

which seem to have survived, and Ben Bell suspects predation is a less likely cause of the decline, though more investigation is needed.

'The fact that larger frogs are remaining does suggest climate may be a factor, as larger frogs would be less prone to dehydration than smaller frogs,' he notes. '1995 to 1998 was a time of exceptionally dry periods on the Coromandel. This same drought may not have affected the higher altitude Moehau population because of its frequently cloudy (and hence damp) summit.' However, Ben Bell says that over the thousands of years of evolution in New Zealand, *Leiopelma* frogs would have been exposed to periods of extreme climatic conditions, and in recent times the frogs on the Coromandel have survived kauri logging, bush fires, and mining within their range.

As yet the cause of the decline at central Coromandel is a matter of speculation, and it is not known if the population there will recover. The crash is '...not only an ecological tragedy, it's also a research tragedy as most of the frogs which have been monitored for so long are no longer there to study.' One frog in the study population was known to have lived for 17 years. Fortunately, for the short term, the decline does not seem to be continuing. But distressingly, Ben Bell has seen no indication of brooding (which is done by the males) at sites where frogs were previously known to breed.

A PhD student will shortly begin a three-year study of Archey's frogs on Moehau. It is hoped this study will reveal more about frog habitat requirements, and particularly about their altitudinal distribution over the mountain. The project also aims to identify possible causes of decline and the conservation measures to combat them. Until then DoC can only monitor and hope the central Coromandel crash is a localized and temporary one. It would be a biodiversity tragedy for the world if we were to lose any more of our unique native frogs.



SHAUN BARNETT is a photographer and writer specializing in the natural world. He is based in Wellington.



There seems to be no such population crash for *Hochstetter* frogs, such as this one in a central Coromandel catchment, Coromandel Forest Park

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