

## Milestone reached as baiting is completed

The Macquarie Island Pest Eradication team landed on Macquarie Island on 22 April, 2011, with high hopes of achieving their mission to deliver approximately 300 tonnes of bait to the island's rabbits, rats and mice.

Only eight weeks later, this milestone was reached. This is how events unfolded.

Three bait depots containing bait pods and helicopter fuel were established at the strategic locations of Hurd Point, The Isthmus and Green Gorge. Aerial baiting began on 3 May with a 'shake-down' exercise on North Head and the Isthmus. This area of approximately 90 ha was baited in 2010 and was known to have very few remaining target animals. The station buildings were next on the target list and these were baited by hand on 3 and 4 May.

The helicopters took to the air to begin their precision baiting runs whenever there was sufficient visibility and the wind dropped below 25 knots. The team began at Hurd Point at the southern end of the island, which provided the most challenging terrain and weather. From there they moved onto Green Gorge, halfway up the east coast, for baiting of the middle portion of the island. By this time the two bait loading teams were working as a well-oiled machine, shifting tonnes of 25kg bait bags out of, and onto, bait pods before feeding the insatiable maws of the bait buckets slung under the helicopters. Each time the four helicopters left the loading site another 2.3 tonnes of bait was about to be spread.



Loading bait at the Green Gorge bait depot.

Pilot Fletcher Anderson described the challenges of flying in the sub-Antarctic.

"For such a small island with relatively low topography, it is incredible how turbulent it can be. With the predominant westerly winds, the eastern coast is often not a fun place to be for a helicopter. The wind rolls over the small hills and rotors over the lee side creating unstable air. There is no time for complacency here, especially when flying with a bucket with 650kg of bait underneath the helicopter," Fletcher said.

"The weather can also change incredibly quickly, for better or worse. One minute you are in sunshine flying north on a sowing run and when you turn around cloud has formed on the hills behind you making it impossible to continue baiting. This year however has been much more favourable with more clear days on the plateau making our job that much easier. While there are some similarities to flying at home in New Zealand, Macquarie has the weather cranked up to 11!"

A milestone was reached on 26 May when the first bait drop was completed, with a total of 205 tonnes of bait distributed. The second bait drop was completed during the third week of June.

Project manager Keith Springer said there are two key factors contributing to the operation's success so far this year.

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# Fewer carcasses reduce non-target mortality

A major change to the project this year has been an increased team size with additional staff dedicated to non-target mitigation.

PWS Southern Region ranger Luke Gadd is leading the Non-Target Mitigation Team. Members include Helen Achurch, Bree Hunter, Dean Richards and Louise Besanvalle, but it's an activity that at times has involved the entire team. Their role is to comb the island and collect and bury carcasses from areas baited between five and 10 days previously.

As of the third week in June, the team recovered and buried a total of 632 carcasses of which 591 were rabbits. Mice were found only in small numbers (30 recorded) and rats in even fewer numbers (11 recorded, mostly from around buildings).

"We are now finding only the occasional rabbit carcass, which is more likely to be unscavenged than earlier carcasses found. The near-absence of skuas on the island is probably leading to the reduced scavenging," Luke reported.

As was the case last year, kelp gulls were the most significantly affected. Skua and northern giant petrel mortality to date has been much lower than 2010. As of 19 June a total of 523 non-target species had been collected, about half of which were kelp gulls.

Consistent with the 2010 results, a significant portion of non-target species carcasses have been found along the coast.

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"One is the arrival on the island a full month ahead of last year and the second is the weather which allowed the bulk of the first bait drop to be completed by mid-May," Keith said.

With the first two whole-of-island bait drops complete, a third drop will be undertaken to cover areas of concern for harbouring rodents including the Isthmus, around penguin colonies and on rock stacks.

Keith said that Australian Antarctic Division staff have provided excellent support to baiting operations, particularly when the team was operating from the Isthmus using most of the station machinery to move bait pods from the loading site.

### RHDV a remarkable success

When the team was forced to withdraw from Macquarie Island last year with the baiting unfinished, it was a major disappointment for all involved in the project. However no time was lost in preparing for a second attempt in 2011. The intervening months also provided an opportunity to review the project, particularly in terms of reducing the impacts on non-target species. As part of that review, it was decided to take up the suggestion from the New Zealand Department of Conservation's Island Eradication Advisory Group (IEAG) to release Rabbit Haemorrhagic Disease Virus (RHDV) or calicivirus, on Macquarie Island to reduce non-target mortality among scavenging seabirds.

About 200 kilograms of carrots were sent to the island in late January 2011 and these were used to distribute the virus to key sites of high rabbit densities. The results have been nothing short of remarkable in terms of reducing rabbit numbers. and the use of the virus may well have valuable lessons for others planning rabbit eradication projects.

Drastically reduced rabbit numbers has a number of benefits for the eradication program including many fewer carcasses on the ground and a resultant reduction in secondary poisoning among non-target species. Fewer rabbits also means there is more bait available to rats and mice.

Dr Brian Cooke from the Invasive Animals CRC and Institute of Applied Ecology at the University of Canberra is a member of the project's Scientific and Technical Advisory Committee.

Dr Cooke said that while documented information about the use of RHDV in this project would be helpful for others planning eradication projects, it would also be useful in increasing the understanding of the virus in Australia.

"It was previously considered that the disease may not work in cooler humid climates, but the Macquarie Island experience says otherwise. This supports the idea that climate per se is not the limitation but rather the fact that in Australia we have a non-pathogenic rabbit virus (RCV-AI) that circulates in the more humid parts of the continent. Antibodies raised against those viruses are protective against acute RHD," Dr Cooke said.

Advice from the IEAG indicated that in fact agents for carrying disease may be a greater influence in spreading the virus than climatic conditions and that cooler climates may have fewer suitable vectors.



Dean Richards and Louise Besanvalle burying carcasses as part of efforts to reduce impacts on non-target species.

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