Eradicating feral goats and deer from Kangaroo Island



Natural Resources Kangaroo Island



National Landcare Program





Australian Government

Successful eradication of feral goats and deer

Kangaroo Island is the largest island in the world to have successfully eradicated feral goats and the only island to have eradicated feral deer. It is Australia's third largest island (4400 km²) and is nationally important for biodiversity conservation, primary production and tourism. Eradicating these feral animals from Kangaroo Island will have long term benefits for primary production and biodiversity, including threatened species.

Early settlers brought goats to Kangaroo Island nearly 200 years ago. Feral goat populations soon established around the west coast of the island. Over time they caused significant damage to native vegetation, spread weeds and caused soil erosion, particularly on sand dunes and around high impact areas such as caves and watering points.

Fallow deer became feral on Kangaroo Island in the 1990s when fencing around a deer farm deteriorated and the deer escaped. Fallow deer carry diseases that threaten the Island's cattle breeding industry, compete with stock for pasture, and trample crops and native vegetation. In 2005 the Kangaroo Island Natural Resources Management Board determined that eradication of feral goats and feral deer was feasible. With the help of dedicated control officers, the support of the community and financial investment from the Australian Government and Government of South Australia, the Board began the long journey to achieve this.

The results of these eradications are already profound. Drooping sheoak, main food of the endangered South Australian glossy black-cockatoo has regenerated prolifically. Native succulents and ground covers have grown where they were previously unknown, creating additional habitat for the rare rock parrot and eastern large bronze azure butterfly, which had not been seen on KI for over 80 years. With vigorous plant growth, soil erosion has decreased to the point where local fishermen report high rainfall events are no longer washing large amounts of sediment into the surrounding ocean.



Principles of successful eradication

Eradication is the permanent removal of a population. An eradication project will only succeed if it can meet the following principles.

- 1. Reinfestation can be prevented from neighbouring populations, released animals, or escapees.
- 2. Feral animals can be destroyed faster than they reproduce.
- 3. All reproductive individuals are at risk from the available techniques.
- 4. Monitoring of the population at low densities is possible.
- 5. There is strong community and government support.
- 6. The high cost of eradication can be justified.
- 7. Planning and implementation can be carried out by skilled and dedicated staff.

Achievements from 2006–2018:



Community support was vital

Successful eradication was only possible with the support of the community, who gave access to their properties and reported any feral goats and deer they saw. This support was dependant upon the trust and respect the control officers established with community members.

At the start of the project the community was surveyed, public meetings were held and control officers spoke with people at local shows and field days. Control officers were from the local community and were always available to talk with people seeking more information about their work, or wanting to report feral goats and deer sightings. In many respects control officers were always 'onduty' and were always approachable, whether at work, when shopping, playing sport, collecting their children from school, or just walking down the street. The information they gave to community members was always sincere and transparent.

When visiting a property control officers explained exactly what they were planning to do. They abided by farm protocols, delivered goods from the main towns, helped with stock, fixed fences and notified the landholder of any issues. On leaving a property control officers advised the landholders when they left, what they had done and what they had seen. Throughout the program it was important for control officers to maintain one-on-one contact with all relevant landholders. This contact will continue to be needed to monitor the eradications over the next few years.

To encourage community support the project also lead by example, removing feral goats from conservation reserves first, before moving onto private land.

To promote eradication work articles were regularly published in the local media, on the Natural Resources Kangaroo Island website, though social media and via radio stations. To encourage the reporting of feral goat and deer sightings fridge magnets were distributed and advertisements published with control staff contact numbers.

As a result control officers were always granted access to the properties they needed to work on and the efficiency of the project was greatly improved through promptly reported sightings of feral goats and deer, enabling targeted control.





What techniques were used?

Successful control was dependent on hunting with an eradication ethic; ensuring control only began when the whole mob could be culled. Other important parameters included:

- using skilled, accurate, experienced marksman that worked cooperatively together and understood each others methods of operation
- » using the right tools for the job
- understanding the animals behaviour and social structure to exploit animal weaknesses
- » understanding how the animals use their environment
- using terrain to the control officers advantage; for visibility and accuracy when shooting and to minimise feral animal escape
- » knowing the area where working
- using the weather to predict animal behaviour and adapt hunting techniques
- » using remote cameras to gain a better understanding of animal behaviour, their movements through the landscape and to identify individuals.

Goats

Control operations used Judas goats to exploit the social nature of feral goats. Judas goats were white feral goats captured, fitted with radio-telemetry collars, and released. The gregarious nature of goats resulted in the Judas goats searching for other goats. The Judas goats were monitored and tracked and any feral associates destroyed. The Judas was then left to find further feral herds.

Deer

Feral deer are very secretive, hypervigilant and learn quickly. To begin control officers used quiet vehicles with spotlights to detect feral deer over a wide area. Full camouflage gear was worn to hide control officers and break their silhouette to reduce their detection by feral deer. Multiple ground hunting techniques were used to locate and cull feral deer. Patience and concentration were essential. As the project progressed and feral deer became wary, it took much longer (almost 500 times longer) for control officers to locate and cull feral deer.

Keeping track of impacts and progress

Monitoring the number of feral goats and deer was essential to ensure eradication success. The project also monitored the impacts of feral goats and deer.

Goats

The numbers of feral goats and their impact on native vegetation were monitored. Methods to monitor feral goat numbers included ground searches, aerial surveys, sightings by community members, Judas goat movements, remote cameras and scat counts.

Monitoring transects and photo points were established at set locations to detect the impact of feral goats on native vegetation.

Vegetation in 2001

Deer

The presence or absence of feral deer was monitored by looking for their hoofprints, through remote cameras and reports of sightings from the community. Sand plots were installed along tracks and on dams walls and monitored for feral deer hoofprints over summer each year.

A grid of four remote cameras per square kilometre was systematically moved every fourteen days from property to property to estimate the numbers of feral deer, and identify individual animals. The age structure of the feral deer population was determined by inspecting tooth eruption and wear patterns on jaws collected from culled animals.

Vegetation in 2012





Preventing domestic animals escaping

As long as domestic goats and deer reside on Kangaroo Island, there will be a risk of a feral population re-establishing in the wild. To counter this possibility, the Government of South Australia revised the legislation so keeping domestic goats and deer requires a permit from the Kangaroo Island Natural Resources Management Board. As a result of this project no domestic deer remain on KI. To obtain a permit control staff inspect goat properties every two years, or when they change ownership. Each property is given a risk rating and permits are only issued for landholders who meet all requirements. Again community support is vital and control staff work closely with landholders to ensure compliance and that any escapees are immediately reported.

