the Environment and Energy  
P: +61 2 6274 1646  
M: s47F  
E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

---

**From:** s47F  
**Sent:** Thursday, 29 August 2019 3:28 PM  
**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; EA TS Commissioner <[EA.TSCommissioner@environment.gov.au](mailto:EA.TSCommissioner@environment.gov.au)>  
**Subject:** Additional documents for TSR meeting brief [SEC=OFFICIAL]

Hi Nick, Beth and Sally,

Please find attached the following additional documents as discussed in our meeting:

- NESP Research Priorities, 2017
- Project 7.7 Project Plan. The project plan does mention 'estimating the costs of conservation actions' a few times, so I imagine this is why Brendan was suggesting the link between the spending to save paper and this project. However, the plan certainly doesn't flag an analysis and commentary of the sufficiency of current government spending on threatened species as a project activity or output.

s22

Cheers,  
s47F

s47F  
Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

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[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*  
Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** Nicholas Post

**Sent:** Wednesday, 28 August 2019 4:08 PM

**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F

<s47F@environment.gov.au>; s47F

<s47F@environment.gov.au>

**Subject:** TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

s47F,

Please find attached background from the SPS team for the meeting with Brendan on Friday.

Cheers

Nick

---

**From:** s47F

**Sent:** Tuesday, 27 August 2019 5:05 PM

**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>

**Cc:** s47F <s47F@environment.gov.au>

**Subject:** FW: FOR YOUR REVIEW: TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

Hi Nick,

Please find the updated brief attached with some words added re today's issue.

I've left a hard copy on s47F's desk.

Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

Phone: s47F

s47F

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**Sent:** Tuesday, 27 August 2019 3:03 PM

**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>

**Cc:** s47F <s47F@environment.gov.au>

**Subject:** FOR YOUR REVIEW: TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

Hi Nick,

Please see attached a draft of the briefing for the upcoming meeting with TSR.

s47F will provide a hard copy. Beth has requested we provide this briefing to her by COB Wednesday.

Thank you to s47F for her work on this.

s47F

s47F

**Director, Science Partnerships**

Department of the Environment and Energy

PO Box 787, Canberra, ACT 2601

s47F



Email: **s47F** [@environment.gov.au](mailto:s47F@environment.gov.au)

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*



**From:** [Sally Box](#)  
**To:** s47F  
**Cc:** s47F; [Nicholas Post](#); [Beth Brunoro](#); s47F  
**Subject:** Re: TSR meeting brief [SEC=OFFICIAL]  
**Date:** Friday, 30 August 2019 5:37:55 PM

---

Hi s47F

Thanks very much for all the supporting papers for the meeting - they were very useful for framing the conversation.

Cheers  
Sally

Sent from my iPhone

On 29 Aug 2019, at 11:39 am, s47F <s47F@environment.gov.au> wrote:

Hi Sally,

Please find attached background for the meeting with Brendan on Friday.



Cheers,  
s47F

s47F  
Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

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<image004.jpg>

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To: s47F <s47F@environment.gov.au>  
Cc: s47F <s47F@environment.gov.au>; s47F  
s47F <s47F@environment.gov.au>; s47F  
<s47F@environment.gov.au>

**Subject:** TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

s47F,

Please find attached background from the SPS team for the meeting with Brendan on Friday.

Cheers

Nick

---

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**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>

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s47F

s47F

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Department of the Environment and Energy

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<image002.jpg>

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s47F

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s47F

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<image001.jpg>

s22

<Wintle et al - Spending to save Australian threatened species\_forDoEE.pdf>

<Meeting brief\_BB NP meeting with BWintle\_30 August 2019.docx>

s22

**From:** [Beth Brunoro](#)  
**To:** [Sally Box](#); s47F  
**Cc:** s47F; [Nicholas Post](#); s47F  
**Subject:** RE: TSR meeting brief [SEC=OFFICIAL]  
**Date:** Monday, 2 September 2019 1:40:54 PM

---

Ditto s47F and s47F

Great to have all the information at our fingertips. I am sure Nick will give you a read out and we can cover off next steps.

cheers

**Beth Brunoro**  
First Assistant Secretary  
Knowledge and Technology Division  
Department of the Environment and Energy

GPO Box 787, Canberra ACT 2601  
T 02 6159 7504  
[beth.brunoro@environment.gov.au](mailto:beth.brunoro@environment.gov.au)



---

**From:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Sent:** Friday, 30 August 2019 5:38 PM  
**To:** s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; s47F <s47F@environment.gov.au>  
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s22

# s22

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s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

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<image004.jpg>

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---

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**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>; s47F

s47F <s47F@environment.gov.au>; s47F

<s47F@environment.gov.au>

**Subject:** TSR meeting brief [SEC=OFFICIAL]

**Importance:** Low

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Nick

---

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s47F

s47F

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Science Partnerships Section  
Department of the Environment and Energy

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<image001.jpg>

s22

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s22



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s47C

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**s47C**

**From:** [Nicholas Post](#)  
**To:** [Beth Brunoro](#)  
**Cc:** s47F  
**Subject:** TSR Hub Meeting Note - Final(ish) [SEC=OFFICIAL:Sensitive]  
**Date:** Tuesday, 10 September 2019 1:47:05 PM  
**Attachments:** [Meeting Note v3.docx](#)

---

Beth,

Please find attached update meeting note. I wonder if you would like to send it to Brendan as an official record of conversation or simply file it for our records.

I have briefed the team on the discussion and they are:

- 1) aware that we need to prepare advice for the Minister when the 'spending to save' paper is release;

s22

Happy to update or discuss further it suits.

Cheers

Nick

**Meeting Note: Threatened Species Recovery Hub – Research program and future output review**

Location: Melbourne University 30 August 2019

Participants - Beth Brunoro (DoEE), Sally Box (DoEE), Nick Post (DoEE), Brendan Wintle (TSR Hub) and Martine Maron (TSR Hub)

**Agenda item 1: Principles of engagement**

DoEE and TSR Hub leadership agreed that the TSR Hub had consistently delivered high value science and issues that required leadership attention were extremely rare.

DoEE advised that the research guidance for the National Environmental Science Program (NESP) was unnecessarily confusing with key information spread across multiple agreements and documents.

DoEE and TSR Hub leadership agreed that documentation clarity should be improved for the next program and that the following key principles were important for stakeholders across all NESP Hubs:

- NESP research priorities are informed by end-users needs and set by the Department;
- NESP end-users respect the independence of all scientific research outputs;
- NESP Hubs deliver scientific research to program end-users; and
- NESP Hubs do not produce or deliver policy advice.

DoEE and TSR Hub Leadership agreed that early consultation was required to ensure that research was always consistent with end-user requirements.

TSR Hub leadership noted that access to decision makers was advantageous for academics as it allowed research to be targeted and provided opportunities for influence to advance environmental outcomes.

TSR Hub leadership highlighted that academics were required to publish the results of all research to ensure their future career prospects and that this culture extended to research funded by NESP.

DoEE and TSR Hub Leadership agreed that some research could be conducted on a confidential basis if agreement was reached prior to research commencing so that academics could decide to participate and forgo a future academic publication.

TSR Hub Leadership noted that the Hub had conducted some confidential work for the NSW Government and that this had allowed closer collaboration on sensitive issues than would otherwise have been possible under the traditional academic model.

**Agenda item 2: Future TSR HUB outputs**

*'Spending to Save'*

DoEE noted that the 'Spending to Save' academic publication did not fall under agreed NESP research priorities and that most of the background information was drawn from a TSR Hub submission into a senate inquiry. DoEE sought an update on next steps.

TSR Hub leadership agreed that the 'Spending to Save' publication was not a NESP product. TSR Hub leadership noted that the senate inquiry had triggered additional thinking and analysis within the academic community that needed to be published.

TSR Hub Leadership agreed that the 'Spending to Save' publication would not be badged as a NESP product and that it would simply be released into the academic community. TSR Hub leadership offered DoEE the opportunity to review the publication ahead of publication.

DoEE acknowledged the proposed release strategy, declined to review the publication and noted the importance of early engagement to ensure research funded by NESP remained focused on end-user requirements.

A large, bold, black serif font graphic consisting of the lowercase letter 's' followed by the number '22'. The characters are set against a solid grey rectangular background.

### **Agenda item 3 - Other Business**

DoEE recognised the significant contribution made by the TSR research community and highlighted that the productive partnership was built on mutual respect for each organisation's professional values and ethics frameworks.

**From:** [Nicholas Post](#)  
**To:** [Emma Campbell](#)  
**Cc:** s47F; [Beth Brunoro](#); [Sally Box](#); s47F  
**Subject:** RE: NESP TSR Hub Leader seeking meeting with Emma [SEC=OFFICIAL]  
**Date:** Thursday, 12 September 2019 5:23:17 PM  
**Attachments:** [Meeting Note v3.docx](#)

---

Hi Emma,

That sounds like a great idea and I am sure Beth will be keen to engage on the issue. I have attached a copy of the draft meeting note to ensure you have the latest context before the discussion.

Looking forward to seeing you.

Cheers  
Nick

---

**From:** Emma Campbell  
**Sent:** Thursday, 12 September 2019 2:27 PM  
**To:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** FW: NESP TSR Hub Leader seeking meeting with Emma [SEC=OFFICIAL]

Hi,  
I will meet with Brendan but thought might be good if we chat first? Sally's given me a debrief of meeting in Melb – but interested in views and next steps and anything I can do to assist/further/not undermine relationship with NESP would be good  
I'll ask s47F to set up a time.  
Emma

---

**From:** s47F  
**Sent:** Thursday, 12 September 2019 11:52 AM  
**To:** Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Cc:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** FW: NESP TSR Hub Leader seeking meeting with Emma [SEC=OFFICIAL]

E: Are you interested in meeting Brendan Wintle (TSR Hub Director) – next Thu 19 Sep (9 – 9.30; and 12 – 1.30) free at this time?

Grateful your consideration.

s47F

---

**From:** s47F  
**Sent:** Thursday, 12 September 2019 11:32 AM  
**To:** s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>

**Subject:** FW: NESP TSR Hub Leader seeking meeting with Emma [SEC=OFFICIAL]

Until I have Emma's calendar access, we can look at this today.

---

**From:** s47F

**Sent:** Thursday, 12 September 2019 10:53 AM

**To:** s47F <s47F@environment.gov.au>

**Cc:** s47F <s47F@environment.gov.au>

**Subject:** NESP TSR Hub Leader seeking meeting with Emma [SEC=OFFICIAL]

Hi s47F,

Brendan Wintle, the Hub Director of the National Environmental Science Program's Threatened Species Recovery (TSR) Hub is going to be in town next Thursday 19 Sept.

As BCD are one of the Department's key research users for the TSR Hub, Brendan was wondering if Emma would like to meet with him while he's here.

He's envisaging a pretty casual ½ hour catch up, potentially over a coffee. He is available between 8 and 9:45, and between 12 and 2.

Could you please let me know whether Emma is available and if she would like to meet with Brendan?

Many thanks,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*

[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

Check out the latest [Science for Saving Species](#) news

<image001.jpg>

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

**From:** [Nicholas Post](#)  
**To:** s47F  
**Subject:** RE: TSR steering committee meeting - no hot issues, we have sufficient coverage if needed [SEC=OFFICIAL:Sensitive]  
**Date:** Monday, 28 October 2019 4:21:09 PM  
**Attachments:** [Meeting Note v3.docx](#)

---

s47F ,

s22

Also please reference the attached 30 August record of conversation during the pre-brief and use it as a guide for all conversations with Brendan. We need to be very clear and consistent in all our engagement with the hub.

s22

Thanks  
Nick

---

**From:** s47F  
**Sent:** Monday, 28 October 2019 4:00 PM  
**To:** Beth Brunoro  
**Cc:** s47F ; Nicholas Post ; s47F  
**Subject:** TSR steering committee meeting - no hot issues, we have sufficient coverage if needed

Hi Beth,

I discussing the TSR Steering Committee meeting (in the JGB this Wednesday) with and we decided it easiest if I just send you an email.

I understand you have extremely high demands on your time at the moment and may not be able to make all or part of the meeting.

**The short story is it's not a problem if you can't make it – no hot issues, everyone will understand and we have it covered.**

s22

s22



**From:** s47F on behalf of Emma Campbell  
**To:** [Beth Brunoro](#); [Nicholas Post](#); [Sally Box](#)  
**Subject:** Debrief on NESP [SEC=OFFICIAL]  
**Start:** Wednesday, 18 September 2019 4:30:00 PM  
**End:** Wednesday, 18 September 2019 5:00:00 PM  
**Location:** Emma's Office  
**Attachments:** [RE NESP TSR Hub Leader seeking meeting with Emma SECOFFICIAL.msg](#)

---

Hi

As per your email discussions, Emma would like to meet have a debrief on any next steps with NESP before meeting with the Hub Leader on Thursday morning.

Thanks  
s47F

**From:** [Nicholas Post](#)  
**To:** "Brendan Wintle"  
**Cc:** [Beth Brunoro](#); [Sally Box](#); [Martine Maron](#); [Rachel Morgain](#); s47F ; s47F ; s47F  
s47F; s47F  
**Subject:** RE: spending to save [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 10:19:34 AM  
**Attachments:** [image001.png](#)

---

Thanks Brendan,  
I appreciate the update and hope you are well.  
All the best  
Nick

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Wednesday, 6 November 2019 10:16 AM

**To:** Beth Brunoro ; Nicholas Post ; Sally Box ; s47F

**Cc:** Rachel Morgain ; s47F ; s47F

**Subject:** spending to save

Hi Beth, Nick, Sally, s47F , s47F ,

I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

I have no particular plans for media on this and it is not Hub work.

Regards,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](http://www.nespthreatenedspecies.edu.au)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Sally Box](#)  
**To:** [Emma Campbell](#); s47F ; [Geoff Richardson](#)  
**Subject:** Fwd: spending to save [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 11:22:24 AM  
**Attachments:** [image001.png](#)

---

FYI

We should work with the NESP crew to inform the MO and get some points to get points together in case it gets media attention.

s47F - could you touch base w s47F ?

Thanks  
Sally

Sent from my iPhone

Begin forwarded message:

**From:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
**Date:** 6 November 2019 at 8:49:33 am ACST  
**To:** 'Brendan Wintle' <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**Cc:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, Martine Maron <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>, Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>, s47F <s47F@environment.gov.au>  
**Subject:** RE: spending to save [SEC=OFFICIAL]

Thanks Brendan,  
I appreciate the update and hope you are well.  
All the best  
Nick

---

**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
**Sent:** Wednesday, 6 November 2019 10:16 AM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; Martine Maron <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Subject:** spending to save

Hi Beth, Nick, Sally, s47F , s47F ,  
I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.  
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Regards,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland <sup>SEP</sup>  
ph. +61 3 8344 3306  
skype: brendan.wintle  
[http://brendanwintle.wordpress.com/about/  
google scholar brendan wintle](http://brendanwintle.wordpress.com/about/google-scholar-brendan-wintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Sally Box](#)  
**To:** s47F; [Geoff Richardson](#); [Emma Campbell](#)  
**Subject:** Fwd: spending to save  
**Date:** Wednesday, 6 November 2019 11:24:18 AM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** spending to save

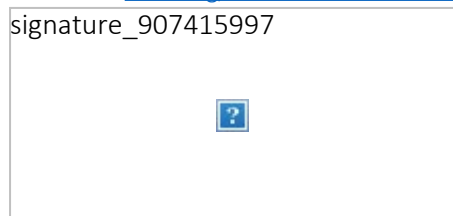
Hi Beth, Nick, Sally, s47F, s47F,

I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

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Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?user=brendanwintle)  
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ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
signature\_907415997



*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the*

*Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

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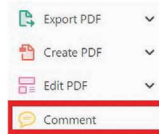
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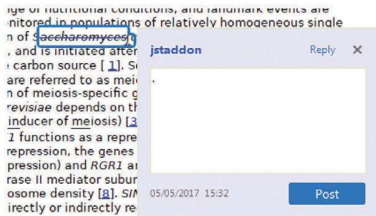


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Strikes a line through text and opens up a text box where replacement text can be entered.

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- Highlight a word or sentence.
- Click on .
- Type the replacement text into the blue box that appears.



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Strikes a red line through text that is to be deleted.

**How to use it:**

- Highlight a word or sentence.
- Click on .
- The text will be struck out in red.

experimental data if available. For ORFs to be had to meet all of the following criteria:

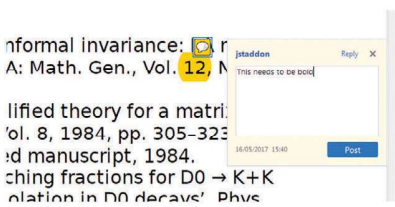
1. Small size (35–250 amino acids).
2. Absence of similarity to known proteins.
3. Absence of functional data which could not be the real overlapping gene.
4. Greater than 25% overlap at the N-terminus with another coding feature; or both ends; or ORF containing a tRNA.

**3. Commenting Tool – for highlighting a section to be changed to bold or italic or for general comments.**

Use these 2 tools to highlight the text where a comment is then made.

**How to use it:**

- Click on .
- Click and drag over the text you need to highlight for the comment you will add.
- Click on .
- Click close to the text you just highlighted.
- Type any instructions regarding the text to be altered into the box that appears.

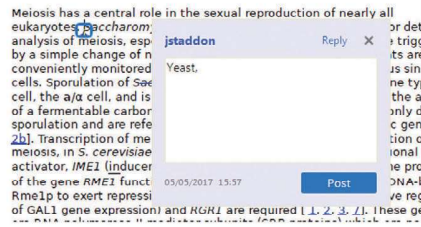


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USING e-ANNOTATION TOOLS FOR ELECTRONIC PROOF CORRECTION

**5. Attach File Tool – for inserting large amounts of text or replacement figures.**

 Inserts an icon linking to the attached file in the appropriate place in the text.


**How to use it:**

- Click on .
- Click on the proof to where you'd like the attached file to be linked.
- Select the file to be attached from your computer or network.
- Select the colour and type of icon that will appear in the proof. Click OK.


The attachment appears in the right-hand panel.

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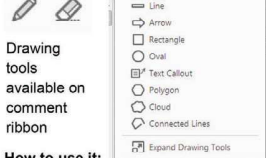
**6. Add stamp Tool – for approving a proof if no corrections are required.**

 Inserts a selected stamp onto an appropriate place in the proof.

**How to use it:**

- Click on .
- Select the stamp you want to use. (The *Approved* stamp is usually available directly in the menu that appears. Others are shown under *Dynamic*, *Sign Here*, *Standard Business*).
- Fill in any details and then click on the proof where you'd like the stamp to appear. (Where a proof is to be approved as it is, this would normally be on the first page).

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**APPROVED**

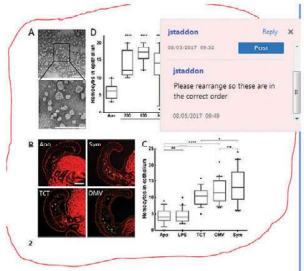


**How to use it:**

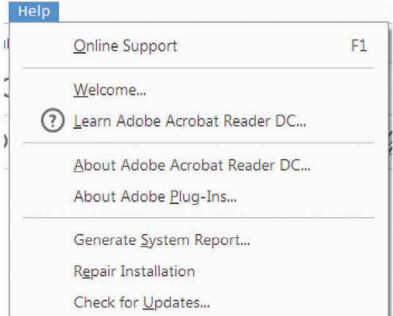
- Click on one of the shapes in the **Drawing Markups** section.
- Click on the proof at the relevant point and draw the selected shape with the cursor.
- To add a comment to the drawn shape, right-click on shape and select *Open Pop-up Note*.
- Type any text in the red box that appears.

**7. Drawing Markups Tools – for drawing shapes, lines, and freeform annotations on proofs and commenting on these marks.**

Allows shapes, lines, and freeform annotations to be drawn on proofs and for comments to be made on these marks.



For further information on how to annotate proofs, click on the **Help** menu to reveal a list of further options:



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Q6	Please provide publisher location for reference Garnett et al. (2018a).	
Q7	Please provide page range and volume number for reference Garnett et al. (2018b).	
Q8	Please provide volume number and page range for reference Kearney et al. (2018).	
Q9	Please provide complete detail for reference Suckling et al. (2016).	
Q10	Please provide complete detail for reference Woinarski et al. (2014).	

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Please confirm that the funding sponsor list below was correctly extracted from your article: that it includes all funders and that the text has been matched to the correct FundRef Registry organization names. If a name was not found in the FundRef registry, it may not be the canonical name form, it may be a program name rather than an organization name, or it may be an organization not yet included in FundRef Registry. If you know of another name form or a parent organization name for a "not found" item on this list below, please share that information.

FundRef Name	FundRef Organization Name
Commonwealth of Australia's National Environmental Science Program	

**POLICY PERSPECTIVE**

# Spending to save: What will it cost to halt Australia's extinction crisis?

**Brendan A. Wintle**<sup>1</sup> | **Natasha C.R. Cadenhead**<sup>1</sup> | **Rachel A. Morgain**<sup>2</sup> |  
**Sarah M. Legge**<sup>2,3</sup> | **Sarah A. Bekessy**<sup>4</sup> | **Matthew Cantele**<sup>1</sup> | **Hugh P. Possingham**<sup>3,5</sup> |  
**James E.M. Watson**<sup>3,6</sup> | **Martine Maron**<sup>3</sup> | **David A. Keith**<sup>7</sup> | **Stephen T. Garnett**<sup>8</sup> |  
**John C. Z. Woinarski**<sup>8</sup> | **David B. Lindenmayer**<sup>2</sup>

<sup>1</sup>School of Biosciences, The University of Melbourne, Victoria, Australia

<sup>2</sup>Fenner School of Environment & Society, The Australian National University, ACT, Australia

<sup>3</sup>Centre for Biodiversity and Conservation Science, University of Queensland, St Lucia, Queensland, Australia

<sup>4</sup>Interdisciplinary Conservation Science, RMIT University, Victoria, Australia

<sup>5</sup>The Nature Conservancy, Arlington, Virginia

<sup>6</sup>Global Conservation Program, Wildlife Conservation Society, Bronx, New York

<sup>7</sup>Centre for Ecosystem Science, University of New South Wales, Kensington, Australia

<sup>8</sup>Research Institute for the Environment and Livelihoods, Charles Darwin University, Northern Territory, Australia

## Correspondence

Brendan A. Wintle, School of Biosciences,  
University of Melbourne, Victoria 3010,  
Australia.

Email: b.wintle@unimelb.edu.au

## Funding information

Commonwealth of Australia's National  
Environmental Science Program

## Abstract

As with most governments worldwide, Australian governments list threatened species and proffer commitments to recovering them. Yet most of Australia's imperiled species continue to decline or go extinct and a contributing cause is inadequate investment in conservation management. However, this has been difficult to evaluate because the extent of funding committed to such recovery in Australia, like in many nations, is opaque. Here, by collating disparate published budget figures of Australian governments, we show that annual spending on targeted threatened species recovery is around U.S.\$92m (AU\$122m) which is around one tenth of that spent by the U.S. endangered species recovery program, and about 15% of what is needed to avoid extinctions and recover threatened species. Our approach to estimating funding needs for species recovery could be applied in any jurisdiction and could be scaled up to calculate what is needed to achieve international goals for ending the species extinction crisis.

## KEYWORDS

budget, costs, Endangered Species Act, funding, government spending, recovery plan, resource allocation, threatened species, transparency, the United States

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## 1 | INTRODUCTION

The Anthropocene is characterized by species extinction rates between 100 and 1,000 times higher than background rates (Barnosky et al., 2011). Humans are responsible for the vast majority of extinctions in the past 400 years due largely to habitat destruction and degradation, overexploitation and the introduction of invasive species and diseases (Lewis & Maslin, 2015). In Australia, the drivers of extinction broadly reflect the global profile, although invasive species have played a relatively larger role compared to most of the rest of the world (Kearney et al., 2018). A potent combination of rapid habitat destruction and introduced predators, herbivores and pathogens, has resulted in Australia losing more biodiversity than any other developed nation in the past 200 years (Waldron et al., 2017).

Australia's obligations under the Convention for Biological Diversity (CBD) include meeting the United Nation's Strategic Plan for Biodiversity Aichi Target 12: "...by 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained" (CBD, 2010). However, during the past decade, imperiled species in Australia have continued to decline and at least three species have been allowed to go extinct (Woinarski, Garnett, Legge, & Lindenmayer, 2017).

There is an urgent need to address the extinction crisis in Australia; the response will require legislative reform, increased funding allocated to species security, protection and recovery, and more effective, targeted and enduring management (Kearney et al., 2018; Walsh, Watson, Bottrill, Joseph, & Possingham, 2013). This paper focuses on the funding shortcomings that have contributed to Australia's failure to meet the Aichi target. To date, arguments for increasing funding have not been backed by detailed analysis of the current situation (but see Howell & Rodger, 2018 for an analysis of *research* investment). Such analysis has been hampered by poor information about what is currently spent on threatened species conservation and recovery in Australia. While there have been estimates made of Australia's environmental and biodiversity expenditure as a whole (ABS, 2004; Cresswell & Murphy, 2017), here we provide the first published estimate of direct expenditure by Australian governments on threatened species recovery aggregated across the Commonwealth, states and territories, and estimate how much Australia *should* have been spending to meet its CBD obligations to prevent further biodiversity loss. While the paper focuses on Australian spending, the approach we take to estimating funding requirements and shortfalls could be applied in any country or jurisdiction from local governments to multicountry entities, such as the European Union. The approach could be scaled up to calculate spending required to achieve international commit-

ments to ending the extinction crisis, recognizing that adequate spending will need to be accompanied by regulatory and policy reform to curb habitat loss and overexploitation.

### 1.1 | Australia's extinction crisis

Australia has 1890 taxa listed as extinct or threatened with extinction under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia, 1999), hereafter EPBC Act. Of these, the majority (1,373) are plants, followed by birds (156), mammals (134), invertebrates (66), reptiles (63), fishes (59), and amphibians (41). Consistent with overall levels of endemism in Australian biota (Chapman, 2009) most of the Australian listed threatened species are endemic, and hence their survival is entirely dependent on the extent and success of conservation actions taken in Australia. These tallies are likely to severely underestimate the numbers of species that are actually threatened with extinction: species that are undescribed, data deficient, or less charismatic (e.g., invertebrates) are much less likely to be listed (Walsh et al., 2013).

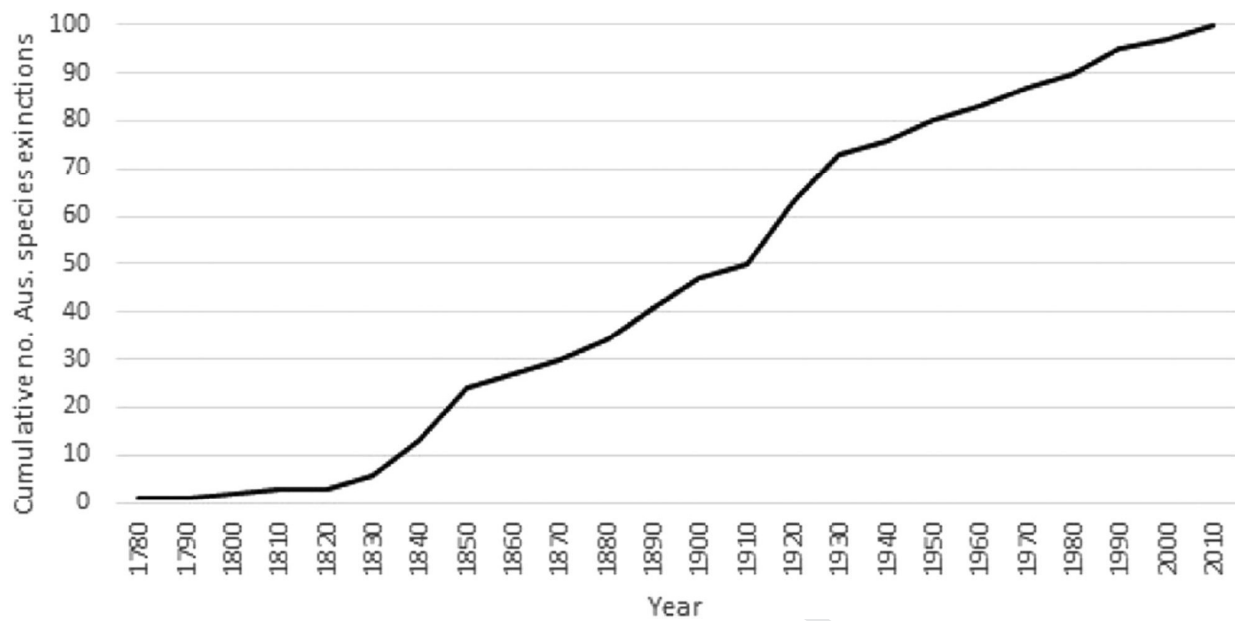
The proportional extent of known loss has been largest for endemic mammals: at least 34 Australian mammal species—10% of its endemic mammalian fauna—have become extinct since European settlement (Figure 1) (Woinarski, Burbidge, & Harrison, 2015). Extinction of Australian reptiles is also notable. The three recent Australian reptile extinctions (Andrew et al., 2018) are the only known extinctions of reptiles in the world since the 1970s (IUCN, 2018).

The past decade has seen a rapid decline in expenditure on environmental management in Australia, with cuts of 37% to environmental investments in the Australian Government budget since 2013 (ACF, 2018). The decline in expenditure and ongoing species loss has drawn sharp criticism from the international community for over a decade (OECD, 2008, 2019) as well as from independent domestic authorities (ANAO, 2006; Cresswell & Murphy, 2017). Relative to the scale of biodiversity loss, it has been asserted that Australia underspends on biodiversity conservation relative to other countries of comparable wealth (Waldron et al., 2017). However, detailed accounting of actual spending on threatened species recovery in Australia is currently lacking.

## 2 | WHAT IS AUSTRALIA DOING?

### 2.1 | Funding for threatened species recovery in Australia

Ideally an assessment of the effectiveness of funding to recover listed threatened species would be based on a collation of budgetary requirements foreshadowed in species' recovery



**FIGURE 1** The cumulative number of extinctions of Australian endemic mammal species since 1800. Note that, for some species, the dating of extinction is difficult to assess, so there is uncertainty in the exact (*x*-axis) position of some of the extinct accumulations, especially earlier in the time series. (Modified with permission from Woinarski, Burbidge, & Harrison, 2014)

plans, budgets actually allotted to such recovery efforts, and the extent to which this expenditure has led to recovery. However, all three of these components are difficult to assess in Australia, because many listed species do not have (and are not required to have) recovery plans; many recovery plans do not include budgets; budgets, where included, contain too little detail to assess whether the estimates are reasonable; there is no legal obligation to implement recovery plans or to allocate the funds earmarked in them; there is little accounting of expenditure on individual species' recovery efforts; few Australian threatened species are monitored with sufficient statistical power (Legge et al., 2018); and few Australian threatened species have demonstrably recovered.

With the direct approach unavailable, we instead attempt to estimate the spending by Australian governments on conservation of threatened species and benchmark this rate of spending against a comparable nation that has achieved demonstrable recovery of threatened species.

Detailed analysis of Australia's current threatened species expenditure is hampered by the lack of specific reference to threatened species spending in Australian Government federal and state budget papers, and a lack of reporting on conservation expenditure for individual threatened species. To estimate government spending on threatened species, we examined environment-relevant budgets from 2015–2016 to 2018–2019 across all Australian jurisdictions. Australian Government budgets report down to just a few program lines (Table S1), requiring further investigation beneath the program level to ascertain which components of program spending were either directly, indirectly, or not at all related

to threatened species recovery. Direct spending included programs that supported activities such as captive breeding of a threatened species or targeted threat management (e.g., fox control) to secure a population of a threatened species. Indirect spending included activities such as general weed or predator control that may benefit a threatened species without being expressly for that purpose. Unrelated spending was all other environment-related spending unlikely to contribute directly to threatened species persistence. We classified each program line into targeted (direct), relevant, or nonrelevant threatened species recovery components, justifying each breakdown with reference to program annual reports and other evidence obtained via grey literature or personal communications (Tables S1–S2). In all cases, we detailed assumptions and references to relevant documents, such as annual reports, for each budget line.

We estimate that targeted threatened species allocated spending by the Australian Government amounts to U.S.\$38.1m (AU\$49.6m) for the 2018–2019 financial year (Table S1), down from U.S.\$65.1m (AU\$86.9m) the previous year (Supporting Information S4). All price figures throughout have been converted from their original nominal amounts to 2018 constant prices to account for inflation, unless otherwise specified. The newly released figures for 2019–2020 show a slight increase of U.S.\$3.8m (AU\$5m) (Supporting Information S4).

Including both targeted (direct) expenditure seeking to recover threatened species and other relevant expenditures, the estimated upper limit of investment by the Australian Government in biodiversity in 2018–2019 is about U.S.\$293m

(AU\$391m). This is down from U.S.\$574m (AU\$766m) in 2017–2018, due largely to an increased, one-off spend in that financial year on the “Reef 2020 Plan” program (Commonwealth of Australia, 2018). The broad category of relevant but not targeted programs includes several programs that *may* contribute to some aspects of threatened species recovery. For example, expenditure under the Commonwealth Environmental Water Office might assist threatened species conservation by improving some habitats in some areas that contain threatened species; however, its activities are not *targeted* to deliver specific outcomes for particular threatened species (Table S1). Given the number of objectives outside of threatened species recovery that such programs set out to achieve, it is reasonable to assert that the Australian Government spends much less than this amount on targeted threatened species recovery actions.

A similar process was applied to obtain spending estimates for Australian states and territories (Supporting Information S2). We stress that, because of the challenges with getting exact and comparable estimates of expenditure across jurisdictions for the period of interest, our figures are not to be considered precise estimates, but rather a reasonable approximation. Our best estimate of combined state and territory expenditure on targeted threatened species recovery is U.S.\$54.3m/year (AU\$72.4m/year) over recent years (Table S2).

Summing across state, territory and commonwealth jurisdictions results in an estimated net public investment in targeted threatened species recovery in Australia of U.S.\$92m/year (AU\$122m/year), or ca U.S.\$51,000 per extant EPBC Act listed species per year.

### 3 | WHAT SHOULD AUSTRALIA HAVE BEEN DOING?

Current levels of government funding are inadequate to address Australia’s extinction crisis. This is apparent in the ongoing species loss, the ongoing decline of most listed species, and the increasing number of species being identified as threatened every year. So, what should Australia be spending if it is to prevent further species loss and maximize the chance that listed species recover? Significant uncertainty exists about exactly which actions should be taken to conserve species, and how effective those actions will be (Garnett et al., 2018b), so precise species-by-species costing is not possible. We looked to the United States where species recovery has been demonstrated for many species, where a similar number of species have been listed as threatened under a comparable (but typically less discretionary) threatened species protection legislation over a comparable land area. The United States also has a similar level of per-capita wealth, equivalent federalized administrative responsibility for threatened species, a

strong judicial system, and a strong tradition of public investment in tackling environmental issues.

There is empirical evidence that the more a country spends on conservation, the fewer species it loses (Waldron et al., 2017). The United States provides a strong case in point. Funding for actions listed under recovery plans is mandated under the *Endangered Species Act 1973* (U.S.C., 1973), and the United States has seen relatively strong recovery in listed species. Money spent strategically on threatened species has achieved improvements in species’ status (Taylor, Suckling, & Rachlinski, 2005). For example, 85% of listed birds achieve a documented stabilization or recovery following listing.

From 2011 to 2016, the U.S. government spent at least U.S.\$1.45b/year on direct threatened species conservation and recovery actions, equating to about U.S.\$903k/species/year (USFWS, 2016). This is augmented by between U.S.\$60m/year and 100m/year in U.S. State investments in threatened species recovery (USFWS, 2016). The Federal (U.S. Fish and Wildlife Service) reports expenditure on direct threatened species recovery projects and does not include land acquisition or administration costs of the major agencies. In 2018, 1,662 species were listed as threatened and endangered under the U.S. Endangered Species Act (ESA), about 100 *fewer* than listed in equivalent categories under Australia’s EPBC Act (1,798, excluding extinct species).

Evidence for the effectiveness of U.S. investment in threatened species recovery is strong. The U.S. track record in recovery far exceeds Australia’s, with 39 species de-listed due to recovery<sup>1</sup> and strong recovery trends observed in many species, including the iconic grey wolf, grizzly bear, and bald eagle (Suckling, Mehrhoff, Beam, & Hartl, 2016; Taylor et al., 2005). Suckling et al. (2016) found that birds listed under the U.S. ESA increased in population size on average by 624% since their listing, while unlisted birds declined by 24% on average over the 42 years since the inception of the Act. This comparison suggests that the recovery of listed birds in the United States can be attributed largely to the regulations, mandated funding, and recovery actions associated with listing a species.

Using the U.S. species recovery expenditure figures for 2013 (Gerber, 2016), we computed median and mean (within taxonomic groups) funding allocations to 284 species that were assessed by Gerber (2016) as having adequate funding.<sup>2</sup> Mean and median per-species costs were then multiplied by the number of species in each taxonomic group listed under Australia’s *EPBC Act 1999* to provide a preliminary estimate of targeted funding required to recover Australia’s listed threatened species (see Supporting Information S3 for more detail). The total estimate ranges from U.S.\$684m/year to 1.27b/year (AU\$911m/year to 1.69b/year) depending on whether median or mean U.S. funding figures were used for each taxonomic group (Table 1). Funding Australian

**TABLE 1** Annual average and median expenditure (across species within taxonomic groups) allocated to achieve recovery under the U.S. *Endangered Species Act 1973* in 2015 (Gerber, 2016). Column 4 gives the number of species listed under Australia's *EPBC Act 1999* by taxonomic group. Columns 5 and 6 provide the product of the average or median expenditure and the number of species in each taxonomic group to provide an estimate of the total funding required to secure Australian threatened species within taxonomic groups. Amounts shown have been adjusted to 2018USD; total amounts in brackets are 2018AUD

Taxa	2018USD \$'000		Number of species (EPBC Act <sup>a</sup> )	2018USD \$'000	
	U.S. allocated funding			Estimated expenditure to recover	
	Median	Mean		Based on median	Based on mean
Plant	\$53	\$125	1,336	\$70,406	\$167,112
Invertebrate	\$126	\$320	65	\$8,183	\$20,812
Fish	\$212	\$2,091	58	\$12,294	\$121,286
Amphibian	\$517	\$1,124	37	\$19,138	\$41,587
Reptile	\$757	\$1,998	61	\$46,203	\$121,889
Bird	\$3,379	\$3,430	134	\$452,797	\$459,595
Mammal	\$700	\$3,131	107	\$74,848	\$334,965
			Total 2018 USD	\$683,868	\$1,267,246
			Total 2018 AUD	(\$910,853)	(\$1,687,861)

Note: Amounts shown are adjusted to 2018 USD constant prices (from 2013 USD), with AUD totals conversion rate at 2018–2019 average as per the Australian Tax Office (AU\$1 = U.S.\$0.7508).

<sup>a</sup>Excludes species listed as Extinct and Extinct in the Wild.

threatened species recovery at the taxonomic mean rate of funding provided to species recovery in the United States would result in an approximately 20-fold increase in funding in Australia compared with current expenditure. The relative merits of using mean versus median rates are discussed in Supporting Information S3. Recovery here, as in the study by Gerber (2016), is defined as achieving security such that delisting of the species under the EPBC Act is justified.

## 4 | WHAT AUSTRALIA NEEDS TO DO NOW

Our estimates of recovery funding requirements for Australia's threatened species based on the median cost of recovery in the United States may be optimistically low. Invasive animals, plants and pathogens play a larger role in Australian extinctions than they do in many other places (Garnett et al., 2018b; Kearney et al., 2018), and many of these invasive species are extremely difficult to eradicate or suppress to the level required to allow threatened native species to persist (Burbidge & McKenzie, 1989; Moseby et al., 2011). This is compounded by the logistical challenges of managing those threats over the immense area in which they manifest. Other caveats on our estimates include the fact that Australia's EPBC Act listing is incomplete and new species are likely to enter the list as more information accumulates and listing catches up with biodiversity loss. These and other deep uncertainties make any method of costing extremely challenging, and cross-jurisdictional comparisons of recovery costs should be made with care.

Taking these factors into account, it is likely that the actual cost of recovering Australia's listed threatened species is closer to the estimated U.S.\$1.27b/year (AU\$1.69b/year) based on the mean per-species expenditure on recovery in the United States. Although governments may consider this to be a large sum relative to current levels of funding, a useful context is that Australians will spend more than double this amount on pet cat care in 2019 (REF), the Australian Government expects to pay U.S.\$143.9 billion (AU\$191.8b) in social security and welfare payments in 2019–2020, and forewent U.S.\$735m (AU\$980m) tax revenue through fuel tax credits to coal mining companies in 2018 (ACF, 2018; Klapdor & Arthur, 2018). Unfortunately, preventing extinction will most likely cost more relative to GDP in Australia than it will in the United States.

Our estimates of recovery expenditure in Australia and the United States excludes the efforts of local government, and importantly, the private sector and NGOs, who undoubtedly make a significant contribution to the conservation of threatened species. Unfortunately for Australia, the relative contribution of private NGOs is much larger in the United States. For example, The Nature Conservancy operational budget in

the United States is U.S.\$1.2b/year, compared with the relatively modest ~U.S.\$30m combined annual operating budget of Australia's two large land management NGOs, Bush Heritage Australia and the Australian Wildlife Conservancy (Australian Wildlife Conservancy, 2018; Bush Heritage Australia, 2018; PricewaterhouseCoopers, 2018).

#### 4.1 | Continuity, transparency, and accountability

Threatened species management requires long-term (decadal scale) continuity and consistency to be effective (Garnett, Woinarski, Lindenmayer, & Latch, 2018a). Many of Australia's ecosystems are characterized by decadal drought and wet cycles and reliance on rare stochastic disturbances such as fires or floods for regeneration; consequently, opportunities to act to conserve species occur infrequently and unpredictably (Dickman, Wardle, Foulkes, & de Preu, 2014). Committing to support the conservation of such species requires long-term and flexible funding arrangements in which funds can be deployed rapidly when the need or opportunity arises. Moreover, the capacity to report on what is achieved through management, or to identify and act on precipitous declines in species is severely compromised when funding is not committed to the establishment and implementation of powerful monitoring programs (Legge et al., 2018).

Improving the accountability and transparency of expenditure on conservation of threatened species in Australia would also enable a better understanding of the effectiveness of conservation investment (ANAO, 2006). Clear reporting on expenditure, combined with measurement of conservation outcomes, provides a sound basis for analyzing cost-effectiveness of conservation actions, and supports rational prioritization of future investments to maximize conservation outcomes (Iacona et al., 2018). A feature of the U.S. threatened species recovery system is a high degree of transparency on expenditure to recover each species listed under the ESA (USFWS, 2016). Future reporting of threatened species conservation spending in Australia could be modeled on the annual endangered and threatened species expenditure report compiled by the U.S. Fish and Wildlife Service (e.g., USFWS, 2016). Or by tailoring versions of previously used reporting formats—like that of the Australian Bureau of Statistics environmental expenditure reports on local governments (ABS, 2004)—to explicitly address threatened species.

Several of the targeted investments of the Australian Government represent good practice and national leadership in threatened species protection and recovery. Notably, the leadership and coordinated strategy for feral cat management provided through the national Threatened Species Strategy and a National Feral Cat Taskforce provides a model that could usefully be applied to managing other threats. The National Environmental Science Program provides a model

for research designed specifically to inform environmental management and includes an U.S.\$23m (AU\$30m) investment over 6 years (2015–2021) by the Australian Government on targeted threatened species recovery research.

Without adequate resourcing, supporting legislation, and strong governance of threatened species recovery, monitoring systems that can report species declines and recovery in a timely fashion, and strong regulation and management of threatening processes, we will leave a tragic legacy of extinction and fail in our obligations to future generations of Australians, and the international community. Clarifying our current targeted threatened species expenditure and setting out costing options to estimate long-term funding needs is a necessary first step towards supporting successful threatened species recovery programs. We have set out an approach to provide preliminary estimates of funding needs to delist threatened species, which could be applied in any jurisdiction where there is a list of species to be conserved and recovered. We acknowledge that our approach should be used only as a first parse and does not substitute for detailed analysis of recovery costs that are sensitive to the particular needs of each species, the threats they face, and their local contexts, which are always somewhat unique. We have provided a defensible costing model and starting point for governments seeking to halt the extinction crisis.

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#### ENDNOTES

<sup>1</sup> <https://ecos.fws.gov/ecp0/reports/delisting-report>.

<sup>2</sup> Gerber (2016) reallocated surplus funding from 50 overfunded to 182 underfunded species. We used these reallocated figures to calculate taxonomic group means and medians (see Gerber, 2016 for reallocation details).

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**How to cite this article:** Wintle BA, Cadenhead NCR, Morgain RA, et al. Spending to save: What will it cost to halt Australia's extinction crisis? *Conservation Letters*. 2019;e12682. <https://doi.org/10.1111/conl.12682>

**From:** [Emma Campbell](#)  
**To:** [Dean Knudson](#)  
**Cc:** [Sally Box](#); s47F  
**Subject:** Fwd: spending to save research paper  
**Date:** Wednesday, 6 November 2019 11:54:15 AM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

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Hi, heads up Nesp scientists will publish paper on the need to spend more on threatens species. It is not neap branded (in part due to interventions by sally and Beth) but could be linked to program.

Between us and nesp we'll ensure mo is aware  
E

Sent from my iPhone

Begin forwarded message:

**From:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**To:** "s47F" <s47F@environment.gov.au>, "Geoff Richardson" <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** Fwd: spending to save

And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F s47F" <s47F@environment.gov.au>, "s47F s47F" <s47F@environment.gov.au>  
**Subject:** spending to save

Hi Beth, Nick, Sally, s47F, s47F,

I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

I have no particular plans for media on this and it is not Hub work.

Regards,  
Brendan.

-----  
Professor Brendan Wintle

Director NESP Threatened Species Recovery Hub  
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*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Emma Campbell](#)  
**To:** [Sally Box](#); [s47F](#); [Geoff Richardson](#)  
**Subject:** RE: spending to save  
**Date:** Wednesday, 6 November 2019 1:10:06 PM

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I note that they have C'wealth NESP as funder in the metadata part. Assume we don't want that?

E

Sent from [Mail](#) for Windows 10

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**From:** [Sally Box](#)  
**Sent:** Wednesday, 6 November 2019 11:24 AM  
**To:** [s47F](#); [Geoff Richardson](#); [Emma Campbell](#)  
**Subject:** Fwd: spending to save  
And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** spending to save

Hi Beth, Nick, Sally, [s47F](#), [s47F](#),  
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Regards,  
Brendan.

-----  
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University of Melbourne and University of Queensland<sup>[1]</sup>  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](http://www.nespthreatenedspecies.edu.au)  
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ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)

signature\_907415997

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Sally Box](#)  
**To:** [Emma Campbell](#)  
**Cc:** s47F ; [Geoff Richardson](#)  
**Subject:** Re: spending to save  
**Date:** Wednesday, 6 November 2019 1:41:13 PM

---

Hi Emma,

Sorry - I hadn't picked that up. Not sure if NESP team considered that at the time we received a draft. Strongly suspect it will be too late to change it (but Nick or s47F could advise) - we may just need to prep handling. s47F - can you check in w s47F?

I think links to NESP will be made regardless, given that the paper's scope and conclusions mirror those in the Hub's submission to the senate enquiry, and the fact that the authorship is most of the Hub leadership..

Sally

Sent from my iPhone

On 6 Nov 2019, at 11:40 am, Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)> wrote:

I note that they have C'wealth NESP as funder in the metadata part. Assume we don't want that?

E

Sent from [Mail](#) for Windows 10

---

**From:** [Sally Box](#)  
**Sent:** Wednesday, 6 November 2019 11:24 AM  
**To:** s47F ; [Geoff Richardson](#); [Emma Campbell](#)  
**Subject:** Fwd: spending to save  
And here is paper ...

Sent from my iPhone

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**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
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ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
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signature\_907415997



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-----

**From:** s47F  
**To:** [Sally Box](#); [Emma Campbell](#)  
**Cc:** [Geoff Richardson](#)  
**Subject:** RE: spending to save [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 4:52:39 PM

---

Hi – s47F looking into the metadata thing, she will advise. DoEE NESP crew not planning on coordinating media given not NESP publication. Geoff could you and I pls chat about handling points tomorrow. I will just need to reread the paper to see what substantial responses (\$ invested in TS, TSS approach) are not covered already by SE.

Cheers s47F

---

**From:** Sally Box  
**Sent:** Wednesday, 6 November 2019 1:41 PM  
**To:** Emma Campbell  
**Cc:** s47F ; Geoff Richardson  
**Subject:** Re: spending to save

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Cc: "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F s47F" <s47F @environment.gov.au>, "s47F s47F" <s47F @environment.gov.au>

**Subject: spending to save**

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signature\_907415997



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**From:** s47F  
**To:** "Brendan Wintle"; Beth Brunoro; Nicholas Post; Sally Box; Martine Maron  
**Cc:** Rachel Morgain; s47F ; s47F ; s47F  
**Subject:** RE: spending to save [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 5:00:37 PM  
**Attachments:** image003.png

---

Thanks for sending this through Brendan,  
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Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

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[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

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---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Wednesday, 6 November 2019 10:16 AM

**To:** Beth Brunoro ; Nicholas Post ; Sally Box ; s47F

**Cc:** Rachel Morgain ; s47F ; s47F

**Subject:** spending to save

**Importance:** Low

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skype: brendan.wintle

<http://brendanwintle.wordpress.com/about/>

[google scholar brendan wintle](https://scholar.google.com/citations?user=brendanwintle)

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National Environmental Science Programme

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-----

**From:** [Dean Knudson](#)  
**To:** [Matt Cahill](#)  
**Cc:** [Beth Brunoro](#); [Emma Campbell](#)  
**Subject:** FW: spending to save research paper [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 5:02:06 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

Hi Matt

Dean has asked me to send this on to you.

Many thanks

s47F

s47F

Executive Assistant to Deputy Secretary Dean Knudson

---

Environment Protection Group  
Department of the Environment and Energy  
PO Box 787, CANBERRA, ACT 2601  
T: s47F  
E: [EA.DeanKnudson@environment.gov.au](mailto:EA.DeanKnudson@environment.gov.au)

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 11:54 AM  
**To:** Dean Knudson <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
<s47F@environment.gov.au>  
**Subject:** Fwd: spending to save research paper

Hi, heads up Nesp scientists will publish paper on the need to spend more on threatens species. It is not neap branded (in part due to interventions by sally and Beth) but could be linked to program.

Between us and nesp we'll ensure mo is aware

E

Sent from my iPhone

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**To:** "s47F" <s47F@environment.gov.au>, "Geoff Richardson" <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** Fwd: spending to save

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**From:** [Emma Campbell](#)  
**To:** [Sally Box](#); s47F  
**Subject:** Fwd: spending to save research paper [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 5:12:05 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

FYI

Sent from my iPhone

Begin forwarded message:

**From:** "Dean Knudson" <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**To:** "Matt Cahill" <[Matt.Cahill@environment.gov.au](mailto:Matt.Cahill@environment.gov.au)>  
**Cc:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
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"s47F [REDACTED]"

<s47F [REDACTED]@environment.gov.au>, "s47F [REDACTED]"

s47F [REDACTED]" <s47F [REDACTED]"

s47F [REDACTED]@environment.gov.au>

**Subject: spending to save**

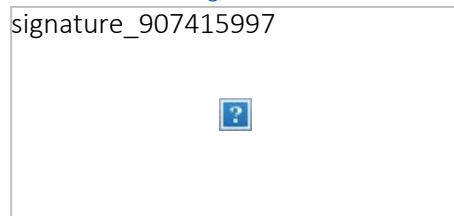
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**From:** [Sally Box](#)  
**To:** s47F  
**Cc:** s47F  
**Subject:** Re: spending to save [SEC=OFFICIAL]  
**Date:** Wednesday, 6 November 2019 6:40:04 PM

---

Yes, thanks s47F !

Sent from my iPhone

On 6 Nov 2019, at 4:52 pm, s47F <s47F@environment.gov.au> wrote:

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Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

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<image002.jpg>

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

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**Sent:** Wednesday, 6 November 2019 10:16 AM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas

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<s47F @environment.gov.au>; s47F <s47F  
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**Subject:** spending to save

**Importance:** Low

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<http://www.nespthreatenedspecies.edu.au>  
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<image003.png>

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-----

s47C

**s47c**

**s47c**

s47C

**s47C**

**s47C**



**s47C**

**From:** s47F  
**To:** [Sally Box](#); s47F  
**Subject:** RE: spending to save [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 9:34:48 AM

---

And thanks to Emma for picking it up and s47F for bringing it to my attention. When I spoke to Brendan, he was already aware of it and had already asked the journal to fix it.

Cheers,  
s47F

s47F  
Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
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---

**From:** Sally Box  
**Sent:** Wednesday, 6 November 2019 6:40 PM  
**To:** s47F <s47F@environment.gov.au>  
**Cc:** s47F <s47F@environment.gov.au>  
**Subject:** Re: spending to save [SEC=OFFICIAL]  
**Importance:** Low

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**Phone:** s47F

s47F

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<image002.jpg>

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**From:** Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
**Sent:** Wednesday, 6 November 2019 10:16 AM  
**To:** Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; Martine Maron <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** Rachel Morgain <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Subject:** spending to save  
**Importance:** Low

Hi Beth, Nick, Sally, s47F, s47F,

I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs

are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

I have no particular plans for media on this and it is not Hub work.

Regards,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?user=brendanwintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
<image003.png>

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** s47F  
**Cc:** [Sally Box](#); [Nicholas Post](#); s47F; s47F  
**Subject:** Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 11:28:50 AM

---

Hi s47F,

I've had a chat to Nick and he's happy to take a bit of a two-pronged approach to putting the spending to save TPs up to the MO. Nick and Beth haven't spoken to the Minister about the spending to save paper previously, so Nick thinks that it's appropriate for the TPs to come from you guys as the policy area, particularly as we're trying to distance NESP from this product. But Nick will also let our adviser in the MO (s47F) know that the TPs are coming and clarify that the paper is not a NESP product.

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Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

**Phone:** s47F

s47F

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The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

**From:** [Matt Cahill](#)  
**To:** [Dean Knudson](#)  
**Cc:** [Beth Brunoro](#); [Emma Campbell](#)  
**Subject:** Re: spending to save research paper [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 12:45:44 PM

---

Thanks

Matt Cahill  
Deputy Secretary  
Strategy and Operations Group  
Department of the Environment and Energy  
GPO [Box 787 Canberra ACT 2601](#)  
Tel: 02 62741114

On 6 Nov 2019, at 5:02 pm, Dean Knudson <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)> wrote:

Hi Matt

Dean has asked me to send this on to you.

Many thanks

s47F

s47F

Executive Assistant to Deputy Secretary Dean Knudson

---

Environment Protection Group  
Department of the Environment and Energy  
PO Box 787, CANBERRA, ACT 2601  
T: s47F  
E: [EA.DeanKnudson@environment.gov.au](mailto:EA.DeanKnudson@environment.gov.au)

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 11:54 AM  
**To:** Dean Knudson <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
<s47F@environment.gov.au>  
**Subject:** Fwd: spending to save research paper

Hi, heads up Nesp scientists will publish paper on the need to spend more on threatens species. It is not neap branded (in part due to interventions by sally and Beth) but could be linked to program.

Between us and nesp we'll ensure mo is aware

E

Sent from my iPhone

Begin forwarded message:

**From:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**To:** "s47F" <s47F@environment.gov.au>, "Geoff Richardson" <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** Fwd: spending to save

And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F" <s47F@environment.gov.au>, "s47F" <s47F@environment.gov.au>, "s47F" <s47F@environment.gov.au>  
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ph. +61 3 8344 3306  
skype: brendan.wintle

<http://brendanwintle.wordpress.com/about/>

[google scholar brendan wintle](#)

<http://www.nespthreatenedspecies.edu.au>

ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)

signature\_907415997



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the Wurundjeri people of the Kulin Nations, and pay my respects  
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-----

<conl\_12682\_LR.pdf>



**From:** s47F  
**To:** s47F; [Sally Box](#); [Geoff Richardson](#)  
**Cc:** [Nicholas Post](#); s47F; s47F; [Emma Campbell](#); [Sally Box](#)  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 4:15:44 PM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

Hi all

Attached/at link are draft TPs for the Minister in response to this article.

s47E(d)

Can you pls provide comments in track changes at the link. If you can't access the link, then in the attachment. And if that's too hard just send me an email.

I haven't given media team a heads up and happy to do so now and will offer to have these TPs up first thing tomorrow morning but may get back to you with a tighter timeframe if they advise otherwise.

Cheers s47F  
s47F

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**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F @environment.gov.au>; s47F @environment.gov.au>  
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Science Partnerships Section  
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Phone: s47F

s47F

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s47C

**s47C**

**From:** s47F  
**To:** [Media](#)  
**Subject:** FW: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 4:21:11 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)

---

Howdy media colleagues

The KTD NESP team have been advised by a researcher that a paper will be published in a scientific journal tomorrow that explores and compares Australian Government funding for threatened species with US funding and recommends Aust Govt need to increase funding to get results.

We are preparing TPs in case this is covered in the media – should be finalised tomorrow morning.

I will give you a call shortly about giving the MO a heads up and timing.

FYI the article is attached and draft TPs are at the link below – yet to receive SES clearance/coment.

Cheers s47F

s47F

s47F

---

**From:** s47F  
**Sent:** Thursday, 7 November 2019 4:16 PM  
**To:** s47F ; Sally Box ; Geoff Richardson  
**Cc:** Nicholas Post ; s47F ; s47F ; Emma Campbell ; Sally Box  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]

Hi all

Attached/at link are draft TPs for the Minister in response to this article.

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Can you pls provide comments in track changes at the link. If you can't access the link, then in the attachment. And if that's too hard just send me an email.

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s47F

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**Cc:** Sally Box <Sally.Box@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

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s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

Phone: s47F

s47F

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**From:** s47F  
**To:** [Media](#)  
**Cc:** [Sally Box](#)  
**Subject:** FW: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 4:34:35 PM

---

Hi s47F – thanks for the chat.

Here are key points for MO heads up. I expect the TPs will be finalised/cleared tomorrow morning.

*The Knowledge and Technology Division have been advised that an article on spending for threatened species recovery will be published in the Conservation Letters journal 8 November. The article states that Australian Government funding is not sufficient and not commensurate with US spending per threatened species.*

*The Office of the Threatened Species Commissioner is preparing TPs for the Minister in case this is covered in the media*

Cheers s47F

---

**From:** s47F  
**Sent:** Thursday, 7 November 2019 4:21 PM  
**To:** Media <Media@environment.gov.au>  
**Subject:** FW: Spending to save paper TPs [SEC=OFFICIAL]

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s47F  
s47F

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**Sent:** Thursday, 7 November 2019 4:16 PM  
**To:** s47F <s47F@environment.gov.au>; Sally Box <s47F@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>

**Cc:** Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
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s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

Phone: s47F

s47F

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**From:** s47F  
**To:** s47F ; Sally Box; Geoff Richardson  
**Cc:** Nicholas Post; s47F ; s47F ; Emma Campbell; Sally Box  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Thursday, 7 November 2019 5:05:02 PM

---

Hi again

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I have asked the media team to update the MO media crew with this information.

With this in mind please aim to have any comments back by COB Monday if possible.

Cheers s47F

---

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# s47C

---

**From:** s47F [redacted]

**Sent:** Thursday, 7 November 2019 5:05 PM

**To:** s47F [redacted]@environment.gov.au; Sally Box

<Sally.Box@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F [redacted]

[redacted]@environment.gov.au; s47F [redacted]

[redacted]@environment.gov.au; Emma Campbell <Emma.Campbell@environment.gov.au>;

Sally Box <Sally.Box@environment.gov.au>

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<[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; s47F  
<[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>;  
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Department of the Environment and Energy

Phone: s47F

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**Sent:** Thursday, 7 November 2019 5:05 PM

**To:** s47F <s47F@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>

**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>

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Cheers s47F

s47F

---

**From:** s47F

**Sent:** Thursday, 7 November 2019 11:28 AM

**To:** s47F <s47F@environment.gov.au>

**Cc:** Sally Box <Sally.Box@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Subject:** Spending to save paper TPs [SEC=OFFICIAL]

Hi s47F,

I've had a chat to Nick and he's happy to take a bit of a two-pronged approach to putting the spending to save TPs up to the MO. Nick and Beth haven't spoken to the Minister about the spending to save paper previously, so Nick thinks that it's appropriate for the TPs to come from you guys as the policy area, particularly as we're trying to distance NESP from this product. But Nick will also let our adviser in the MO (s47F) know that the TPs are coming and clarify that the paper is not a NESP product.

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Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

**Phone:** s47F

s47F



[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*

[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

**From:** s47F  
**To:** s47F  
**Subject:** Article on spending to save - perhaps just the heading published? [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 12:08:56 PM

---

<https://conbio.onlinelibrary.wiley.com/>

*Office of the Threatened Species Commissioner  
Biodiversity Conservation Division  
Australian Department of the Environment and Energy  
P: s47F  
E: s47F @environment.gov.au*

*The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.*

**From:** s47F  
**To:** s47F  
**Subject:** FW: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 12:14:36 PM

---

FYI

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
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**Sent:** Thursday, 7 November 2019 5:05 PM  
**To:** s47F <s47F@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>  
**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]

Hi again

Brendan Wintle has advised s47F that the article is now not likely to be published until mid-late next week.

I have asked the media team to update the MO media crew with this information.

With this in mind please aim to have any comments back by COB Monday if possible.

Cheers s47F

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**From:** s47F

**Sent:** Thursday, 7 November 2019 4:16 PM

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**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>

**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]

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s47E(d)

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Cheers s47F

s47F

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Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy

Phone: s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*

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**From:** s47F  
**To:** Nicholas Post; s47F  
**Subject:** FW: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 1:03:06 PM

---

Hi s47F and Nick,

FYI, we have just realised that whilst the spending to save article won't be published until next week, the abstract was published online on Wednesday.

<https://conbio.onlinelibrary.wiley.com/>

The TS Commissioner's team are following up with media re whether the TPs go up today or first thing next week (as a number of key people are away s47F, Sally Box), it may not be possible to get them up until Monday.

I guess it's unlikely that the abstract will attract much media attention, s22

Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
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**Sent:** Thursday, 7 November 2019 5:05 PM  
**To:** s47F <s47F@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>  
**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>;

Sally Box <Sally.Box@environment.gov.au>

**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]

Hi again

Brendan Wintle has advised s47F that the article is now not likely to be published until mid-late next week.

I have asked the media team to update the MO media crew with this information.

With this in mind please aim to have any comments back by COB Monday if possible.

Cheers s47F

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Cheers s47F

s47F

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**Sent:** Thursday, 7 November 2019 11:28 AM

**To:** s47F <s47F@environment.gov.au>

**Cc:** Sally Box <Sally.Box@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

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Cheers,

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s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

Phone: s47F

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**s47C**

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**s47C**

**s47c**



s47C

s47C

s47C

**From:** s47F  
**To:** [Media](#)  
**Cc:** [Sally Box](#); s47F; [Emma Campbell](#)  
**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 2:40:28 PM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

Hi s47F

We have just discovered that the abstract for this paper has been published on the journal website. The full article is under embargo and will be published mid-late next week. As the abstract is now publically available can you pls advise the MO. TPs are also attached – please also provide these if the MO require.

Cheers s47F

---

**From:** s47F

**Sent:** Thursday, 7 November 2019 5:02 PM

**To:** Media

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F – we’ve just been advised by the lead author that the article will not be published tomorrow – it is now unlikely to be published until mid-late next week.

We will provide TPs early next week.

Can you pls advise MO

Cheers s47F

---

**From:** Media

**Sent:** Thursday, 7 November 2019 4:39 PM

**To:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Cc:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>

**Subject:** Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

We have been advised that an article on spending for threatened species recovery will be published in the *Conservation Letters* journal Friday, 8 November.

The article states that Australian Government funding is not sufficient and not commensurate with US spending per threatened species.

The Office of the Threatened Species Commissioner is preparing TPs for the Minister in case this is covered in the media.

Please let us know if you have a particular deadline for these TPs, otherwise we’ll aim to provide them as soon as possible.

Many thanks,

s47F

**Media Team**

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F



**Talking points for 'Spending to Save: What will it cost to halt Australia's extinction crisis?' article scheduled to be published 8 November 2019.**

Talking points

- The Australian Government welcomes the publication of information on strategies and approaches to support threatened species conservation and recovery
  - including approaches that have worked well in other countries such as the USA.
  - Australia is happy to continue to share approaches to threatened species recovery that are delivering results here.
    - : Feral cats are a key threat to threatened species here and in the USA. Our effective strategies for raising public awareness and tackling this problem have certainly been of interest in the USA.
  - We have not analysed in any detail the funding amounts presented in the publication. It is quite possible to come up with different spending recommendations depending on the approach taken.
    - : Our spending on threatened species is informed by recovery plans and conservation advices.
    - : Our spending is strategic - for example where appropriate we support actions that will provide umbrella benefits to multiple threatened species such as tackling threats and restoring habitat
- Funding for threatened species recovery is important and that is why the Australian Government has made significant investments to do just this.
  - \$425 million has been mobilised for 1300 projects supporting threatened species outcomes since 2013. This funding is focused on supporting matters in the National Environmental Interest and species and actions prioritised under the Threatened Species Strategy.
    - : This includes \$170 million recently invested under the Regional Land Partnerships program for threatened species and threatened ecological communities
  - The new \$100 million Environment Restoration Fund will also invest in threatened species as a priority
  - Complementary programs, such as the internationally applauded Indigenous Protected Areas program, which the Australian Government recently expanded by 28 per cent to over 100 million hectares, support Indigenous land managers to make important contributions to the protection and recovery of our threatened wildlife.
- Funding for threatened species recovery is important but a multi-pronged approach is needed to make sure actions to support threatened species are appropriately managed, for example:
  - Actions to protect and manage our environment need to be underpinned by science and that is why the Australian Government has also invested \$145 million in the National Environmental Science Program, including \$29.9 million for the Threatened Species Recovery Hub.

- Strong partnerships and community engagement are critical to enduring threatened species outcomes, which is why the Australian Government is recognising and supporting this approach through our Threatened Species Strategy and flagship initiatives such as Regional Land Partnerships.
- Our environmental laws are robust and ensure species threatened with extinction are afforded protection from significant impacts, and that the actions needed to stop the decline of species and support recovery are set down in recovery plans or conservation advices.
- The Australian Government's Threatened Species Strategy is our national framework for prioritised threatened species action. We remain committed to the Strategy and its ambitious targets, and already it is bearing fruit:
  - Just recently we reported that six birds and eight mammals have improved trajectories since 2015. This means that the populations of these species are now on a better path.
  - More than 18 million hectares of feral cat control has been undertaken since the launch of the Threatened Species Strategy.
    - : This is helping to address the threat posed by feral cats to our wildlife, with research from the National Environmental Science Program estimating that cats kill more than 1 million birds and 1.7 million reptiles each day across Australia.
  - Over 61 per cent of Australia's known threatened plant species are now stored in Australian Seed Bank Partnership seedbanks, providing an important insurance policy for the future.

## Background

The abstract for an article on spending for threatened species recovery was published 8 November in the *Conservation Letters* journal. The full article is under embargo and is expected to be published around 13-15 November. The paper was prepared by researchers who are engaged in the NESP Threatened Species Recovery Hub but was not commissioned as part of the TSRH program of work. Nonetheless the Department was advised as a courtesy by Professor Brendan Wintle of the pending publication.

### *Summary* (from Abstract):

As with most governments worldwide, Australian governments list threatened species and proffer commitments to recovering them. Yet most of Australia's imperilled species continue to decline or go extinct and a contributing cause is inadequate investment in conservation management. However, this has been difficult to evaluate because the extent of funding committed to such recovery in Australia, like in many nations, is opaque. Here, by collating disparate published budget figures of Australian governments, we show that annual spending on targeted threatened species recovery is around U.S.\$92m (AU\$122m) which is around one tenth of that spent by the U.S. endangered species recovery program, and about 15% of what is needed to avoid extinctions and recover threatened species. Our approach to estimating funding needs for species recovery could be applied in any jurisdiction and could be scaled up to calculate what is needed to achieve international goals for ending the species extinction crisis.

**From:** s47F  
**To:** s47F; [Sally Box](#); [Geoff Richardson](#)  
**Cc:** [Nicholas Post](#); s47F; s47F; [Emma Campbell](#); [Sally Box](#); s47F  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 2:45:03 PM  
**Attachments:** [RE Threatened species report out tomorrow \(Friday\) SECOFFICIAL.msg](#)

---

Hi again – s47F just discovered that the abstract for this paper has been published on the journal website (full article is under embargo).

Nick, if you are still wanting to triangulate with s47F, I have just now asked media team to liaise with MO comms advisers and have provided TPs (attached).

Cheers s47F

---

**From:** s47F  
**Sent:** Thursday, 7 November 2019 5:05 PM  
**To:** s47F; Sally Box; Geoff Richardson  
**Cc:** Nicholas Post; s47F; s47F; Emma Campbell; Sally Box  
**Subject:** RE: Spending to save paper TPs [SEC=OFFICIAL]

Hi again

Brendan Wintle has advised s47F that the article is now not likely to be published until mid-late next week.

I have asked the media team to update the MO media crew with this information.

With this in mind please aim to have any comments back by COB Monday if possible.

Cheers s47F

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**Sent:** Thursday, 7 November 2019 4:16 PM  
**To:** s47F <s47F@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; Geoff Richardson <Geoff.Richardson@environment.gov.au>  
**Cc:** Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>  
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s47F

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**To:** s47F <s47F@environment.gov.au>  
**Cc:** Sally Box <Sally.Box@environment.gov.au>; Nicholas Post <Nicholas.Post@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

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Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

**Phone:** s47F

s47F

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**From:** s47F  
**To:** [Media](#); s47F; [A25461](#)  
**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 2:48:59 PM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

Hi s47F,

Please see TPs and some information from the line area regarding its upcoming release.

The line area has discovered that the abstract for this paper has been published and is publically available on the journal website. The full article is under embargo and will be published mid-late next week.

Thanks,

s47F

---

**From:** Media  
**Sent:** Friday, 8 November 2019 12:03 PM  
**To:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

FYI – This is no longer going ahead.

We've just been advised by the lead author that the article will not be published tomorrow – it is now unlikely to be published until mid-late next week.

We will provide TPs early next week.

Thanks,

Emma

---

**From:** Media  
**Sent:** Thursday, 7 November 2019 4:39 PM  
**To:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
**Cc:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>  
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Many thanks,

s47F

**Media Team**

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F



**From:** [Nicholas Post](#)  
**To:** "[Brendan Wintle](#)"  
**Cc:** [Beth Brunoro](#); [Emma Campbell](#); [Sally Box](#); s47F ; s47F  
**Subject:** RE: Spending to save [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 4:12:56 PM  
**Importance:** Low

---

Brendan,

Thanks for the update.

Regards  
Nick

-----Original Message-----

From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
Sent: Friday, 8 November 2019 4:11 PM  
To: s47F <s47F@environment.gov.au>; Nicholas Post  
<Nicholas.Post@environment.gov.au>  
Subject: Spending to save

s47F, Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.

Have a good weekend.  
Brendan.

From phone

**From:** [Nicholas Post](#)  
**To:** [Sally Box](#)  
**Cc:** [Beth Brunoro](#); s47F ; s47F ; s47F ; s47F ; [Media](#)  
**Subject:** Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 4:17:47 PM  
**Attachments:** [RE Spending to save paper TPs SECOFFICIAL.msg](#)

---

Sally,

The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

I love Friday afternoons!

Nick

-----Original Message-----

From: Nicholas Post  
Sent: Friday, 8 November 2019 4:13 PM  
To: 'Brendan Wintle' <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
Cc: Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
Subject: RE: Spending to save [SEC=OFFICIAL]

Brendan,

Thanks for the update.

Regards  
Nick

-----Original Message-----

From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
Sent: Friday, 8 November 2019 4:11 PM  
To: s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
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**Cc:** s47F ; s47F  
**Subject:** FW: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 4:21:18 PM  
**Attachments:** [RE Spending to save paper TPs SECOFFICIAL.msg](#)

---

Hi s47F

Nick is seeking confirmation that our advice has gone up to the office. Can you please advise.

Thanks

s47F

-----Original Message-----

From: Nicholas Post  
Sent: Friday, 8 November 2019 4:18 PM  
To: Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
Cc: Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>  
Subject: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]

Sally,

The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

I love Friday afternoons!

Nick

-----Original Message-----

From: Nicholas Post  
Sent: Friday, 8 November 2019 4:13 PM  
To: 'Brendan Wintle' <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
Cc: Beth Brunoro <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>; Emma Campbell <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>; Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
Subject: RE: Spending to save [SEC=OFFICIAL]

Brendan,

Thanks for the update.

Regards

Nick

-----Original Message-----

From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
Sent: Friday, 8 November 2019 4:11 PM  
To: s47F <s47F@environment.gov.au>; Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
Subject: Spending to save

s47F, Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.

Have a good weekend.

Brendan.

From phone

**From:** [Media](#)  
**To:** s47F [redacted]; [Media](#)  
**Cc:** s47F [redacted]; s47F [redacted]  
**Subject:** RE: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 4:28:52 PM

---

Hi s47F [redacted],

I can confirm that the advice and TPs have gone up to the office.

Thanks,  
s47F [redacted]

Media Team  
Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601  
T: s47F [redacted]

-----Original Message-----

**From:** s47F [redacted]  
**Sent:** Friday, 8 November 2019 4:21 PM  
**To:** Media <Media@environment.gov.au>  
**Cc:** s47F [redacted] <s47F [redacted]@environment.gov.au>; s47F [redacted] <s47F [redacted]@environment.gov.au>  
**Subject:** FW: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]

Hi s47F [redacted]

Nick is seeking confirmation that our advice has gone up to the office. Can you please advise.

Thanks  
s47F [redacted]

-----Original Message-----

**From:** Nicholas Post  
**Sent:** Friday, 8 November 2019 4:18 PM  
**To:** Sally Box <Sally.Box@environment.gov.au>  
**Cc:** Beth Brunoro <Beth.Brunoro@environment.gov.au>; Emma Campbell <Emma.Campbell@environment.gov.au>; s47F [redacted] <s47F [redacted]@environment.gov.au>; s47F [redacted] <s47F [redacted]@environment.gov.au>; s47F [redacted] <s47F [redacted]@environment.gov.au>; s47F [redacted] <s47F [redacted]@environment.gov.au>; Media <Media@environment.gov.au>  
**Subject:** Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]

Sally,

The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

I love Friday afternoons!

Nick

-----Original Message-----

**From:** Nicholas Post  
**Sent:** Friday, 8 November 2019 4:13 PM  
**To:** 'Brendan Wintle' <b.wintle@unimelb.edu.au>  
**Cc:** Beth Brunoro <Beth.Brunoro@environment.gov.au>; Emma Campbell

<Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; s47F  
<s47F@environment.gov.au>; s47F <s47F@environment.gov.au>  
Subject: RE: Spending to save [SEC=OFFICIAL]

Brendan,

Thanks for the update.

Regards  
Nick

-----Original Message-----

From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

Sent: Friday, 8 November 2019 4:11 PM

To: s47F <s47F@environment.gov.au>; Nicholas Post  
<Nicholas.Post@environment.gov.au>

Subject: Spending to save

s47F, Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.

Have a good weekend.  
Brendan.

From phone



**From:** [Emma Campbell](#)  
**To:** [Nicholas Post](#)  
**Cc:** s47F; s47F  
**Subject:** Re: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 4:58:09 PM

---

Think media has to provide to mo. Is this right s47F s47F?

Sent from my iPhone

> On 8 Nov 2019, at 4:17 pm, Nicholas Post <Nicholas.Post@environment.gov.au> wrote:

>

> Sally,

>

> The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

>

> I love Friday afternoons!

>

> Nick

>

> -----Original Message-----

> From: Nicholas Post

> Sent: Friday, 8 November 2019 4:13 PM

> To: 'Brendan Wintle' <b.wintle@unimelb.edu.au>

> Cc: Beth Brunoro <Beth.Brunoro@environment.gov.au>; Emma Campbell

> <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; s47F

> <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

> Subject: RE: Spending to save [SEC=OFFICIAL]

>

> Brendan,

>

> Thanks for the update.

>

> Regards

> Nick

>

> -----Original Message-----

> From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

> Sent: Friday, 8 November 2019 4:11 PM

> To: s47F <s47F@environment.gov.au>; Nicholas Post

> <Nicholas.Post@environment.gov.au>

> Subject: Spending to save

>

> s47F, Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.

>

> Have a good weekend.

> s47F .

>

> From phone

>

> <mime-attachment>

**From:** [Emma Campbell](#)  
**To:** s47F  
**Cc:** [Sally Box](#)  
**Subject:** Re: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 5:00:35 PM

---

Thanks s47F!

Sent from my iPhone

> On 8 Nov 2019, at 5:00 pm, s47F <s47F@environment.gov.au> wrote:

>

> Hi Emma and Nick

>

> The media team confirmed this has gone up to the MO.

>

> Regards

> s47F

>

> -----Original Message-----

> From: Emma Campbell

> Sent: Friday, 8 November 2019 4:58 PM

> To: Nicholas Post <Nicholas.Post@environment.gov.au>

> Cc: s47F <s47F@environment.gov.au>; s47F

> <s47F@environment.gov.au>

> Subject: Re: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]

>

> Think media has to provide to mo. Is this right s47F/s47F?

>

> Sent from my iPhone

>

>> On 8 Nov 2019, at 4:17 pm, Nicholas Post <Nicholas.Post@environment.gov.au> wrote:

>>

>> Sally,

>>

>> The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

>>

>> I love Friday afternoons!

>>

>> Nick

>>

>> -----Original Message-----

>> From: Nicholas Post

>> Sent: Friday, 8 November 2019 4:13 PM

>> To: 'Brendan Wintle' <b.wintle@unimelb.edu.au>

>> Cc: Beth Brunoro <Beth.Brunoro@environment.gov.au>; Emma Campbell

>> <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; s47F

>> <s47F@environment.gov.au>; s47F <s47F@s@environment.gov.au>

>> Subject: RE: Spending to save [SEC=OFFICIAL]

>>

>> Brendan,

>>

>> Thanks for the update.

>>

>> Regards

>> Nick

>>

>> -----Original Message-----

>> From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]  
>> Sent: Friday, 8 November 2019 4:11 PM  
>> To: s47F [redacted] <s47F [redacted]@environment.gov.au>; Nicholas Post  
<Nicholas.Post@environment.gov.au>  
>> Subject: Spending to save  
>>  
>> s47F [redacted], Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.  
>>  
>> Have a good weekend.  
>> Brendan.  
>>  
>> From phone  
>>  
>> <mime-attachment>

**From:** [Sally Box](#)  
**To:** [Nicholas Post](#)  
**Subject:** Re: Urgent: Spending to save paper abstract released ahead of schedule [SEC=OFFICIAL]  
**Date:** Friday, 8 November 2019 5:46:15 PM

---

Hi Nick, TPs are with the Office now - I think you should have received an email from s47F? I've been travelling today.. Sally

Sent from my iPhone

> On 8 Nov 2019, at 4:17 pm, Nicholas Post <Nicholas.Post@environment.gov.au> wrote:

>

> Sally,

>

> The timeline has moved forward. Has the advice and additional context our teams developed together gone up to the office?

>

> I love Friday afternoons!

>

> Nick

>

> -----Original Message-----

> From: Nicholas Post

> Sent: Friday, 8 November 2019 4:13 PM

> To: 'Brendan Wintle' <b.wintle@unimelb.edu.au>

> Cc: Beth Brunoro <Beth.Brunoro@environment.gov.au>; Emma Campbell

> <Emma.Campbell@environment.gov.au>; Sally Box <Sally.Box@environment.gov.au>; s47F

> <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

> Subject: RE: Spending to save [SEC=OFFICIAL]

>

> Brendan,

>

> Thanks for the update.

>

> Regards

> Nick

>

> -----Original Message-----

> From: Brendan Wintle [<mailto:b.wintle@unimelb.edu.au>]

> Sent: Friday, 8 November 2019 4:11 PM

> To: s47F <s47F@environment.gov.au>; Nicholas Post

> <Nicholas.Post@environment.gov.au>

> Subject: Spending to save

>

> s47F, Nick, Looks like they posted abstract today. Usually they would wait until full paper has corrected proofs. Expect full paper online early next week. Will forward link when full paper appears.

>

> Have a good weekend.

> Brendan.

>

> From phone

>

> <mime-attachment>

**From:** s47F  
**To:** s47F  
**Subject:** FW: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]  
**Date:** Sunday, 10 November 2019 9:41:40 PM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

s47F

**Senior Media Adviser | Office of the Hon Sussan Ley MP  
Minister for the Environment**

Suite M 1.40, Parliament House, Canberra, ACT 2600

s47F m: s47F

---

**From:** s47F

**Sent:** Friday, 8 November 2019 2:49 PM

**To:** Media ; s47F ; s47F

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

Please see TPs and some information from the line area regarding its upcoming release. The line area has discovered that the abstract for this paper has been published and is publically available on the journal website. The full article is under embargo and will be published mid-late next week.

Thanks,

s47F

---

**From:** Media

**Sent:** Friday, 8 November 2019 12:03 PM

**To:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F

FYI – This is no longer going ahead.

We've just been advised by the lead author that the article will not be published tomorrow – it is now unlikely to be published until mid-late next week.

We will provide TPs early next week.

Thanks,

s47F

---

**From:** Media

**Sent:** Thursday, 7 November 2019 4:39 PM

**To:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Cc:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>

**Subject:** Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

We have been advised that an article on spending for threatened species recovery will be published in the *Conservation Letters* journal Friday, 8 November.

The article states that Australian Government funding is not sufficient and not commensurate with US spending per threatened species.

The Office of the Threatened Species Commissioner is preparing TPs for the Minister in case this is covered in the media.

Please let us know if you have a particular deadline for these TPs, otherwise we'll aim to provide them as soon as possible.

Many thanks,

s47F

**Media Team**

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F



**From:** [Sally Box](#)  
**To:** [EA TS Commissioner](#)  
**Subject:** FW: spending to save research paper [SEC=OFFICIAL]  
**Date:** Sunday, 10 November 2019 10:24:49 PM  
**Attachments:** [con1\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

Pls print

**Dr Sally Box**  
**Threatened Species Commissioner**  
Biodiversity Conservation Division  
Department of the Environment and Energy  
P: +61 2 6274 1646  
M: s47F  
E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 5:12 PM  
**To:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
<s47F@environment.gov.au>  
**Subject:** Fwd: spending to save research paper [SEC=OFFICIAL]

FYI

Sent from my iPhone

Begin forwarded message:

**From:** "Dean Knudson" <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**To:** "Matt Cahill" <[Matt.Cahill@environment.gov.au](mailto:Matt.Cahill@environment.gov.au)>  
**Cc:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** FW: spending to save research paper [SEC=OFFICIAL]

Hi Matt

Dean has asked me to send this on to you.

Many thanks

s47F

s47F

Executive Assistant to Deputy Secretary Dean Knudson

---

Environment Protection Group  
Department of the Environment and Energy  
PO Box 787, CANBERRA, ACT 2601  
T: s47F  
E: [EA.DeanKnudson@environment.gov.au](mailto:EA.DeanKnudson@environment.gov.au)

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 11:54 AM  
**To:** Dean Knudson <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** Fwd: spending to save research paper

Hi, heads up Nesp scientists will publish paper on the need to spend more on threatens species. It is not neap branded (in part due to interventions by sally and Beth) but could be linked to program.

Between us and nesp we'll ensure mo is aware

E

Sent from my iPhone

Begin forwarded message:

**From:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**To:** "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "Geoff Richardson" <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** Fwd: spending to save

And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>, "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** spending to save

Hi Beth, Nick, Sally, s47F, s47F,



I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

I have no particular plans for media on this and it is not Hub work.

Regards,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?user=brendanwintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)  
signature\_907415997



*I acknowledge the Traditional Owners of the land on which I work,  
the Wurundjeri people of the Kulin Nations, and pay my respects  
to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** s47F; [A25461](#); s47F  
**Subject:** FW: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 9:29:15 AM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

Hi just checking you are across this as well

s47F

**Senior Media Adviser | Office of the Hon Sussan Ley MP  
Minister for the Environment**

Suite M 1.40, Parliament House, Canberra, ACT 2600

s47F | m: s47F

---

**From:** s47F

**Sent:** Sunday, 10 November 2019 9:42 PM

**To:** s47F

**Subject:** FW: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

s47F

**Senior Media Adviser | Office of the Hon Sussan Ley MP  
Minister for the Environment**

Suite M 1.40, Parliament House, Canberra, ACT 2600

s47F | m: s47F

---

**From:** s47F

**Sent:** Friday, 8 November 2019 2:49 PM

**To:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F

s47F <s47F@environment.gov.au>

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F

Please see TPs and some information from the line area regarding its upcoming release.

The line area has discovered that the abstract for this paper has been published and is publically available on the journal website. The full article is under embargo and will be published mid-late next week.

Thanks,

s47F

---

**From:** Media

**Sent:** Friday, 8 November 2019 12:03 PM

**To:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F

s47F <s47F@environment.gov.au>

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

FYI – This is no longer going ahead.

We've just been advised by the lead author that the article will not be published tomorrow – it is now unlikely to be published until mid-late next week.

We will provide TPs early next week.

Thanks,

s47F

---

**From:** Media

**Sent:** Thursday, 7 November 2019 4:39 PM

**To:** s47F <s47F@environment.gov.au>; s47F

<s47F [REDACTED]@environment.gov.au>

**Cc:** Media <Media@environment.gov.au>

**Subject:** Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

We have been advised that an article on spending for threatened species recovery will be published in the *Conservation Letters* journal Friday, 8 November.

The article states that Australian Government funding is not sufficient and not commensurate with US spending per threatened species.

The Office of the Threatened Species Commissioner is preparing TPs for the Minister in case this is covered in the media.

Please let us know if you have a particular deadline for these TPs, otherwise we'll aim to provide them as soon as possible.

Many thanks,

s47F

**Media Team**

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F [REDACTED]



**From:** [Media](#)  
**To:** s47F; [Media](#)  
**Cc:** [A25461](#)  
**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 9:49:38 AM  
**Attachments:** [2019 November - Spending to Save article - EM TPs.docx](#)

---

Hi s47F

The line area won't know until the paper it's self is released – the researchers are being a bit tight lipped about it.

They are predicting it to be released mid this week but we will advise the moment it is.

Please see some TPs attached for background information.

Thanks,

s47F

#### Media Team

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F



---

**From:** s47F

**Sent:** Monday, 11 November 2019 9:33 AM

**To:** Media <Media@environment.gov.au>

**Subject:** FW: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi have we had any more update on when this will be published

s47F

**Senior Media Adviser | Office of the Hon Sussan Ley MP**

**Minister for the Environment**

Suite M 1.40, Parliament House, Canberra, ACT 2600

s47F | m: s47F

---

**From:** Media

**Sent:** Friday, 8 November 2019 12:03 PM

**To:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>; s47F <s47F@environment.gov.au>; s47F

s47F <s47F@environment.gov.au>

**Subject:** RE: Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

FYI – This is no longer going ahead.

We've just been advised by the lead author that the article will not be published tomorrow – it is now unlikely to be published until mid-late next week.

We will provide TPs early next week.

Thanks,

s47F

---

**From:** Media

**Sent:** Thursday, 7 November 2019 4:39 PM

**To:** s47F <s47F@environment.gov.au>; s47F <s47F@environment.gov.au>

**Cc:** Media <Media@environment.gov.au>

**Subject:** Threatened species report out tomorrow (Friday) [SEC=OFFICIAL]

Hi s47F,

We have been advised that an article on spending for threatened species recovery will be published in the *Conservation Letters* journal Friday, 8 November.

The article states that Australian Government funding is not sufficient and not commensurate with US spending per threatened species.

The Office of the Threatened Species Commissioner is preparing TPs for the Minister in case this is covered in the media.

Please let us know if you have a particular deadline for these TPs, otherwise we'll aim to provide them as soon as possible.

Many thanks,

s47F

**Media Team**

Communications and Engagement Branch  
Department of the Environment and Energy  
GPO Box 787, CANBERRA ACT 2601

T: s47F



**s47C**

**From:** s47F [redacted]  
**To:** s47F [redacted]  
**Subject:** Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft  
**Date:** Monday, 11 November 2019 1:31:27 PM

---

Sent from my iPhone

**From:** s47F  
**To:** [Sally Box](#)  
**Subject:** FW: spending to save research paper [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 2:06:53 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

Hi Sally – this is the most recent version of the Spending to Save paper the Department has. This version still references this as a NESP product, which we asked the authors to remove/correct (as this was not produced as part of the NESP program of work).

s47

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 5:12 PM  
**To:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
<[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Subject:** Fwd: spending to save research paper [SEC=OFFICIAL]

FYI

Sent from my iPhone

Begin forwarded message:

**From:** "Dean Knudson" <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>  
**To:** "Matt Cahill" <[Matt.Cahill@environment.gov.au](mailto:Matt.Cahill@environment.gov.au)>  
**Cc:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** FW: spending to save research paper [SEC=OFFICIAL]

Hi Matt

Dean has asked me to send this on to you.

Many thanks

s47F

s47F  
Executive Assistant to Deputy Secretary Dean Knudson

---

Environment Protection Group  
Department of the Environment and Energy  
PO Box 787, CANBERRA, ACT 2601  
T: s47F  
E: [EA.DeanKnudson@environment.gov.au](mailto:EA.DeanKnudson@environment.gov.au)

---

**From:** Emma Campbell  
**Sent:** Wednesday, 6 November 2019 11:54 AM  
**To:** Dean Knudson <[Dean.Knudson@environment.gov.au](mailto:Dean.Knudson@environment.gov.au)>



**Cc:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>; s47F  
<s47F @environment.gov.au>  
**Subject:** Fwd: spending to save research paper

Hi, heads up Nesp scientists will publish paper on the need to spend more on threatens species. It is not neap branded (in part due to interventions by sally and Beth) but could be linked to program.  
Between us and nesp we'll ensure mo is aware  
E

Sent from my iPhone

Begin forwarded message:

**From:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**To:** "s47F" <s47F @environment.gov.au>, "Geoff Richardson" <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>  
**Subject:** Fwd: spending to save

And here is paper ...

Sent from my iPhone

Begin forwarded message:

**From:** "Brendan Wintle" <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)>  
**To:** "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, "Martine Maron" <[m.maron@uq.edu.au](mailto:m.maron@uq.edu.au)>  
**Cc:** "Rachel Morgain" <[rachel.morgain@anu.edu.au](mailto:rachel.morgain@anu.edu.au)>, "s47F" <s47F @environment.gov.au>, "s47F" <s47F @environment.gov.au>, "s47F" <s47F @environment.gov.au>  
**Subject:** spending to save

Hi Beth, Nick, Sally, s47F, s47F,

I think I said I'd let you know when this paper comes to press. Usually conservation letters post papers on their website as soon as proofs are accepted. That would be by the end of the week, I expect. Proofs are attached for reference.

I have no particular plans for media on this and it is not Hub work.

Regards,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](https://scholar.google.com/citations?hl=en&user=bwintle)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](https://orcid.org/0000-0002-4234-5950)

signature\_907415997



*I acknowledge the Traditional Owners of the land on which I work,  
the Wurundjeri people of the Kulin Nations, and pay my respects  
to their Elders, past, present and future.*

-----

**From:** [Sally Box](#)  
**To:** s47F  
**Cc:** [Emma Campbell](#); [Beth Brunoro](#); [Nicholas Post](#)  
**Subject:** Spending to save research paper [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 2:12:55 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)

---

Hi s47F

Please find attached a near-final draft of the Wintle *et al* 'Spending to Save' paper, due to be published shortly. This is the most recent version of the paper that the Department has – it still includes references to the National Environmental Science Program as a funding source, which the Department has asked the authors to remove/correct (as this was not produced as part of the NESP program of work).

Kind regards,

Sally

**Dr Sally Box**

**Threatened Species Commissioner**

Biodiversity Conservation Division

Department of the Environment and Energy

P: +61 2 6274 1646

M: s47F

E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

**From:** s47F  
**To:** s47F ; s47F  
**Subject:** FW: Spending to save research paper [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 2:14:50 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)

---

**From:** Sally Box  
**Sent:** Monday, 11 November 2019 2:13 PM  
**To:** s47F  
**Cc:** Emma Campbell ; Beth Brunoro ; Nicholas Post  
**Subject:** Spending to save research paper [SEC=OFFICIAL]

Hi s47F

Please find attached a near-final draft of the Wintle *et al* 'Spending to Save' paper, due to be published shortly. This is the most recent version of the paper that the Department has – it still includes references to the National Environmental Science Program as a funding source, which the Department has asked the authors to remove/correct (as this was not produced as part of the NESP program of work).

Kind regards,  
Sally

**Dr Sally Box**

**Threatened Species Commissioner**

Biodiversity Conservation Division  
Department of the Environment and Energy  
P: +61 2 6274 1646  
M: s47F  
E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

**From:** [Emma Campbell](mailto:Emma.Campbell@environment.gov.au)  
**To:** [Dean Knudson](mailto:Dean.Knudson@environment.gov.au)  
**Subject:** Fwd: Spending to save research paper [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 2:28:13 PM  
**Attachments:** [conl\\_12682\\_LR.pdf](#)  
[ATT00001.htm](#)

---

For info

Sent from my iPhone

Begin forwarded message:

**From:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**To:** "s47F" <[s47F@environment.gov.au](mailto:s47F@environment.gov.au)>  
**Cc:** "Emma Campbell" <[Emma.Campbell@environment.gov.au](mailto:Emma.Campbell@environment.gov.au)>, "Beth Brunoro" <[Beth.Brunoro@environment.gov.au](mailto:Beth.Brunoro@environment.gov.au)>, "Nicholas Post" <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>  
**Subject:** Spending to save research paper [SEC=OFFICIAL]

Hi s47F

Please find attached a near-final draft of the Wintle *et al* 'Spending to Save' paper, due to be published shortly. This is the most recent version of the paper that the Department has – it still includes references to the National Environmental Science Program as a funding source, which the Department has asked the authors to remove/correct (as this was not produced as part of the NESP program of work).

Kind regards,  
Sally

**Dr Sally Box**  
**Threatened Species Commissioner**  
Biodiversity Conservation Division  
Department of the Environment and Energy  
P: +61 2 6274 1646  
M: s47F  
E: [sally.box@environment.gov.au](mailto:sally.box@environment.gov.au)

**From:** §47F  
**To:** [Sally Box](#); §47F; [Steve Costello](#); [Geoff Richardson](#)  
**Cc:** §47F; §47F; §47F  
**Subject:** Senate estimates - Topical Issues for Threatened Species - updated [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 4:36:49 PM

---

Hi all

We've made some last minute changes to the senate estimates brief on topical issues for threatened species to include talking points on the "Spending to Save" article (although as of 4pm Monday afternoon the full article is not available) and s22  
§47E(d)

The points on Spending to Save were cleared and sent the MO last Friday s22  
§47E(d)

# s22

Regards

§47F

*Office of the Threatened Species Commissioner  
Biodiversity Conservation Division  
Australian Department of the Environment and Energy*  
P: §47F  
E: §47F [@environment.gov.au](mailto:§47F@environment.gov.au)

*The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.*

BIODIVERSITY CONSERVATION DIVISION – **SUPPLEMENTARY BRIEF**

SENATE ESTIMATES, October 2019

TOPICAL ISSUES FOR THREATENED SPECIES

**Key issues**

- Key issues covered in this brief:

s22

- Spending to Save paper

s22

s22

s22



S22

**s47F, s22**

## Spending to Save

### Summary

- The abstract for an article on spending for threatened species recovery was published 8 November in the *Conservation Letters* journal. The full article is under embargo and is expected to be published around 13-15 November. The paper was prepared by researchers who are engaged in the NESP Threatened Species Recovery Hub but was not commissioned as part of the TSRH program of work. The Department was advised as a courtesy by Professor Brendan Wintle of the pending publication.
- ABSTRACT (full article is not attached to this brief as it is not yet published). *As with most governments worldwide, Australian governments list threatened species and proffer commitments to recovering them. Yet most of Australia's imperilled species continue to decline or go extinct and a contributing cause is inadequate investment in conservation management. However, this has been difficult to evaluate because the extent of funding committed to such recovery in Australia, like in many nations, is opaque. Here, by collating disparate published budget figures of Australian governments, we show that annual spending on targeted threatened species recovery is around U.S.\$92m (AU\$122m) which is around one tenth of that spent by the U.S. endangered species recovery program, and about 15% of what is needed to avoid extinctions and recover threatened species. Our approach to estimating funding needs for species recovery could be applied in any jurisdiction and could be scaled up to calculate what is needed to achieve international goals for ending the species extinction crisis.*

### Handling

- The Australian Government welcomes the publication of information on strategies and approaches to support threatened species conservation and recovery.
  - including approaches that have worked well in other countries such as the USA.
  - Australia is happy to continue to share approaches to threatened species recovery that are delivering results here.
    - Feral cats are a key threat to threatened species here and in the USA. Our effective strategies for raising public awareness and tackling this problem have certainly been of interest in the USA.
- We have not analysed the funding amounts presented in the publication Abstract. It is quite possible to come up with different spending recommendations depending on the approach taken.
  - Our spending on threatened species is informed by recovery plans and conservation advices.
  - Our spending is strategic - for example where appropriate we support actions that will provide umbrella benefits to multiple threatened species such as tackling threats and restoring habitat
- Funding for threatened species recovery is important and that is why the Australian Government has made significant investments to do just this.
  - \$425 million has been mobilised for 1300 projects supporting threatened species outcomes since 2013. This funding is focused on supporting matters in the National

## For Official Use Only

Environmental Interest and species and actions prioritised under the Threatened Species Strategy.

- This includes \$170 million recently invested under the Regional Land Partnerships program for threatened species and threatened ecological communities
- The new \$100 million Environment Restoration Fund will also invest in threatened species as a priority
- Complementary programs, such as the internationally applauded Indigenous Protected Areas program, which the Australian Government recently expanded by 28 per cent to over 100 million hectares, support Indigenous land managers to make important contributions to the protection and recovery of our threatened wildlife.
- Funding for threatened species recovery is important but a multi-pronged approach is needed to make sure actions to support threatened species are appropriately managed, for example:
  - Actions to protect and manage our environment need to be underpinned by science and that is why the Australian Government has also invested \$145 million in the National Environmental Science Program, including \$29.9 million for the Threatened Species Recovery Hub.
  - Strong partnerships and community engagement are critical to enduring threatened species outcomes, which is why the Australian Government is recognising and supporting this approach through our Threatened Species Strategy and flagship initiatives such as Regional Land Partnerships.
  - Our environmental laws are robust and ensure species threatened with extinction are afforded protection from significant impacts, and that the actions needed to stop the decline of species and support recovery are set down in recovery plans or conservation advices.
- The Australian Government's Threatened Species Strategy is our national framework for prioritised threatened species action. We remain committed to the Strategy and its ambitious targets, and already it is bearing fruit:
  - Just recently we reported that six birds and eight mammals have improved trajectories since 2015. This means that the populations of these species are now on a better path.
  - More than 18 million hectares of feral cat control has been undertaken since the launch of the Threatened Species Strategy.
  - This is helping to address the threat posed by feral cats to our wildlife, with research from the National Environmental Science Program estimating that cats kill more than 1 million birds and 1.7 million reptiles each day across Australia.
  - Over 61 per cent of Australia's known threatened plant species are now stored in Australian Seed Bank Partnership seedbanks, providing an important insurance policy for the future.

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S22

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S22

**From:** s47F  
**To:** s47F  
**Cc:** s47F ; s47F ; s47F  
**Subject:** RE: Senate estimates - Topical issues for Threatened Species - updated [SEC=OFFICIAL]  
**Date:** Monday, 11 November 2019 6:38:15 PM

---

Thanks for the update.

Once the brief has been cleared by Sally can you please provide a printed copy to s47F so she can add it to Emma's SE folder.

s47F

---

**From:** s47F  
**Sent:** Monday, 11 November 2019 4:37 PM  
**To:** Sally Box ; s47F ; Steve Costello ; Geoff Richardson  
**Cc:** s47F ; s47F ; s47F  
**Subject:** Senate estimates - Topical issues for Threatened Species - updated [SEC=OFFICIAL]

Hi all

We've made some last minute changes to the senate estimates brief on topical issues for threatened species to include talking points on the "Spending to Save" article (although as of 4pm Monday afternoon the full article is not available) s22

s47E(d)

The points on Spending to Save were cleared and sent the MO last Friday s22

s22

Regards

s47F

*Office of the Threatened Species Commissioner  
Biodiversity Conservation Division  
Australian Department of the Environment and Energy*

P: s47F

E: s47F @environment.gov.au

*The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.*



s47C

s47C

**From:** [Nicholas Post](#)  
**To:** [Brendan Wintle](#)  
**Cc:** s47F; [Sally Box](#); [Beth Brunoro](#); [Emma Campbell](#); s47F  
**Subject:** Re: Spending to save..  
**Date:** Wednesday, 13 November 2019 8:28:42 AM

---

Thanks Brendan

Sent from my iPhone

On 13 Nov 2019, at 8:09 am, Brendan Wintle <[b.wintle@unimelb.edu.au](mailto:b.wintle@unimelb.edu.au)> wrote:

Hi Both,  
just a note to say that the paper went up to the cons letters website last night.

<https://conbio.onlinelibrary.wiley.com/journal/1755263x>

Best,  
Brendan.

-----  
Professor Brendan Wintle  
Director NESP Threatened Species Recovery Hub  
University of Melbourne and University of Queensland  
ph. +61 3 8344 3306  
skype: brendan.wintle  
<http://brendanwintle.wordpress.com/about/>  
[google scholar brendan wintle](#)  
<http://www.nespthreatenedspecies.edu.au>  
ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)  
<image001.png>

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** s47F  
**To:** "Brendan Wintle"; Nicholas Post  
**Subject:** RE: Spending to save.. [SEC=OFFICIAL]  
**Date:** Wednesday, 13 November 2019 9:04:23 AM  
**Attachments:** [image003.png](#)

---

Thanks for the heads-up Brendan.

Cheers,

s47F

s47F

Hub Liaison Officer – Threatened Species Recovery Hub

Science Partnerships Section

Department of the Environment and Energy

**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*

[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*

Check out the latest [Science for Saving Species](#) news



The s47F acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

---

**From:** Brendan Wintle [mailto:b.wintle@unimelb.edu.au]

**Sent:** Wednesday, 13 November 2019 8:09 AM

**To:** Nicholas Post ; s47F

**Subject:** Spending to save..

Hi Both,

just a note to say that the paper went up to the cons letters website last night.

<https://conbio.onlinelibrary.wiley.com/journal/1755263x>

Best,

Brendan.

-----  
Professor Brendan Wintle

Director NESP Threatened Species Recovery Hub

University of Melbourne and University of Queensland

ph. +61 3 8344 3306

skype: brendan.wintle

<http://brendanwintle.wordpress.com/about/>

[google scholar brendan wintle](https://scholar.google.com/citations?user=s47F)

<http://www.nespthreatenedspecies.edu.au>

ORCID ID - [orcid.org/0000-0002-4234-5950](http://orcid.org/0000-0002-4234-5950)



National Environmental Science Programme

*I acknowledge the Traditional Owners of the land on which I work, the Wurundjeri people of the Kulin Nations, and pay my respects to their Elders, past, present and future.*

-----

**From:** [Sally Box](#)  
**To:** s47F ; s47F ; s47F  
**Cc:** s47F ; [Beth Brunoro](#); [Nicholas Post](#); s47F ; [Emma Campbell](#); [Media](#)  
**Subject:** Fwd: FYI: Spending to Save paper published last night. [SEC=OFFICIAL]  
**Date:** Wednesday, 13 November 2019 9:22:30 AM

---

Hi all

The 'spending to save' paper (TPs provided last Friday) was published last night - please find link below.

We will keep an eye on media and alert you to any coverage.

Sally

Sent from my iPhone

Begin forwarded message:

**From:** s47F <s47F @environment.gov.au>  
**Date:** 13 November 2019 at 9:06:34 am AEDT  
**To:** Sally Box <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>, s47F <s47F @environment.gov.au>, s47F <s47F @environment.gov.au>, s47F <s47F @environment.gov.au>, s47F <s47F @environment.gov.au>, Geoff Richardson <[Geoff.Richardson@environment.gov.au](mailto:Geoff.Richardson@environment.gov.au)>, s47F <s47F @environment.gov.au>  
**Cc:** Media <[Media@environment.gov.au](mailto:Media@environment.gov.au)>, Nicholas Post <[Nicholas.Post@environment.gov.au](mailto:Nicholas.Post@environment.gov.au)>, s47F <s47F @environment.gov.au>  
**Subject:** FYI: Spending to Save paper published last night. [SEC=OFFICIAL]

Hi all,

Brendan Wintle has informed us that his Spending to Save paper was published on the [Conservation Letters site](#) last night.

Cheers,  
s47F

s47F  
Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

Check out the latest [Science for Saving Species](#) news



The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

**From:** s47F [redacted]  
**To:** s47F [redacted]  
**Subject:** Fwd: Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft  
**Date:** Thursday, 14 November 2019 6:59:33 AM

---

Hi  
I'm assuming you've already sorted this out long ago?

Begin forwarded message:

**From:** s47F [redacted] <s47F [redacted]@environment.gov.au>  
**Date:** 11 November 2019 at 1:31:26 pm AEDT  
**To:** s47F [redacted] <s47F [redacted]@environment.gov.au>  
**Subject:** Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft

Sent from my iPhone



**From:** s47F  
**To:** s47F  
**Cc:** s47F  
**Subject:** RE: Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft [SEC=OFFICIAL]  
**Date:** Thursday, 14 November 2019 9:57:40 AM

---

Yes, I think s47F passed on the version we had and just let them know that the reference to NESP would be removed.

s47F

Hub Liaison Officer – Threatened Species Recovery Hub  
Science Partnerships Section  
Department of the Environment and Energy  
**Phone:** s47F

s47F

[www.environment.gov.au/nesp](http://www.environment.gov.au/nesp) | *environmental research for decision making*  
[www.nespthreatenedspecies.edu.au](http://www.nespthreatenedspecies.edu.au) | *Threatened Species Recovery Hub*  
Check out the latest [Science for Saving Species](#) news



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---

**From:** s47F  
**Sent:** Thursday, 14 November 2019 7:00 AM  
**To:** s47F <s47F@environment.gov.au>  
**Subject:** Fwd: Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft

Hi  
I'm assuming you've already sorted this out long ago?

Begin forwarded message:

**From:** s47F <s47F@environment.gov.au>  
**Date:** 11 November 2019 at 1:31:26 pm AEDT  
**To:** s47F <s47F@environment.gov.au>  
**Subject:** Can you pls flick me the version of spending to save article that is going to be published (if u have it). For MO. Otherwise we will send them draft

Sent from my iPhone

**From:** [Sally Box](#)  
**To:** §47F  
**Subject:** Fwd: Department of the Environment and Energy Daily Briefing 15 Nov 2019  
**Date:** Friday, 15 November 2019 8:22:00 AM  
**Attachments:** [Department of the Environment and Energy Daily Briefing 15 November 2019.pdf](#)  
[ATT00001.htm](#)

No spending to save coverage..

Sent from my iPhone

Begin forwarded message:

**From:** "Isentia Daily Briefings" <[DailyBriefings@isentia.com](mailto:DailyBriefings@isentia.com)>  
**To:** "Sally Box" <[Sally.Box@environment.gov.au](mailto:Sally.Box@environment.gov.au)>  
**Subject:** Department of the Environment and Energy Daily Briefing 15 Nov 2019



# Department of the Environment and Energy Daily Briefing

Friday, 15th November 2019

<a href="#">Major News</a>	<a href="#">Minster Taylor – Portfolio Mentions</a>	<a href="#">Minister Ley– Portfolio Mentions</a>	<a href="#">Assistant Minister Evans – Portfolio Mentions</a>
<a href="#">Special Envoy Warren Entsch</a>	<a href="#">Australian Antarctic Division</a>	<a href="#">Australian Renewable Energy Agency</a>	<a href="#">Biodiversity Conservation</a>
<a href="#">Bureau of Meteorology</a>	<a href="#">Clean Energy Finance Corporation</a>	<a href="#">Clean Energy Regulator</a>	<a href="#">Climate Change</a>
<a href="#">Commonwealth Environmental Water Holder</a>	<a href="#">Energy</a>	<a href="#">Environmental Standards Division</a>	<a href="#">Waste and Recycling</a>
<a href="#">Management and Public Service</a>	<a href="#">Unconventional Gas including Coal Seam Gas</a>	<a href="#">Whales</a>	<a href="#">Heritage, Reef and Marine Division</a>
<a href="#">Parks</a>	<a href="#">Indigenous</a>		

## EXECUTIVE SUMMARY

- The [Australian](#) reports head of Adani's ports division, Karan Adani, has accused critics of its Carmichael coal mine of ignoring the needs of up to 300 million Indians living without electricity. Mr Adani said the demand for Australian coal in India will continue to surge as the country strives to improve its standard of living.
- The [Sydney Morning Herald](#) reports that a total fire ban will be in place in Sydney as fires continue to burn across the state. This comes as New South Wales Premier Gladys Berejiklian identified a fourth fire victim as Barry Parsons. A Rural Fire Service spokesman said Mr Parsons likely died on Friday.
- The [Sydney Morning Herald](#) reports that incoming BHP Chief Executive Mike Henry has vowed to maintain the company's focus on climate change and emissions reduction. Mike Henry, who will take over at BHP from January 1, used his first press conference after being announced as CEO to endorse the strategy set out by outgoing CEO Andrew Mackenzie.
- The [Age](#) reports that the Countdown on Health and Climate Change report has found that inaction on climate change is putting lives at risk. The report found that there is little evidence to suggest that the Australian government is acting effectively to mitigate heat-related health issues.

## MAJOR NEWS

### **Adani scion says coal essential to lifting Indians out of poverty**

The Australian, General News, 15/11/2019, Ben Packham, Page 4

One of Adani's top executives has accused Australian critics of its Carmichael coal mine of ignoring the needs of up to 300 million Indians living without electricity as the nation pushes to more than triple its power consumption and lift its people from poverty. The humanitarian defence of increased fossil fuel usage comes amid a heated political row over the bushfires ravaging NSW and Queensland, which the Greens have blamed on coal-fired power, branding Coalition and Labor MPs as "arsonists".

[Read More](#)

### **BHP chief's emissions vow**

Sydney Morning Herald, General News, 15/11/2019, Nick Toscano, Page 1

The incoming chief executive of the nation's biggest miner BHP has vowed to maintain the focus on climate change and emissions reduction adopted by his predecessor despite the risk of clashes with the federal government. Mike Henry, who will take the reins at BHP from January 1, used his first press conference after being announced as CEO to endorse the strategy set out by outgoing boss Andrew Mackenzie, who has become one of corporate Australia's most prominent advocates for bolder climate action.

*Also reported by: The Age*

[Read More](#)

### **Fire bans across the state as death toll rises**

Sydney Morning Herald, General News, 15/11/2019, Helen Pitt, Lisa Visentin and Laura Chung, Page 1

A total fire ban is in place in Sydney and seven areas across the state today after the death toll from NSW bushfires climbed to four and two men were charged over lighting fires during Wednesday's fire ban. Premier Gladys Berejiklian identified the fourth fire victim as Barry Parsons, 58, and offered her

condolences to his family in Parliament.

[Read More](#)

### **Concern on climate health risks: study**

Age, General News, 15/11/2019, Rachel Clun, Page 4

The federal government's failure to address the damaging health effects of climate change including extreme heatwaves and intense bushfires is putting lives at risk, the authors of a major report warn. There was little evidence to suggest Australia is acting effectively to mitigate the multiple heat-related risks for physical and mental health, environmental and health experts wrote in the Medical Journal of Australia-Lancet Countdown on Health and Climate Change report.

*Also reported by: The Sydney Morning Herald online*

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### **Teen arrested over Queensland blaze**

Age, General News, 15/11/2019, Lucy Stone, Page 5

A 16-year-old boy has been arrested over a central Queensland bushfire that destroyed 14 homes near Yeppoon during the state's ongoing emergency, a blaze that could have wiped out far more homes. The fire at Cobraball has claimed the highest number of properties of any Queensland fire in the emergency so far.

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## **MINSTER TAYLOR – PORTFOLIO MENTIONS**

### **Turnbull told he was losing 'quiet Australians'**

Australian Financial Review, General News, 15/11/2019, Aaron Patrick, Page 1

Malcolm Turnbull was advised in a confidential memo in the aftermath of the 2016 election that the property boom was costing the Coalition support in the outer suburbs, regional cities and towns, and the government needed to shift political strategy to avoid losing power. The analysis, by current Energy Minister and former McKinsey management consultant Angus Taylor, compared the election results, seat by seat, with data from the 2011 census and concluded there had been a structural shift in voting patterns influenced by house price increases, according to a new book, *The Surprise Party, How the Coalition Went from Chaos to Comeback*.

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### **Generator to boost our supply**

Adelaide Advertiser, General News, 15/11/2019, Chris Russell, Page 27

Summer electricity supply has been bolstered with a new gas-fired generator installed at the Hallett Power Station in the Mid North. EnergyAustralia said a 30MW, fast-start generator had been added to the existing 203MW of power at the plant at Canowie. [...] Federal Energy and Emissions Reduction Minister Angus Taylor said generators such as this "will help ensure that we've got affordable, reliable power on the worst days, and that there's downward pressure on prices when there are shortages of supply".

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### **Sydney council bows at altar of hypocritical elites**

Courier Mail, General News, 15/11/2019, Renee Viellaris, Page 34

Why do ratepayers and taxpayers pay the wages of morons? In the latest act of economic sabotage and giving the middle finger to residents who want functional park facilities and regular servicing of their numerous-coloured bins (ones for waste, swan-shaped hedge clippings plus biodegradable

packaging for their vegan caviar and nut-based beverages), Sydney's Inner West Council has done the dumbest thing since Bob Brown led a convoy to Clermont. [...] Let's not forget that, just last month, Energy Minister Angus Taylor and NSW Premier Gladys Berejiklian announced a co-funded underwriting for the NSW-Queensland Interconnector upgrade, to ensure those Cockroaches have enough power to heat their swimming pools and cool their uber hip pads.

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## **'We saw it coming': Former fire commissioner says government was warned on bushfires**

Sydney Morning Herald, Other, 14/11/2019

Australia could have been better prepared for the current bushfire crisis facing multiple states if the federal government had heeded warnings from emergency leaders as early as April, former Fire & Rescue NSW Commissioner Greg Mullins says. Speaking on the ABC's Radio National program on Thursday morning, Mr Mullins said he wrote to Prime Minister Scott Morrison in April and again "immediately after" the May election, warning him of the coming bushfire season and requesting an urgent meeting to discuss funding for firefighting and action to address climate change. [...] Instead, he said he was told Energy Minister Angus Taylor would be in touch.

[Read More](#)

## **Former Australian fire chiefs say Coalition 'doesn't like talking about climate change'**

Guardian Australia, Other, 14/11/2019, Naaman Zhou

A coalition of former fire chiefs have said the government "fundamentally doesn't like talking about climate change" and that politics is the reason the government was ignoring their advice. [...] Mullins said he was told the energy minister, Angus Taylor, would speak to him and the water minister, David Littleproud, has set a meeting.

[Read More](#)

## **ARENA to power up bioenergy role**

PSNews, Other, 14/11/2019

The Australian Renewable Energy Agency (ARENA) has been tasked by its Minister to develop a bioenergy roadmap to grow and identify a clear role for bioenergy in Australia's future energy mix. Minister for Energy and Emissions Reduction, Angus Taylor said bioenergy was a renewable energy source created from organic and renewable materials, also known as biomass, producing heat, electricity, biogas and liquid fuels.

[Read More](#)

## **Scott Morrison shuns Torres Strait Islanders worried about climate change**

SBS.COM.AU, Other, 14/11/2019, Rosemary Bolger

Scott Morrison has declined to visit the homes of a group of Torres Strait Islanders who are taking their complaint against government inaction on climate change to the UN. Prime Minister Scott Morrison has rejected an invitation to visit the homes of Torres Strait Islanders who have lodged a complaint with the UN about the government's climate change inaction. [...] But Mr Morrison has declined, as has Emissions Reduction Minister Angus Taylor to make the journey to Australia's north.

[Read More](#)

## **Former fire chiefs urge Morrison govt to act on climate**

Sky News Australia, Other, 14/11/2019

Five former fire chiefs have united to call fires a symptom of climate change' and implore the Morrison government to act. "Fires are literally off the scale of fire danger in this warming planet," former NSW Fire and Rescue Commissioner Greg Mullins said. [...] The group has secured a meeting with Energy Minister Angus Taylor and Minister for Water Resources David Littleproud next month.

[Read More](#)

## **Why petrol prices could be set to drop**

Yahoo! Finance Australia, Other, 14/11/2019, Anastasia Santoreneos

Iran has discovered a new oil field with reserves estimated at more than 50 billion barrels, increasing the country's total reserves by a third and it has the potential to alter oil prices around the world. "I am telling the White House that in the days when you sanctioned the sale of Iranian oil and pressured our nation, the country's dear workers and engineers were able to discover 53 billion barrels of oil in a big field," Iranian President Hassan Rouhani said of the discovery. [...] "There are ample commercial stocks globally, and that's the key to making sure that this is as manageable as possible and that the impact is minimised," Energy Minister Angus Taylor told the ABC.

[Read More](#)

## **Channel 9, National Nine News, 14/11/2019, Peter Overton**

A group of former Fire & Emergency chiefs admitted that the dangerous fire conditions that everyone is experiencing now is something that they have expected to come. They are aiming to get a summit with Prime Minister Scott Morrison and believe that more resources and deep cuts to carbon emission be initiated to fight firestorms, who they claim have been supercharged by climate change. [...] According to the Federal Government, Morrison has offered a meeting with Angus Taylor, Energy Minister, which the group rejected.

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## **MINISTER LEY– PORTFOLIO MENTIONS**

### **Wild dog study casts doubt on notion that dingoes are basically extinct in parts of Australia**

ABC Online, Other, 14/11/2019

New research is busting the myth that dingoes are all but extinct in south-eastern Australia. A 16-year analysis of canines culled in New South Wales found that around one-quarter were pure dingoes, not wild dogs. [...] A spokesman for Federal Environment Minister Sussan Ley said the dingo was listed for possible assessment as a threatened species, however that did not mean it would be approved.

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## **ASSISTANT MINISTER EVANS – PORTFOLIO MENTIONS**

No relevant coverage

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## **SPECIAL ENVOY WARREN ENTSCH**

### **Entsch launches Great Barrier Reef plastics recycling discussion paper**

Herald Sun, Other, 14/11/2019, Chris Calcino

Establishing a collection hub on Horn Island for recyclable plastics to be shipped for the mainland is one option on the table as Warren Entsch kickstarts his first big move as special reef envoy. The Leichhardt MP Warren Entsch has now launched his first discussion paper, titled Convenience vs.

Conservation, seeking community input on how to tackle the prominence of single-use plastics in convenience-driven economies.

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## AUSTRALIAN ANTARCTIC DIVISION

No relevant coverage

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## AUSTRALIAN RENEWABLE ENERGY AGENCY

### **Housing Trust batteries help Qld**

Adelaide Advertiser, General News, 15/11/2019, Chris Russell, Page 9

Batteries installed in hundreds of SA Housing Trust homes were used to stabilise the electricity grid when a Queensland coal-fired power station failed last month. The batteries, which are linked together in what is called a virtual power plant, immediately injected power into the grid when the Kogan Creek coal plant tripped.

*Also reported by: The Adelaide Advertiser online and the Hobart Mercury*

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## BIODIVERSITY CONSERVATION

### **No name yet, but you can call me joey**

Herald Sun, General News, 15/11/2019, Alanah Frost, Page 25

Poking its head out for the first time, this little koala joey has already captured the hearts of those at Melbourne Zoo. The adorable addition is the first koala to be born at the zoo in eight years, with mum Karri the last.

[Read More](#)

### **Flying foxes leaving bad impressions at Douglas**

Adelaide Now, Other, 15/11/2019, Matt Taylor

A popular Townsville walking path may soon have less fitness fanatics pounding the pavement, with flying foxes setting up a roost nearby. The walkway along Ross River at Douglas, near Teak Place, is a popular spot for afternoon runners, cyclists and dog walkers, and is also used by schoolchildren walking to and from school.

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### **Housing Industry Association SA says homeowners should not have to plant more trees**

Adelaide Now, Other, 14/11/2019, Renato Castello

A plan to force developers to plant at least one tree on housing blocks is a "feel good" exercise that will push more costs onto first-home buyers and do nothing to arrest the loss of urban vegetation, the state's housing lobby says. The State Planning Commission is proposing to reward developers with faster housing approvals if they meet mandatory minimum design standards, including planting more trees, under planning reforms out for public review.



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## **Hollywood A-lister Leonardo DiCaprio concerned for wildlife in 'catastrophic' bushfires**

The Courier Mail, Other, 14/11/2019, Louise Starkey

Leonardo DiCaprio has turned to social media to express his deepest sympathies and concern for those affected by bushfires. The Hollywood A-lister, 45, shared pictures of the ongoing tragic fire, animals and areas affected today, alongside a "catastrophic fire danger" warning by officials.

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## **Funds to tackle feral pig problem**

West Australian, Other, 14/11/2019, Daryna Zadvirna

Wagin Woodanilling Landcare Zone has received more than \$27,000 in State funding to tackle the region's feral pig problem. The grant was part of \$300,000 received by four community-led initiatives aimed to increase monitoring, trapping and shooting of feral pigs.

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## **Online trade fuelling illegal pet trade and posing a danger to Pacific wildlife**

ABC Online, Other, 14/11/2019

An organisation fighting the illegal trade of wildlife says online platforms are fuelling the illegal pet market in Asia and posing a threat to Pacific wildlife, after more than 300 animals were intercepted in Philippines. Authorities seized a consignment of wildlife in late October including birds endemic to Papua New Guinea and Solomon Islands.

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## **Meet Rover, the record-setting (and love seeking) platypus**

ABC Online, Other, 14/11/2019

How far would you go for love? Rover is a three-year-old platypus that has gone the distance, travelling from Healesville to Warburton (about 55kms to be exact) in search of a possible mate.

[Read More](#)

## **How we plan for animals in emergencies**

The Conversation, Other, 14/11/2019, Ashleigh Best

Animals are desperately vulnerable to natural disasters. An estimated 350 koalas have died during catastrophic bushfire conditions across eastern Australia and reports of injured animals continue to pour in. It's not just wildlife at risk. February's Townsville floods claimed the lives of some 600,000 cattle. People are often injured while attempting to rescue pets, and the thought of leaving a dependent animal to face fire alone is devastating.

[Read More](#)

## **Koala Hospital Port Macquarie post heartbreaking video of injured koala found in NSW bushfire debris**

Perth Now, Other, 14/11/2019

A heartbreaking video of an injured koala from the bushfire-ravaged Bellangry State Forest in NSW has gone viral online, as the devastation takes its toll on local wildlife. An 'incalculable' number of fauna have been lost to the emergency-level bushfires in Queensland and New South Wales, as fire indiscriminately rips through national parks and reserves home to native wildlife.

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## BUREAU OF METEOROLOGY

### **Last message: 'Looks and sounds like apocalypse out there'**

Australian Financial Review, General News, 15/11/2019, Mark Ludlow, Page 7

The fourth victim of the NSW fires - a 58-year-old man from near Kempsey on the mid-north coast - described the catastrophic fires as something out of an "apocalypse" in a message on the day a bushfire raged in the area near his property. As fires continued to burn across NSW and Queensland, police said a 16-year-old boy has been accused of lighting the destructive bushfire near Yeppoon in Central Queensland which razed 14 homes.

*Also reported by: [The Australian Financial Review online](#)*

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### **No rain as grim summer nears**

Canberra Times, General News, 15/11/2019, Page 12

Australia is staring down the barrel of a horrific summer season that will drag scorching temperatures and extreme conditions well into the new year. Livio Remano has never seen such extreme conditions in the 20 years he has worked with the Bureau of Meteorology, comparing the long term seasonal outlook to a bad chest X-ray.

[Read More](#)

### **Dangerous fire threat ramps up**

Canberra Times, General News, 15/11/2019, Page 12

Queensland firefighters were working frantically to strengthen containment lines and fire breaks as the state braces for the fire danger to again ramp up to severe levels. The Bureau of Meteorology has warned conditions will become more dangerous as dry westerlies push extremely hot air across the state on Friday and heading into the weekend.

*Similar coverage appears in: [Adelaide Advertiser \(Adelaide\)](#), [Daily Telegraph Australia \(Online\)](#), [Daily Telegraph Australia \(Online\)](#), [Herald Sun \(Online\)](#), and [Adelaide Now \(Online\)](#)*

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### **Minister promises we're well prepared**

Hobart Mercury, General News, 15/11/2019, David Killick, Page 18

Tasmania was well prepared to face this summer's bushfire season, Police, Fire and Emergency Management Minister Mark Shelton said. In State Parliament yesterday, Mr Shelton moved to reassure the public after facing criticism over the Government's slow response to two reports on the last two bushfire seasons.

[Read More](#)

### **Qld firefighters 'regrouping' before fire threat ramps up on the weekend**

Sydney Morning Herald, Other, 14/11/2019

Firefighters have saved 246 homes amid the bushfire crisis at Cobraball in central Queensland but high fire danger was expected on Friday. A 16-year-old boy has been arrested over a bushfire that destroyed 14 homes in the region, while investigations into the cause of fires at Noosa is expected to start in the coming days. Also on Thursday Noosa North Shore residents were able to return home after being evacuated for the second time during the bushfire emergency across the state.

[Read More](#)

### **Teen arrested over Queensland bushfire ahead of high danger weekend**

Sydney Morning Herald, Other, 14/11/2019

A 16-year-old boy has been arrested over a bushfire that destroyed 14 homes in central Queensland during the state's ongoing bushfire emergency. The fire at Cobraball, near Yeppoon, has claimed the highest number of properties of any Queensland fire in the emergency so far.

*Similar coverage appears in: [ABC Online \(Online\)](#), and [Daily Telegraph Australia \(Online\)](#)*

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## **East-coast bushfires: 'a mongrel of a thing'**

The Age, Other, 14/11/2019

As fires raged through NSW and Queensland this week, a million hectares of land has burned, over 300 homes have been lost and four people have died. NSW Premier Gladys Berejiklian declared a state of emergency on Tuesday and announced that much of the east coast of Australia was in catastrophic fire danger.

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## **Tasmania bushfire season: Row emerges over volunteer firefighter numbers this summer**

Daily Telegraph Australia, Other, 14/11/2019, Amber Wilson

A stoush is emerging among Tasmanian firefighters over volunteer numbers, with some warning a serious lack in crews this summer could lead to "catastrophic" uncontained blazes. An anonymous group of United Firefighters Union (UFU) members told the Mercury that although the Tasmania Fire Service (TFS) had 5000 volunteers on its books, only 1200 to 1500 of those were "active".

[Read More](#)

## **Gold Coast fires: Hinterland bushfires 'now in control'**

Herald Sun, Other, 15/11/2019, Kirstin Payne

Fire fighters on the Gold Coast are breathing a little fresh air as blazes in the Gold Coast hinterland begin to burn out. Dean Cording, second officer of the Lower Beechmont rural fire brigade said crews are now in control and monitoring containment areas, the first sign of relief since Friday. By the weekend Mr Cording expects the 250 hectares could be completely burnt out, if conditions remain good.

*Also reported by: [The Northern Territory News online](#)*

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## **Australians left to save our burning nation as politicians spit fire**

West Australian, Other, 14/11/2019, Jenna Clarke

The "catastrophic" fire zones of NSW and Queensland are a horrifying illustration of what the political class looks like in Australia right now. For years our politicians have cared about nothing but their own self-interest and self-promotion and now the world is on fire.

[Read More](#)

## **Queensland's bushfires rage for sixth consecutive day as firefighters look to gather energy ahead of next 'sprint'**

ABC Online, Other, 14/11/2019

Firefighters have been working around the clock for almost a week to keep fires under control. Queensland's firefighters will today concentrate again on strengthening containment lines and extinguishing existing fires before the weather deteriorates over the weekend.

[Read More](#)

## **See how the winds are affecting bushfire conditions around the country**

ABC Online, Other, 14/11/2019

Strong and changeable winds can have a huge impact on how bushfires start and spread and how firefighters are able to try and contain them. See what the winds are doing now in the areas around the country that are being impacted by bushfires.

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## **Were Queensland fire danger indices historically high for early September?**

ABC Online, Other, 14/11/2019, Tom Forbes

This year's fire season in south-east Queensland and north-east New South Wales, has already resulted in loss of life and property, propelling the issue of increasingly early fire danger into the national debate. As early as the first week of September, more than 100 fires raged across the area, destroying homes and properties and burning vast areas of bushland.

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## **Lightning strikes likely to spark fires as thunderstorms forecast for tinder-dry Queensland**

Guardian Australia, Other, 14/11/2019, Ben Smee

Queensland remains so dry that thunderstorms forecast for the weekend could bring lightning but no rain a potential spark for more bushfires but no relief from the fire crisis gripping two states. Fire conditions on Thursday gave emergency services workers a brief respite and the chance to build stronger containment lines around many of the 75 bushfires still burning across the state.

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## **Channel 9 Darwin, National Nine News, 14/11/2019, Paul Taylor and Samantha Heathwood**

Premier Anastacia Palaszczuk has been forced to defend Qld's fire maps amid allegations firefighters don't have up-to-date accurate information. According to some of them, they're relying on data from another state instead.

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## **Sky News Live, The Bolt Report, 14/11/2019, Andrew Bolt**

Interview with One Nation Leader Pauline Hanson. Bolt says the reactions to the fires are crazy, noting retired fire chiefs have claimed the Morrison Government has not turned down the world's temperature by cutting Australia's tiny emissions.

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## **CLEAN ENERGY FINANCE CORPORATION**

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## **CLEAN ENERGY REGULATOR**

### **Solar farms spar with energy users over grid**

Australian Financial Review, General News, 15/11/2019, Angela Macdonald-Smith and Mark Ludlow, Page 10

Solar farm developers clashed with major energy users over who should bear the cost of worsening bottlenecks in the transmission grid, with both sides using the price impact on consumers to support

their arguments. Owners of solar and wind farms claim a draft ruling from the Australian Energy Market Commission rejecting proposed changes in the allocation of transmission losses will be devastating for the sector, slowing investment and keeping prices high.

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## CLIMATE CHANGE

### **Turn climate neglect into action, MPs told**

Australian Financial Review, General News, 15/11/2019, Tom McIlroy, Page 7

Mayors from communities hit by catastrophic bushfires in Queensland and NSW have issued a joint declaration to the Morrison government, calling for action to limit the contribution of climate change. As MPs fought in federal Parliament this week over the contribution carbon emissions are making to weather-related events, 12 mayors from fire affected local government areas including Noosa, Bellingen, the Blue Mountains and Ryde have signed on to a joint statement.

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### **Sweden central bank sheds Australian mining state bonds**

Australian Financial Review, International News, 15/11/2019, Kelsey Johnson, Page 14

Sweden's central bank has sold off Australian and Canadian bonds because it believes greenhouse gas emissions in both countries are too high. Riksbank Deputy Governor Martin Floden said the bank would no longer invest in assets from issuers with a large climate footprint, even if the yields were high.

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### **Lion to go to 'next level green' in beer brewing**

Australian Financial Review, Companies and Markets, 15/11/2019, Elouise Fowler, Page 32

Beer brewing company Lion said it plans to be carbon neutral by next year in response to consumer demand for action on climate change. The Australasian division of the company aims to neutralise the 107,000 tonnes of carbon dioxide emissions it produces annually brewing beer, heating and lighting offices, and flying employees around for work by switching to clean electricity, recycling biogas from the brewing process, and buying carbon credits.

*Also reported by: The Australian Financial Review online*

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### **Global head named for climate backwater**

Australian Financial Review, Legal Affairs, 15/11/2019, Hannah Wootton, Page 34

Ilona Millar has learnt that when it comes to climate change, it's best to work with the corporate sector while waiting for the politicians to catch up. Ms Millar, who has been appointed the global leader of Baker McKenzie's climate change practice, says Australia is evidence that there are many ways to effect change.

*Also reported by: The Australian Financial Review online*

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### **Coalition is a natural lightning rod for climate rage**

Australian Financial Review, General News, 15/11/2019, Phillip Coorey, Page 39

In just over a fortnight, on December 1, it will be 10 years since Tony Abbott rolled Malcolm Turnbull for the leadership of the Liberal Party. Abbott's ascension was not preordained. The night before the party room ballot, he and a gaggle of others were in Joe Hockey's office urging him to run.

*Also reported by: The Australian Financial Review online*

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## **Green Swedes ditch Aussie bonds**

The Australian, General News, 15/11/2019, Paul Garvey, Page 1

The world's oldest central bank has dumped billions of dollars of bonds issued by Western Australia and Queensland because of concerns about Australia's lack of action on climate change. In a move that represents a new front in the global political and economic tussle over carbon emissions, Sweden's Sveriges Riksbank said it had sold the holdings - along with bonds issued by the Canadian province of Alberta as part of a new policy.

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## **The C-word isn't so dirty in London and Venice**

Sydney Morning Herald, General News, 15/11/2019, Andy Marks, Page 23

Recent flooding in Britain is, according to Conservative Prime Minister Boris Johnson, "almost certainly because of climate change". Contrary to the Australian experience, it turns out it is entirely acceptable around the world for politicians to utter the words "climate change" in an emergency.

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## **Airlines risk passenger guilt: Branson**

Age, General News, 15/11/2019, Patrick Hatch, Page 13

Virgin Australia won't say if it will match rival Qantas' pledge to eliminate long-term emissions but billionaire co-founder Richard Branson has admitted airlines must reduce their carbon footprints or risk a backlash from passengers. Sir Richard, who owns 10 per cent of Virgin Australia and is also behind the Virgin Atlantic carrier in the UK, said sustainability should be the No.

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## **DFAT's plan to use aid for climate action**

Canberra Times, General News, 15/11/2019, Katie Burgess, Page 7

The Department of Foreign Affairs and Trade has described climate change as an "existential threat" for Pacific nations, in a long-awaited climate strategy quietly released earlier this month. The document signals the department will use its aid program to help developing nations respond to climate change.

[Read More](#)

## **Australia to help out Pacific neighbours**

Courier Mail, General News, 15/11/2019, Page 12

Australia is stepping up its pledge to help Pacific nations combat climate change and prepare for disaster reliance, ahead of international climate talks. The foreign affairs department has released its long-awaited climate change action strategy without fanfare, pledging \$500 million from 2020-2025 to help Pacific nations.

[Read More](#)

## **'Fully committed': BHP to maintain climate push, vows new CEO**

Sydney Morning Herald, Other, 14/11/2019

The incoming chief executive of the nation's biggest miner BHP has vowed to maintain the focus on climate change and emissions reduction adopted by his predecessor despite the risk of clashes with the federal government. Mike Henry, who will take the reins at BHP from January 1, used his first press conference after being announced as CEO to endorse the strategy set out by existing boss Andrew Mackenzie who has become one of corporate Australia's most prominent advocates for bolder climate action.

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## **An open letter to the Deputy PM: Fire is burning your party**

Canberra Times, Other, 15/11/2019, David Shearman

Dear Deputy Prime Minister, The bushfires in the eastern states are distressing to all Australians and our hearts go out to all who are suffering and to the heroic firefighters; however I must say that I was disturbed and deeply distressed by your words on ABC Radio National this week, for they represented the antithesis of the future needs of Australia.

[Read More](#)

## **Political debate over climate change's link to bushfires heats up**

ABC Online, Other, 14/11/2019, Gavin Coote

With the immediate danger of this bushfire crisis now passing, former fire chiefs are now stepping up calls for action on climate change to help minimise the risk of future catastrophic events. But there are questions about what can practically be done to face off the looming fire threat in the coming months.

[Read More](#)

## **Labor backs calls for an overhaul of bushfire management**

ABC Online, Other, 14/11/2019

With the bushfire threat far from over, 23 former fire and emergency chiefs have secured a meeting with the Minister for Natural Disasters David Littleproud. The group says the Government has ignored the potential for climate change to supercharge extreme weather events like fires, floods and cyclones.

[Read More](#)

## **Coalition inaction on climate change and health is risking Australian lives, global report finds**

Guardian Australia, Other, 14/11/2019, Melissa Davey

The federal government's lack of engagement on health and climate change has left Australians at significant risk of illness through heat, fire and extreme weather events, and urgent national action is required to prevent harm and deaths, a global scientific collaboration has found.

[Read More](#)

## **We have warned governments for years that climate change is worsening bushfire danger**

Guardian Australia, Other, 14/11/2019, Ken Thompson

It's been a devastating week of unprecedented bushfires for New South Wales, Queensland, and other states. Some people are still fighting to save their homes, others are picking up the pieces after fires destroyed their properties and figuring out how to rebuild, and countless others are anxiously watching the fire warnings and preparing to evacuate.

[Read More](#)

## **Ex-fire chiefs accuse government of unofficial gag on climate change**

SBS.COM.AU, Other, 14/11/2019

A coalition of 23 fire and emergency services say the government is trying to gag debate on climate change. Former fire chiefs from across Australia have accused the government of trying to gag debate on climate change which they say is "supercharging" bushfires.

[Read More](#)

## **While Australia burns, the world watches our credibility go up in smoke**

The New Daily, Other, 14/11/2019

When a mass shooting shattered Australia in 1996, the country banned automatic weapons. In its first years of independence, it enacted a living-wage law. Stable retirement savings, national health care, affordable university education Australia solved all these issues decades ago.

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## **Fire chiefs demand urgent action on climate change as nation burns**

The New Daily, Other, 14/11/2019

Retired fire chiefs are demanding action on the "urgent threat" of climate change as Australia battles its worst bushfire season. With no end in sight, exhausted firefighters who are "dead on their feet" spent Wednesday night battling dozens of blazes across Queensland and NSW.

[Read More](#)

## **ABC Radio Perth, Drive, 14/11/2019, Geoff Hutchison**

Continuing Regular Segment: Backbench Drivers with Labor Member Jessica Shaw and Liberal Member Libby Mettam Hutchison asks about the appropriateness of climate change discussion during bushfire season. He says conservative politicians think now is not the time to talk about climate change.

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## **ABC Radio Sydney, Drive, 14/11/2019, Richard Glover**

Regular Segment: The Journos with The Sydney Morning Herald editor Lisa Davies, The New York Times Australia Bureau Chief Damien Cave, and ABC Religion and Ethics Report presenter Andrew West. Glover notes talking about climate change during the current terrible fires turns one into a 'raving inner city lunatic' according to one side to politics.

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## **ABC, ABC News, 14/11/2019, Tamara Oudyn**

About 23 former fire chiefs are back in action on a new front to pressure the Federal Government over climate change. They have warned the Government about the expected situation.

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## **ABC News, ABC News Tonight, 14/11/2019, Andrew Geoghegan**

Former fire chiefs have joined forces to pressure the Federal Government over climate change, saying they have tried to warn the government months ago Australia was underresourced for this year's fire. Former NSW Fire and Rescue Commissioner Greg Mullens first asked to speak to PM Scott Morrison in April to discuss resourcing for the predicted catastrophic season.

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## **ABC News, ABC News Hour, 14/11/2019, Andrew Geoghegan**

Pre-recorded interview with Tony Burke, Labor MP and former Environment Minister by Patricia Karvelas, reporter, ABC News. Burke states the current bushfire situation was predicted by scientists in 2008 when he was still the Environment and Agriculture Minister.

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## **Radio National, PM, 14/11/2019, Tom Tilley**

Report by Gavin Coote. Attention is turning to horror season predicted ahead this summer.

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## **Radio National, RN Drive, 14/11/2019, Patricia Karvelas**

Pre-interview with Tony Burke, Shadow Minister for Industrial Relations. Karvelas says 23 former fire and emergency chiefs have secured a meeting with the Minister for Natural Disasters David Littleproud.



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### **Sky News Live, Hinch, 14/11/2019, Derryn Hinch**

Hinch wonders if there is something wrong with the Nationals, saying Deputy Prime Minister [Michael] McCormack and Barnaby [Joyce] have made some inappropriate comments about the bushfires. Hinch says McCormack has described people linking climate change to the current disaster as 'raving inner-city lunatics'.

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### **Sky News Live, The Bolt Report, 14/11/2019, Andrew Bolt**

Continuing panel discussion with Sky News host Rita Panahi and former Queensland Liberal Premier Campbell Newman. Bolt says there is no logic behind the calls on the government to fight the bushfires by cutting emissions.

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## **COMMONWEALTH ENVIRONMENTAL WATER HOLDER**

### **Leaked emails on water chat motives**

Sydney Morning Herald, General News, 15/11/2019, Kylar Loussikian and Samantha Hutchinson, Page 2

Bipartisanship is alive and well at Macquarie Street according to leaked emails between the offices of ex-Greens MP Justin Field and Shooters, Fishers & Farmers MP Roy Butler. It's not the most obvious political partnership. Field quit the Greens in April this year after a bitter internal fight within the party and has campaigned on environmental issues ever since.

[Read More](#)

### **Matthew Abraham: The \$100m desal deal better not sell us down the river**

Adelaide Now, Other, 14/11/2019, Matt Abraham

The black mud on the shores of Lake Albert is chest deep and blood warm. Once the cracked crust on the surface gives way, you must crawl on all fours or sink up to your shoulders in the ooze. In 2008, as a big drought tightened its grip on South Australia, dairy farmers on the Narrung Peninsula were forced to slither on their stomachs for hundreds of metres over the exposed mud as the waters of Lakes Albert and Victoria shrunk into the heat haze.

[Read More](#)

### **Holy water: Anglican bishop says water's spiritual need should be recognised as ACCC water inquiry underway**

ABC Online, Other, 14/11/2019

The Right Reverend Bishop Donald Kirk says that water needs to be seen as a physical and spiritual fundamental, rather than a commodity, as hearings for the Australian Competition and Consumer Commission (ACCC) inquiry into the water market take place.

[Read More](#)

### **Up the creek: the \$85 million plan to desalinate water for drought relief**

The Conversation, Other, 14/11/2019, Lin Crase

The deal to crank up Adelaide's desalination plant to make more water available to farmers in the drought-stricken Murray-Darling Basin makes no sense. It involves the federal government paying the South Australian government up to A\$100 million to produce more water for Adelaide using the little-used desalination plant.

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## ENERGY

### **Australia to profit from 'hydrogen revolution'**

Australian Financial Review, General News, 15/11/2019, Bo Seo, Page 13

Australia is well placed to benefit from South Korea's ambitions to become a "hydrogen-powered society" and its efforts to diversify trade away from China, business leaders were told. Macquarie Capital resources executive Kate Vidgen said South Korea was more advanced than "almost any other country" on hydrogen, and had complementary skills with Australia as both countries sought to decarbonise their economies.

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## ENVIRONMENTAL STANDARDS DIVISION

### **Adani Ports chief bullish on future of Australian coal**

Australian Financial Review, General News, 15/11/2019, Matthew Cranston, Page 9

Adani Ports chief executive Karan Adani says Indian demand for Australian coal will keep growing. Mr Adani said the company's politically sensitive Carmichael mine in Queensland would power ahead despite a "cyclical" drop in thermal coal prices, and that the mine's first export of coal in 2021 would be followed by a weekly 200,000-tonne shipment to India.

*Also reported by: The Australian Financial Review online*

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### **BHP's Henry plans productivity push**

Sydney Morning Herald, Business News, 15/11/2019, Nick Toscano and Colin Kruger, Page 24

Incoming BHP chief executive Mike Henry plans to "accelerate" the miner's productivity push and unlock greater value from its ore bodies and petroleum basins as he prepares to lead the company through a challenging period including a feared slowdown in demand from China. Mr Henry, who was named on Thursday as successor to long-serving CEO Andrew Mackenzie, said he would spend the next 45 days engaging with staff across the miner's global operations before making any significant decisions.

[Read More](#)

### **Leave our contractors alone, says Adani**

Daily Telegraph, General News, 15/11/2019, John Rolfe, Page 29

Adani has urged activists to leave its contractors alone, after a Sydney council voted to boycott suppliers to the Queensland coal mine. Legal concerns have also emerged over the ban. The Daily Telegraph yesterday revealed that Inner West Council mayor Darcy Byrne expected a \$2 million investment in a new public square will be lost after the Greens succeeded in forcing it to stop using companies that also do work with Adani.

[Read More](#)

### **India needs our coal**

Daily Telegraph, General News, 15/11/2019, Tony Vermeer, Page 29

At Ahmedabad night market you won't find much sympathy for Extinction Rebellion, the Greens and

well-off Westerners crusading against the use of Australian coal to power several million Indian homes. The street stall owners are just grateful the lights are on as they battle to earn a few rupees selling mainly clothes, textiles and shoes. They know nearly 300 million fellow Indians - one in four - live without reliable electricity.

[Read More](#)

## Ready ore not, coal set to roll

Courier Mail, General News, 15/11/2019, Hayden Johnson, Page 2

Adani has pledged to ship its first batch of Queensland coal to India by 2021, and has hit out at green activists, declaring itself a global leader in reducing carbon emissions. In a rare and wide-ranging interview at the company's headquarters in Ahmedabad, India, Adani Ports CEO Karan Adani declared that after nine years of setbacks, the goal was to send the first coal from the company's controversial Carmichael megamine to India within about a year.

*Also reported by: The Northern Territory News online*

[Read More](#)

## Funding to fuel mining for rare earth metals

Courier Mail, General News, 15/11/2019, Page 23

Miners looking at digging up the rare earths and critical minerals needed for many modern technologies could get double the help from taxpayers as the Federal Government looks to expand the market opportunities. Projects will now be able to get support from Export Finance Australia, including its defence branch, and the Northern Australia Infrastructure Facility if they meet the criteria.

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## WASTE AND RECYCLING

No relevant coverage

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## MANAGEMENT AND PUBLIC SERVICE

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## UNCONVENTIONAL GAS INCLUDING COAL SEAM GAS

### Chevron to be read riot act on Browse

The Australian, Business News, 15/11/2019, Paul Garvey, Page 17

Federal Resources Minister Matt Canavan will lay down the law to Chevron chairman Mike Wirth at an upcoming meeting in San Francisco, with the senator set to warn the energy giant that it could lose its good standing in Australia if it stood in the way of Woodside Petroleum's \$30bn Browse LNG project. Senator Canavan is poised to meet with Mr Wirth in San Francisco on Friday, US time, at the start of a week-long visit to the country.

*Also reported by: The Australian online*

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## Helix, Petro Talaria eye Inpex, Santos gas assets

The Australian, Business News, 15/11/2019, Bridget Carter, Page 18

Petro Talaria and the US-based oil and gas company Helix Energy are understood to be homing in on Australian oil and gas assets, including both West Australian interests owned by Santos and Inpex and the company Northern Oil & Gas Australia. While Jadestone was expected to be the group that would chase the Inpex assets in Australia's West, it is now understood that they are in the cross-hairs of Constantine Capital and Petro Talaria, which has close ties to Helix.

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## ConocoPhillips mulling Australia Pacific LNG exit

The Australian, Business News, 15/11/2019, Bridget Carter, Page 18

American multinational energy company ConocoPhillips is believed to be crunching the numbers on its investment in Australia Pacific LNG in Queensland to determine whether to stage an exit from the \$US20bn (\$29.4bn) project. ConocoPhillips owns 37.5 per cent of the Queensland operation, Origin Energy owns 37.5 per cent and Sinopec, to which the gas for the project is contracted, holds the remaining interest.

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## WHALES

No relevant coverage

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## HERITAGE, REEF AND MARINE DIVISION

### Fine line for tuna survival

Daily Telegraph, General News, 15/11/2019, Al McGlashan, Page 71

Raising the bar for ocean conservation and those championing tuna, last week Life on the Line, the first documentary detailing the amazing story of the southern bluefin tuna, premiered at IMAX in Melbourne. Three years in the making, the documentary reveals the highs and lows of one of the most expensive fish in the ocean.

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## PARKS

No relevant coverage

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## INDIGENOUS ISSUES

### Perkins' personal statement from the heart

The Australian, General News, 15/11/2019, Paige Taylor, Page 5

Indigenous filmmaker Rachel Perkins has described her "hybrid heritage" as a reflection of Australia's evolution, and described her hopes for Australians to "see each other better". Perkins, celebrated

director and producer of films such as Bran Nue Dae and television series Mystery Road and Total Control, on Friday will deliver a passionate and personal argument for the 2017 Uluru Statement from the Heart - the culmination of dialogues with indigenous people nationwide.

[Read More](#)

### **At the heart of the voice is just our desire for honesty**

The Australian, General News, 15/11/2019, Rachel Perkins, Page 12

At the foot of Uluru, the symbolic and spiritual heart of our nation, about 300 people stood together in May 2017 for the First Nations National Constitutional Convention. We were drawn from some 150 Australian "tribes" whose ancestry runs deep into this country.

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# Adani scion says coal essential to lifting Indians out of poverty

**BEN PACKHAM**  
AHMEDABAD, INDIA

One of Adani's top executives has accused Australian critics of its Carmichael coal mine of ignoring the needs of up to 300 million Indians living without electricity as the nation pushes to more than triple its power consumption and lift its people from poverty.

The humanitarian defence of increased fossil fuel usage comes amid a heated political row over the bushfires ravaging NSW and Queensland, which the Greens have blamed on coal-fired power, branding Coalition and Labor MPs as "arsonists".

Karan Adani — head of the company's ports division and son of founder Gautam Adani — said demand for Australian coal in India would continue to surge over the coming decade as everyday Indians sought to improve their standard of living.

The head of Adani's non-Indian businesses, Jeyakumar Janakaraj, said climate activists in Australia had made Adani a "poster child of coal and of climate change", seeking to tarnish its global reputation.

Opponents of the mine failed to understand the transformational impact that electricity brought to people's lives, Mr Adani said.

"Whether it's better education, whether it is access to better technology or whether it's better irrigation facilities coming in with electricity," he said. "It is a balancing act that we need to do in terms



**Karan Adani**

of improving the planet, at the same time as the upliftment of the people."

The Adani family scion conceded that the energy giant had failed to better promote its green credentials, revealing a plan to expand solar and wind investments to 20,000MW and make its ports group carbon-neutral by 2025.

India's former energy secretary RV Shahi also urged Australians who continued to agitate against the project in Queensland's Galilee Basin to "review their opinion of the situation", saying coal was needed to power India's health system.

"There are 300 million people who don't have reliable energy. So much of our healthcare depends on energy so isn't it our democratic responsibility to provide that?" Mr Shahi said.

"If we don't import coal from Australia, we will just import it from somewhere else."

Per capita energy usage in India is running at about 1000kWh — one 10th of Australia's per capita consumption and less than a third of the global average of 3600kWh.

The development of the Car-

michael coal mine will enable India to source more higher-efficiency coal than the lower quality Indonesian coal it predominantly uses, lowering its overall carbon footprint.

A day after the International Energy Agency predicted India was set to overtake China as the world's biggest coal importer, Mr Adani said new coal and renewables plants needed to be rolled out in tandem across the country to ensure reliability.

"We strongly believe the coal consumption in India will continue to grow," he said.

"The underlying stable network of the country can only rely on non-renewable sources.

"And for us the cheapest source is coal."

The Australian travelled to Adani's port at Mundra, in Gujarat, which will offload coal from the Carmichael mine when it begins to ship in 2021.

The modern facility is the world's biggest coal importing terminal, one of its fastest-growing container facilities, and the site of a high-efficiency 4620MW power plant. It is also home to a solar photovoltaic factory that produces 1.2 gigawatts of panels a year.

As Scott Morrison prepares to visit India in January, Mr Adani said it would be "an absolute pleasure" to host the Prime Minister at the Mundra facility.

The Adani mine featured prominently in Bill Shorten's shock election loss in May, with the ALP's campaign review concluding that Labor lost votes in coalmining communities.



15 Nov 2019

Sydney Morning Herald, Sydney

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## BHP chief's emissions vow

New BHP chief executive Mike Henry vows he will maintain the miner's focus on climate change and emissions reduction pioneered by his predecessor, Andrew Mackenzie.

**NEWS Page 9**



### LEADERSHIP CHANGE

# BHP to sustain climate effort, vows new chief

**Nick Toscano**

The incoming chief executive of the nation's biggest miner BHP has vowed to maintain the focus on climate change and emissions reduction adopted by his predecessor despite the risk of clashes with the federal government.

Mike Henry, who will take the reins at BHP from January 1, used his first press conference after being announced as CEO to endorse the strategy set out by outgoing boss Andrew Mackenzie, who has become one of corporate Australia's most prominent advocates for bolder climate action.

Describing global warming as an indisputable crisis requiring a global "mobilisation" effort, Mr Mackenzie has been pressing policymakers for a price on carbon and has embarked on an ambitious \$500 million emissions-reductions drive aimed at cutting greenhouse gas emissions from BHP's own operations and the operations of its customers for coal and iron ore.

Mr Henry yesterday vowed BHP's position on climate change

would remain central, insisting it was appropriate for BHP to speak publicly and act on issues that affected the company's long-term business.

"Our position on climate change doesn't change ... I am fully committed to the goals that we have put out there," he said. "For those issues that intersect with our business interests, it is absolutely critical - it's essential - that we are out there with a view."

Senior figures in the Morrison government have repeatedly chastised business for speaking out on social and environmental issues. Resources Minister Matt Canavan, who last year said he respectfully disagreed with Mr Henry about the merits of introducing a price on carbon, yesterday welcomed his appointment.

"Mike Henry will bring extensive Australian experience to the role that I know will serve him well in leading a great Australian company," Mr Canavan said. "Mike has an innate care for the wonderful people that make up the resources industry and he is passion-

ate about improving opportunities for those in the industry."

BHP, although a producer of fossil fuels, has adopted a growing focus on sustainability and mitigating the long-term risks to its business posed by climate change.

But along with a string of other resources companies, the miner has come under pressure over its links to lobby groups accused of expressing views "inconsistent" with the Paris climate goals of holding the increase in global average temperatures to below two degrees above pre-industrial levels.

At its latest annual investor meeting, almost one-third of BHP shareholders defied the board and voted for the miner to sever links with groups such as the Minerals Council of Australia and the Business Council of Australia due to their support of various policies on the future of coal and gas.

Mr Henry yesterday reiterated the company's position, insisting that industry associations played an important role in developing standards, best practices and



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policies across the industry, including on climate change.

“Nothing changes on that front,” he said. “We’ve been clear on that, about the value being brought to the industry.”

BHP is carrying out a review of its industry group memberships to ensure their positions on climate change matched those of the company.

**Full BHP coverage**  
**BUSINESS PAGES 24-26**

*‘Nothing changes on that front.’*

BHP CEO Mike Henry



Mr Henry will take the reins on January 1. Photo: Eamon Gallagher





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# Fire bans across the state as death toll rises

**Helen Pitt, Lisa Visentin,  
Laura Chung**

A total fire ban is in place in Sydney and seven areas across the state today after the death toll from NSW bushfires climbed to four and two men were charged over lighting fires during Wednesday's fire ban.

Premier Gladys Berejiklian identified the fourth fire victim as Barry

Parsons, 58, and offered her condolences to his family in Parliament.

Mr Parsons lived in a shed two kilometres from the nearest road in bushland on the state's mid-north coast. He was last heard from on Friday, when he wrote on social media: "Seriously looks and sounds like apocalypse out there."

NSW Police said residents found his body on the southern end of the

Kyuna Track at Willawarrin, about 34 kilometres north-west of Kempsey, about midnight on Wednesday.

A Rural Fire Service spokesman said Mr Parsons likely died on Friday when the Carrai East fire "took a run under extreme fire conditions" ripping through reclusive communities near the Boonanghi State Forest. That blaze has now burnt through more than 93,000 hectares of bush, and remains at "watch and act".

An autopsy will be done to determine his cause of death and a report will be prepared for the coroner.

**Continued Page 4**



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## Total fire bans across the state today as death toll rises

From Page 1

NSW Rural Fire Service Commissioner Shane Fitzsimmons warned conditions would likely worsen today, with temperatures in the mid-30s, low humidity and strong winds expected. Total bans will be in place in Sydney, Far North Coast, North Coast, Hunter, Central rangers, New England and Illawarra/Shoalhaven and Northern Slopes regions.

“We have about 59 fires burning in NSW, 30 of them still uncontrolled but fortunately none at emergency level. We have 1500 firefighters in the field as we speak, 500 trucks and 70 aircraft,” Ms Berejiklian told Parliament yesterday afternoon.

Fires at Myall Creek Road in the Richmond Valley south of Lismore in the state’s north and a fire at Hillville Road near Taree were upgraded to emergency level later yesterday.

The Hillville Road fire forced police to close the Pacific Highway at Possum Brush, south of Taree, as fire crews hunted down spot fires.

One man in Annandale in Sydney’s inner west and another in the Hunter Valley were charged yesterday after allegedly lighting fires during Wednesday’s fire ban.

Police allege Rhys Mackay, 37, loosened a footpath in Johnston Street, Annandale, with a crowbar and then set the electrical wires underneath alight just before 2am on Wednesday. He was refused bail and remanded in custody until his next court appearance in January. Newtown Local Court was told he

posed an unacceptable risk of committing a further serious offence and his release would endanger the safety of the community.

Police also arrested a man, 26, in the Hunter Valley who they allege lit a fire to burn rubbish.

In Parliament yesterday, Police and Emergency Services minister David Elliott dodged a question on the links between climate change and the frequency and severity of bushfires in NSW.

“I will have to defer to those who are responsible for the environment portfolio, and that is because quite frankly I am so focused on the 1500 [firefighters],” Mr Elliott said.

Labor leader Jodi McKay heckled his response, saying: “You are kidding me.”

Earlier in question time, Mr Elliott said the government would establish information hubs in Taree, Kempsey and Glen Innes for fire-affected communities from Monday. He said they would “provide centralised services including welfare, Red Cross chaplains and mental health support”.

Yesterday afternoon, four small fires were reported in the Blue Mountains, while to the west, near Lithgow, fire crews conducted hazard-reduction burning near Putty, generating a significant amount of smoke.

In Queensland, where 75 fires continued to blaze yesterday, the Insurance Council said insurers had received more than 700 claims for losses estimated at \$80 million.

With Jenny Noyes and  
Sally Rawsthorne



15 Nov 2019  
Age, Melbourne

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# Concern on climate health risks: study

**Rachel Clun**

The federal government's failure to address the damaging health effects of climate change including extreme heatwaves and intense bushfires is putting lives at risk, the authors of a major report warn.

There was little evidence to suggest Australia is acting effectively to mitigate the multiple heat-related risks for physical and mental health, environmental and health experts wrote in the *Medical Journal of Australia-Lancet Countdown on Health and Climate Change* report.

Australian researchers from the international consortium of 120 experts from 35 institutions urged the government to transition from fossil fuels to renewable energy.

Climate change was extending and intensifying bushfire seasons, posing an increasing threat to lives, livelihoods and properties in greater numbers, the report said.

"What we're seeing with the fires we've just had, and you get that from all bushfires, is the air pollution that comes from fires puts people at risk of respiratory

illness – particularly those suffering from underlying conditions," Professor Hilary Bambrick, a co-author of the paper and Queensland University of Technology environmental epidemiologist, said.

People with pre-existing medical conditions and those who have prolonged exposure to the pollution were at higher risk of health problems, said University of Sydney academic and a co-author of the paper, Dr Ivan Hanigan.

Long-term air pollution had a substantial impact on Australia's death rate, with fine PM2.5 particle pollution contributing to 2800 premature deaths in 2016.

Lead author of the report's *MJA* chapter, Macquarie University Associate Professor Paul Beggs said Australians were increasingly vulnerable to heat-related risks of climate change.



# Teen arrested over Queensland blaze

**Lucy Stone**

A 16-year-old boy has been arrested over a central Queensland bushfire that destroyed 14 homes near Yeppoon during the state's ongoing emergency, a blaze that could have wiped out far more homes.

The fire at Cobraball has claimed the highest number of properties of any Queensland fire in the emergency so far. Police confirmed the teen would be dealt with under the Youth Justice Act.

Queensland Fire and Emergency Services acting commissioner Mike Wassing said "extraordinary" efforts from firefighters had saved 246 homes in the fire, but warned more severe fire weather was on its way.

A brief day of quieter conditions was all exhausted Queensland firefighters had yesterday as they battled more than 70 blazes, ahead of a mini-heatwave and dry thunderstorms predicted for the weekend.

More than 3100 firefighters have rotated through the front lines since Friday last week, with relief crews flown in from across the nation to help.

The heat will rise during the weekend with Noosa and Brisbane expected to hit 32 degrees, while the forecast top at Rockhampton, near the Cobraball fire front, is 36.

Bureau of Meteorology national operations lead Richard Wardle said that while there was a chance of storms this weekend, they would not bring much rain.

"The main story with these storms could be the dry lightning potentially igniting further fires."

Although yesterday was not as intense as Wednesday for fire danger, there were still multiple evacuations and fires burning statewide.

Water-bombing aircraft were

helping to fight a fire at Woodgate, south of Bundaberg, which was subject to a "prepare to leave" order from QFES.

Evacuation centres were opened for residents and visitors, some of whom were separated from family members.

The fire was marching towards the northern side of Woodgate Road, while a second front was burning south of the road, blocking access.

Woodgate Beach Hotel duty manager Kirsty Webb said roads were closed to return to town but people were allowed to leave yesterday afternoon.

Ms Webb said it was "touch-and-go" overnight as they waited in the hotel to see how the bushfire would unfold.

"A lot of families are stuck out of town or some have been separated because kids are out of town and their parents are here," she said.

For residents of Noosa North Shore on the Sunshine Coast, it was good news when an evacuation order was lifted after a worried night.

A bushfire that had threatened homes for all of Wednesday was brought under control yesterday.

Fires were still causing evacuations, as a fire west of Gympie at Thornside and Black Snake switched direction after a wind change.

Meanwhile, a fire half an hour north of Toowoomba at Pechey – where a water-bombing helicopter crashed in strong winds – eased after multiple evacuation orders were issued on Wednesday evening.

The pilot was discharged from hospital on Wednesday night. A spokesman for McDermott Aviation said the pilot was "very lucky" to survive. A water-bombing tanker was on its way from the United States to assist

firefighters, US ambassador to Australia Arthur Culvahouse jnr announced. With Toby Crockford, Jocelyn Garcia



15 Nov 2019

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# Turnbull told he was losing 'quiet Australians'

**Exclusive**

**Aaron Patrick**

Malcolm Turnbull was advised in a confidential memo in the aftermath of the 2016 election that the property boom was costing the Coalition support in the outer suburbs, regional cities and towns, and the government needed to shift political strategy to avoid losing power.

The analysis, by current Energy Minister and former McKinsey management consultant Angus Taylor, compared the election results, seat by seat, with data from the 2011 census and concluded there had been a structural shift in voting patterns influenced by house price increases, according to a new book, *The Surprise Party, How the Coalition Went from Chaos to Comeback*.

The book is the first account of the Turnbull and Morrison governments commissioned by a publisher after the Coalition's unexpected victory in May.

Mr Taylor did the analysis during a family skiing holiday a week after the government almost lost the election.

He saved the document on a Google Drive and sent the prime minister a link giving only him access to minimise the chance of a leak.

Mr Turnbull never acknowledged receiving the document, which

**Continued p4**

**From page 1**

## Turnbull was warned on 'quiet Australians'

effectively foreshadowed the successful "quiet Australians" campaign run by Prime Minister Scott Morrison in May. The underlying message was that Mr Turnbull should drop his vague language about the benefits of innovation and become more of an economic nationalist.

In privileged electorates such as Mr Turnbull's Wentworth, property inflation was seen as a sign of economic health, wrote Mr Taylor. For those on the city fringes and elsewhere who didn't have the earning power to keep up, property value increases had

become a source of financial stress.

"The people of our outer suburbs, nearby regions and regional cities risk becoming today's 'forgotten people,'" Mr Taylor wrote. "Listening to them and responding is good policy, and good politics."

Mr Taylor ultimately became so frustrated with Mr Turnbull that he joined a mass resignation of ministers that contributed to his removal as party leader. Promoted into cabinet by Mr Morrison, he helped run the effective campaign against the Labor Party's climate policies, including its 50 per cent

target for electric car sales by 2030.

Other revelations include that members of his family feared Alex Turnbull's political activism would damage their long-standing relationships with the Liberal Party; Malcolm and wife Lucy Turnbull sat around eating beef tacos and reading Twitter as Liberal MPs prepared to remove him as leader; and during the 2019 campaign Labor leader Bill Shorten developed such a dislike of a combative Channel 10 reporter that he referred to him as a "c---".

The book also describes how Treasurer Josh Frydenberg feared the Labor Party would overrule shadow treasurer Chris Bowen's plan to end tax refunds on franking credits. "I started telling Bowen in the chamber and interviews, 'You are going to get over-ruled by Bill,' knowing Bowen is very proud," Mr Frydenberg said in an interview for the book.

Backbench Liberal MP Tim Wilson describes in the book how a parliamentary inquiry into the plans tapped into deep resentment among voters and helped the Liberal Party quickly build a database of retirees to campaign against the policy.

"Without it, we would have lost," said Wilson. "The government would have fallen."

*The Surprise Party by Aaron Patrick will be published by Black Inc on Monday. Exclusive extract in today's Review section.*



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Australian Financial Review, Australia

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Lost message: Angus Taylor with Malcolm Turnbull in May 2018. PHOTO: AAP



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Adelaide Advertiser, Adelaide

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# Generator to boost our supply

**CHRIS RUSSELL**

SUMMER electricity supply has been bolstered with a new gas-fired generator installed at the Hallett Power Station in the Mid North.

EnergyAustralia said a 30MW, fast-start generator had been added to the existing 203MW of power at the plant at Canowie. Visiting the site yesterday, EnergyAustralia managing director Catherine Tanna said the new turbine was on schedule and budget.

“SA has a foundation of wind and solar power and it’s Hallett’s job to provide back-up when renewable energy is not available and provide dispatchable generation to support energy system security,” Ms Tanna said. She said the turbine upgrade was on track to deliver reliable power. “A modern, cleaner energy system is taking shape in SA, based on solar and wind power and supported by demand response, pumped hydro and battery storage,” she said.

Federal Energy and Emissions Reduction Minister Angus Taylor said generators such as this “will help ensure that we’ve got affordable, reliable power on the worst days, and that there’s downward pressure on prices when there are shortages of supply”.



15 Nov 2019

Courier Mail, Brisbane

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# Sydney council bows at altar of hypocritical elites

**RENEE  
VIELLARIS**



**W**HY do ratepayers and taxpayers pay the wages of morons?

In the latest act of economic sabotage and giving the middle finger to residents who want functional park facilities and regular servicing of their numerous-coloured bins (ones for waste, swan-shaped hedge clippings plus biodegradable packaging for their vegan caviar and nut-based beverages), Sydney's Inner West Council has done the dumbest thing since Bob Brown led a convoy to Clermont.

It has lost a multi-million investment in a new public square because the Greens-dominated council passed a motion that enforced a boycott of companies that have contracts with Adani – that central Queensland mine more than 1500km away. The council now must “give preference to contractors that are not on The Adani List”.

The Adani motion requires the council to write to GHD “and any other companies found to be both contractors to the council during 2019 and on The Adani List to request that they cease any involvement with Adani's Carmichael Coal Mine and Rail Project and advise them that in awarding future contracts Council will give preference to contractors whose policies and practices align with Council's commitment to facing the climate emergency”.

AMP, Ernst & Young, Siemens, GHD and Telstra are also in the firing line. Hopefully these companies have the gumption to ignore this childish behaviour.

It's no coincidence that the council area is within the federal Labor Opposition Leader Anthony Albanese's electorate of Grayndler.

This is an electorate where residents are so wise and rich that they tell residents in other states that their coal mining jobs are bad and they should re-skill to become low-carbon-emitting brain surgeons.

They do this by wagging their fingers at Queensland in their diesel-hungry Range Rovers and Porsche Cayennes. After RSI has kicked in from all that finger-wagging, they go home and clap on their lights, in many cases powered by Queensland coal.

Let's not forget that, just last month, Energy Minister Angus Taylor and NSW Premier Gladys Berejiklian announced a co-funded underwriting for the NSW-Queensland Interconnector upgrade, to ensure those Cockroaches have enough power to heat their swimming pools and cool their uber hip pads.

The Australian Energy Market Operator declared it a high priority project and when operational will deliver an extra 190 MW of capacity

into NSW during peak demand. The majority of Queensland's power is generated by coal and gas. Maybe to make Sydney's Inner West Council feel better, they should power down during peak periods, because one would not like to be a hypocrite. But that is just wishful thinking, isn't it?

And on another matter, how about all these councillors educate themselves about thermal coal and the difference between the stuff dug up in central Queensland, and the product that would come out of the ground from Indonesia or China if the Adani mine does not go ahead.

It would be a worse environmental outcome if it came from overseas locations – because their coal is much worse for the environment than ours.

The message for Mr Albanese is clear – spend less time around the loonies in your electorate and more time listening to common sense Queenslanders if you want any hope of winning the next election.





15 Nov 2019

Adelaide Advertiser, Adelaide

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# Housing Trust batteries help Qld

**CHRIS RUSSELL**

BATTERIES installed in hundreds of SA Housing Trust homes were used to stabilise the electricity grid when a Queensland coal-fired power station failed last month.

The batteries, which are linked together in what is called a virtual power plant, immediately injected power into the grid when the Kogan Creek coal plant tripped.

The incident showed how solar and battery technology “can contribute to a secure and reliable electricity network, while also reducing energy costs for participating consumers”, the Australian Energy Market Operator said.

The operator is working with the State Government to use the 900 Housing Trust homes equipped with solar and batteries as a trial.

AEMO’s executive general manager emerging markets and services Violette Mouchaileh said Australians were leading the global adoption of such energy resources, which exported energy back into as well as providing critical services for the grid. “It’s these critical network services traditionally performed by large-scale, conventional electricity generators that contribute to the security and reliability of the Australia’s rapidly transform-



ing electricity sector,” she said.

The Kogan Creek failure on October 9 suddenly took 748MW out of supply, causing a big drop in the frequency level of the system. The response by SA’s virtual power plant and other participants stabilised the system.

Energy and Mining Minister Dan van Holst Pellekaan said it showed why the State Government had the most ambitious home-battery program in the country, with batteries providing both savings to consumers and valuable support to the grid at a local and national scale.

“Although the virtual power plant is in its early days, it is already demonstrating how it can provide the network support traditionally performed by large conventional generators” he said.

Gilberton resident Alan Hedges, pictured, is among people who have joined the scheme. “Since installing my battery, my winter electricity bill has gone from \$1034.24 to \$344.88,” he said.

“Knowing I’m helping others save money through the renewable energy I generate and put back into the grid is also really important to me.”

The scheme is led by Tesla and retailer Energy Locals and has been included in AEMO trial work since mid-September.

It was supported by a \$2.46 million grant from the Australian Renewable Energy Agency.



15 Nov 2019

Herald Sun, Melbourne

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# NO NAME YET, BUT YOU CAN CALL ME JOEY

## **ALANAH FROST**

**POKING** its head out for the first time, this little koala joey has already captured the hearts of those at Melbourne Zoo.

The adorable addition is the first koala to be born at the zoo in eight years, with mum Karri the last.

While the sex of the tiny marsupial is not yet known, and nor does it have a name, Parkville's newest resident is creating a buzz.

The zoo's Australian bush keeper Maddy Jamieson said the joey was four-months-old and "adventurous."

"We've started to see the baby pop its head out of the pouch and we've started to see it get its little arms out and also have a little bit of a sniff of the gum leaves, just checking everything out," she said.

"In about a month we'll start to see it fully emerge

from the pouch and also start to eat the gum that the koalas eat as adults.

"It is very exciting to have a new joey here."

Koalas are considered vulnerable in many parts of Australia, threatened by disease and habitat destruction.



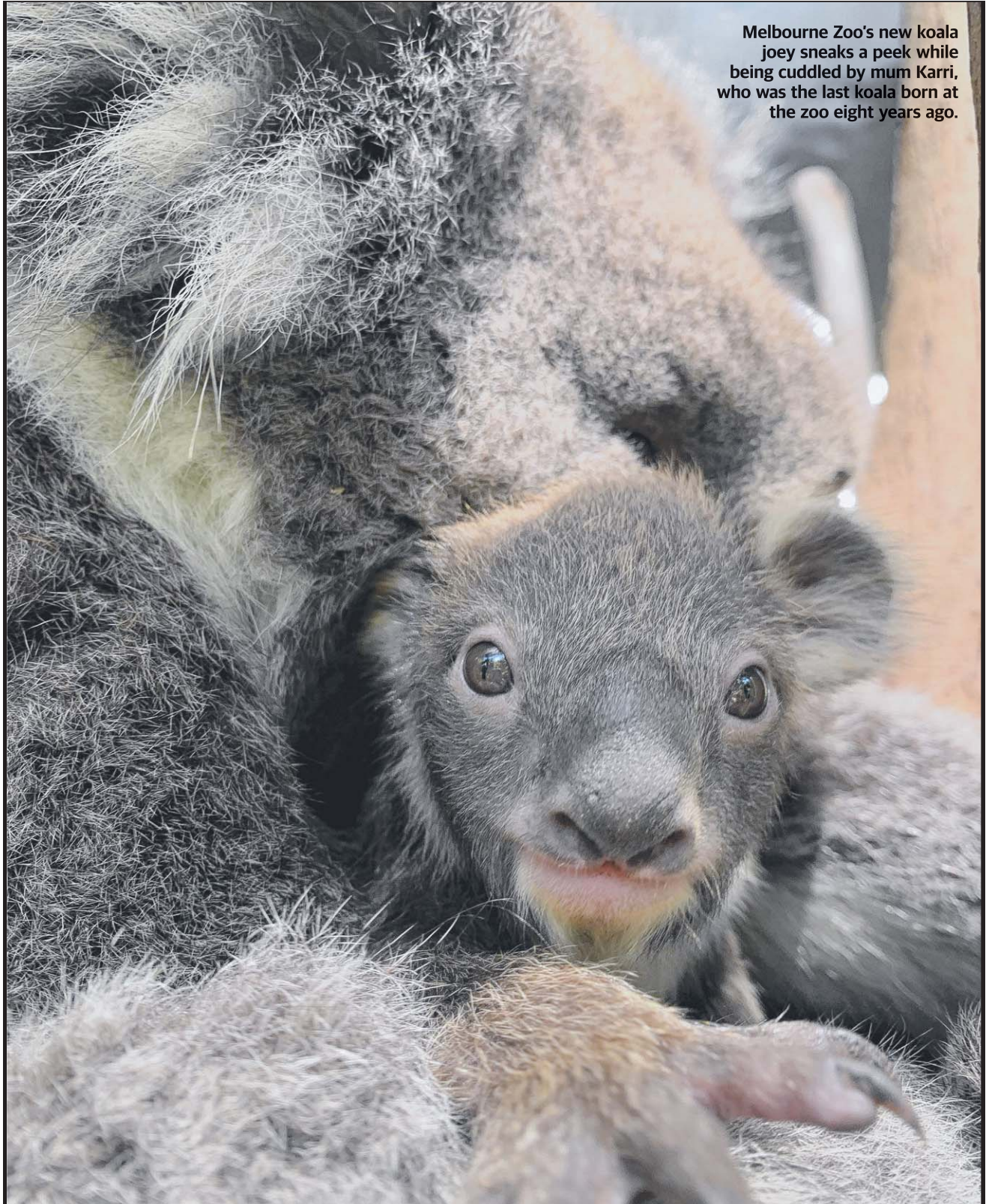
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Melbourne Zoo's new koala joey sneaks a peek while being cuddled by mum Karri, who was the last koala born at the zoo eight years ago.



# Last message: ‘Looks and sounds like apocalypse out there’

Mark Ludlow

The fourth victim of the NSW fires – a 58-year-old man from near Kempsey on the mid-north coast – described the catastrophic fires as something out of an “apocalypse” in a message on the day a bushfire raged in the area near his property.

As fires continued to burn across NSW and Queensland, police said a 16-year-old boy has been accused of lighting the destructive bushfire near Yeppoon in Central Queensland which razed 14 homes.

He will not be charged because of his age, but he will be dealt with under the state’s Youth Justice Act.

NSW authorities confirmed 58-year-old Barry Parsons died in bushland on the southern end of the Kyuna Track at Willawarrin, near Kempsey.

Although his body was only found on Wednesday night, it is understood Mr Parsons, who lived in a shed, was likely to have died in the fires last week.

His death follows that of Julie Fletcher, 63, who died in the town of Johns River, and Wyaliba locals Vivian Chaplain, 69, and the elderly George Nole.

A coronial report will determine the timing and cause of Mr Parsons’ death, but in a social media post last Friday he described the catastrophic fires in the region. “Seriously looks and sounds like apocalypse out there. F--ked up being on your own in these times,” he posted on Facebook.

NSW Premier Gladys Berejiklian paid tribute to the four fire victims in state Parliament on Thursday. She said the battle to fight the fires was not over yet. “Currently we have about 59 fires burning in NSW, 30 of them still uncontrolled but fortunately none at emergency level,” she said. “We have

1500 firefighters in the field as we speak, 500 trucks and 70 aircraft.”

After horror conditions on Wednesday – when higher than average temperatures and strong winds whipped up fires across the eastern seaboard – a cooler change gave firefighters some reprieve yesterday.

But it is expected to be short-lived as the Bureau of Meteorology warned hotter temperatures would return on Friday and over the weekend.

Rural Fire Service NSW Deputy Commissioner Rob Rogers said the passing of Tuesday’s “catastrophic” fire warning day had not made battling blazes easier.

“We had a better day yesterday, only one fire got to emergency warning, but even in these pretty benign conditions we’re seeing quite a lot of aggressive fire behaviour simply because it’s so dry,” Mr Rogers told the Seven Network.

“Conditions starting to warm up tomorrow, into the weekend and then heating up early next week, a return to more gusty conditions. We’re in for the long haul.”

The RFS has confirmed more than 300 homes have been destroyed or damaged since last Friday, at least 50 of them on Tuesday.

It said fires in the mid-north coast area such as Taree, Port Macquarie, Kempsey and Coffs Harbour were proving hard to control, as well as a blaze near Lithgow in the Blue Mountains.

In Queensland, fire authorities said 70 fires were still burning throughout the state, and they did not expect conditions to improve any time soon.

“Leave now” warnings are still in place for properties in Black Snake, near Gympie, and the coastal town of Woodgate, south of Bundaberg. Resid-

ents of Noosa North Shore returned to their homes yesterday afternoon.

WITH AAP

## Fire facts

- **Four** people in NSW have died. Latest victim was 58-year-old Barry Parsons, from near Kempsey.
- A 16-year-old boy has been accused of lighting the fires near Yeppoon in Central Qld that destroyed **14** homes.
- More than **70** fires are burning in Queensland and **59** in NSW.
- **329** homes destroyed in NSW fires, with **131** damaged.
- Insurers have received **730** claims worth **\$80m** from the catastrophic fires.
- **1500** firefighters deployed in NSW, and another **1000** in Qld.

SOURCE: FINANCIAL REVIEW



15 Nov 2019

Australian Financial Review, Australia

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A CFA member works on a controlled back burn along Putty Road near Colo Heights north of Sydney; above, burnt cars on a derelict property in the surrounding area. PHOTO: GETTY



15 Nov 2019

Canberra Times, Canberra

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## No rain as grim summer nears

AUSTRALIA is staring down the barrel of a horrific summer season that will drag scorching temperatures and extreme conditions well into the new year.

Livio Remano has never seen such extreme conditions in the 20 years he has worked with the Bureau of Meteorology, comparing the long term seasonal outlook to a bad chest X-ray.

"It's horrible, it's a horrible map to look at," he said.

"I have never seen this before in my life ... the entire country of Australia is covered in deep red."

That red colour means 70 to 80 per cent of the country is experiencing above-average temperatures, and is being blamed on something

called an extremely positive Indian Ocean Diode.

Westerly winds weaken along the equator and push warm water to shift towards Africa during a typical IOD.

The wind changes allow cool water to rise from the depths of the ocean in the east, causing a temperature difference across the tropical Indian Ocean, with unusually cooler water in the east and warmer in the west.

It means atmospheric moisture levels drop in Australia's northwest, which alters the path of weather systems coming from Australia's west. The result is less rainfall and higher than normal temperatures over parts of Australia.

Queensland is moving

into its wet season but there is little chance of significant rainfall until January. But eventually, Mr Remano says the rain will come.

"What we need is English rain, but it is not forthcoming – certainly not anytime soon," he said.



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Canberra Times, Canberra

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## Dangerous fire threat ramps up

QUEENSLAND firefighters were working frantically to strengthen containment lines and fire breaks as the state braces for the fire danger to again ramp up to severe levels.

The Bureau of Meteorology has warned conditions will become more dangerous as dry westerlies push extremely hot air across the state on Friday and heading into the weekend.

Many Queenslanders forced to flee their homes remained in limbo unable to return home.

As the fire threat deepens, there has been growing anger after a teenage boy was charged with lighting the Cobraball fire near Yeppoon that has burned for days in

central Queensland.

A total of 36 structures – including 14 homes – had been destroyed by the blaze which was still burning.

“I think everyone is angry and disappointed,” Premier Anastacia Palaszczuk said.

“Thankfully there were no lives lost, but it could have been a different story. I think parents need to sit down with their kids and talk about the consequences

of their actions.” More than 70 fires were burning across the state.

While authorities keep a close eye on the bigger fires, exhausted crews face another challenge on Friday as the temperatures rise and the fire threat intensifies.

The weather bureau warns

the westerlies will push extremely dry air back toward the coastal fringe bringing a low-intensity heatwave.

Severe isolated storms cells have also been forecast to potentially bring dry lightning which could ignite further fires.



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# Minister promises we're well prepared

**DAVID KILLICK**

TASMANIA was well prepared to face this summer's bushfire season, Police, Fire and Emergency Management Minister Mark Shelton said.

In State Parliament yesterday, Mr Shelton moved to reassure the public after facing criticism over the Government's slow response to two reports on the last two bushfire seasons.

Labor and the Greens have also claimed staffing shortages hampered recent fire fights and remote area fire teams remain grounded.

Mr Shelton said the state had never been so well prepared for bushfires.

"I am absolutely committed to making sure that we are ready and, Madam Speaker, we are ready," he said.

"I want to reassure Tasmanians that today we are better prepared than ever before for bushfires, better prepared than ever before because of actions we have taken."

He dismissed opposition claims as political point scoring and "scaremongering".

"As of today, we have 5670 firefighters in total, over 5000 volunteers," he said.

"Our plans are in place, brigade districts have been briefed, fuel reduction burns have occurred in all regions."



**Minister Mark Shelton**





15 Nov 2019

Australian Financial Review, Australia

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# Solar farms spar with energy users over grid

**Angela Macdonald-Smith  
and Mark Ludlow**

Solar farm developers clashed with major energy users over who should bear the cost of worsening bottlenecks in the transmission grid, with both sides using the price impact on consumers to support their arguments.

Owners of solar and wind farms claim a draft ruling from the Australian Energy Market Commission rejecting proposed changes in the allocation of transmission losses will be devastating for the sector, slowing investment and keeping prices high.

But major energy users support the AEMC in vetoing the rule change to ensure consumers don't pay the price for investors' misjudged decisions.

Changing the rule would have spread the financial hit from transmission losses more broadly across the sector, rather than on those plants connected into weak points on the grid.

"Consumers should not be paying for electricity that doesn't arrive," Andrew Richards, head of the Energy Users Association of Australia, said.

The ruling also found strong support from coal power investor Trevor St Baker, who described it as "an end to the renewables investors' gravy train".

Mr St Baker took issue with renewable investors' attempts to "have someone else pay to get their large-scale renewables generation from North Queensland or other remote locations out the back of Burke ... to electricity customers in the cities".

"Cheap power in Timbuktu is only cheap if competitive with the price of power supplied from closer generation locations," said Mr St Baker, half-

owner of the Vales Point coal power generator in NSW and an investor in electric vehicle charging networks.

Under the existing system, the estimated losses between the amount of power generated and that received by customers are allocated annually to individual projects on a marginal basis, which can cause sharp variations in revenue for plants that they are unable to hedge against.

The Clean Energy Investor Group, a group of 20 investors that includes Macquarie and BlackRock, argues that reducing that volatility – through using an average instead of a marginal calculation – is the only way to keep downward pressure on wholesale prices, and therefore consumer electricity prices.

But AEMC chairman John Pierce says the opposite is the case. He argues that changing to an average number would penalise generators located in strong parts of the networks, and consumers would pay more.

The commission said the current system signals the best place to put new plants to minimise costs to consumers.

About \$1 billion of value is estimated to have been wiped from the sector in the past two to three years, while some sources warn of funding defaults and project failures.

Transmission losses for some projects in remote areas amounted to as much as 23 per cent this financial year.

Under a draft released this month, they are set to worsen in some areas next financial year, including for Foresight Solar's Bannerton and BayWa r.e.'s Karadoc solar farms in Victoria and PARF's Broken Hill project in NSW, where revenue could be less than 80 per cent of what might have been expected.



# Turn climate neglect into action, MPs told

## Exclusive

Tom McIlroy

Mayors from communities hit by catastrophic bushfires in Queensland and NSW have issued a joint declaration to the Morrison government, calling for action to limit the contribution of climate change.

As MPs fought in federal Parliament this week over the contribution carbon emissions are making to weather-related events, 12 mayors from fire affected local government areas including Noosa, Bellingen, the Blue Mountains and Ryde have signed on to a joint statement.

It calls on Prime Minister Scott Morrison and the Coalition to recognise spiralling costs to local communities from catastrophic fires, and for more funding and resources to be provided for frontline services.

Byron Shire mayor Simon Richardson said federal and state leaders must talk about the contribution of changing climate and the heightened threat to regional communities from hotter, longer fire seasons.

“Everybody who’s involved with the bushfires is talking about climate change, the only people who aren’t talking about it are the politicians and their media supporters,” he said.

Bellingen mayor Dominic King said his community on the NSW mid-north coast did not usually face fire risk.

“It’s quite obvious that this is very different from something that we would expect on the mid-north coast. This is a wet area that has lots of rain-forest and we’re seeing them dry out and burn,” he said.

“It’s also quite obvious to anyone



Byron Shire mayor Simon Richardson (left) and former NSW fire commissioner Greg Mullins.

who’s been watching the discussion around climate change that this is exactly what the scientists were talking about.”

The statement is also signed by majors and councillors from Shoalhaven City Council, Lismore, Ryde, Hawkesbury, Hornsby and Newcastle.

## The only people who aren’t talking about [climate change] are the politicians.

Simon Richardson, Byron Shire mayor

It follows Mr Morrison’s reluctance to discuss climate change, and messy political fights involving the Greens and the Nationals.

“This government has the chance to be the first to turn the years of inaction and neglect into action and focus and allow our communities to reap the rewards,” the statement says.

“When we have a crisis, it makes sense for us to listen to emergency service professionals. Now, it makes

sense for our federal government to listen to the warnings of those on the frontline.”

Separately on Thursday, former fire chiefs from across the country urged the Morrison government to declare a climate emergency and improve fire mitigation.

Former Fire and Rescue NSW commissioner Greg Mullins said Australians faced a “new age of unprecedented bushfire danger”.

Among the more than 20 retired chiefs were former Queensland Fire and Emergency Services commissioner Lee Johnson, former Victorian Country Fire Authority chief executive Neil Bibby and former Tasmania Fire Service chief fire officer Mike Brown.

“We’d like to see Labor, the Coalition government, Greens and the crossbenchers all come together and declare a climate emergency,” Mr Mullins said.

“Climate change is the key reason why fire seasons are lengthening, fires are harder to control, and access to international firefighting resources like large aircraft is becoming more difficult. The government must respond to this urgent threat with an urgent response.”

US Ambassador to Australia, Arthur Culvahouse jnr expressed condolences to communities who have lost loved ones, homes and livelihoods in the fires.

“Australian firefighters are some of the most professional and effective anywhere in the world,” he said.

“As Americans, we know this because we have seen it first-hand – when your firefighters have come to help us face our own devastating forest fires.



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# Sweden central bank sheds Australian mining state bonds

**Kelsey Johnson**

*Ottawa* | Sweden's central bank has sold off Australian and Canadian bonds because it believes greenhouse gas emissions in both countries are too high.

Riksbank Deputy Governor Martin Floden said the bank would no longer invest in assets from issuers with a large climate footprint, even if the yields were high.

"Australia and Canada are countries that are not known for good climate work. Greenhouse gas emissions per capita are among the highest in the world," he said in a speech at Orebro University in Sweden.

"As a result of the new investment policy, we sold our holdings of bonds issued by Alberta in the spring. For the same reason, we have recently sold our holdings in bonds issued by the Australian states of Queensland and Western Australia."

Floden, who did not give details, said Sweden had invested around 8 per cent of its foreign exchange reserves in various kinds of Australian and Canadian bonds.

Analysts say the valuations of fossil fuel companies could be at risk if governments move to spur stronger action.

Bank of England Governor Mark Carney has said that the financial sec-

tor had to transform its management of climate risk, warning that global

warming would prompt reassessments of the value of every single financial asset.

"Central bankers aren't your typical tree huggers, so Canadian politicians should take note when they start black-listing government bonds over climate concerns," Keith Stewart, senior energy strategist with Greenpeace Canada, said.

Alberta's government insisted the province "has the highest environmental standards in the world", and the energy industry was continually improving its environmental footprint.

"If the Swedish central bank is really concerned with making a difference on climate change they need to be investing more in ethical producers, such as Alberta, which have shown dramatic gains in reducing emissions," said Christine Myatt, spokeswoman for Alberta Premier Jason Kenney.

The governments of Queensland and Western Australia could not immediately be reached for comment.

The sell off could pose more problems for Alberta, which is already hurting from five years of low crude prices

and pipeline constraints. A number of major firms have sold their Canadian assets or scaled back investments.

Alberta's reserves exist in the form of

tar-like bitumen, which must be heated with steam before oil can be extracted. The process is highly energy-intensive.

There are already widening splits between Alberta and Ottawa over climate change.

Liberal Prime Minister Justin Trudeau has pushed through tougher environmental policies since winning power in 2015, saying the energy sector needs to do more.

But the Kenney has complained the new measures are so harsh that it is impossible to build energy projects.

REUTERS

**Australia and Canada are not known for good climate work.**

Riksbank's Martin Floden



# Lion to go to ‘next level green’ in beer brewing

Elouise Fowler

Beer brewing company Lion said it plans to be carbon neutral by next year in response to consumer demand for action on climate change.

The Australasian division of the company aims to neutralise the 107,000 tonnes of carbon dioxide emissions it produces annually brewing beer, heating and lighting offices, and flying employees around for work by switching to clean electricity, recycling biogas from the brewing process, and buying carbon credits.

Unveiling its pledge ahead of Friday’s relaunch of Climate Active – the federal government’s rebranded carbon neutral certification project – Lion was set to join 83 businesses in certifying their carbon neutral status at an event at the Sydney Opera House.

Lion chief executive Stuart Irvine said this took the beverage company’s commitment to climate action to the next level, which he said was something customers wanted.

“We are sending a powerful signal to our people, supply chain and, of course, our consumers, that we are deepening our collective responsibility to measure, manage and reduce Lion’s emissions of our offices and manufacturing sites,” he said.

The brewer, which generated \$2.26 billion in revenue in alcohol sales in fiscal 2018, already neutralised 13,000 tonnes of carbon emissions through installing new equipment and exploring new production technologies at its major breweries in Australia.

Solar panels now adorn the Geelong brewery, which produces Little Creatures, and the 141-year-old Brisbane brewery, which produces Queensland’s XXXX Gold.

Lion’s Brisbane brewery also harvests the biogas emitted from the beer fermentation process to use as fuel to power some of the plant’s steam boilers, which are used to heat, clean equipment.

A renewable power contract was signed to provide electricity to its Sydney brewery, which produces Tooheys.

The remaining 94,000 tonnes of carbon emissions will be offset by buying

carbon credits from Melbourne-based

Tasman Environmental Markets, which will cost about \$1 million for projects based in Australia or overseas.

This offsetting approach will introduce an internal price on carbon at Lion, creating a stimulus to reduce more emissions across the company’s supply chain, the company said.

The location or type of offset credit project has not yet been settled, but Mr Stuart said the portfolio would seek to focus on bush regeneration and conservation projects that both cut carbon emissions and protect habitat and food sources for native wildlife.

Tasman Environmental Markets recently struck a deal with Qantas Airways, which on Monday pledged to go carbon neutral by 2050.

Over the next three years, Mr Stuart said the Australasian division of Lion would explore options to make the beers themselves carbon neutral by ensuring its supply chain of ingredients, packaging and transport were carbon neutral.

Energy Australia announced on Thursday that Climate Active, which certifies products and events as well as companies, had certified the energy provider’s “Go Neutral” power plan.



Stuart Irvine: Lion to be carbon neutral by 2020. PHOTO: PETER RAE



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# Global head named for climate backwater

**Hannah Wootton**

Ilona Millar has learnt that when it comes to climate change, it's best to work with the corporate sector while waiting for the politicians to catch up.

Ms Millar, who has been appointed the global leader of Baker McKenzie's climate change practice, says Australia is evidence that there are many ways to effect change.

"What we've seen is, even when there is less enthusiasm from federal governments, states start to jump in ... then increasingly what I'm really excited by – in Australia, and globally – is seeing co-operative prudential regulators require climate change reporting."

Ms Millar has spent 20 years working on climate change law and finance for governments and the private sector, and replaces another Sydney-based lawyer, Martijn Wilder, in the global role.

She said the area was a growing source of work for both transaction and litigation lawyers.

Ms Millar noted that the Australian Prudential Regulation Authority's insurance executive Geoff Summerhays this year demanded banks and insurers disclose and manage climate change risk. And in August, the Australian Securities and Investments Commission updated its guidance to retail investors to label climate change as a systemic risk.

"We're getting very clear signals from the ASX, APRA and ASIC that climate change has the potential to be a material risk for financial markets and institutions," she said.

This came on top of increased concern from super funds and insurers and pressure from private markets.

Some may consider basing a global head of climate change in Australia counter-intuitive, considering Australia is frequently cited as a laggard in climate change policy.

Ms Millar pointed to carbon capture and storage as an example of why this was unfair, saying Australia "has some of the best legislative frameworks".

Litigation around climate change was on the rise.

"I can't see any abating of the importance of this issue to environmental and community groups," she said.

REST Super is in a legal battle against one of its members, Mark McVeigh, who is alleging the fund failed to protect his pension savings from the financial risks posed by climate change.

"This is strategic litigation to test the extent of disclosure that's needed ... and the standards of that disclosure," Ms Millar said.

She predicted that "it's not if, but when we see action around directors' duties", and that the ACCC would step up its scrutiny of "green" products and their marketing.

This week's catastrophic bushfires in NSW and Queensland might also lead to litigation. And climate change was also becoming increasingly important to farming groups.

People only had to look at other countries for examples of how climate change legislation might develop. Though new laws overseas tended to be focused on moving to a zero carbon economy by 2050, "legislation is starting to go one step further in terms of looking at obligations around disclosure and mandatory climate change risk reporting. This sends a very strong message to companies."



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Ilona Millar: Australia shows the many outlets for change. PHOTO: YIANNI ASPRADAKIS



# Coalition is a natural lightning rod for climate rage

## Canberra observed

After a decade of denial and reluctance to cut emissions, Libs and Nats feel the heat as bushfires rage.



Phillip Coorey

In just over a fortnight, on December 1, it will be 10 years since Tony Abbott rolled Malcolm Turnbull for the leadership of the Liberal Party. Abbott's ascension was not preordained. The night before the party room ballot, he and a gaggle of others were in Joe Hockey's office urging him to run.

Hockey had the numbers. All he had to do was disavow the Carbon Pollution Reduction Scheme that Turnbull had negotiated with the Labor government but which had divided the Coalition and become the catalyst for the spill.

Hockey could not bring himself to do so, proposing instead there be a conscience vote in the party room. No dice.

"Joe, we're offering you the leadership of the Liberal Party on a plate," Abbott implored his colleague.

Until then, Abbott had not been seeking the leadership but he declared as he left Hockey's office that, if necessary, he would run against Turnbull.

Down the corridor, Turnbull's numbers man Ian Macfarlane was telling him he would lose by three votes. His only option was to accede to a demand by conservative senator and leading anti-climate-change agitator Nick Minchin to delay the CPRS by referring it to a Senate committee.

"No f---ing way," said Turnbull, knowing full well it was a tactic designed to destroy the policy.

The next day, Turnbull, Hockey and Abbott squared off for the leadership. Abbott won by a solitary vote.

And on such a tiny margin did history turn. And it kept turning.

Seconds after the leadership ballot, Abbott called a secret party room ballot

effectively on whether to vote against the CPRS in Parliament. It passed by 54 votes to 29, a truer reflection of views in the party.

Abbott, who previously had been caught on tape denouncing climate science as "crap", pretended otherwise. With significant qualification. "I think that climate change is real and I think that man does make a contribution," he said.

"There is an argument, first, as to how great that contribution is, and second, over what should be done about it."

The day after the spill, it got worse for those concerned with climate change.

Prime minister Kevin Rudd put the CPRS

to the Senate for a vote. The Greens, in their time-honoured tradition of putting the perfect ahead of the achievable, joined the Coalition, Nick Xenophon and Steve Fielding in opposing the scheme. Despite two Coalition senators, Judith Troeth and Sue Boyce, crossing the floor to vote with Labor, it was defeated by 33 votes to 41.

Had the five Greens voted with Labor, the legislation would have succeeded by two votes, 38 to 36. The defeat was a fatal blow for Rudd, reinforced by the failure to achieve a global consensus at the Copenhagen climate talks a few weeks later. He was gone by June 2010.

The Greens bristle when their role in torpedoing the CPRS is mentioned. They contend the scheme was weak and would have achieved very little. They point to the carbon price deal they negotiated with Julia Gillard in 2011.

That was never going to survive because Labor was such a rabble; Abbott was going to win the next election and dump it, which he did.

Moreover, the second scheme was browner than the CPRS. While both schemes unconditionally aimed to reduce emissions by 5 per cent below 2000 levels by 2020, the second one gave greater assistance to the steel industry, coal-fired

generators and underground coal mines. This brownness was offset by the bolting on of the Clean Energy Finance Corporation, a government-backed loan facility designed to fund clean energy projects.

The Liberals lined up to denounce the CEFC as the "Bob Brown bank" and Abbott tried to abolish it after he won power in 2013 but was stopped by the Senate. These days, the government clings to the CEFC like chewy to a blanket as it tries to buttress its climate credentials. Two weeks ago, it gave the CEFC a new capital injection of \$1 billion.

As we sit here today, all the warnings

sounded back then are ringing true. That droughts would be more frequent and more severe, bushfires would be more frequent and more severe, and the cost of action would increase the more you delayed.

It is a fact that Australia alone could not meaningfully influence global greenhouse emissions, even if it shut down all its

polluting industries overnight. That doesn't mean you don't do your bit.

Because the Coalition spent a decade cultivating a reputation of denial and reluctance to act, most recently reinforced by dumping Turnbull over the National Energy Guarantee, it has become the lightning rod for rage.

Labelling those with concerns as inner-city lefties and lunatics, as Nationals leader Michael McCormack did this week, was not only risible, but politically dangerous.

The Coalition's core constituents are at the front line of the problem.

And what of the 23 dozen former fire chiefs – dignified, apolitical, middle-aged folk in suits from across the country with hundreds of years of combined experience and expertise – gathering on Thursday to back the climate change warnings and reveal their requests for a meeting with the government have been fobbed off?

Greg Mullins, former Fire and Rescue NSW commissioner, said now was the time to talk about climate change and those who argued otherwise "want the debate gagged because they don't have any answers".

When a plane crashes, the cause is discussed straight away, he said. "This government fundamentally doesn't like talking about climate change."

When Australia was last afflicted by a terrible drought, it was in the lead-up to the 2007 election, and climate change was a big issue. John Howard was not a great believer in the science but nonetheless heeded the message and put together an emissions trading scheme to rival Rudd's proposals.

It remains a great irony that had Howard won in 2007, Australia would have had a scheme in place and the inanity of the past decade would never have occurred. We would even have an energy policy.

After Turnbull was dumped last year, Scott Morrison cobbled together a new version of "direct action" to get through the election. No one is advocating a price on carbon any more. Should, however, this drought not abate and the fires continue, the Coalition may well need to take a more substantial policy to the next election.

It's not going to go away.



15 Nov 2019

Australian Financial Review, Australia

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Market: Australia • Words: 1124 • Item ID: 1200115300

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*Phillip Coorey is The Australian Financial Review's political editor.*

*As we sit here today,  
all the warnings  
sounded back then  
are ringing true.*



Malcolm Turnbull was first toppled by Tony Abbott 10 years ago. PHOTO: ANDREW MEARES





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## Green Swedes ditch Aussie bonds

PAUL GARVEY

The world's oldest central bank has dumped billions of dollars of bonds issued by Western Australia and Queensland because of concerns about Australia's lack of

action on climate change. In a move that represents a new front in the global political and economic tussle over carbon emissions, Sweden's Sveriges Riksbank said it had sold the holdings — along with bonds issued by the Canadian province of Alberta —

as part of a new policy. The bank's Martin Floden said the decision reflected the fact the two countries were among the highest per capita emitters of greenhouse gas emissions.

FULLREPORT P4

# Sweden dumps Oz bonds over 'climate inertia'

PAUL GARVEY

The world's oldest central bank has dumped billions of dollars of bonds issued by Western Australia and Queensland because of concerns about Australia's lack of action on climate change.

In a move that represents a new front in the global political and economic tussle over carbon emissions, Sweden's Sveriges Riksbank said it had sold the holdings — along with bonds issued by the Canadian province of Alberta — as part of a new investment

policy.

Sveriges Riksbank deputy governor Martin Floden said the bank's decision reflected the fact that the two countries were among the highest per-capita emitters of greenhouse gas emissions. "Australia and Canada are countries that are not known for good climate work," he said.

Mr Floden said about 8 per cent of the bank's 500bn Swedish krona (\$75.4bn) foreign exchange reserves are allocated to Australian and Canadian government

bonds, suggesting up to \$6bn of bond holdings could have been impacted by the move.

"We will not invest in assets issued by issuers with a large climate footprint when we are choosing other assets than those best corresponding to our policy need," he said.

Divestments on ethical and environmental grounds by sovereign wealth funds, churches and some major investment funds have become increasingly common in stockmarkets around the world in recent years, prompting



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most major companies to adopt considered public positions on the environment.

Sweden's move could be the first time that government bonds have been sold in response to concern about government policy settings on climate change.

The immediate impact of Sweden's sale is likely to be minimal, given the relatively small scale of the country in international bond markets and the fact economic fundamentals are the dominant driver of investor appetite for government bonds.

Longer term, however, the borrowing costs of Australia and the states could increase if other major bond investors adopt a similar position.

Emma Herd, chief executive of the Investor Group on Climate Change, said Sweden's move was the natural next step in a trend across the international investment community. "This is not going away any time soon and this trend will continue, and governments both state and federal and all parts of the financial sector need to be very aware and managing climate change as an investment risk," she said.

Australia's carbon-intensive and trade-exposed economy meant managing climate change was a "fundamental economic risk" for the country.

"The challenge for Australia is that we have an incredibly problematic climate change policy discussion, we don't have a clear plan for how we are going to manage climate change across the economy, and we don't have a long-term plan for what we are going to do to help the economy transition over time," she said. "These are the risks we will continue to see."

News of Sweden's decision appeared to have no impact on Australian bond prices yesterday, with jobs data instead weighing on the market.

AMP Capital chief economist Shane Oliver noted that the trajectory of Australian bond prices over the past year meant Sweden would have likely made a handsome profit of between 10

and 20 per cent on its Australian bond holdings over the past year.

Mr Oliver said the relatively small size of Sweden's holdings meant there was unlikely to be any lasting impact to bond prices.

That view was echoed by S&P Global Ratings analyst Martin Foo, who said Australian state government bonds were among the most highly rated globally.

WA Treasurer Ben Wyatt said the Swedish sale represented "a very small proportion" of total bonds on issue. "Regardless of their reasoning, I suspect it has been driven more around rating elements and profit-taking as they continue to hold NSW bonds, a significant coal exporter, and have taken the opportunity to make some social commentary."

### 'Australia and Canada are countries that are not known for good climate work'

MARTIN FLODEN  
SVERIGES RISK BANK  
DEPUTY GOVERNOR



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Sydney Morning Herald, Sydney

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# The C-word isn't so dirty in London and Venice

**Andy Marks**



**R**ecent flooding in Britain is, according to Conservative Prime Minister Boris Johnson, “almost certainly because of climate change”.

Contrary to the Australian experience, it turns out it is entirely acceptable around the world for politicians to utter the words “climate change” in an emergency.

Nobody called the thoroughly urban mayor of Venice, Luigi Brugnaro, a “raving inner city lunatic” when he said flooding due to climate change had brought his city “to its knees”.

Equally not prone to lunacy, Japan’s Prime Minister, Shinzo Abe, cautioned in the wake of Typhoon Hagibis that “making the world more resilient to natural disasters will be more important” in light of an “increase in cyclone intensity because of climate change”.

In contrast, amid recent Californian wildfires, US President Donald Trump tweeted the state’s Governor, Gavin Newsom, had done “a terrible job of forest management”, failing to “clean” his forest floors. Newsom retorted: “You don’t believe in climate change. You are excused from this conversation.”

In their refusal to “go there” on climate change, Australian MPs have more in common with Trump. Deputy PM Michael McCormack rightly said fire victims most needed “sympathy, understanding and real assistance”. But that shouldn’t mean treating them like simpletons,

or ruling out discussion on the cause of their trauma.

It’s not only “woke capital city greenies”, as McCormack put it, demanding answers, but also his constituency. *The Land* surveyed readers on the eve of the March NSW election and declared a “whopping 63 per cent” of respondents believed in climate change. And 15 per cent said it would determine their vote.

The state poll delivered an average swing of 25 per cent against the Nationals in four seats – those devastated by fish kills and drought.

WA Nationals leader Mia Davies told *The West Australian* her party’s constituents expect it “to be a part of the conversation ... When you live in regional Western Australia you see the impact of climate change ... we are dealing with [it] on a day-to-day basis.”

The party’s own polling before the federal election revealed “climate change is a key issue” in National-held seats. Its member for Gippsland, Darren Chester, said many of his most ardent supporters were “practical environmentalists” who “expect a balanced and rational ... response to climate change”. There. He said it. Climate change. Not so hard after all.

Andy Marks is assistant vice-chancellor at Western Sydney University.

THECA1 1002



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Age, Melbourne

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# Airlines risk passenger guilt: Branson

**Patrick Hatch**

Virgin Australia won't say if it will match rival Qantas' pledge to eliminate long-term emissions but billionaire co-founder Richard Branson has admitted airlines must reduce their carbon footprints or risk a backlash from passengers.

Sir Richard, who owns 10 per cent of Virgin Australia and is also behind the Virgin Atlantic carrier in the UK, said sustainability should be the No.1 priority for every airline

and every company. "If any industry doesn't get their act together on carbon, there is the risk that consumers will act badly against them - and they deserve to be acted badly against," he said yesterday.

The aviation industry is responsible for about 2 per cent of the world's carbon emissions. In Europe "flight shame" has led people to avoid flying because of guilt over the impact on the environment.

"Every consumer needs to make up their own mind on things like that," Sir Richard said in Brisbane, where he was promoting Virgin Australia's new route to Tokyo, set to launch in March.

"It's up to us companies to get our

footprint down and down and down, so people don't feel guilty," he said.

"We all feel guilty about certain things we do - it's important that we all have an element of guilt and we try to balance that."

Qantas last week pledged to cut its net carbon emissions to zero by 2050 through a combination of fuel

efficiency and off-setting schemes, such as planting trees.

Sir Richard and Virgin Australia boss Paul Scurrah said they remain committed to the goal set out by the International Air Transport Association of reducing emissions to half their 2005 levels by 2050.

Mr Scurrah said the airline industry had to get better at balancing the argument between the impact of aviation on the environment and the economic benefit it provides. He said Virgin was working to get

ahead of what other airlines were doing in the space. "We have to have a balanced argument about how we actually draw the roadmap from where we are today to where we need to be as an industry," he said.

Sir Richard this week called on Australia to stop exporting coal because of its contribution to climate change. He has proposed a scheme

for all companies to work out their carbon footprints and spend a percentage of profits on clean energy initiatives.



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# DFAT's plan to use aid for climate action

**Katie Burgess**

THE Department of Foreign Affairs and Trade has described climate change as an "existential threat" for Pacific nations, in a long-awaited climate strategy quietly released earlier this month.

The document signals the department will use its aid program to help developing nations respond to climate change.

It comes as the government pledges to step up its investment in the Pacific to \$500 million to help island nations build resilience to climate change and natural disasters.

The strategy describes climate change as a "major risk to sustainable development" which was threatening global efforts to stamp out poverty.

"[Climate change] will increasingly affect all Australian development assistance policy and investment decisions, and influence long-term planning and risk management," the strategy says.

"The world's climate is changing faster than most scientists expected even five years ago. The impacts of climate change are magnifying a range of challenges for developing countries.

"For some, including Pacific atoll nations, climate change impacts present an existential threat."

The language echoes that

used by Fiji's Prime Minister Frank Bainimarama at the Pacific Islands Forum in August, where Australia famously attempted to try to water down a strong consensus from smaller Pacific nations to phase down the use of coal.

But it raised eyebrows, when the document was uploaded with little fanfare to the department's website on November 1. It includes a foreword from DFAT secretary Frances Adamson, not Foreign Affairs Minister Marise Payne.

Asked why the release of the strategy was so under the radar, a department spokesperson said it was an "internal" document to guide aid program development and implementation.

"Australia has provided support for climate change and disaster resilience projects and initiatives through its development assistance for more than 25 years," the spokesperson said.

"The strategy has been developed and added to as new initiatives have been announced."

The strategy was released on the same day Senator Payne opened cyclone-standard classrooms at a primary school in Vanuatu, which had been funded by the Australian government.

The department said this

was a practical example of Australia's commitment to investing in climate change and disaster resilience across the Pacific.

However former Kiribati president Anote Tong said earlier this year Australia was acting like an abusive relative, by refusing to make its own changes to reduce climate change.

"What we have today is a country that knows that what it's doing is damaging the future generations yet it continues to do that. What would you do? If a member of your family was actually doing damage to the family would you keep them in place, or ask them to go somewhere else until they can come to their senses?" Mr Tong said.

Tuvalu's prime minister Enele Sopoaga has also said the \$500 million package did not give it a free pass for failing to reduce its own emissions.

"No matter how much money you put on the table it doesn't give you the excuse not to do the right thing, which is cutting down your emissions, including not opening your coal mines," he said at the time.



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**The world's climate is changing faster than most scientists expected even five years ago. The impacts of climate change are magnifying a range of challenges for developing countries.**

**The Department of Foreign Affairs and Trade**



15 Nov 2019

Courier Mail, Brisbane

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## Australia to help out Pacific neighbours

AUSTRALIA is stepping up its pledge to help Pacific nations combat climate change and prepare for disaster reliance, ahead of international climate talks.

The foreign affairs department has released its long-awaited climate change action strategy without fanfare, pledging \$500 million from 2020-2025 to help Pacific nations.

The figure is a “step up” from the \$300 million commit-

ment from 2016-2020, the department says in the strategy paper.

“The world’s climate is changing faster than most scientists expected even five years ago,” the paper says.

“The impacts of climate change are magnifying a range of challenges for developing countries. For some, including Pacific atoll nations, climate change impacts present an existential threat.”

Released a month ahead of the United Nations Climate Change Conference in Madrid, the paper reaffirms Australia’s commitment to the Paris Agreement, which the department says “underlines the strength of global commitment to addressing the threats of climate change, including commitments by donor countries to provide support to developing countries in need to address climate change”.



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# Leaked emails on water chat motives

Bipartisanship is alive and well at Macquarie Street according to leaked emails between the offices of ex-Greens MP **Justin Field** and Shooters, Fishers & Farmers MP **Roy Butler**.

It's not the most obvious political partnership. Field quit the Greens in April this year after a bitter internal fight within the party and has campaigned on environmental issues ever since.

As the *Herald* revealed last month, Deputy Premier **John Barilaro** and Water Minister **Melinda Pavey** proposed new powers to override environmental and planning rules for new pipelines and dams in drought-affected towns.

Now leaked emails from Wednesday, sent between Field's and Butler's office, show a vigorous exchange of ideas from the two ideologically-distant operations on whether to agree to the plan.

Having asked Pavey's chief-of-staff **Jeff McCormack** to clarify parts of the legislation, Field's advisor **Emily Dyball** forwarded the answers to Butler staffer **John Clements**.

"So suspicious — I think they are reordering the priority to benefit [irrigators]," she wrote.

A few minutes later, Dyball follows up with a further comment.

"It's all bullshit and Pavey can't be trusted with this power," she told Clements.

Clements agreed. He wrote to Pavey's office, telling them further assurances were needed to make sure the new rules aren't "used

more broadly than for critical water supply". Fair enough.

Environmentalists and the Shooters working together? It's Parliament at its finest except, err, when Clements forgets to remove Dyball's commentary on the Nationals' suspicious motives and forwards the entire email exchange to ... Pavey's office.

Whatever discussions did take place between Clements and Dyball — we are assured the leaked emails are not the whole story — it was not enough to see off the powers.

They passed Parliament on yesterday morning.





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# Australia to profit from 'hydrogen revolution'

Bo Seo

Australia is well placed to benefit from South Korea's ambitions to become a "hydrogen-powered society" and its efforts to diversify trade away from China, business leaders were told.

Macquarie Capital resources executive Kate Vidgen said South Korea was more advanced than "almost any other country" on hydrogen, and had complementary skills with Australia as both countries sought to decarbonise their economies.

South Korea, Australia's fourth-largest trade partner, aims to power 30 per cent of its cities and towns with hydrogen, and manufacture 6.2 million hydrogen fuel cell cars by 2040.

Ms Vidgen said companies from the two countries should heed the lessons from the LNG boom and avoid duplicating infrastructure in the manner of the three gas ventures in Queensland.

"Early alignment and partnership will yield the greatest likelihood of long-term success," she told a meeting of the Australia Korean Business Council (AKBC).

Hydrogen can be extracted for fuel from water, gas and coal using power from renewable sources or, with carbon capture, fossil fuels. The technology has not been commercialised, but Australia is considered well-placed as an exporter due to its abundance of each of these inputs.

Since the South Korea-Australia Free Trade Agreement went into force in 2014, Australian exports have increased by almost a quarter to \$24 billion in 2018.

But on the sidelines of the meeting, some delegates privately complained about local environmental regulations that they claimed amounted to a barrier to foreign investment.

In September, the NSW Independent Planning Commission blocked Korean electric utility KEPCO's plans to develop a coal mine in the Bylong Valley near Mudgee. Steel giant POSCO is still wrestling with approvals for its Hume Coal Project in the Southern Highlands.

AKBC chairman and former Labor

minister Simon Crean said he understood these concerns and that a "one-stop shop" approach to regulatory approvals was sensible in principle.

But Mr Crean said the public would oppose the move to a centralised system if they believed it would override their environmental and social concerns: "It's the community outrage that brings the blocks up".

Australia's chief scientist Alan Finkel, who is leading the development of a national hydrogen strategy, said Seoul's commitment to hydrogen would change the "essential energy trade" between the two countries.

Australia is South Korea's largest supplier of coal and the second-largest supplier of LNG, accounting for 33 and 18 per cent of imports. Seoul aims to cut coal's share of its energy mix from 45.3 per cent in 2017 to 36.1 per cent in 2030, and to slash domestic emissions by one-third over the same period.



# Adani Ports chief bullish on future of Australian coal

**Matthew Cranston**  
Economics correspondent

*Ahmedabad* | Adani Ports chief executive Karan Adani says Indian demand for Australian coal will keep growing.

Mr Adani said the company's politically sensitive Carmichael mine in Queensland would power ahead despite a "cyclical" drop in thermal coal prices, and that the mine's first export of coal in 2021 would be followed by a weekly 200,000-tonne shipment to India.

He has invited Prime Minister Scott Morrison to visit the world's biggest imported coal port at Mundra, India, in January.

With the International Energy Agency predicting this week that India will overtake China as the world's biggest coal importer by the mid-2020s, Mr Adani said there would be no holding back on coal demand in what is already a crucial \$11 billion-a-year trade relationship for Australia.

"We strongly believe coal consumption in India will continue to grow because the underlying stable electricity network of the country can only run on non-renewable sources and the cheapest source right now is coal," Mr Adani said.

India's per capita consumption of electricity per year is now 800kWh, well below the world average of 3130kWh and Australia's 9179. As 300 million Indians still have little reliable electricity supply, growth in consumption is expected to expand significantly, drawing further demand for coal.

Demand in India has tripled since 2000 and is expected to continue to grow by around 5 per cent to 2035. "India is moving towards cleaner sources of coal," Mr Adani said. "For us, Australia is where we get one of the cleaner sources of coal."

He said he would be pleased to see Mr Morrison at the company's massive

west coast import terminal when the Prime Minister visits Indian counterpart Narendra Modi in January.

He encouraged other politicians to

make the journey in an effort to bolster the trade relationship, which some expect could lead to a bilateral free trade agreement following India's withdrawal from the Regional Comprehensive Economic Partnership this month.

"It would be our pleasure to have the Prime Minister but not just the Prime Minister, I think anybody from Australia who wants to come should, we have nothing to hide," Mr Adani said.

Strong criticism of Adani's Queensland mine has made the company a target for climate change activists, but Mr Adani said the company blamed no one but itself for not properly communicating its green credentials. He said

the corporation's port operations will soon be carbon neutral.

"Our target is to be carbon neutral by 2025," Mr Adani said.

"So while our total coal production will be growing, it will be offset with the amount of investment we are making on renewable energy.

"Our renewable portfolio in the last four years has gone from zero to 4000 megawatts and the idea is that by 2025 we want to take that up to 9000 megawatts."

Adani has faced rejection from a string of banks and insurers that refused to back its coal and solar ventures in Australia.

However, Mr Adani said he did not care that Australian banks and insurers would not provide financing and that Indian banks were still supportive.

"So far we have not seen any negative effect in terms of not lending for coal. One of the largest miners in the country is Coal India, which is operated by the government of India," he said.

Adani's Australian chief executive, Jeyakumar Janakaraj, said he thought the company had probably attracted

some criticism because it had been "quite aggressive in terms of our timeline".

"For want of a better word we became the poster child for coal and climate change in the country and while people were talking about multiple projects, it was us that sort of got picked out," Mr Janakaraj said.

Mr Adani's advice to other mining chief executives around the world trying to invest in Australia was that they should remain patient.

*Matthew Cranston travelled as a guest of the Confederation of Indian Industry.*

## For us, Australia is where we get one of the cleaner sources of coal.

Karan Adani, Adani Ports

### Key points

Queensland coal mine expected to ship 200,000 tonnes a week to India.

The company blames itself for not communicating its green credentials.



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Karan Adani: Port operations will be carbon neutral by 2025. PHOTO: CAMERON LAIRD



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Sydney Morning Herald, Sydney

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**SUCCESSION** Mike Henry to replace Andrew Mackenzie

# BHP's Henry plans productivity push

**Nick Toscano and Colin Kruger**

Incoming BHP chief executive Mike Henry plans to “accelerate” the miner’s productivity push and unlock greater value from its ore bodies and petroleum basins as he prepares to lead the company through a challenging period including a feared slowdown in demand from China.

Mr Henry, who was named on Thursday as successor to long-serving CEO Andrew Mackenzie, said he would spend the next 45 days engaging with staff across the miner’s global operations before making any significant decisions.

“The company is in great shape,” Mr Henry said. “I am going to spend the next 45 days out engaging with our global operations listening to our people and I’ll look forward to coming forward at our February half-year results with some initial impressions.”

Speculation has been building that BHP is weighing a potential exit from thermal coal - used to generate energy - and what it will do with its 50 per cent stake in the Bass Strait oil fields off the coast of Victoria after its joint-venture partner ExxonMobil announced plans to sell.

BHP is also soon to make a decision on whether or not to proceed with the development of a potash mine in Canada.

Camille Simeon, senior investment manager with Aberdeen Standard Investments, one of BHP’s biggest shareholders, said Mr Mackenzie had “cleaned up”

BHP’s asset base and set the business up for further improvements under Mr Henry.

“Now it’s about unlocking value in the assets and operations,” she said. “That can be from production growth or improving the returns on the business.”

Argo Investments’ Andy Forster said all eyes would be on Mr Henry’s growth plans.

“It’s all well to be shrinking yourself to greatness the last few years but I suppose people want to know how are they going to grow the business from here,” Mr Forster said.

“The big one is potash on which people are really hanging.”

BHP, the world’s biggest miner, announced Mr Henry’s appointment on Thursday morning, ending months of speculation over who would replace Mr Mackenzie, who has been in the role for more than six years.

The role at the helm of BHP is considered one of the most important jobs in corporate Australia. Along with half a million direct shareholders, an estimated one in three Australians has an interest in BHP through their superannuation funds.

BHP also has a huge influence on the strength of the economy as its commodities such as coal and iron ore rank among the nation’s top exports. And BHP is one of Australia’s top taxpayers, paying some \$10 billion into government coffers in the past financial year.

Mr Henry, 53, joined BHP in 2003 and has 30 years’ experience in the mining and petroleum industry. He was appointed to his current role of Australian minerals operations president in 2016.

Despite the pressure facing the business due to the impact of the US-China trade war on global growth and concerns of demand shrinking for some of its products, Mr Henry vowed to maintain Mr Mackenzie’s disciplined approach to safety, operational performance and capital allocation.

“This discipline will help us navigate uncertainty,” he said.

“I have the luxury of being able to lead a company that is in really good shape. I see my job as the next CEO to build upon that foundation we have created to accelerate performance.”

On Thursday, some BHP insiders privately described Mr Henry as the “boring but smart choice”.

“I find Henry very straight, which isn’t to my personal liking, but he’s one of those super bright hard-working types,” said a source familiar with the BHP executive team.

Mr Henry will receive a base salary of \$US1.7 million (\$2.5 million), with a potential short-term cash and stock bonus of up to 80 per cent of that and a long-term incentive of up to 200 per cent, subject to shareholder approval.



15 Nov 2019  
Sydney Morning Herald, Sydney

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Ken MacKenzie, Mike Henry and Andrew Mackenzie. Photo: Eamon Gallagher



15 Nov 2019

Daily Telegraph, Sydney

Author: John Rolfe • Section: General News • Article type : News Item

Classification : Capital City Daily • Page: 29 • Printed Size: 102.00cm<sup>2</sup> • Region: NSW

Market: Australia • Words: 218 • Item ID: 1200086028

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Page 1 of 1

# Leave our contractors alone, says Adani

**JOHN ROLFE**

ADANI has urged activists to leave its contractors alone, after a Sydney council voted to boycott suppliers to the Queensland coal mine.

Legal concerns have also emerged over the ban.

The Daily Telegraph yesterday revealed that Inner West Council mayor Darcy Byrne expected a \$2 million

investment in a new public square will be lost after the Greens succeeded in forcing it to stop using companies that also do work with Adani.

The council's partner in the square project is Telstra, which owns the site and is a supplier to Adani.

Adani yesterday said: "We think it is only reasonable that Australian companies like our contractors and their

employees are afforded the opportunity to go about their legal business without their livelihoods being threatened by activists."

Meanwhile, Liberal Julie Passas said: "I don't know how legal the resolution can be." She voted in favour of it, despite having "no respect for their motion whatsoever".

"The game was the Greens didn't expect it to get

through," Ms Passas said.

"They thought they were putting Labor in a difficult position." Mr Byrne said council would have to take legal advice on implementing the boycott.

Greens councillor Jamie Parker, said on Facebook: "Local Labor led by the mayor have chosen to back Adani, not the environment and not our community."



15 Nov 2019

Daily Telegraph, Sydney

Author: TONY VERMEER • Section: General News • Article type : News Item  
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Page 1 of 2

**'Without electricity there's no survival ... be a little considerate'**

# India needs our coal

**TONY VERMEER  
IN AHMEDABAD**

AT Ahmedabad night market you won't find much sympathy for Extinction Rebellion, the Greens and well-off Westerners crusading against the use of Australian coal to power several million Indian homes.

The street stall owners are just grateful the lights are on as they battle to earn a few rupees selling mainly clothes, textiles and shoes. They know nearly 300 million fellow Indians — one in four — live without reliable electricity.

They can't understand why Australians would oppose a crucial part of the program to electrify India while making a buck via the huge Carmichael coal mine in Queensland.

Stallowner and father-of-two Mohammed Siddiq said he realised Westerners were concerned about climate change but for Indians it was a life and death matter.

"Without electricity life stops — my business survives because of electricity," he told The Daily Telegraph through an interpreter. "If there's a country where the citizens are against providing coal to a country which needs electricity, it is not good because they are not getting the point how much electricity means to us. A country should help another country."

Fellow stallholder Mamta Ashokumar Vaishnav said:

"Without electricity there's no survival ... they need to be a little considerate about our requirements. It would be nice if we can get that coal."

Thermal coal use in India is expected to double by 2030 to about 1100 million tonnes as the government's program of connecting every village to reliable power continues.

While India was also heavily investing in solar, wind and hydro, coal would continue to be a crucial part of the mix — and Australian coal was the most environmentally friendly, former Indian power secretary RV Shahi said.

"I would urge people of Australia who have some partial information about this subject to review their opinions. Would they not help people like this in India and people who are even more ill-placed in other countries?" he asked.

Ahmedabad, capital of Gujarat state, is home of the Adani group, the energy and logistics giant that has spent the best part of a decade battling environmental activists to win approval for the \$2 billion Carmichael mine.

It plans to use the mine's cleaner, more efficient product in its coal-fired plants for at least two decades. The first shipment is expected in 2021.

The company this week

hosted a tour of its port at Mundra, where the Carmichael coal will be shipped, and its

electricity plant next door, where it will be burned.

It coincided with an International Energy Association report predicting India would soon usurp China as the world's biggest coal importer.

Adani Ports CEO Karan Adani believes coal power, which makes up 75 per cent of India's supply, will continue to play the major role, despite the growth of renewables. "The underlying stable network of

the country can only run on a non-renewable source and for us the cheapest source right now is coal," he said.

But Adani, India's largest private generator, is also betting big on solar, having built India's biggest solar panel manufacturing plant, turning out 10,000 panels a day.

It also has a small wind farm flanking the power plant.

The author travelled as a guest of the Confederation of Indian Industry.





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Daily Telegraph, Sydney

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Stallholder Mohammed Siddiq, Adani's port and power plant, and (below) Karan Adani. Pictures: Cameron Laird







15 Nov 2019

Courier Mail, Brisbane

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# Ready ore not, coal set to roll

## Indian power player says shipments will leave Queensland within a year

HAYDEN JOHNSON

ADANI has pledged to ship its first batch of Queensland coal to India by 2021, and has hit out at green activists, declaring itself a global leader in reducing carbon emissions.

In a rare and wide-ranging interview at the company's headquarters in Ahmedabad, India, Adani Ports CEO Karan Adani declared that after nine years of setbacks, the goal was to send the first coal from the company's controversial Carmichael megamine to India within about a year.

About 10 million tonnes of coal will be unearthed from the Galilee Basin each year and shipped to India where it will provide baseload power to the world's fastest-growing large economy.

Mr Adani – one of two sons to billionaire businessman and Adani chairman Gautam Adani – was unwavering in his pledge to start work on the company's north Queensland project.

"We're not moving away from our commitment in terms of starting this mine," he said.

Adani has been a flashpoint for environmental protesters who have mobilised and caused chaos across Australian cities and towns. Sitting in the com-

pany's 15th-floor boardroom, the 32-year-old CEO, who is also a strict vegetarian, took aim at activists and declared Adani was a corporate leader in reducing carbon emissions.

"As a group we would be by 2025, or maybe earlier, we would be one of the few organisations who would be coming close to the Copenhagen 2022 targets," he said. "Coalmining and thermal production, even though will be growing, it will still be offset with the amount of investments we are making in renewables."

Despite the bruising nine-year battle to secure approval for the Galilee Basin project, Mr Adani believes it will pave the way for future investment in Queensland.

"It has been a very tough journey, let me put it this way," he said.

"At the end of the day we do believe it's a very good investment. "Our idea right now is just to focus on getting this up and running, start construction and get the first coal out by 2021 and then we'll take it forward."

RENEE VIELLARIS P34  
CARTOON P37



15 Nov 2019

Courier Mail, Brisbane

Author: Hayden Johnson • Section: General News • Article type : News Item  
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**“ We would be  
one of the few  
organisations  
coming close to  
the Copenhagen  
2022 targets**

**KARAN ADANI**



**ON TRACK:** Karan Adani and (inset) Adani executives Jeyakumar Janakaraj and Avinash Rai. Picture: Cameron Laird



15 Nov 2019

Courier Mail, Brisbane

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## Funding to fuel mining for rare earth metals

MINERS looking at digging up the rare earths and critical minerals needed for many modern technologies could get double the help from taxpayers as the Federal Government looks to expand the market opportunities.

Projects will now be able to get support from Export Finance Australia, including its defence branch, and the Northern Australia Infrastructure Facility if they meet the

criteria. Resources Minister Matt Canavan said there was potential for thousands of jobs to be created.

“Today more products rely on the use of minerals that start, often in this country, under the ground than ever before,” he said yesterday.

Australia and the US are teaming up to develop the sector in a bid to counter China’s near-stranglehold on supply of the vital minerals.

Trade Minister Simon Birmingham said the Government had been working carefully and steadily to build the market’s potential.

Senator Canavan is heading to the US for talks with Commerce Secretary Wilbur Ross.

Queensland Resources Council chief Ian Macfarlane, who will join him on the trip, said the state can be at the forefront of the emerging sector in Australia.



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# Chevron to be read riot act on Browse

## EXCLUSIVE

PAUL GARVEY

Federal Resources Minister Matt Canavan will lay down the law to Chevron chairman Mike Wirth at an upcoming meeting in San Francisco, with the senator set to warn the energy giant that it could lose its good standing in Australia if it stood in the way of

Woodside Petroleum's \$30bn Browse LNG project.

Senator Canavan is poised to meet with Mr Wirth in San Francisco on Friday, US time, at the start of a week-long visit to the country.

The government has been determined to see the large but remote Browse gas fields off northern Western Australia — which were first discovered almost 50 years ago — finally de-

veloped after a series of false starts. But Chevron is one of several potential roadblocks in the way of the project.

Woodside and its partners in Browse must convince other partners in the existing North West Shelf LNG plant, including Chevron and BHP, to open up the North West Shelf facility to gas from Browse.

Woodside also faces chal-  
*Continued on Page 27*

# Browse licence threatened

*Continued from Page 17*

Challenges in keeping its own joint venture partners in Browse aligned, given those companies, including Royal Dutch Shell, have other development projects elsewhere in the world that are competing for attention. BHP has also been reluctant to throw its full support behind both the Browse proposal and Woodside's plans to develop the Scarborough gas field.

Speaking to *The Australian* ahead of his departure, Senator Canavan made it clear he did not want Chevron to be the reason Browse did not go ahead.

"If they're not seen to be good participants in the development of our resources, of course that will affect their good standing with the Australian government," Mr Canavan said.

Chevron is the single largest foreign investor in Australia, having pumped tens of billions of dollars into the development of the Gorgon and Wheatstone LNG projects in Western Australia over the past decade.

It also owns the Clio and Acme gas fields, which are smaller than the Browse fields but which sit much closer to the North West

Shelf plant. Senator Canavan said he would make it clear the government wanted to see Browse developed.

"We want this done and we think they should be able to do it if they act in good faith. If it does fall over at this last hour, we will be asking some serious questions about what happened," he said.

He has previously warned Woodside and its partners that they risked losing their retention licence over the Browse fields if they don't move towards development soon.

Senator Canavan said the Australian people owned the Browse gas and expected the current Browse partners to bring them to development.

"If they can't do that, we are within our rights to take them back and give someone else a go," he said.

Chevron Australia managing director Al Williams said Chevron was keen to see Browse processed through the North West Shelf. He said the North West Shelf partners had put "an attractive package" to the Woodside and the Browse partners.

"There is a deal on the table that we see as a clear path to an agreement," he said.



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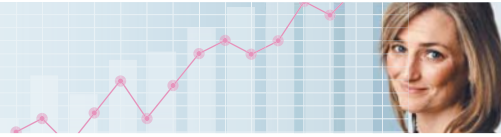
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## DATAROOM

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# Helix, Petro Talaria eye Inpex, Santos gas assets

Petro Talaria and the US-based oil and gas company Helix Energy are understood to be homing in on Australian oil and gas assets, including both West Australian interests owned by Santos and Inpex and the company Northern Oil & Gas Australia.

While Jadestone was expected to be the group that would chase the Inpex assets in Australia's West, it is now understood that they are in the cross-hairs of Constantine Capital and Petro Talaria, which has close ties to Helix.

Apparently, Helix Energy and Petro Talaria had been offered

preferred bidder status earlier this year for what has been dubbed Project Sunflower.

On offer has been the Van Gogh, Coniston and Novara oil fields jointly owned by Inpex and Santos, a floating production facility, the Ravensworth oil field and the Scaffell gas field which is yet to be developed.

The Van Gogh, Coniston and Novara oil fields are close to depletion with an estimated 2 million barrels remaining.

A further drilling campaign is needed on the assets and is expected to cost up to \$US380m (\$560m). This would create three wells to provide 7-9 million

barrels of reserves. Inpex holds a 47.5 per cent interest in the projects, with Santos, the operator, holding the remainder.

It is now understood that Santos is also eager to sell out of the West Australian assets that it owns with Inpex and is working with investment bank Deutsche on the sale.

The assets carry remediation costs that are believed to be worth \$US550m and it is understood that they will be sold

for a nominal amount.

The oil reserves in the asset are declining.

Meanwhile, Northern Oil and Gas Australia is in the hands of

accounting firm KPMG and has liabilities worth \$US225m.

The company has the Laminaria-Corallina development in the Timor Sea, 550km northwest of Darwin and the Northern Endeavour double hulled floating production storage and offloading vessel, permanently moored between the Laminaria and Corallina oil fields in the Timor Sea.

Helix Energy is Texas-based and is listed on the New York Stock Exchange with a \$US1bn market value while Petro Talaria is a recently launched company run by an Australian-based oil and gas specialist.



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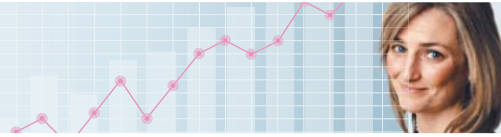
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# ConocoPhillips mulling Australia Pacific LNG exit

American multinational energy company ConocoPhillips is believed to be crunching the numbers on its investment in Australia Pacific LNG in Queensland to determine whether to stage an exit from the \$US20bn (\$29.4bn) project.

ConocoPhillips owns 37.5 per cent of the Queensland operation, Origin Energy owns 37.5 per cent and Sinopec, to which the gas for the project is contracted, holds the remaining interest.

Some believe ConocoPhillips could be working with investment bank JPMorgan, although the US bank declined to comment on whether it had any involvement.

ConocoPhillips also declined to comment on its plans.

APLNG is Australia's largest producer of coal-seam gas, supplying the Queensland domestic gas market, as well as processing CSG from southwest Queensland's Bowen and Surat Basins into liquefied natural gas to meet growing export demand.

The gas is transported via a 530km main export pipeline to the LNG facility, located on Curtis Island near Gladstone.

Some believe that the buyer of the interest could be an infrastructure-style investor that has a lower cost of capital than the US group and could generate stronger returns from the project.

However, an operator would also be involved.

ConocoPhillips initially purchased a 50 per cent stake in APLNG more than 10 years ago for about \$US5bn.

Sinopec later bought an interest, increasing its equity stake in the project in 2011 from 15 per cent to 25 per cent.

However, some say that the investment has been a disappointment for

ConocoPhillips, which is understood to have written off some of the value and better investment opportunities in the US and Canada with shale gas and other oil opportunities.

Recently, ConocoPhillips sold its stake in its Darwin LNG plant and northern gas fields in October to Santos and a sale of APLNG would see it almost completely exit Australia.

The gas on the product has been contracted over the long term to China's Sinopec, so the offer would be an earnings stream, and it is not thought to have any growth prospects.

Should the asset come up for offer, a concern for Origin Energy would be what party becomes the operator, given that ConocoPhillips is currently the downstream operator.

One possibility could be a demerger by both Origin and ConocoPhillips of APLNG, although this is thought to be less likely, or upstream operations could be split from downstream operations.

It is understood that ConocoPhillips has recently commissioned some initial scoping work for the gas assets related to LNG futures, based on the US versus Australia long term and spot contracts.

The asset has previously been involved in legal action by Tri-Star Petroleum.



15 Nov 2019

The Australian, Australia

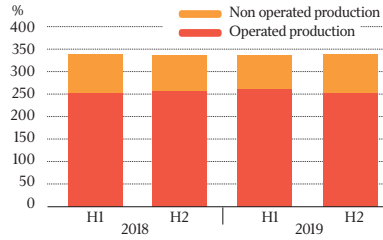
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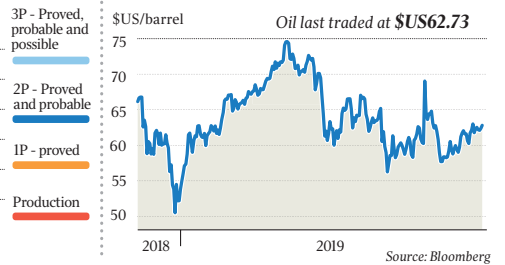
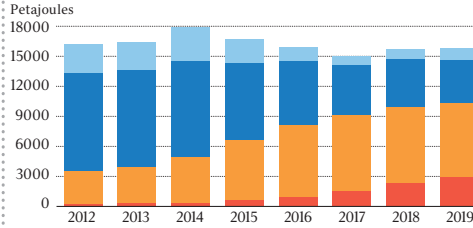
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Australia Pacific's LNG production



APLNG reserves position





# GONE FISHING



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## Fine line for tuna survival



SEE THE  
VIDEO  
LIFE ON THE LINE  
[dailytelegraph.com.au](http://dailytelegraph.com.au)

Southern bluefin tuna  
(main and below)  
numbers have recovered.

Raising the bar for ocean conservation and those championing tuna, last week *Life on the Line*, the first documentary detailing the amazing story of the southern bluefin tuna, premiered at IMAX in Melbourne. Three years in the making, the documentary reveals the highs and lows of one of the most expensive fish in the ocean.

However, what made this event so monumental was that for the first time, the whole industry came together. Not to fight but to celebrate a documentary that highlighted what we are doing right with our oceans.

Commercial and recreational fishers along with gov-

ernment authorities, politicians and even environmentalists all packed the cinema to capacity to celebrate the fish we are all so passionate about.

All too often when it comes to ocean conservation all the groups with vested interests spend more time bickering for self-gain as opposed to working for the greater good of the ocean.

However, for the first time everyone involved came together despite their differences and the results speak for themselves.

It really is an important message, not just regarding bluefin, but for our oceans as a whole where the focus needs to be on research so we can better understand and ultimately better protect it.

Initially the idea was to promote the documentary just through standard channels like television, but then Wes Chandler from the Knox Fishing Club came up with the brilliant idea of making it into a movie

night. Sean Tracey from Tuna Champions and Brett Clearly from the Australian Recreational Fishing Foundation took it to the next level high grading it to premier it at IMAX. If that wasn't enough, the Federal Research Development Corporation stepped up and between the three organisations, they funded it so the whole event was free to the public and it sold out in less than a week.

The story of the SBT is an amazing one. In the early





15 Nov 2019

Daily Telegraph, Sydney

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Page 2 of 2

2000s the species was on the verge of collapse. I never even saw one as a kid but then suddenly they reappeared literally out of the blue and numbers have been climbing for over a decade.

There were no marine park lockouts, instead it was all about clever management, not just from Australia but from all countries involved in this international fishery.

Don't get me wrong, it hasn't all been smoothing sailing, but the end results speak for themselves with the species classed as recovering in 2018.

When you consider I never saw one as a kid yet now I catch them every year it is a credit to the whole SBT community how the stocks have turned around.

The good news is for those that missed the premier, the documentary airs this Saturday at 3.30pm on Channel Nine. There is still lots to do to fix our oceans but isn't it just refreshing to celebrate success's along the way.

What is really important is that we can all learn from what we have done right with blue-fin tuna.

## AL'S TIPS

- 1** Always respect your tuna and only keep what you are going to eat.
- 2** And then look after the fish, icing and processing properly.
- 3** Tag and release the rest so we can better understand the species for the future.





15 Nov 2019

The Australian, Australia

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# Perkins' personal statement from the heart

PAIGE TAYLOR

INDIGENOUS AFFAIRS  
CORRESPONDENT

Indigenous filmmaker Rachel Perkins has described her “hybrid heritage” as a reflection of Australia’s evolution, and described her hopes for Australians to “see each other better”.

Perkins, celebrated director and producer of films such as *Bran Nue Dae* and television series *Mystery Road* and *Total Control*, on Friday will deliver a passionate and personal argument for the 2017 Uluru Statement from the Heart — the culmination of dia-

logues with indigenous people nationwide. It is the first of three Boyer Lectures on ABC TV and Radio National.

“I am Arrernte and Kalkadood, desert peoples, but I am also a descendant of immigrants: a poor Irish miner and German farmers,” Perkins says, according to a copy of her speech supplied to *The Australian*.

“This hybrid heritage makes me feel uniquely Australian, and I hope it enables me to identify with these parts of our nation and see it from multiple perspectives.

“I am no expert, not an elder, politician or lawyer, but I am Australian, and the aspirations articulated in the Uluru statement about our shared country are for us, the Australian people to consider.”

Perkins wrote her speeches after Indigenous Australians Minister Ken Wyatt pledged a referendum in this term of government on whether the Constitution

should be changed to acknowledge indigenous Australians. Mr Wyatt disappointed Uluru supporters when he said there would be no referendum question on whether an indigenous voice to parliament should be enshrined in the Constitution. This is one of three key elements of the Uluru statement.

Perkins does not directly address Mr Wyatt’s rejection of the concept of a constitutionally enshrined voice. Instead, the daughter of late indigenous activist Charles Perkins documents Australia’s recent history of fruitless consultations and broken deals with indigenous people, including the 1988 Barunga statement when indigenous people believed then prime minister Bob Hawke would enter into a federal treaty.

“So much has been achieved since 1968: segregation laws have been abolished, our young people enter tertiary education in unprecedented numbers, much land has been returned and our culture is experiencing a wonderful resurgence. But some things remain the same,” she said.

She sees the Uluru statement and looming anniversary of James Cook’s 1770 landing as linked. Uluru is “an opportunity for the full history of our nation to be finally told and listened to, and for agreements to settle the unfinished business of our nation that began on the shore of Kamay Botany Bay 250 years ago”.

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*The Boyer Lectures will be broadcast on ABCRN from*

*Saturday. The first will be on ABC TV on Friday at 1.30pm.*

15 Nov 2019  
The Australian, Australia

Author: Paige Taylor • Section: General News • Article type : News Item  
Classification : National • Page: 5 • Printed Size: 500.00cm<sup>2</sup> • Region: National  
Market: Australia • Words: 442 • Item ID: 1200096745

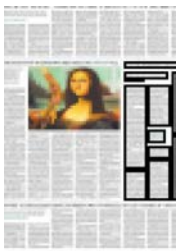
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**Indigenous producer-director Rachel Perkins, who will deliver the first Boyer Lecture on Friday**



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# AT THE HEART OF THE VOICE IS JUST OUR DESIRE FOR HONESTY

*Indigenous Australians want a frank reckoning of the past, and ongoing justice*

## RACHEL PERKINS

At the foot of Uluru, the symbolic and spiritual heart of our nation, about 300 people stood together in May 2017 for the First Nations National Constitutional Convention. We were drawn from some 150 Australian “tribes” whose ancestry runs deep into this country.

It was a moment of common purpose, about our hopes for the future, embodied in a message sent to the Australian people and known as the Uluru Statement from the Heart.

In a few months from now another group of Australians will stand together, this time on the east coast, looking out across the shore of Kamay Botany Bay.

This, too, is a significant site for our nation and these Australians also have roots in this country, though more recent, and they will stand together to mark the 250th anniversary of the day the Endeavour dropped anchor and James Cook led a party of men from the British Empire ashore.

Uluru and Kamay Botany Bay: two sites of significance, two gatherings of historical importance, a confluence of ancient history and our recent past that will, perhaps, inform our country’s future. I am reminded of distinguished poet and stateswoman Oodgeroo Noonuccal when she wrote:

*Let no one say the past is dead  
The past is all about us  
and within*

For indigenous people have not lost from our minds the history of our nation, not only its deep past of thousands of years, but also the events on April 29, 250 years ago, when Cook ordered his men to fire on the two men standing on the shore.

It is likely they were Gweagal warriors, who stood before him in defence of their family behind

them on the beach. Cook’s action signalled the Crown’s intentions; the transfer of a continent, from one people to another, by force if necessary, a phenomenon we politely call colonisation.

Of course, our generation wasn’t standing on the deck of the Endeavour or on the shores of Kamay Botany Bay in 1770, just as we weren’t present during the massacres as the colonial frontier progressed from south to north.

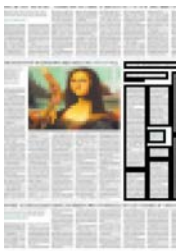
However, as my father Charles Perkins, the indigenous leader who came to prominence in the 1960s for leading the Freedom Ride, said: “We cannot live in the past, but the past lives in us.” The past has made us. We are its inheritors, for better or worse, and this is now our time. How we move forward from this moment will set the course of relationships between indigenous people and their fellow Australians.

I was brought up surrounded by politics, trailing after my father from meeting to meeting. I saw the hard work required to achieve understanding and consensus and I also witnessed the extraordinary change it can bring.

The Uluru statement and the Cook anniversary provide a moment in time, a catalyst to see each other better, to strive for a more holistic national identity.

In some way my heritage reflects the nation’s evolution over millennia. I am Arrernte and Kalkadoon, desert peoples, but I am also a descendant of immigrants: a poor Irish miner and German farmers. This makes me feel uniquely Australian and I hope it enables me to identify with these parts of our nation and see it from multiple perspectives.

I am no expert, not an elder, politician, or lawyer, but I am Australian, and the aspirations articu-



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Page 2 of 2

lated in the Uluru statement about our shared country are for us, the Australian people, to consider. And that is why the statement is addressed to us, not the government of the day.

It is the result of more than a decade's consideration and discussion around what has loosely been called indigenous recognition; that means how the nation acknowledges its indigenous history and resolves the outstanding legacy of colonisation within our contemporary society.

In 2017 at Uluru, after many days of heated discussion and much humour, which always accompanies indigenous meetings, law professor Megan Davis took the floor to read the Uluru statement and get the endorsement of all the delegates. In the recording taken at this moment you can

sense the anticipation and tension. Three hundred blackfellas have never been so quiet.

She began: "We, gathered at the 2017 National Constitutional Convention, coming from all points of the southern sky, make this statement from the heart: Our Aboriginal and Torres Strait Islander tribes were the first sovereign nations of the Australian continent and its adjacent islands, and possessed it under our own laws and customs. This our ancestors did, according to the reckoning of our culture, from the Creation, according to the common law from 'time immemorial', and according to science more than 60,000 years ago. This sovereignty is a spiritual notion: the ancestral tie between the land, or 'mother nature', and the Aboriginal and Torres Strait Islander peoples who were born therefrom, remain attached thereto, and must one day return thither to be united with our ancestors."

Moments later, in a nod to the Barunga Statement three decades earlier, a blank artist's canvas was rolled out. Across its cream unmarked surface, Noel Pearson inscribed his signature, under which he wrote in the language of his people "Guugu Yimithirr".

His Christian name identifies him as an individual in the world

but his language, his tribe, his people demonstrate the roots of his ancient identity. This identity has endured against great odds since that day in April 250 years ago — and it remains so to this day.

I joined the other delegates as we added our names and languages. Later, the senior women and custodians from Uluru painted the dreamings of their country as a border around the signatures. As they painted, they sang the dreamings passed down to them.

Finally, the words of the Uluru statement, crafted during the three-day convention but distilled from more than a dozen previous meetings around the country, were printed in the centre. The Uluru Statement from the Heart gives us the road map to finally end the great Australian silence, this cult of forgetfulness on a national scale - by a constitutional guarantee that indigenous peoples' voices will be heard. For the full history of our nation to be finally told and listened to and for agreements to settle the unfinished business of our nation that began on the shore of Kamay Botany Bay 250 years ago.

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*Rachel Perkins is a film writer, director and producer. This is the edited text of her first 2019 Boyer lecture to be broadcast on ABC TV today at 1.30pm.*

**The past has made us. We are its inheritors, for better or worse, and this is now our time**