

## The bluetongue revival



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In the 1960s the pygmy bluetongue lizard disappeared without trace from its known habitats on the Adelaide Plains and was presumed extinct, only to be rediscovered alive and well almost 30 years later in the State's mid-north.

Researchers at Flinders University are now seeking to "back up" the small populations of lizards living on privately owned pastoral land near Burra.

Professor Michael Bull of the School of Biological Sciences has won Australian Research Council Linkage program funding that will see the University collaborate with the Nature Foundation of SA, the South Australian Museum and the State Department of Environment and Heritage in a research program focusing on conservation of the small reptiles.

The research continues earlier studies that examined the lizard's basic biology, behaviour and reproductive cycles, as well as the nature and scope of their habitat.

"Now we're expanding the study to look at strategies for captive breeding and release at some later stage," Professor Bull said.

Because the lizards live in spider burrows, typically made by trap-door or wolf spiders, Professor Bull said that knocking holes of a similar depth and diameter into the ground offers a physical inducement to the lizards to take up residence.

"So we already know something about habitat engineering that will promote the physical conditions to encourage their retention; now we are trying to work out if there are factors in their social environment that will either encourage or inhibit settlement," he said.

Lizards are often assumed to be fairly solitary creatures, but recent research has uncovered surprising evidence to the contrary. Research by Professor Bull and his team has revealed, for instance, that sleepy lizards form long-term monogamous pair bonds, while studies of skinks in the Flinders Ranges have shown some lizard species to have complex family structures based around a system of matriarchal groups of up to 17 individuals.

"It's analogous to a lion pride in a way," Professor Bull said.

Because the pygmy bluetongues come from the same general group of lizards, Professor Bull said that it was important to make sure that releasing captive-bred lizards into an existing population was not a waste of time.

"If you were to take some captive-bred animals and release them into a closed society, as it were, they may just scatter and the release would be of no value at all," he said.

The lizards' natural odour and sense of smell may hold the key, Professor Bull said.

"We are looking at the relatedness of individuals in adjacent holes and how those individuals react to the smells of individuals from a distance - will they act aggressively or will they accept them?"

"You tend to attribute these kinds of emotional behaviours to mammals or birds, and not to think of lizards having these attachments or social interactions, but we think that they do.

"Smell seems to be important for recognition among lizard species that are slow moving and live close to the ground - for many lizard species, their field of vision is so small that using visual signals is not of much use."

Professor Bull said discoveries about lizard behaviour are constantly being made through observation, even though information is relatively hard to glean.

"There is an army of birdwatchers in every country who are feeding their anecdotal observations to scientists, enabling them to build a quite comprehensive view about the behaviours of birds, but the number of people who watch lizards is much smaller," Professor Bull.

As well as increasing the stock of basic knowledge about lizards, Professor Bull said the researchers will be doing something that actively helps to conserve an endangered species. He said there is considerable local community interest in, and sympathy towards, the species, and the pygmy bluetongue population, although modest, is not in decline.

Yet while the lightly grazed sheep pastures on which the 15 known populations of lizards live seems to suit them, Professor Bull said that because the land is privately owned, there is no guarantee that the type of land use may not change, putting the lizards at risk.

There are also potential threats from the insecticides used to control locust plagues and from exotic diseases.

"While we do have some time up our sleeves, there is an element of cautious urgency," Professor Bull said.

"What we hope to do is establish the pygmy bluetongues in some kind of conservation park and to create a reservoir population that can be relied on," Professor Bull said.

"Ideally we would like to re-establish them in places where they once used to live, and also to maintain and augment the existing populations."