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Agriculture and Environment Committee
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24th February 2016

Dear Mr Glenn Butcher MP,
Committee Chair

**National Parks Association of Queensland
Submission to The Agriculture and Environment Committee:
Inquiry into barrier fences in Queensland**

Thank you for the opportunity to provide a submission to the Committee regarding the *Inquiry into barrier fences in Queensland*.

Established in 1930, National Parks Association of Queensland (NPAQ) is an independent, not-for-profit, membership-based organisation. NPAQ is dedicated to promoting the conservation of nature through the development and good management of protected areas in Queensland.

Submission: Inquiry into barrier fences in Queensland

NPAQ welcomes the inquiry into barrier fences in Queensland. In particular, it is reassuring to see the inclusion of two issues; the consideration of unintended impacts on native species and the effectiveness of barrier fences in managing introduced species.

NPAQ has prepared a submission focussing on the following items from the Terms of Reference:

- The effectiveness of barrier fences at protecting stock and crops from wild dogs, rabbits and other introduced species
- The unintended impacts of barrier fences on native species
- Whether barrier fences should be expanded to other areas of the State to protect stock.

Effectiveness of barrier fences

The management of wild dogs and rabbits in Queensland is a complex issue with economic and environmental repercussions. 'Wild dogs' is a collective term referring to purebred dogs, dingoes, hybrids and domestic dogs. There is ongoing research to understand the ecological role of wild dogs, including the importance of maintaining apex predators. In contemplating the effectiveness of barrier

fences on introduced species, NPAQ contends it is important to consider design, maintenance and monitoring, other methods of control as part of an integrated solution.

NPAQ understands that barrier fences have been a key strategy for managing invasive pests including wild dogs and rabbits since the 1880s. This includes the Wild Dog Barrier Fence spanning 2,560 kilometres connecting with fences in New South Wales and South Australia and the Darling Downs-Moreton Rabbit Fence. These fences serve to act as a barrier, preventing and hindering the movement of introduced or feral species to particular areas of concern.

Barrier fences can also serve to act as a barrier preventing the incursion of feral species into protected areas. In 2013, the Senate enquiry into the *Effectiveness of Threatened Species and Ecological Communities Protection* in Australia recognised that predator-proof sanctuaries can assist in the recovery of threatened species. The enquiry recommended to the Federal Government that further consideration be given to the 'greater use of exclusion fences' and other forms of 'mainland island sanctuaries' for threatened species (Senate Enquiry, 2013).

From a conservation perspective, adequately maintained fences can provide secure habitat for native species on the proviso that all feral species (including foxes, rabbits, etc) have been removed. It should be noted that that in parallel, there may also be unintended adverse impacts on native species. These are discussed further in next section of this submission.

Fences should be designed to prevent the ingress of feral species whilst not inhibiting the movement of native species. This may require additional research and monitoring in the design phase in order to ascertain native species present, and making accommodations accordingly. For example, altering the wire spacing slightly may decrease the incidence of electrocution of native animals (Lund and DeSilva, 1994).

Once constructed, fences require maintenance and monitoring. This can prove costly and time-consuming. Barrier fences are subjected to weathering and possible damage from native and introduced species. Animals may become entangled, burrow under or short out electrical fences. All of these incidents necessitate repair, incurring additional expense. As a result, managers of barrier fences must be attentive and manage any incursions when they occur (Dickman, 2012).

Exclusion fencing is used at part of the management program on Currawinya National Park in Queensland for the greater bilby. Maintenance of the fence (constructed in 2001) has proven difficult. Inadequate maintenance, flood damage (2011 and 2012) and pressure from feral species have resulted in decimation of the bilby population in the area¹. Uncertainty regarding the effectiveness of the exclusion fence in protecting the population jeopardises any future translocation of bilbies.

Barrier fences should not be considered in isolation of other control methods for feral species. Instead, barrier fences should be viewed as complementary to other control methods (shooting, trapping, etc). An integrated approach which considers all of the options available including barrier fencing is recommended by NPAQ.

In summary, if installed and maintained properly barrier fences can benefit native species and serve to improve the conservation outcomes of a target area. Fences are most effective when designed to prevent ingress by feral species, whilst not hindering the movement or foraging of native species. Other appropriate control methods should be utilised in conjunction with barrier fences to maximise the conservation outcomes.

¹ <http://www.abc.net.au/news/2015-06-15/bilbies-currawinya-national-park-size-doubled/6547308>

Unintended impact of barrier fences on native species

Unintended impacts of barrier fences on native species may include habitat fragmentation, direct mortality as a result of entanglement or injury, change in population dynamics, clearing or destruction of native flora for any fence construction or maintenance works.

Habitat fragmentation can limit the movement and migration of native species, and as a result affect population size. In addition, flora assemblages can become more susceptible to damage through increased exposure to natural elements and other threatening processes (introduction of weeds, grazing pressure etc).

Native species may become entangled or injured via interactions with barrier fences. Regular inspections and maintenance should aim to monitor impact on native species, and identify any modifications or repairs required. It would be inhumane if native species were to become trapped or entangled and die as a result of a lack of attention or inspection by managers. Given the large scale of the current barrier fences, this presents a significant challenge to managers. The size and scale of this task should be taken into consideration when contemplating any expansion of the barrier fence network in the future.

Erecting barrier fences may also serve to create 'island communities' of native species, hindering movement for foraging and mating. In time, this may result in a geographically isolated population which may become prone to overpopulation and inbreeding. This may have a negative impact on both the health and long-term viability of the populations of native species (Hayward, et al 2009 and Long and Robley 2004).

Another unintended impact of barrier fences is the destruction of or damage to native flora. Construction and maintenance of the barrier fence network requires the clearing of vegetation, including native species. NPAQ recommended this be avoided where possible and minimised where required.

NPAQ recommends and supports monitoring and research to understand and report on the unintended impacts of barrier fences on native species. The results of this research and monitoring should be made available publically.

Expansion of barrier fences to other areas of the State

As stated in the previous sections, NPAQ contends that whilst barrier fences may have some success in controlling the spread of introduced species, native species may also be affected. Barrier fences only provide part of the solution in controlling introduced and feral species. Other control methods should also be considered in conjunction with barrier fences. Barrier fences should not be investigated at the expense of other conservation initiatives. Controlling threatening processes (to native species, habitats, etc) should be given a high priority.

NPAQ requests that any future fence design and construction takes into account the populations and movements of native species present in the area and previously recorded historically.

NPAQ recommends:

1. Fences should be designed to prevent the ingress of feral species whilst not inhibiting the movement of native species.
2. An integrated approach to managing feral animals. Barrier fences should not be considered in isolation of other control methods for feral species. Instead, barrier fences should be viewed as complementary to other control methods.
3. Regular inspections and maintenance should aim to monitor impact on native species, and identify any modifications or repairs required.

4. The size and scale of maintenance and monitoring of barrier fences in Queensland should be taken into consideration when contemplating any expansion of the barrier fence network in the future.
5. The clearance of native vegetation should be avoided where possible and minimised where required.
6. Monitoring and research should be undertaken to understand and report on the unintended impacts of barrier fences on native species. The results of this research and monitoring should be made available publically.
7. Any future fence design and construction takes into account the populations and movements of native species present in the area and previously recorded historically.

Thank you for considering NPAQ's submission.

Yours sincerely

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