



ALISON CREE

Biologists were originally concerned to find the Stephens Island gecko living in *Tradescantia*, a weed which has vigorously spread within the remnant native forest on Stephens Island over recent years. Fortunately it turned out that *Tradescantia* is not a major habitat for the gecko and the weed is now being successfully controlled by the Department of Conservation.

been made in a vigorously invading weed, *Tradescantia fluminensis*.

More commonly known by the names "wandering Jew" or "wandering willie", this South American creeper is a common pot plant in New Zealand homes. It is unbelievably tolerant of the most neglectful owners, myself included, and its terminal tendrils remain green in pots left unwatered for months. One can imagine a lighthouse keeper's family on Stephens Island throwing out a neglected, browning specimen from their window sill into their compost pile, perhaps not realising that the creeper remained alive.

Whatever the cause, the weed probably became established on Stephens Island in the last few decades. In one two-hectare patch of remnant forest, Keeper's Bush, the area covered by *Tradescantia* approximately doubled between 1985 and 1990. In 1990 it was estimated to cover about 70 percent of the ground area of Keeper's Bush, and a further 100 square metres within the other main area of remnant forest, Ruston Bush.

The weed thrives in shaded conditions, in highly fertile soil enriched by the droppings of numerous seabirds. It spreads vegetatively, eventually smothering the burrows of tuatara and seabirds and preventing the regeneration of native vegetation. In the words of DSIR botanist Alan Esler, "No other plant of similar size has the same ability to alter the form or shorten the life of a forest".

At a 1989 workshop on management issues for Stephens Island, the control and eventual eradication of *Tradescantia* from Stephens Island was ranked by the De-

partment of Conservation as a major priority. At the same time, workshop participants recognised that further information on the habitats of the Stephens Island gecko, and how removal of the weed would affect it, was urgently needed.

TO HELP provide this information I and several assistants carried out surveys for Stephens Island geckos in various habitats on the island in February-March 1990. Late summer is an ideal time for spotting nocturnal geckos: the nights are warm, comparatively windless and often moist, and fruits of plants such as the pepper tree (kawakawa) on which some geckos are known to gorge themselves, are luscious and ripe.

Search areas were established in a variety of habitats. We reasoned that because *Tradescantia* has been present on Stephens Island for only a few decades, Stephens Island geckos must once have survived in other habitats. Our night time search areas therefore included not only patches of dense *Tradescantia*, but also areas inhabited by other species of gecko on Stephens Island. These habitats included native forest not yet invaded by *Tradescantia*, old overgrown garden sheds and aviaries, and thickets of native vinelands (*Muehlenbeckia* spp). Searches were also made by day in *Tradescantia* and pieces of logs, wood, roofing iron and other debris lying on the floor of native forest.

The inclusion of the *Muehlenbeckia* vinelands was a hunch that paid off. We

predicted that Stephens Island geckos might be present there because of the general physical resemblance of these thicket-line vines to the dense, creeping foliage of *Tradescantia*. Furthermore, we knew that another gecko on Stephens Island, the Marlborough green gecko, *Heteropholis manukanus*, was abundant in the vinelands. Like green geckos, the Stephens Island gecko is a good climber and has a moderately prehensile tail. The gold-and-brown stripes down the body of the Stephens Island gecko would provide effective camouflage against the thin brown stems of the vines.

We found that Stephens Island geckos were most often sighted in the large-leaved *Muehlenbeckia australis* vineland. This species of vine forms dense, tall thickets up to three metres high, and because few tuatara are found in these thickets it is not surprising that biologists studying tuatara on the island had been unaware of the presence of Stephens Island geckos here.

Stephens Island geckos share their *M. australis* vinelands with both of the other more abundant gecko species found on Stephens Island. All three are of a similar size and although the Marlborough green gecko is a basking species that is most active by day, common geckos are active at night at the same time as Stephens Island geckos. In general, biologists think that where several such similar-sized species are present together, there must be some specialisation to reduce niche overlap. Further studies are required to establish how these three geckos partition their common