



Travels with Stroppy

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IN A RICE HULL

- ▶ Small transmitters have been attached to 23 grey teal *Anas gracilis* in the rice-growing areas and in the Lake Eyre Basin to track bird movement by satellite
- ▶ One bird released in the Lake Eyre Basin has been tracked for nearly two years
- ▶ Individual birds have moved up to 978 km in a single flight and travelled more than 6400 km since being released
- ▶ Satellite imagery is being used to map wetland distribution and combined with transmitter information, these data will be used to model waterfowl movements

Since the first grey teal *Anas gracilis*, Harriet, was released at Fivebough Swamp near Leeton on 2 September 2003 much has changed in what we thought we knew about waterfowl movements in Australia. Birds fly faster and further in a single day than previously thought possible, and many return to their starting point weeks and months later.

In November 2004 continuously running transmitters were attached to four grey teal. One, Stroppy, earned its name during this process. The transmitters were programmed to run continuously so that we could get a better understanding of the movement habits of teal in the rice-growing regions. These birds confirmed that teal were mostly moving at night. Previously used transmitters only tracked movement for seven hours each day.

What was surprising was the speed that some individuals were able to fly for sustained periods and how far Stroppy has travelled since being released (Figure 1). This bird has travelled more than 6400 km since being released on 3 November 2004.

The day after Stroppy was tagged there was widespread rain (~20 mm) in northern NSW and central Queensland. The bird departed Leeton on the 6 November for Lake Cowal, stayed overnight and arrived near Warren two days later, spending its time on shallow depressions near the town. The bird stayed there for several weeks, until there was again heavy rain (~200 mm) in northern NSW, for a few days leading up to 10 December. Stroppy moved north arriving at temporary natural wetlands east of Cunnamulla on 14 December, and stayed there until 6 January when it moved to the region near Moree where the rain had been heaviest. This time the bird took up residence on an open bore-drain and moved little until rain fell again on 25 January 2005. This was a cue to explore further west and the bird flew 500 km to the Paroo River in less than six hours. For periods, its average speed was 99 km/h with a moderate tail wind.

Having reached the arid inland it stayed less than a day and was back on the same bore-drain near Moree less than four days later. This suggests that these birds have a well developed spatial memory that enables them to find wetlands many hundreds of kilometres distant that they have visited previously. Stroppy returned to the Riverina in March before departing again for the arid far west of NSW in July. In September the bird was on the Darling River north of Wilcannia.

In contrast to Stroppy, other birds have remained in or near the Riverina and have spent most of their time on the agricultural infrastructure. One, Chaser, moved to a well-vegetated irrigation channel near Gunbower in Victoria in December 2004. This bird had not moved more than a few kilometres from this channel up until the time of writing this report (September 2005). The channel is a former creek with river red gums along its banks and cumbungi along its edges. The owners of the property do not allow shooting and the bird apparently has no reason to move.

Patterns of movement

The observed flights of grey teal are not extraordinary in terms of distance or rate of movement when compared to many species of waterfowl that undertake long-distance seasonal migration in northern temperate regions.


The insight gained from this study is that long-distance movements vary markedly at the individual level in terms of timing and direction, and that the movements of this so-called nomadic species do not appear to be random wanderings between adjacent wetlands. Many birds moved a large distance (up to 978 km) between occupied sites in a short period (hours), remained in the vicinity of those sites for extended periods (months), ventured up to 900 km from their point of release and travelled more than 6000 km in one year. The observed pattern of movement suggests that grey teal interact with available habitat at broad scales and



that movement at these scales is, at least in part, based on experience and spatial memory. Some tagged individuals moved large distances between wetlands, reaches and catchments over regions with a multitude of other natural and man-made wetland resources, to settle on small wetlands or in regions with few significant wetland resources. Once arriving at a new location, individuals have spent periods of eight months or more in the same general vicinity. This pattern of movement may reflect breeding activity and/or previous patterns of habitat occupancy.

To date there has been no significant movement between the Murray-Darling Basin and the Lake Eyre Basin. If this situation reflects the structure of waterfowl populations in south east Australia it suggests that rice-growers are dealing with regional breeding populations of waterfowl. Anecdotal reports from rice growers suggest that there are resident and mobile populations of waterfowl. The data so far supports this notion but the origins of individuals in both groups may be local – with some individuals moving out and back in response to rainfall events.

The project is on-going and four tagged individuals are still sending back data. Stropky is on the Darling River, Chaser is near Gunbower in northern Victoria, another in the Coorong in South Australia, and the last has recently moved to a swamp west of Coleambally. The next set of analyses will look at the movements of the four individuals that were monitored throughout the day and night and how they used the agricultural infrastructure.

Maps of the birds' movements can be viewed at <http://www.csu.edu.au/faculty/sciagr/sst/pers/droshier/birdmap.html> 

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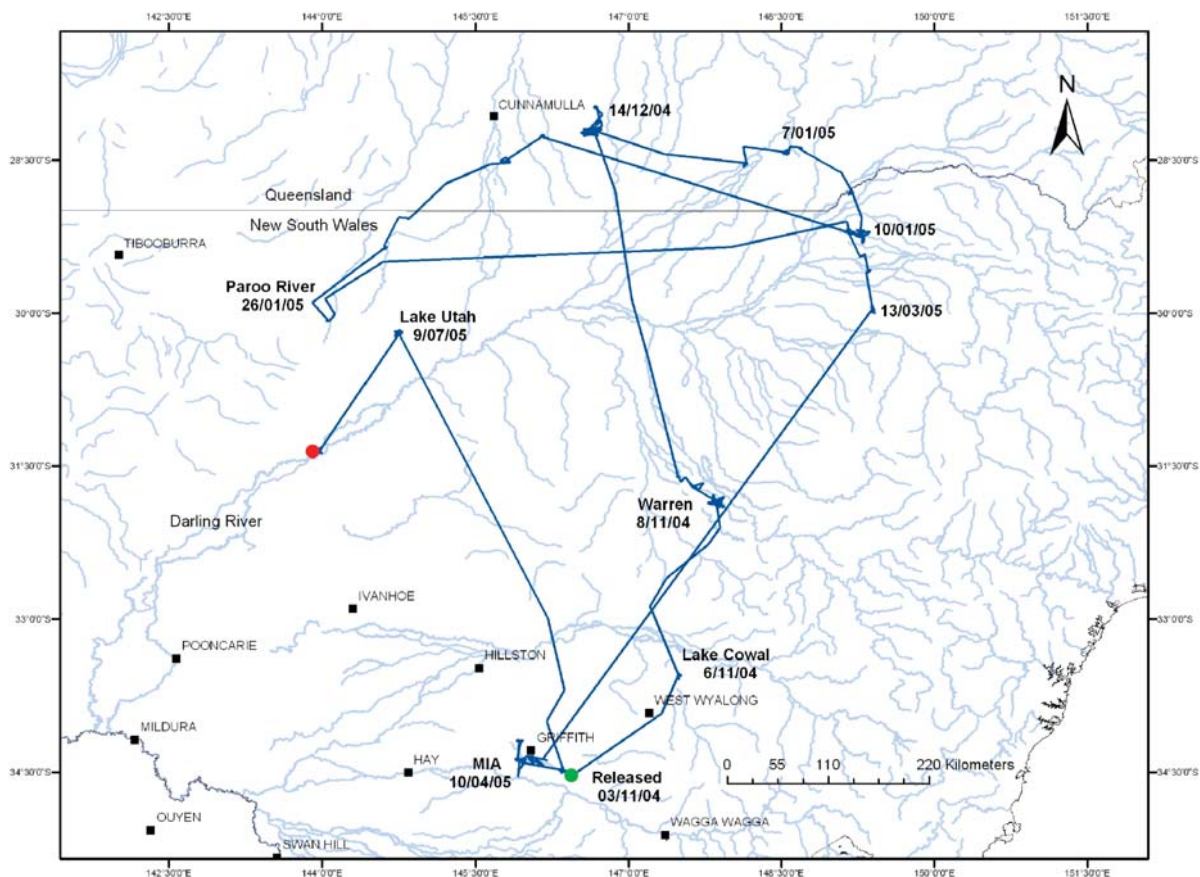


Figure 1 Movement path of Stropky since being released near Leeton in November 2004