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Current work on rats in the Pacific Islands

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Rats in the Pacific

There are four common species of invasive rodent in the Pacific region: the Pacific rat *Rattus exulans*, currently present in 34 island groups in the Pacific, the Ship rat, *R. rattus*, currently present on at least 28 island groups, the Norway rat, *R. norvegicus* which has a more restricted distribution than the other three rat species and is currently present on at least 19 island groups, and the house mouse, *Mus musculus*, which is probably present in all inhabited islands, with confirmed presence on 19 island groups.

Specific impacts

Impacts can be broadly categorized into three: environmental, agricultural and urban. Environmental impacts include predation on native biota, with immediate adverse impacts on nesting birds, reptiles, and invertebrates, and longer term impacts by affecting changes in vegetation structure, and vegetation and decomposition cycles. Agricultural impacts are primarily as crop pests, with damage seen to root, fruit and vegetable crops, as well as coconut and oil palm, both in the field and post-harvest. Farmers in Tonga see rodents as the pest they have the least control over and consider that 'rats make them poor' because rodents are an important constraint for produce that could be sold in local markets or be exported to main islands or overseas. Urban impacts include such factors as zoonoses, nuisance, structural damage due to gnawing and burrowing and reduced quality of living due to their presence.

Some current projects

Currently in the Pacific eight countries are involved in implementing or planning eradication of rats from islands in 12 island groups. Using methodology adapted from the very successful New Zealand experience for off-shore island restoration, rats are eradicated using hand-broadcasting and/or bait stations of rodenticidal baits. To date relatively small islands have been successfully cleared, but the first aerial baiting is now being planned which will open the door to larger islands being restored.

Control is being carried out in at least 2 countries in the Pacific region, in both cases to protect bird nesting sites on relatively large inhabited islands where eradication is not currently feasible. Agricultural rat control is carried out in a range of countries, typically sporadically, locally and not very strategically.

What have we learned?

Typically, there are 3 weaknesses to the rat management programmes: lack of long-term post-eradication monitoring of the impact of eradication; lack of effective biosecurity to minimize the risk of reintroductions; and lack of community involvement or buy-in to the work. Awareness of these weaknesses is, however, high and current projects attempt to address them. Technical capacity is slowly growing in the Pacific region, with sharing of expertise from overseas agencies, technical support from new partnerships such as the Pacific Invasives Initiative, and peer-learning from the Pacific Invasives Learning Network. Technical issues in the tropical Pacific include the presence of crabs and cultural beliefs.

The way ahead

Capacity and confidence will grow with the number of projects planned and executed and with this more and larger islands will be successfully restored, starting with the removal of invasive rats. Active networking is part of this growth, and for inspiring other countries to start their own projects as they realize what is possible.