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NPA submission to the Natural Resources Commission (NRC) State-wide review of NSW pest animal management Issues Paper

Introduction

The National Parks Association of NSW Inc. (NPA) established in 1957, is a community-based organisation with over 20,000 supporters from rural, remote and urban areas across the state. The NPA promotes nature conservation and evidence-based natural resource management. We have a particular interest in the protection of the State's biodiversity and supporting ecological processes, both within and outside of the formal conservation reserve system. The NPA has a long history of engagement with both government and non-government organisations on issues of public land management, including National Parks. While we retain this core interest, the NPA has broadened its scope to also address the management of private land, particularly through our participation in the Great Eastern Ranges Initiative and via our grant-funded programs BushMates and Who's Living on my Land? The NPA therefore has a strategic interest in pest management issues and we appreciate the opportunity to comment on the Issues Paper. Note that our interest in pest management is primarily ecological, rather than economic or agricultural, and this will be the focus of this submission.

We would like to commend the NRC on their open-minded approach to the issues surrounding pest management. The NPA representative at the meetings, Oisín Sweeney, has been encouraged by the willingness of both NRC staff and participants to discuss widely on various issues of pest-management. We hope that this creativity and spirit of cooperation can be carried through into policy.

1. Guiding Principles

The NPA strongly supports evidence-based decision making as the core pillar of policy development. It is therefore welcome to see this specified as a principle. There is a large body of evidence surrounding successes and failures of pest management that should be incorporated into future management strategies, and encouraging a thorough review of this evidence and identifying gaps that exist should be a starting point in any review of pest management. Research and evaluation should be a priority area for any strategy.

We caution that political interference has in the past determined the response, or lack of it, towards a pest species. The ongoing impasse regarding feral horses in Kosciuszko National Park is an obvious example of this. A commitment to move towards an evidence-based approach, and greater accountability, is therefore positive.

We are also strongly supportive of a cross-tenure approach to pest management. This cross-tenure approach should include not just the owners of land, but those responsible for setting policy: i.e. any

approach should be coordinated across the three levels of government to ensure policy that works collectively towards achieving outcomes rather than antagonistically.

The NPA has some concern with the 'Cost effective' principle. We support the strategic use of resources, but biodiversity is not accorded the same economic value as other land uses. We are therefore concerned that decisions made purely on economic terms (i.e. 'appropriate and proportionate to the problem') will undervalue nature and not place the same emphasis on environmental priorities as economic ones. Explicitly stating that biodiversity has an inherent value and, in NSW, underpins ecosystem services such as water supply (Dudley and Stolton 2008) and important industries such as tourism (Destination NSW 2014) would help to make the case that environmental pests deserve the same consideration as agricultural pests. Furthermore, a cross tenure approach is necessary to ensure that some areas don't become sources for reinvasion for others, therefore undermining efforts.

Finally, there is no mention of best-practice pest management relative to ethical considerations. A key principle of pest management should be ensuring that control efforts are as humane as possible. Principles of humane pest management also apply to native species that are impacted upon by pests. The NPA recommends that ethical considerations are specifically addressed as part of any pest management strategy.

2. Key questions

Please note that some of the key questions posed in the Issues Paper are outside the scope of expertise in the NPA. We have therefore focussed on those questions most relevant to the NPA and Australian ecology more generally. In order to facilitate the NRC quickly compiling responses we have numbered our responses to align with the questions. A blank number indicates a question outside the scope of the NPA.

a) Roles and Responsibilities

- i. To the general public it is unlikely that the roles and responsibilities regarding pest management are clear.
- ii.
- iii. The NPA is not a compliance organisation, but it is our experience that education and engagement work well at the local, intimate scale. Planning should occur at all scales (i.e. federal, state and local government) as every scale will have a different perspective, but it is crucial that the three tiers of government act in a coordinated and complementary fashion.
- iv.
- v. The government will 'set the tone' regarding pest animal management. Therefore, a primary role of government will be in the prevention of new incursions and decisive action to eradicate new incursions. For more established pests it is likely that organisations such as the National Parks and Wildlife Service (NPWS) will play a lead role in determining where the needs are in terms of pest management on public land. Local Land Services (LLS), will have regional responsibility for encouraging best practice on private land.
- vi.
- vii. Regular reporting and evaluation of performance in pest management is crucial. However to undertake accurate reporting there must be measurable aims.
- viii.

b) Shared ownership

- i. The NPA's Who's Living on my Land? (WLOML) project has proven to be an excellent landholder engagement tool. WLOML introduces landholders to both native species and pests on their land by providing them with a remote-sensor camera. This initial 'soft engagement' can both lead landholders to become more interested in native species and environmental protection as they learn about species that share their land, and also to take a

more active role in pest management via project alignment with LLS. WLOML has operated in the SE LLS region for several years and was just funded via the SE LLS for a further three years.

Another NPA project, BushMates, has just been funded by the Greater Sydney LLS. BushMates seeks to inform landholders on the urban-bushland interface as to the potential impacts of domestic animals and weeds on natural systems. This project specifically targets the western Sydney growth areas as this is where the most immediate impacts will be felt, but could be tailored to any community close to a high-value patch of native vegetation.

The success of these projects is due to the non-threatening engagement method (NPA is not perceived as a regulatory body) and alignment with existing projects and staff such as LLS. This allows landholders to increase their involvement if required.

Outreach programs that encourage desexing of domestic pets such as cats, dogs and rabbits could complement a regulatory approach taken by local councils.

- ii. Making people aware of the impacts of pests and the source of pests (i.e. domestic households) could help generate a greater feeling of responsibility.
- iii. See i
- iv. It is NPA's experience that local projects have the most chance of success as they can be tailored to local needs.
- v. Aligning community-based projects with other pest management programs would help increase efficiency. For example, community-based projects could be targeted at more valuable areas such as the peri-urban fringe or adjacent to National Parks. This is particularly relevant to Sydney as Sydney is bounded by several patches of high quality native vegetation. In this instance existing pest management programs, such as those conducted by NPWS, could be coordinated with community-based programs.
- vi.
- vii.
- viii.

c) Priority pest species

- i. It is difficult to prioritise a particular pest species at the expense of others, but in terms of impacts to native wildlife foxes and cats are a major threat. Deer are emerging as a large threat in many areas, and anecdotal evidence suggests their numbers are increasing rapidly. Pigs and goats are also a major ecological issue due to their behaviour in disturbing soils and native vegetation. Because of the limited distribution of alpine and high country ecosystems in Australia and the impacts that feral horses have on those ecosystems and their constituent species, the NPA considers feral horses to be a priority:

The proportion of the AANP occupied by feral horses was approximately 20% in 2012 (approximately 3000km²) and has expanded from the 1990s to include new areas (Dawson 2009, Dawson and Hone 2012). Kosciusko National Park (KNP) was estimated to contain 4237 feral horses in 2009 (Dawson 2009) and 6000 in 2014—an increase of almost 1800 in five years

Population density of feral horses is variable across the AANP, with the highest recorded density being 6.4 horses per km² at Cowombat Flat (Dawson and Hone 2012). Food availability is likely to be the limiting factor in the population growth rate of feral horses, adult survival from year to year is high (>90%) and adult survival is the most important factor affecting the population rate of increase (Dawson and Hone 2012). The OEH estimate the cost of removing horses by trapping and mustering at \$1070 per animal with \$2.8 million having so far been spent. This expenditure has not reduced the ecological damage to KNP. The Australian Pest Animal Strategy states that the benefits of management should exceed the costs of control (Commonwealth of Australia 2007), which is clearly not the case in KNP.

In aquatic ecosystems, *Gambusia* and carp major impacts via competition with native species and keeping carp and *Gambusia* out of waterways should be a high priority.

It should be noted that environmental groups do not generally support the widespread persecution of dingoes as dingoes have an important ecological function in many ecosystems and some now consider the dingo as an endemic Australian species (Crowther et al. 2014). The issue of dingo management will be the most difficult for the NRC to resolve due to the views held by farmers that wild dogs are the number one pest but it is vital efforts are made to do so. Suggestions as to how this could be done are made later (see 'Emerging Issues' section).

- ii. Criteria to prioritise pest species should be based on a combination of the feasibility of control and severity of impacts. Early detection and eradication should be the priority for new incursions, but for established pests control could be prioritised in more valuable / vulnerable areas (e.g. national parks and threatened ecological communities) or towards populations of threatened species.
- iii. The prevention of new incursions / early intervention should be the top priority of the pest management strategy. Early intervention means economic and environmental impacts are minimised, and by extension cost of control. Funding of early intervention should be seen in light of the potential for ongoing costs and impacts should a species become established. Foxes are an excellent example of a species that have likely cost billions of dollars in control efforts with few tangible results. Adequate funding should be made available to respond to new incursions decisively so that locating and acquiring funds is not an impediment to effective and timely intervention.
- iv. Future risk could be incorporated by correctly applying the precautionary principle and by ensuring that no species are intentionally imported unless the importer can prove beyond reasonable doubt that establishment is unlikely.

d) Landscape approach

- i. All levels of government have a role to play in ensuring that coordinated cross-tenure management occurs. For example, priorities will be set by federal and state governments while local government is largely responsible for land-use decisions. Therefore ensuring that local government strategies align with state and federal priorities, and encouraging local government programs to educate landholders on their responsibilities are possible strategies.
- ii. Whether pest management is coordinated by species or locality will likely depend on the desired outcome. For example, a new incursion will be targeted by species, whereas widespread species will likely be managed by locality—e.g. to ensure the protection of populations of native species.
- iii. Early intervention is likely to require specific roles assigned to the task. For example, Local Land Services could have dedicated early intervention officers who would complement exclusion efforts at points of entry such as ports and airports. Community vigilance is also required, and key to this is a simple, well known, reporting mechanism (either on-line or by phone) as well as attempting to educate the public as to the importance of early detection.
- iv. The environmental impacts of domesticated animals as opposed to feral animals are not adequately considered: for example, significant outcomes can be achieved by appropriate management of pet dogs and cats. Examples include keeping dogs on leads on beaches where shorebirds are breeding and preventing dogs from roaming in areas where they may attack koalas and keeping cats indoors at night. These reasonably simple measures are useful in decreasing mortality in native species and are not a major imposition to pet owners. Education is likely to be the most effective means in achieving these sorts of outcomes.
- v.
- vi. Similar mechanisms are likely to be effective for both plants and animals. I.e. prioritising the prevention on new incursions; prioritising eradication and early intervention; public

awareness campaigns and aligned management. Therefore there may be benefits to integrating the management of pest plants and animals.

e) Emerging issues

- i. One of the major emerging approaches to pest control is rewilding. Although a definition of rewilding largely depends on location and land-use history (Jørgensen 2015), in essence it seeks to increase the resilience of ecosystems to minimise the impacts of environmental change, including the incursion of pests. Rewilding has potential to restore a range of lost ecosystem functions. The functions most relevant to Australia, and to this Issues Paper, are predation and associated control of invasive mesopredators. There is substantial evidence in Australia to suggest that restoration of ecosystem function via the influence of apex predators (in this case dingoes) can suppress invasive species and increase the likelihood of persistence of native animals (Johnson et al. 2007, Wallach et al. 2010, Letnic et al. 2012, Ritchie et al. 2012, Wallach et al. 2015) and even influence vegetation structure (Dexter et al. 2013, Colman et al. 2014). However, influences are likely to be context-dependent and not consistent (Allen et al. 2014). Poison baiting that disturbs dingo pack structure may change the ecological function of animals (Wallach et al. 2009) and may in fact do more harm than good in regards the impacts of remaining animals (Glen et al. 2007). Tasmania still retains a suite of small mammals that are extinct on mainland Australia. There is evidence to suggest that this is due to the influence of Tasmanian devils which have prevented population increases in cats and therefore indirectly protected conspecifics (Hollings et al. 2014). It is unrealistic to expect the restoration of ecosystem function to eradicate mesopredators (Hayward and Marlow 2014) but it does have the potential to promote coexistence between native species and introduced mesopredators (Wallach et al. 2015).

The volume of evidence pertaining to the ecological functions of predators suggests that consideration of their use to increase ecosystem resilience and, in a best case scenario, allow society to relax control of invasive species in some areas should be investigated. In particular, options include:

1. Moving the 'dog fence' to investigate the influence of dingoes in Sturt National Park, as suggested by scientists (Newsome et al. 2015);
2. Trialling a reintroduction of Tasmanian devils to investigate their potential to provide ecosystem services;
3. Investigating (i.e. funding research) under which circumstances wild dogs and dingoes function as an intact pack, when the most severe interactions with landholders occur and whether this can be anticipated and managed;
4. A large-scale trial (e.g. several adjacent large properties) as to the efficacy of livestock guardian animals (e.g. dogs, alpacas) in protecting stock from predation (this would also include predation by foxes);
5. Research into perceived and actual stock losses via dingoes and wild dogs and whether compensation for losses is a cost-effective approach to mitigating the impact of predators.

The NPA considers that the use of fenced areas may have some merit in emergency intervention, but introducing species into a fenced reserve does not fit the spirit of rewilding. Fenced reserves risk distracting attention from the rest of the landscape, and focussing all funding and effort on (expensive) fenced areas could lead to a future scenario where such fenced areas are the only place that many species exist. Thus they would be functionally extinct in the broader landscape. This would be a great shame and the NPA urges the government to be more ambitious than this. Fenced areas also pose ethical questions such as how to deal with overabundant populations. Any use of fenced areas should be as a complementary strategy to broader wildlife protection and should have as a long-term goal the release of the animals beyond the fence.

- ii. Peri-urbanisation is likely to be affecting pest-management in rural areas. Those in peri-urban areas are probably less likely to undertake pest control than rural landholders. At the same time peri-urban pets pose a threat to native species.
- iii. As mentioned in the introduction, the NPA believes that animal welfare and the humane treatment of animals should be a major consideration in the delivery of pest management. The Invasive Species CRC matrices are an excellent tool in this regard.
- iv. Consideration could be given to the commercial harvest of pest animals provided commercial gain does not become the priority in pest management; rather pest management should focus on environmental outcomes as the priority and retain the ability to intervene if commercial harvesting is not achieving effective management. Any commercialisation would require strong measures to prevent the movement of pest animals to areas where they are absent for economic gain. If the aim of commercial harvesting is to be effective as a pest control measure it must always aim to reduce populations to zero: for example, deer should not be maintained at high levels and environmental damage tolerated to produce a sustainable yield of venison.

Despite the economic and environmental problems deer cause they are managed under the *Game and Feral Animal Control Act 2002* as a resource for hunters. They are treated very differently from goats, which cause similar problems. A hunting license must be obtained from the Game and Pest Board to hunt deer. Hunters must not pursue them using spotlights 'or electronic devices that enhance vision or hearing', or shoot them from a vehicle or hunt them at night. There are bag limits, and there are closed seasons for fallow, red, Wapiti and hog deer.

Bounties are another form of commercialisation. Bounties do not work as a pest control strategy and this is recognised by the NSW Government. The government should not introduce bounties as a pest control strategy and should resist calls to do so as this will constitute a waste of valuable resources.

- v. Managing the risk of incursion via pets, and other avenues, should be a priority for the pest management strategy as the costs of early detection are lower and the possibility of successful intervention higher. Placing the onus on the importer to demonstrate that impacts will be negligible should an animal escape is one approach; educating the public as to the dangers of escaped pets is another; and strong regulations around illegally importing and / or releasing pets is a third.

Development of a specific unit dedicated to the monitoring of emerging trends and issues in the pet and hunting industries would be a good strategic development to increase the probability of early detection and lower the long-term costs of control.

vi.

f) Adequate resourcing

The NPA lacks the data to make informed comment about the adequacy of resourcing. However, there are a number of options that could be considered to ensure funding is adequate:

1. Prioritise investigations into healthy ecosystems and rewilding as a potential tool to decrease the future funding necessary to control pest species and decrease the chance of new incursions being successful;
2. Prioritise funding to interventions that have the best chance of success, e.g. to eradication of a new incursion;
3. Maintain a source of funding for emergency access in the event a new incursion is detected so that the window for effective management is not missed;
4. Adopt a 'polluter pays' principle where industries, such as deer farming, are held accountable for damage caused by pests. This could be in the form of random inspections to high risk industries to ensure best-practice or a levy on high risk activities to ensure resourcing can

address issues. A similar mechanism could be adopted for plants (e.g. olive farmers) and in the event that pest species become a commercial resource;

5. Avoid reactionary and episodic funding of pest control strategies as this is not conducive to long-term efficacy.

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