

Dogs in Space Tracking Initiative

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Why track wild dogs?

Wild dog management is a controversial subject. The *Dogs in Space* tracking initiative aimed to provide scientific information about how wild dogs utilise their habitat to better inform decision-making on control methods.

Dingo and wild dog management across the Australian Alps is problematical and involves balancing the conservation of this top-order predator with the need to protect agricultural interests on private land.

To achieve this balance public land managers need a good understanding of the movement behaviour of these animals. This includes the extent of home range, their habitat preferences and patterns of utilisation.

The *Dogs in Space* initiative was designed to address knowledge gaps, and utilises technology to complement the local knowledge of people involved in wild dog management.

In eastern mainland Australia there have been few studies of the spatial biology of wild dogs, and these have mostly used older tracking technologies such as VHF telemetry systems.

Relying on just these studies may result in control techniques that may not be optimal for effective control.



A purebred dingo fitted with a satellite-tracking collar. Picture: Andrew W. Claridge

Recent advances in wildlife tracking technologies, allow scientists to better describe the home range requirements of wild dogs across the Australian Alps.

In particular, four basic questions can be addressed:

- (i) how large an area do wild dogs range over?;
- (ii) are these ranges consistent with data obtained from previous studies that used conventional telemetry?;
- (iii) do wild dogs display nomadic or more regular movement behaviour in space and time?; and
- (iv) how often do wild dogs in larger areas of public land interact with adjacent agricultural landscapes?



Processing a wild dog ahead of collaring and release is an involved process. Picture: Roger Roach

Where were wild dogs tracked?

Wild dogs were tracked in the:

- Alpine National Park in Victoria,
- Kosciuszko National Park in New South Wales, and
- Namadgi National Park in the Australian Capital Territory.

The areas chosen were distant from regular wild dog control efforts in order to identify the 'natural' movements of animals unaffected by human activity. High and low altitude tracking satellites were used to locate collared wild dogs.

Major Findings

How many wild dogs were tracked?

Overall, 18 wild dogs were successfully tracked across the Alps for periods of between 22 days and 842 days.

The wild dogs tracked comprised 10 male animals and 8 female animals from a range of age classes.

Genetic testing revealed that 2 animals could be considered to be 'mostly dingo'.

Each of the 18 wild dogs tracked during this study remained within the boundaries of the alpine national parks, regardless of season.

What were the size of wild dog home ranges?

Over 3 month periods, home range sizes of the tracked wild dogs ranged from as small as 925 hectares (ha) to as large as 26,000 ha, with an average size of around 10,000 ha.

There was marked variation in average home range size between wild dogs across each of the study areas. For example, the average home range size of wild dogs tracked in Namadgi National Park was significantly less (1,433 ha) than that of animals in Kosciuszko National Park (10,971 ha) or the Alpine National Park (10,418 ha).

There was no significant difference between the average home range size of male animals and female animals, or between animals of different age classes.

Variation in average home range size between wild dogs across the study areas could be partially explained by differences in prey availability.

At Namadgi National Park, where home range sizes were small, the availability of kangaroos, wallabies and rabbits (the major prey of wild dogs) was highest. In contrast, within Kosciuszko National Park prey availability was less and home range sizes were larger on average.

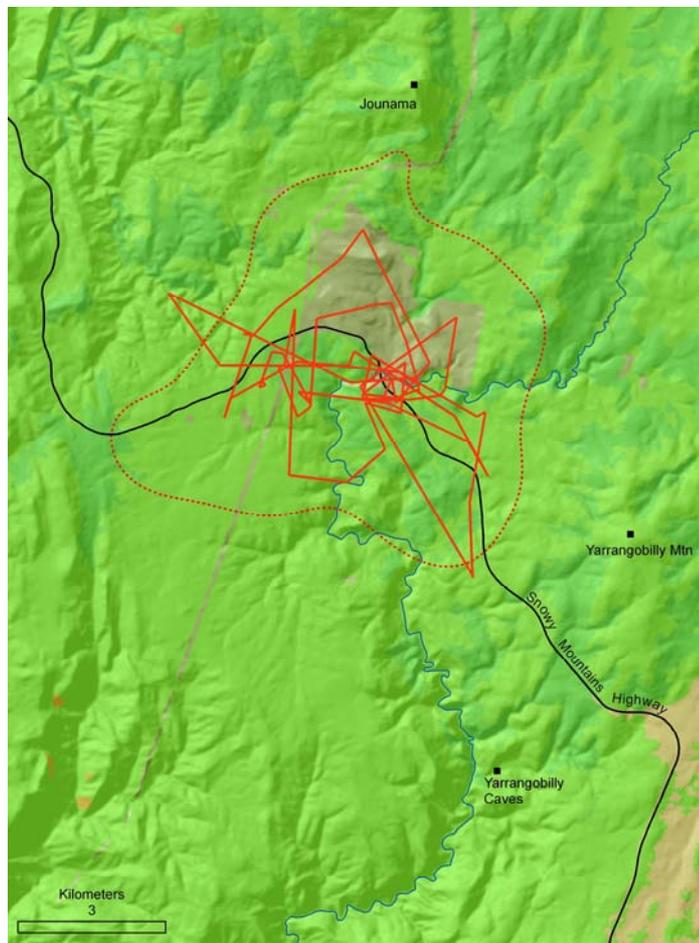
Patterns of movement

Based on 6 hourly segments of data ('runs') animals covered less than 4 kilometres distance in 75% of cases and often dramatically changed direction during these runs. Movements of individual wild dogs could be best characterised then as short, convoluted movements within a defined home range area (see diagram opposite).

Management Implications

The home range sizes for most wild dogs tracked appear to be much larger than observed by conventional telemetry studies, except where the abundance of prey was high.

The tracking work indicated that maintaining buffer zones of 5-10 km width (as is traditionally used) could potentially impact upon a larger area inhabited by wild dogs than presumed. Put another way, because of the larger home ranges discovered, individuals in the core of larger tracts of



Above. 7-day movement patterns of a single wild dog tracked in the Long Plain area of northern Kosciuszko National Park, New South Wales. Diagram by Douglas J. Mills.

public land may be affected by buffer zone control operations while never interacting with domestic stock on private land beyond the buffer.

Finally, the DNA analyses performed on the animals caught during the *Dogs in Space* project indicate they are 'mostly dingo', with few purebred dingoes.

Future management should try to conserve as much of the 'dingo' gene pool as possible by reducing hybridisation at the edges of public lands. The most practical way to achieve this is to maintain focussed control efforts at those locations, rather than more widespread and haphazard control.

Wild dog management is a difficult balancing act

Given the potentially large home ranges of wild dogs, management efforts should ignore land tenure boundaries and focus on protecting agricultural assets deemed to be under threat. This means diligent control efforts at the adjacent forested areas to ensure that stock loss is as low as practicable. Beyond the perimeter control area, (i.e. in the core of large areas of public land) it may be possible to maintain wild dogs or dingoes as potentially important functional components of natural landscapes.