

CASE STUDY

Feasibility study – eradicating long-tailed macaques from Palau

The general issue

People affected by introduced animals may want to do something about the problem, but they often do not have the technical capacity or funding to do so and must apply to external agencies for money. Funding and management agencies want to know whether the problem is significant enough to justify their involvement and, if so, whether eradication (as a preferred option for islands) is possible. Such advice is most convincing as part of a critical analysis of the benefits, constraints, risks and costs conducted independently of both those advocating action and those who might conduct it.

The problem

Long-tailed macaques were introduced to the 830 hectare island of Angaur in the Republic of Palau in the early 1900s. In recent decades they have become a major pest where they affect biodiversity and agricultural values.

Bird species that nest in the forest canopy are either absent or greatly reduced in abundance on Angaur compared with the adjacent island of Peleliu. Macaques also raid the residents' gardens. This is a particular problem for people who rely on subsistence agriculture (and fishing) to survive. It is also somewhat unique on Angaur where agriculture is the domain of women and their high status in Angaur culture may be compromised if they were to lose this economic position in society.

A juvenile macaque



A meeting to discuss the possible eradication of macaques from Angaur



The challenge

Judging when eradication is feasible to convince a funding agency to proceed is usually done in two ways – by looking at precedents, and by analysing the particular constraints and issues in the case under review. For long-tailed macaques there are no precedents for eradication, and only one for a related species – Island Conservation recently eradicated rhesus macaques from Desecheo Island (152 ha) in the Caribbean. When ISI was asked in 2011 to judge whether eradication was feasible on Angaur we had to base our analysis of what control tools were likely to succeed and how they might be applied given the set of constraints on Angaur.

Our conclusions

Basically we thought the only control tools that would work were trapping in large cage traps, shooting and the use of toxic baits. The questions were how to apply them, and in what order to remove all the macaques within some realistic timeframe for which funding might be available.

We asked: Could all macaques be technically put at risk? Could this be done over a realistic timeframe? What would it cost? What sort of expertise would need to be brought in and what capacity could be developed locally to make the attempt? What problems would need to be solved before the operation started and what would need to be solved as the project went along? We also went back to first principles. Methods that put the highest proportion of macaques at risk and taught any that escaped least would increase the chance of successful eradication. The methods that removed whole social groups at each event would be more likely to achieve eradication than those that removed a few at a time.

We concluded that eradication was possible but that some things would have to be done first. Some of these are legal or regulatory (e.g. the use of firearms), some are technical (e.g. development and testing of a toxic bait, bigger and better traps that could catch whole troops of macaques), and some are social and organisational (e.g. how do you involve local residents, how do you avoid problems with the harvest of land crabs if poison baits are used?).

Development of a project structure and operational plan are the next steps if our Palauan and international partners in this project succeed in obtaining the funds to proceed.

This sort of eradication is different from ones where the eradication is all done in a single event, for example aerial baiting to eradicate rodents on islands. In the latter case there are plenty of precedents and most planning is required just to make sure everything goes to plan on the day. In the macaque case there are few precedents and it will take many control events over several years, so there is the chance to learn and adapt as the project proceeds.

References

Parkes J, Fisher P 2011. Feasibility of eradicating long-tailed macaques (*Macaca fascicularis*) from the islands of Palau. Landcare Research Contract Report LC 754.

For further information contact:

John Parkes
Invasive Species International
Ph: +64-3-321 9768
Email: parkesj@landcareresearch.co.nz

This eradication feasibility study was supported by a grant from the [Critical Ecosystem Partnership Fund](#)