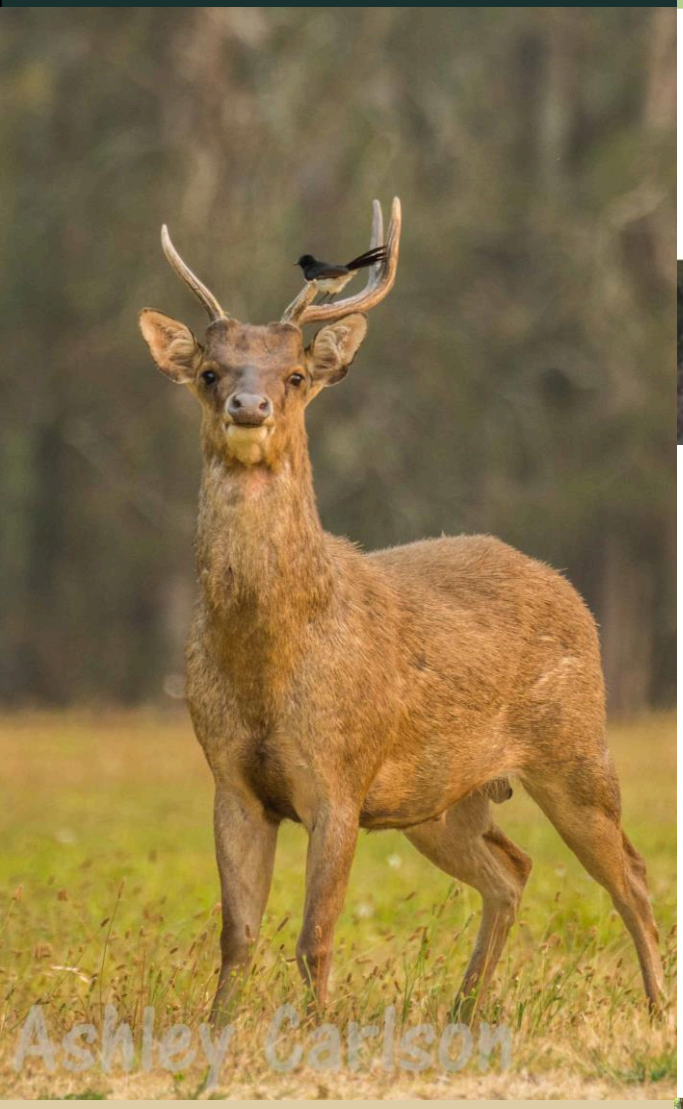
National Feral Deer Action Plan

NEWSLETTER
December 2021



Planning resources on the website

Head to: National Feral Deer Action Plan (feraldeerplan.org.au) under Info and Resources.

In "Project Resources" you will find:

- Templates for forms and surveys
- Guides
- Communication resources
- Coming soon: resources to print and use at workshops/awareness raising activities

In "Literature" you will find interesting articles on feral deer management, impact to the environment and ecology.

Let us know if there are other resources you would like included or if you have anything to provide.

Tell us about garden plants that are unpalatable to deer

Feral deer will selectively browse on vegetation where possible. To minimise damage to gardens and provide a barrier to preferred species, you can plant species that are unpalatable (less preferred).

If you have had tried landscaping alternatives, such as planting unpalatable species to discourage feral deer visiting your place, please fill out this form Landscaping Alternatives - National Feral Deer Action Plan (feraldeerplan.org.au). We will keep you posted on garden plants to try.

Read more about feral deer at www.feraldeerplan.com.au
Visit the *In The News* page to view past newsletters

National Feral Deer Action Plan

WHAT IS HAPPENING AROUND AUSTRALIA?

Thermal Assisted Aerial Control (TAAC) Trial in the Limestone Coast, SA.

Feral deer often hide in bushland during the daytime, which makes them difficult to spot and cull their numbers.

A new tool, a state-of-the-art thermal camera, is helping to find and cull the feral deer hiding under bush canopies during the day.

Thermal cameras have been used to count feral deer from helicopters for a number of years, but now thermal cameras can also assist aerial culls in real time.

Thermal-assisted aerial control of fallow and red deer was trialled in the Limestone Coast region of South Australia in September 2021.

The 2.5 day trial on farming properties sought to mop-up remaining feral deer in the bush 10 days after a traditional (*visual*) aerial cull.

The thermal-assisted aerial cull trial found many more feral deer than anticipated hiding in bushland canopies; up to 25 deer per square kilometre in some patches. During the 2.5 day trial, 190 feral deer were removed from vegetated areas, including areas affected by recent bushfire.

The camera operator and marksman sat side by side facing out the left side of the helicopter, where they could both view the high-resolution thermal video on a screen. This enabled the marksman to reference his own smaller thermal scope against the footage of the more powerful video camera.

The high quality of the video enables feral deer to be easily recognisable from other large warm bodied wildlife such as kangaroos, or livestock such as sheep and cattle.

Photo: A camera operator from Heli Surveys demonstrates the thermal video camera to landholders.

During the trial, when groups of feral deer split and moved in different directions, the thermal camera enabled each group to be re-found. In this way, the trial found that most feral deer could be systematically removed from small patches of bush, reducing impacts and removing the opportunity for feral deer to persist in the landscape and learn to avoid this new culling method.

Thermal-assisted aerial culling in vegetated areas adds another tool to the suite of management options to tackle the growing feral deer problem. It is also a promising option for assisting with eradication of small satellite populations that are sparsely scattered under dense canopies.

The trial was delivered by the Centre for Invasive Species Solutions' National Deer Management Coordinator project, being funded by the Australian Government, and led by the South Australian Department of Primary Industries and Regions (PIRSA).

A short video on the trial: Not so hidden – YouTube

TAAC was also successfully trialled on Sambar Deer in Namadgi National Park (ACT) by the ACT Government (see August newsletter)

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Government of South Australia
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National Feral Deer Action Plan

METHODS OF PROTECTING TREES FROM FERAL DEER DAMAGE.

This month, we summarise trials by Kieran Tapsell.

"In the last two years [2017-2019], feral Rusa deer introduced into the Royal National Park in 1906 have killed or significantly damages 1,778 trees in 2.5 hectares of the 4.5-hectare park on the headland in the middle of Stanwell Park beach and are destroying nearly all regrowth of native species as soon as they appear. They have turned parts of this littoral rainforest into a cattle yard." –
a report by Kieran Tapsell, resident of Stanwell Park, NSW for 49 years and a registered volunteer with Wollongong Council at the Banksia Bush Care site.

The problem
Deer will eat many young trees, such as cheese trees (*Glochidion ferdinandi*), brittle weed (*Claoxylon australe*) and red ash (*Alphitonia excelsa*). Other plants such as wattles, eucalypts, lilly pillies and guioas are not targeted, until the trees are about two metres tall, when deer will simply break the trunk in two and kill it.

In order to protect his property from the impact of deer, Kieran trialled four different methods to protect the trees from rusa deer.

1. Cages.
Cages of star pickets and wire mesh can effectively protect seedlings and saplings. Star pickets should be at least 1.7 m high and driven into the ground half a metre apart. Small trees can be protected with dog mesh (1.2 m high) that is stretched around the star pickets. When trees grows taller, the mesh needs to be 2 m high, which can be achieved with two lengths of flower wire or dog wire, one on top of the other.

2. Flower or chicken wire wrapping
Mature trees can be protected from being ringbarked or rubbed by antlers, by wrapping flower or chicken wire around the trunk. The wire should be checked annually to ensure it doesn't restrict trunk growth. Wire can be loosened with cable ties or be replaced with a wider wire wrapping.

3. Wrapping sticks
Kieran noticed that deer rarely damage trees with low lateral branches, potentially due to the risk of damaging their eyes during a rub. To imitate the function of low lateral branches, Kieran wrapped bamboo, lantana or ochna sticks around the trunks and held them on with cable ties. This method worked well for 1-2 years, after which the sticks became brittle and the deer easily broke them away. Wrapping with flower or chicken wire is more effective in the long term but is more expensive.

4. Deer fencing
A 3,000 square metre fence was erected around a patch of littoral rainforest that was badly damaged by deer. The council bought the materials (2.4 m star posts, 1.5 m hinge wire mesh, stringer wire and tighteners) and Banksia Bushcare volunteers build the 1.85 m fence. Corner posts were braced by two 2.4 metre star posts concreted into the ground.

Keiran found the fence provided the best protection for the whole plant community, including the understorey and grasses. Where larger fences are too expensive, Keiran suggested erecting small fences around copses in sensitive areas.

If you want to read more from Kieran, you can access the Submission to the Environment and Communications Legislation Committee on "**The impact of feral deer on the natural environment at the Banksia Bush Care Site, Stanwell Park, NSW**" here. Kieran has also written a Guide to the Banksia Bush Care Site which can be downloaded here.

Wrapping sticks demonstration

Have you trialled deer management on your property and would like to share what worked and did not work?
Please email: coordinator@feraldeerplan.org.au

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DEER CONTROL PROJECTS

This month, we share the Alpine Tree Frog Feral Deer Exclusion Fence Project from Parks Victoria.

Alpine tree frogs are critically endangered. They are only found in a small area of Victoria's alpine region.

Sambar deer play a part in their conservation status.

Sambar deer trample and wallow in bogs and peatlands, some of which are breeding sites for the alpine frog. By damaging the bogs, the deer have changed the water flow, and reduced the number of breeding pools available for the frogs.

Wild deer may also spread the Chytrid fungus, which has caused many amphibian extinctions. In 2016, a breeding habitat site in Mount Bullfight was free of the Chytrid fungus, but scientists were concerned that wild deer would transmit the virus through wallowing behaviour.

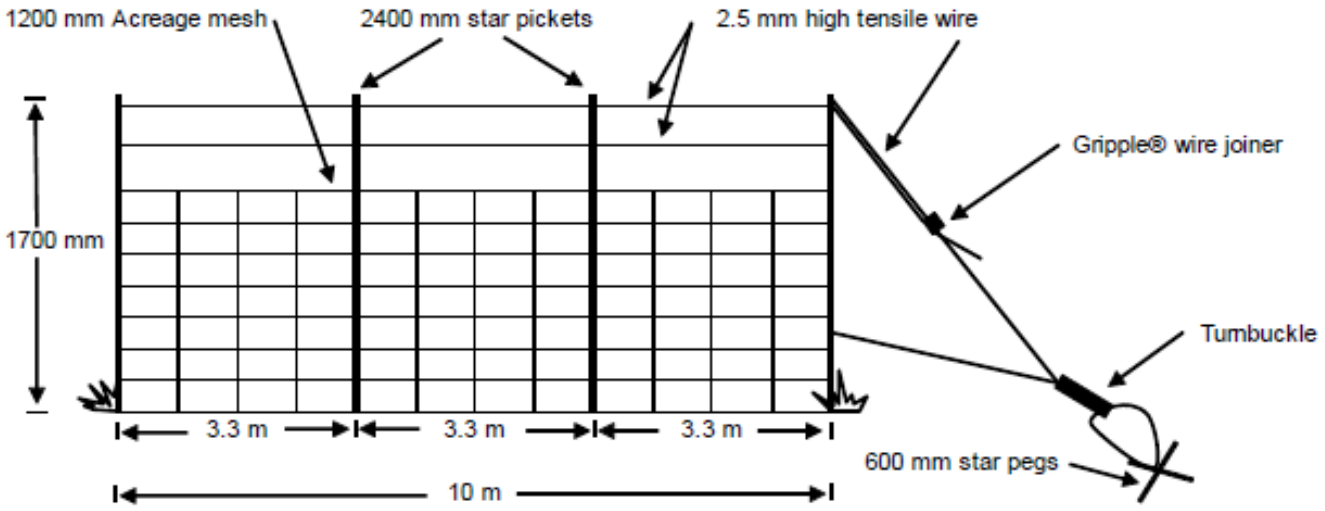
To protect the Mount Bullfight bogs, a 20 square metre exclusion fence was placed around the breeding habitat.

The exclusion fence has successfully excluded Sambar deer, and the bog habitat has improved in condition. Despite the fence, the fungus has now been detected in the frog population. The improved habitat in the fenced area is still expected to help survival of the frogs.

Exclusion fence design

The fence used in this study was designed to completely exclude deer. It was also designed to be relatively easy to set up for staff with limited fencing experience.

The "total plot" design used in the study is adapted from Bennet and Coulson (2008) and drawn below.



Are you engaged in a deer control project and would like to share your story?
Please email: coordinator@feraldeerplan.org.au

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IN THE LITERATURE

This month, we share a literature review of feral deer spread in Tasmania.

Cunningham et al. (2021) estimated that during the period 1985-2019:

- **The feral deer population in Tasmania increased 40-fold, growing at on average, 11.5 % annually.**
- **The core area of feral deer presence increased 2.9-fold and now spans more than 27 % of Tasmania's land area.**

Fallow deer were introduced to Tasmania in the 1800s. Populations remained at low abundance and close to the region in which they were released for over a century. Recently, there have been indications that the population has significantly increased in abundance and distribution (*Cunningham et al., 2021*). The authors caution that despite over a century of slow population growth, sleeper populations of non-native species can increase abruptly.

In the 1970s, it was estimated that ~7000–8000 deer were distributed in three distinct subpopulations occupying a region of ~400 000 ha. The subpopulations were generally centred around introduction sites (e.g. Wapstra, 1973).

By the early 2000s, the estimated population size had more than tripled to ~20,000–30,000 deer occupying 2.1 million ha (*Potts et al., 2014*).

An aerial survey of eastern Tasmania in 2019 estimated a population size of 53,000 deer now spanning 27% of Tasmania's land areas. This survey was conducted late in the 2019 hunting season, during which 30,000 deer were killed. The population is likely to have numbered at least 83,000 at its 2019 peak (*Lethbridge et al., 2020*).

The authors suggest that the population could exceed 1 million animals by the middle of the 21st century (over a larger area), if not controlled.

Feral deer have also expanded their range in Australia over the past 20 years. Deer inhabit more than a third of Tasmania and Victoria, and almost a quarter of New South Wales. Most parts of Australia are likely to be inhabited by at least one species of feral deer based on habitat suitability models (Davis, et al. 2016)

Based on climate and habitat suitability models, *Cunningham et al., (2021)* also predicted that 56 % of Tasmania is suitable under the current climate for fallow deer. This suggests that the range expansions are likely to continue.

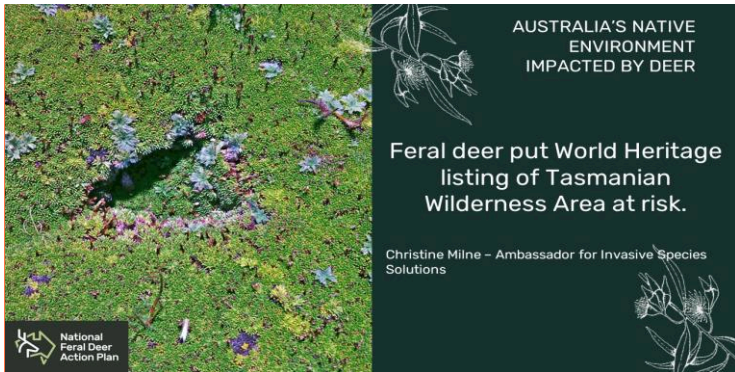
Current estimate of Fallow deer distribution

Map 1a: Current estimate of the distribution of feral deer (Cunningham et al. 2021).

Potential distribution of Fallow deer

Map 1b: Potential occupation of fallow deer in Tasmania based on suitable climate and habitat (Cunningham et al. 2021).

Maps from a report, Feral Deer Control: A Strategy for Tasmania, by Invasive Species Solution (commissioned by the Bob Brown Foundation)



See a video we made with Invasive Species Council on feral deer impacts to Tasmanian Wilderness World Heritage Area

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STAY INFORMED

DID YOU KNOW?

- A 2019 survey undertaken by the Australian Bureau of Agriculture and Resources Economics found that land managers spend an average of $2,627 per year per property on feral deer control activities, up from $2,218 in 2016.

- Deer have a gland in their hoof used to voluntarily release a cheese-like substance. The tarsal gland is located between the two toes or hooves of deer. It can be opened all year round to produce an oily substance that coats the hairs. The substance is odourless to humans but is used for scent communication between deer.

- Deer are considered a keystone species in their native areas, and feral deer can be ecological engineers in other places. Many studies in Australia and internationally have demonstrated that deer can create large-scale changes to vegetation communities by selectively eating large amounts of habita-forming plant species.

WHITE-TAILED DEER IN THE US MAY BE A RESERVOIR OF SARS-COV-2

New research from the US has shown that white-tailed deer are becoming infected with SARS-CoV-2, the virus that causes COVID-19 in humans.

In a recent study, antibodies against SARS-CoV-2 were detected in 40% of deer sampled, suggesting that 40% have at least been exposed to the virus.

The high levels of infection suggests that the deer are transmitting the virus to each other. Research indicates that deer are also contracting the virus from humans. A potential pathway for transmission between humans and deer may be water sources available contaminated with SARS CoV-2.

Such findings raise concern that deer may act as a reservoir for SARS CoV-2. There is not yet evidence for transmission from deer to human.

SARS-CoV-2 infection in feral deer has not been reported in Australia.

White-tailed deer found to be huge reservoir of coronavirus infection (theconversation.com)

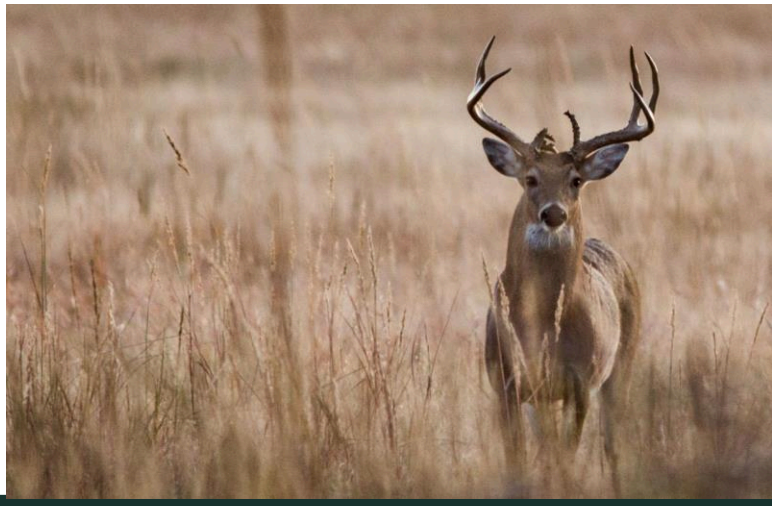
IN THE NEWS

In Tasmania, deer aren't classified as pests. That's causing problems for farmers like Julian - ABC News

New camera technology targets feral deer | The Armidale Express | Armidale, NSW

Over 600 feral deer removed from the Limestone Coast | Border Chronicle | Bordertown, SA

Gold Coast motorcycle rider injured after hitting and killing a feral deer - ABC News



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