

Tahitian Snail Conservation Genetics

Oceanic islands hold particular interest for both evolutionary and conservation biologists. Native plants and animals evolved in isolation on these islands and provide detailed insights into fundamental evolutionary processes. However, they characteristically lack well-developed defensive mechanisms and are exceptionally vulnerable to introduced predators. Using DNA analyses of museum specimens, we aim to reconstruct the evolutionary history of a critically threatened radiation of land snails from Tahiti (French Polynesia). This Pacific island snail fauna has recently been driven to the brink of extinction by an introduced predatory alien land snail. Our museum samples predate the introduction of the predator and, in their DNA, they collectively contain a genealogical record that we can use to revise the traditional shell-based taxonomy and to determine how all these snails evolved on such a small, geologically young, island.



This research will have practical value in helping to prioritize on-going conservation and rehabilitation efforts. Collaborative agreements have been established with Zoological Society of London personnel involved in overseeing captive Tahitian snail zoo populations and in saving the last remnant wild populations. Our shared aim is to place the remnant wild and captive populations into their proper evolutionary context: that of the previously intact fauna, by obtaining DNA profiles of extant wild and captive populations that will be referenced with our historical Tahitian database.