

## Neocolonial conservation

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1 **Neocolonial conservation: is moving rhinos to Australia conservation or genetic theft?**

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15

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24 **Abstract**

25 The Australian Rhino Project ([www.theaustralianrhinoproject.org](http://www.theaustralianrhinoproject.org)) proposes importing 80 rhinos  
26 from South Africa to Australia by 2019 at a cost of over \$US4 million, and the first six due to have  
27 been moved in 2016. This project has high profile supporters in the private sector, zoos and both  
28 governments, and is gaining major publicity through association with sporting teams and TedEx talks  
29 ([http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-](http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-tedx)  
30 [tedx](http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-tedx)). However, establishing extralimital populations of African rhinos is a very low priority  
31 conservation action, particularly given over 800 are already in captivity, and we argue this project  
32 diverts funds and expertise away from more important activities; the proposed captive conditions  
33 will lead to selection for domestic traits; the most likely species involved is the white rhino, which is  
34 the lowest priority rhino species for conservation; it removes a driver of *in situ* conservation; it does  
35 not focus on the critically endangered Asian rhino species; and it extends the historical exploitation  
36 of Africa's resources by colonial powers. There are also insufficient details in the public domain  
37 about the project for objective decision-making. We believe this is misdirected neo-colonial  
38 conservation and the policy support from both governments for this project should be reconsidered.

39

40 **Main body text**

41 The Australian Rhino Project ([www.theaustralianrhinoproject.org](http://www.theaustralianrhinoproject.org)) plans to move 80 rhinos  
42 from South Africa to Australia between now and 2019 (Agence France-Presse 2016) in an effort to  
43 combat the impacts of the poaching epidemic that is afflicting Africa (Ferreira et al. 2015; Graham-  
44 Rowe 2011). The current cost of this action is estimated at \$AUD70,000 per rhino, which equates to  
45 A\$5,600,000 (\$US4,200,000; or ZAR61,670,000 based on the exchange rate @21/06/2016), and it is  
46 unclear whether this sum accounts for the costs of returning these animals and their progeny to

47 South Africa when the poaching epidemic ends (Hayward et al. 2016). The project is partnered or  
48 supported by major corporations (Investec, Coca Cola-Amatil, Carlton & United Breweries, The  
49 Classic Safari Company *inter alia*), sporting teams (Waratahs rugby), conservation management  
50 organisations (Taronga Conservation Society, Zoos South Australia, Australian Zoo and Aquarium  
51 Association), and esteemed academic institutions (University of Sydney). The project is also reported  
52 as having the support of both the Australian and South African governments  
53 ([http://theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/231-australian-  
54 rhino-project-moving-rhinoceros-from-africa-to-protect-against-poaching](http://theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/231-australian-<br/>54 rhino-project-moving-rhinoceros-from-africa-to-protect-against-poaching)) and celebrities (Dumas  
55 2016). A feasibility study has reportedly been conducted, but is not available on the website or upon  
56 request due to commercial-in-confidence restrictions (R. Dearlove, *pers. comm.*; 26/05/2016), nor  
57 are the terms of reference for such a study provided. Below, we document some concerns we see  
58 with the policies of both the Australian and South African governments that reportedly support this  
59 initiative, and identify major questions that need answering.

60           Firstly, even though private donations for one project are not necessarily fungible, the  
61 financing of this project is likely to have competed, and will continue to compete, for funds for  
62 higher priority *in situ* rhino conservation actions. While the creation of extralimital populations is  
63 listed as a conservation action for Africa's rhinos, it is a low priority (Magome et al. 2014) because  
64 there were 706 southern white rhinos (298 males, 405 females and 3 young) in captivity in zoos at  
65 the end of 2011, according to the white rhino studbook, plus an additional 141 that have been  
66 imported to China since 2000 that are not included in the studbook (Ogden 2011). An unknown, but  
67 large, number are held by private owners in South Africa. With appropriate management, this  
68 captive population is sufficient in number to ensure white rhinos persist without losing genetic  
69 diversity. The amount of money needed to bring 80 white rhinos to Australia equates to almost  
70 double the annual anti-poaching budget used by SANParks (\$US2.2 million; SANParks 2015). Were  
71 the donors provided with appropriate information, at least some might have been persuaded to  
72 fund higher priority actions, such as supplementing on-ground actions or developing new actions in

73 South Africa (Mulero-Pázmány et al. 2014). In this sense, the Australian Rhino Project is directly  
74 comparable to the *ex situ* (i.e. foreign zoos) captive breeding initiative for the Sumatran rhino  
75 *Dicerorhinus sumatrensis* in the 1980s. As Caughley (1994) pointed out, this removal of a large  
76 number of Sumatran rhino from the wild failed to boost the population, and carried the missed  
77 opportunity costs of failing to conserve rhino habitat with its myriad of other biodiversity benefits.  
78 Alternatively, these funds could go towards reinforcing education programs in Asia to reduce the  
79 demand for rhino horn (Challender and MacMillan 2014; Challender et al. 2014). However, if this  
80 largely Australian-sourced money were to be dedicated to conservation actions within Australia, the  
81 money would be better served targeting Australia's 108 threatened mammal species, given  
82 Australia's appalling record in mammal extinctions (Woinarski et al. 2014), including two in the past  
83 five years (Woinarski et al. 2016).

84         Secondly, there are two species of rhinos in Africa – *Ceratotherium simum* and *Diceros*  
85 *bicornis* (white and black respectively) – but no mention is made by the Australian Rhino Project as  
86 to which is being targeted or whether both are. The availability of white rhinos in private hands in  
87 South Africa suggests these will be the focus of the Australian Rhino Project. Notwithstanding the  
88 various subspecies that are currently managed as evolutionarily significant units (Amin et al. 2006), a  
89 breeding population of 40 or even 80 individuals is likely to be below the effective population size  
90 necessary to conserve genetic diversity (Frankham 1995), although we recognise that genetic  
91 diversity may not be lost over the short term. Rhino translocation has developed into a highly  
92 successful operation with minimal mortalities (Linklater et al. 2011; Linklater and Swaisgood 2008) in  
93 comparison to past attempts (Kelly et al. 1995) and so moving the animals to Australia is likely to be  
94 successful. However, captive breeding introduces a range of selective pressures that favour the  
95 domestication of animals that may be detrimental if they are ever returned to the wild (Araki et al.  
96 2007; Lynch and O'Hely 2001; Snyder et al. 1996). This is still likely to occur even in open range zoos,  
97 like Monarto or Western Plains (that are currently proposed as captive sites for the Australian Rhino  
98 Project), particularly given the important role predation has played in rhino evolution (Berger 1995;

99 Berger and Cunningham 1994). There are also likely to be new stressors introduced into captive  
100 animals driven by unnatural stocking densities. White rhinos in the wild live at densities of between  
101 0.5 and 5.6 individuals km<sup>-2</sup> (Owen-Smith 1981; Pienaar 1994; Shrader et al. 2006), which means that  
102 an area of up to 160 km<sup>2</sup> will be required to house the 80 animals transported to Australia in  
103 something resembling wild conditions. This seems unlikely given that Western Plains Zoo in its  
104 entirety is currently 3 km<sup>2</sup> and Monarto is 15 km<sup>2</sup> (Zoos SA *pers. comm.*).

105 Thirdly, Africa's rhinos are not necessarily the highest priority pachyderms for conservation  
106 actions (Ripple et al. 2015). White rhinos (global population estimate: 20,170) and black rhinos  
107 (4880) (Emslie 2012a, b), are more abundant and probably more secure than the Great Indian  
108 *Rhinoceros unicornis* (2575), Sumatran (275) and Javan *Rhinoceros sondaicus* (60) that are all listed  
109 as Critically Endangered (Ripple et al. 2016; Ripple et al. 2015; Talukdar et al. 2008; van Strien et al.  
110 2008a, b). Given that these last three species combined are less common than Africa's rarest rhino,  
111 they must be seen as a higher conservation priority for *ex situ* conservation (Isaac et al. 2007). The  
112 latest population estimates for black rhino suggest a significant increase since 2012, while those for  
113 white rhino show no significant change since 2012 (AfRSG 2016) reinforcing the fact that these are  
114 the lowest priority rhino species. While making a decision to implement conservation actions are  
115 likely to be more effective when populations are large (Martin et al. 2012; McDonald-Madden et al.  
116 2011), there already exists a viable captive population for white rhinos and the other rhino species  
117 are in much greater need of conservation action than white rhinos.

118 Fourthly, *in situ* conservation has multiple benefits beyond single species. As  
119 megaherbivores, rhinos are keystone species that play many key ecological roles (Fritz et al. 2002;  
120 Kerley and Landman 2006; Ripple et al. 2015) including holding together complex multi-trophic  
121 interspecific relationships (Plotz 2014) and the creation of grazing lawns for other species that has  
122 cascading impacts on ecosystem structure and leading to an alteration of fire regimes (Cromsigt and  
123 te Beest 2014; Waldram et al. 2008). Rhinos also inhabit sites occupied by a suite of other

124 threatened fauna. The presence of rhinos ensures the protection of areas where other threatened  
125 species, such as elephants *Loxodonta africana*, lions *Panthera leo*, African wild dogs *Lycaon pictus*  
126 and pangolins *Smutsia temminckii*, persist. Furthermore, rhinos have a suite of commensal and  
127 parasitic organisms living on and in them (Zumpt 1964) and so the translocation process is likely to  
128 lead to them being removed (Stringer and Linklater 2014) and thereby placing these species under  
129 greater risk of extinction than the rhinos themselves (i.e. the relationship between rhino density and  
130 parasite abundance suggests the Australian Rhino Project places rhino conservation above their  
131 host-specific microbiota; Stringer and Linklater 2015). Moreover, early parasite exposure is central to  
132 the development of a host organism's fully functioning immune system (Spencer and Zuk 2016), and  
133 this limited exposure to parasites in captivity will reduce the survivability of any offspring that may  
134 ultimately be returned to the wild.

135           Fifthly, the people involved in the Australian Rhino Project are experienced business leaders,  
136 marketing specialists and scientists with considerable international involvement with major funding  
137 agencies. Their talent and experience is being diverted away from raising money and the profile of  
138 other species of higher conservation priority than Africa's rhinos.

139           Finally, and most importantly, the proposal extends the history of exploitation of Africa's  
140 resources. Taking biodiversity assets, like rhinos, for 'safe-keeping' in the west is as patronising and  
141 disempowering as the historical appropriation of cultural artefacts by colonising nations (Nicholas  
142 and Wylie 2009). Such artefacts are currently being returned worldwide now that local institutions  
143 are strengthened. The same approach should be taken for biodiversity, via institutional  
144 strengthening, improved governance and improved protection of existing biodiversity assets in  
145 country. Indeed the genetic resources embodied in charismatic rhinos should be as protected under  
146 the Convention on Biological Diversity as those producing commercial products.

147           Notwithstanding the above points, we acknowledge that there are potential benefits from  
148 this project. Individual rhinos may be safer in Australia, although illegal wildlife capture and trade

149 does occur there (Alacs and Georges 2008). Their removal from South Africa and transport to  
150 Australia may serve to raise awareness in both countries, and globally, of the plight of rhinos and  
151 possibly even the importance of prioritising conservation actions (Carwardine et al. 2012).

152           Yet there remain important unanswered questions. If these translocated animals breed  
153 successfully, they will need to be repatriated to South Africa. Where will those funds come from?  
154 Does South Africa – whose natural heritage is being sent to Australia – retain ownership rights to the  
155 founder stock and their progeny? This may have been the plan in the 1992 importation of black  
156 rhinos to Australia from Zimbabwe, but neither the survivors of that operation or their progeny have  
157 been returned (Kelly et al. 1995). In this respect, the giant panda *Ailuropoda melanoleuca*, all of  
158 which remain the property of China even when made available to 122 foreign zoos, provides an  
159 interesting model of how the rights to a species can be retained by the source nation. The loan  
160 agreements for panda include an annual payment (approx. US\$1 million), retention of progeny and  
161 have limited duration. Is the Australian Rhino Project and/or the South African government  
162 considering such an arrangement, and if not, why not? Which species of African rhino will be  
163 transported to Australia? The conservation status of white rhinos means a captive population of  
164 these offers little conservation benefit, although it seems most likely to be the focus. This  
165 information is not available on the project website (@20<sup>th</sup> of October, 2016) or upon request from  
166 the Founder.

167           Conservation projects are ultimately more legitimate, politically acceptable and successful  
168 when led locally (Rodríguez et al. 2007; Smith et al. 2009). The Black Rhino Range Expansion Project  
169 (BRREP), for example, is a partnership between the World Wildlife Fund- South Africa, provincial  
170 conservation agencies (Ezemvelo KwaZulu-Natal Wildlife and Eastern Cape Parks and Tourism Board)  
171 and private landowners, aiming to increase the overall range and growth rate of South Africa's black  
172 rhino population (Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). Since 2004, more than 70 calves  
173 have been born from the relocation of 160 black rhinos to create 10 new rhino populations spanning

174 220,000 hectares (11th translocation is planned for 2017) (WWF-South Africa Undated). After a  
175 decade, the BRREP now manages an estimated 6% of the total black rhino population in state,  
176 provincial and private owned lands in South Africa, supporting a 21% growth rate in KwaZulu-Natal's  
177 overall black rhino population alone - the highest level since counting began (WWF-BRREP Bulletin  
178 2009). While the donor conservation agency retains ownership of founder rhinos, private custodians  
179 share equally the benefits of rhinos born in these populations (Knight et al. 2010). Other benefits  
180 include the facilitation of partnerships among private landowners to remove internal fences to  
181 expand the area of suitable land before rhinos are relocated, while also providing financial and  
182 logistical support to help with fencing, monitoring (telemetry) and anti-poaching measures (e.g. light  
183 aircraft)(Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). This has increased opportunities for local  
184 socio-economic development and biodiversity protection as almost 50% of the land area is  
185 community owned/managed (Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). These large protected  
186 land areas have also supported the range expansion of other threatened species (e.g., elephant;  
187 Slater and Knights 2011).

188 Although the establishment of new rhino populations is a low conservation priority, efforts to create  
189 a viable rhino breeding herd in Botswana are underway. Botswana has one of the lowest poaching  
190 rates in Africa, and Rhinos Without Borders (RWB, <http://www.rhinoswithoutborders.com/>) is a  
191 partnership between conservation and eco-tourism agencies in Botswana to relocate 100 white  
192 rhino from South Africa, where, with Kenya and Zimbabwe, account for nearly 95% of rhino poaching  
193 since 2006 (Howard 2015; Milliken and Shaw 2012). Supported by bilateral agreements (between  
194 countries), crowd funding and ongoing monitoring (telemetry) and protection, RWB has already  
195 successfully moved 26 white rhinos to wildlife concessions and national parks throughout Botswana.  
196 RWB, including ongoing monitoring and security, requires less money than proposed by the  
197 Australian Rhino Project (\$45, 000 per rhino and a total budget of US\$4.5 million). Although  
198 relocations of rhino are crowdfunded, ongoing eco-tourism opportunities help sustain the

199 monitoring and protection of rhino while supporting jobs, income and ongoing biodiversity  
200 protection in local communities. Other community-based ecotourism initiatives for rhino  
201 conservation in north-west Namibia have catalysed improved species protection and a large-scale  
202 rhinoceros population recovery, where a strong social foundation allowed for more effective  
203 protection strategies (i.e., law enforcement; Muntifering et al. 2015). Thus, community based  
204 conservation has a significant role to play in rhino protection and population recovery (Berkes 2007;  
205 Muntifering et al. 2015) and there are clearly still relatively safe areas within range states that can  
206 accommodate new rhino populations, further reducing the need to establish more captive  
207 populations on other continents.

208           In summary, we see this project as i) diverting funds and public interest away from the real  
209 actions necessary to conserve rhinos, and, as currently construed, appears *prima facie* as an example  
210 of (ii) *neocolonial conservation* that distracts public interest away from the real actions necessary to  
211 conserve rhinos. The Australian Rhino Project does nothing to solve the poaching crisis and the real  
212 issue of dampening demand for rhino horn. As such, the translocated rhino and their offspring will  
213 likely remain as zoo animals in Australia, as the poaching crisis is likely to continue. The project,  
214 while well-meaning, potentially takes funds, attention and skills away from where it is needed, while  
215 disempowering local organisations. Far better would be identifying 'safe' *in situ* areas to relocate  
216 sufficient numbers of rhinos from large source populations (McDonald-Madden et al. 2011) to  
217 establish breeding populations within Africa, as is occurring with translocations of rhinos to  
218 Botswana and even within South Africa (e.g., under the BRREP and RWB initiatives; Howard 2015;  
219 Knight et al. 2010; Knight et al. 2015; Sherriffs 2010), and then adequately funding their protection.  
220 The RWB provides an holistic model to establish extralimital populations in 'safer' countries, such as  
221 Botswana, but even this is a very low priority for rhino management in South Africa (Magome et al.  
222 2014). For rhinos generally a more appropriate focus for establishing extralimital populations would  
223 be the more highly threatened Asian rhinos – but there are few suitably forested, free range  
224 enclosures of sufficient size to enable captive breeding in semi-wild conditions of these species in

225 Australia. Those donating money to this project would be better off investing in strengthening  
226 education policies in Asia to reduce consumer demand for rhino horn (Johnson 2015) or supporting  
227 incentives for locally led initiatives so that communities are supported to act as a more effective first  
228 line of defence against poaching (Biggs et al. 2016; Muntifering et al. 2015; Smith et al. 2009). Rather  
229 than reinforcing colonial stereotypes by removing assets to the west for safekeeping, investors  
230 would sustain not just rhinos but all species sharing their environment by strengthening local  
231 conservation institutions and capacity. After all it was local institutions and capacity at the centre of  
232 one of the world's greatest conservation success stories, bringing white rhino back from the brink of  
233 extinction (i.e., Operation Rhino from c.100 individuals to over 20,000 today; Emslie 2011; Rochat  
234 and Steele 1968). The policies of the IUCN Species Survival Commission Rhino Specialist Group, and  
235 the South African and Australian governments need clarification to ensure this project a) is  
236 refocused to deliver real conservation benefits for taxa that are most in need; and b) is not used as  
237 justification for this type of activity becoming a regular conservation intervention. Africa has a strong  
238 track record in rhino conservation and is using within-Africa translocations to strengthen  
239 international relations in a politically neutral fashion (Kerley and Knight 2009).

240

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245

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