

## Rationale for Controlling Deer in the Greater Alpine National Parks

Over the past ten years, a significant increase in the number of Sambar Deer and the area they occupy has been observed throughout the Alpine National Park, coinciding with increased impacts on a range of native plants and animals and ecological communities, including endangered alpine peatlands (also known as Alpine Sphagnum Bogs). Alpine peatlands are a special vegetation community of national and state significance and one of the most sensitive to deer impacts.

Alpine peatlands, as the name suggests, are composed of peat, a type of soil made up of partially decomposed plant material. They form in waterlogged conditions over many hundreds of years.

They provide habitat and refuge for many plants and animals, some like the Alpine Marsh Marigold, that are rare and threatened. They also play an important role in maintaining the healthy functioning of several water catchments. Alpine peatlands are a fragile community, highly sensitive to disturbance. Once damaged, they can be very slow to recover.

Alpine Peatlands are protected under state and federal environment legislation as are many of the rare and threatened species which occur in these environments. Parks Victoria has a legislative responsibility to preserve and protect the natural environment and prevent impacts, especially on threatened species and communities.

Deer impact on alpine peatlands and other vegetation communities in two main ways – grazing and browsing, and physical disturbance.

Deer grazing and browsing results in a change to the structure and floristics/biodiversity of a community as a result of the decline of the species that are palatable to deer, the loss of plant biomass, the decline in plant diversity and compromised regeneration.

As large animals with hard hooves, the movement of deer compacts the soil and results in the creation of tracks and bare ground, which in alpine areas is subject to frost heave and erosion. The tracks created by deer can also facilitate weed spread by creating gaps in the vegetation for weed seeds to germinate. In addition to this, male deer (stags) also wallow in peatlands, destroying them and the habitat of the native plants and animals that rely on them.



Figure 1: Deer impacts on endangered alpine peatlands.

If nothing is done to control deer, the condition of the Alpine National Park, especially important conservation assets like alpine peatlands, will continue to decline as deer populations continue to expand and increase.

Parks Victoria is controlling deer to protect these conservation values and mitigate the impact deer are having on them.

### **The Alpine National Park Deer Control Trial**

In order to better understand the impacts of deer on alpine peatlands, and approaches for mitigating these impacts Parks Victoria initiated the Alpine National Park Deer Control Trial in 2015.

The trial includes a comprehensive network of deer and peatland monitoring sites, including arrays of remote cameras. This monitoring enables Parks Victoria to investigate whether deer control approaches can reduce deer abundance and density and impacts on alpine peatlands. It also enables Parks Victoria to evaluate the efficacy of different control approaches, determine the optimal timing of control operations and assess the frequency and intensity of control that is required to achieve conservation objectives.

The trial involves 3 years of targeted deer control in two areas on the Bogong High Plains and two in the Southern Alps, and compares this with the same number of non-treatment areas, using before and after monitoring of peatland condition, deer abundance and density.

Ground shooting is being conducted by contractors, and volunteers from the Australian Deer Association and the Sporting Shooters Association of Australia, under the supervision of Parks Victoria staff.

Ground shooting techniques include day stalking, with or without a gundog, night stalking using spotlights and/or thermal imaging equipment, spotlighting from a vehicle and hound hunting.

### **Aerial Shooting Trial**

Parks Victoria is considering the range of deer control techniques available for future integrated deer control programs. Other jurisdictions have reported positive outcomes from deer aerial shooting programs and it is a technique Parks Victoria wishes to trial in the Alps. Aerial shooting from helicopters has been confirmed in Australia, and internationally, as one of the most effective and humane techniques for controlling feral animals, particularly in remote and difficult locations.

The deer control trial is being expanded in 2018 to include a trial of this technique.

An initial operation will be undertaken in October 2018 (Spring) and another is being planned for April/May 2019 (Spring). Each operation will be carried out over around 3-4 days.

The monitoring program established as part of the Alpine National Park deer control trial enables Parks Victoria to assess deer populations, deer impacts and how deer control programs influence deer populations and impacts on alpine peatlands. This monitoring also enables us to investigate what level of deer control is required to reduce deer impacts. The addition of aerial shooting to the trial allows us to assess the efficacy and cost effectiveness of this technique in the Victorian Alps and make inferences about its influence on deer populations and impacts from our monitoring data. The trial will also investigate the influence of season, terrain and vegetation type on the effectiveness of aerial shooting.

Once the trials have been completed, all of the data collected will be analysed to determine the level of deer control required to protect alpine peatlands and the best combination of techniques for different areas and circumstances.

These results will then be used to develop an ongoing, sustainable, landscape scale deer control action plan to manage the impacts of deer on high value vegetation and habitats, as recommended in the Greater Alpine National Parks Management Plan (2016).

Key stakeholders will be consulted during the development of this action plan.

Parks Victoria values the important contribution Australian Deer Association and Sporting Shooters Association of Australia volunteers make to our deer management programs. Parks Victoria intends to maintain these programs, providing volunteers a continuing opportunity to contribute their knowledge and skills to protecting the park's unique natural values.

### **Animal Welfare and Humane Management**

Using humane animal control techniques is of paramount importance to Parks Victoria. Aerial shooting is regarded by experts as a humane and effective control technique for large vertebrates and is an acceptable technique under relevant legislation and codes of practice.

An advantage of aerial shooting is the ability to quickly follow up animals and confirm a kill. This can be more challenging with ground shooting, particularly for sambar deer which can run a reasonable distance before they fall, even with a lethal shot placement.

Parks Victoria will be using appropriately licenced and accredited shooters who have completed a rigorous, and on-going, training and accreditation program covering the safe use of firearms and the humane destruction of animals from helicopters. They are also required to complete an on-going shooting and firearm familiarisation program to maintain their marksmanship standards.

The operation will be conducted in accordance with all relevant legislation, Codes of Practice and Standard Operating Procedures designed to ensure humane animal control.

Parks Victoria is also engaging an independent vet to assess the operation and monitor outcomes with respect to animal welfare and humaneness.

### **Carcass Management**

The deer shot in the aerial shooting operation will be in remote areas away from walking and vehicle tracks, making removing carcasses unsafe and impractical.

Parks Victoria will avoid shooting deer in wetlands, waterways and areas visible from walking or vehicle tracks. In areas where they have no impact on visual amenity or water quality, deer carcasses will be left where they fall.

Evidence suggests that utilisation of deer carcasses by wild dogs is minimal and has little effect on their population dynamics.

Recent research<sup>1</sup>, and observations made as part of other animal control programs, suggests that the utilisation of deer carcasses by wild dogs is minimal because of the availability of alternative food resources

and the preference of dogs for freshly killed food. Carcasses from deer control operations are also unlikely to be a regular and reliable enough food source to sustain ongoing population growth.

Research has also suggested that wild dogs are 'specialist hunters' rather than 'opportunistic generalists'<sup>2</sup>.

<sup>1</sup>Forsyth, DM, Woodford, L, Moloney PD, Hampton JO, Woolnough AP, et al. (2014) How does a carnivore guild utilise a substantial but unpredictable anthropogenic food source. Scavenging on hunter-shot ungulate carcasses by Wild Dogs/Dingoes, Red Foxes and Feral Cats in south-eastern Australia revealed by camera traps. PLoS ONE 9(6) e97937. Doi:10.1371/journal.pone.0097937.

<sup>2</sup>Fleming P, Corbert I, Harden R, Thomson P (2001) Managing the impact of dingoes and other wild dogs. Canberra: Bureau of Rural Science.