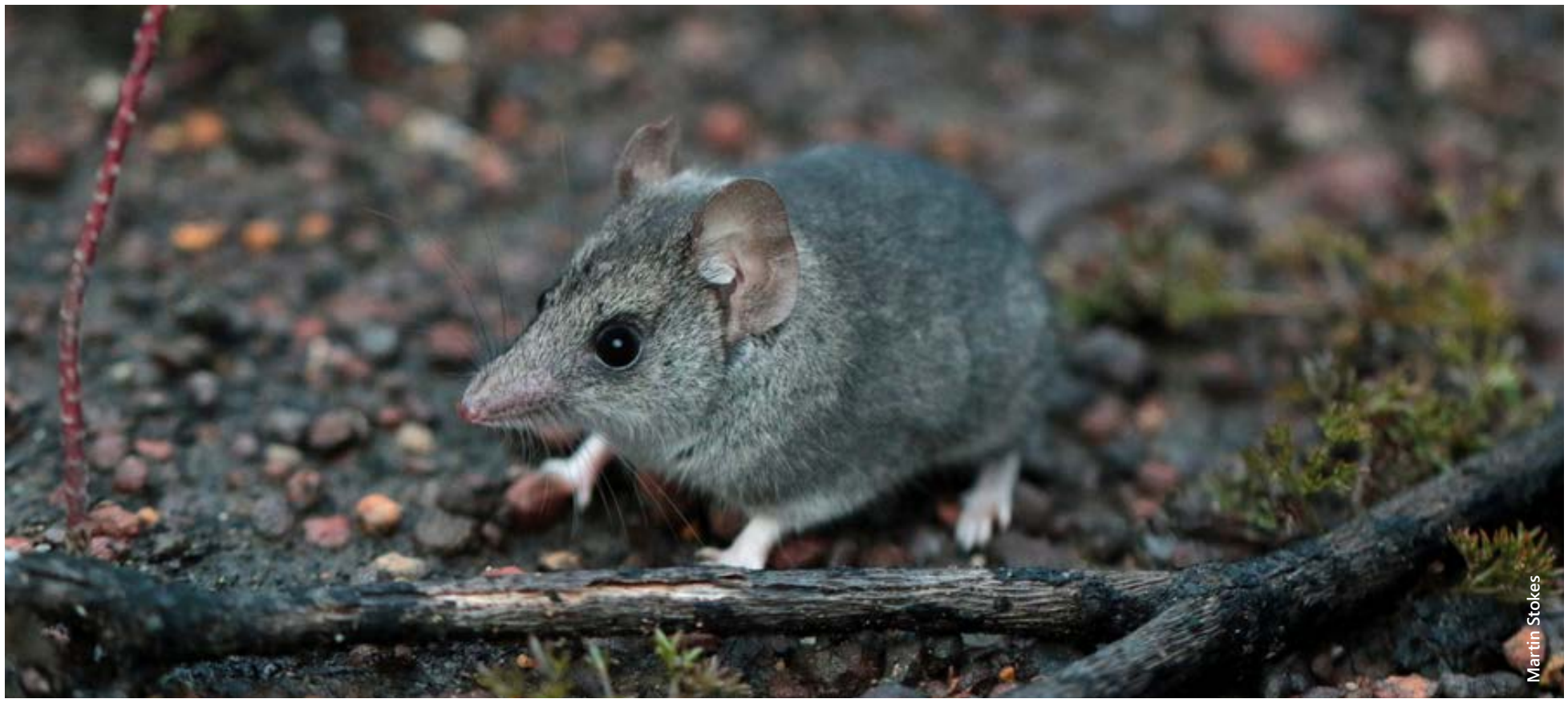
NOVEMBER 2022

Kangaroo Island Dunnart Project

Update for landholders and project partners on the Kangaroo Island Dunnart Recovery Program.



An amazing year for our KI Dunnart Project

Just when we thought we couldn't get more excited about the KI dunnart...2022 happened!

The year has truly flown by as the KI dunnart team continue to reach all-time highs, week after week! Recently a visitor said to us "you are basically describing the ecology of a new species" which really hit home how incredibly important this work is! It appears the KI dunnart is persisting well in a landscape that is still recovering from bushfire as we are detecting them at more sites (99 sites to date), more often, and earlier, than at any other time.

Supporting Zoos South Australia (Zoos SA), our knowledge of the mysterious KI dunnart has improved dramatically in the past few months following a very successful radio-tracking study in May and June, with the results completely blowing everyone's minds! This unique insight and experience has had us absolutely buzzing with excitement! The feral cat management team are successfully applying new technologies to more efficiently knock down the unwanted predators on the western end of the island, giving vulnerable native wildlife a fighting chance.

The Kangaroo Island Landscape Board (KILB) continues to work closely with our project partners, Zoos SA, National Parks and Wildlife Service (NPWS), World Wildlife Fund (WWF), Kangaroo Island Land for Wildlife (KILfW) and Trees for Life (TFL), as well as volunteers and many private landholders across the island.

KI dunnarts detected at **99** sites

1,250 feral cats removed from the western-end of the island over 47,000+ trap nights

Supported by

Australian Government | National Landcare Program

ZOOS SOUTH AUSTRALIA

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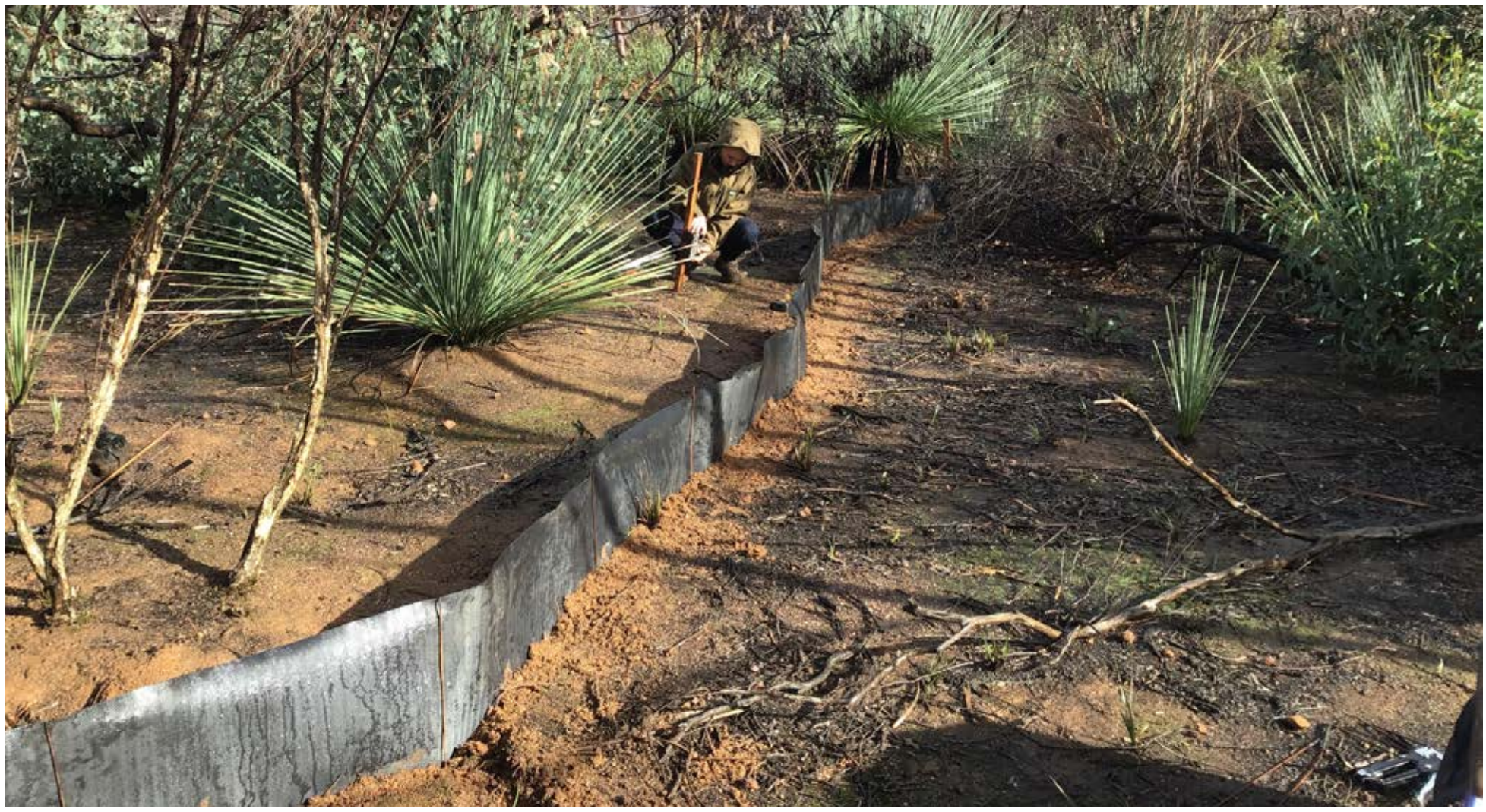


Re-survey sites

Hannah and Kelly, our field staff and dunnart enthusiasts, began the year by completing the re-survey of 110 of the 275 sites across the island. These re-survey sites were selected to monitor any changes in occupancy from initial surveys after the fires, which will allow us to keep an eye on recovery. The results so far indicate a positive outlook for the KI dunnart with an increased re-occurrence rate on our motion activated cameras, an encouraging sign that they are flourishing at these locations, as well as appearing at many new sites which were previously burnt. Time from site installation to the first KI dunnart detection has also dropped from 28 days in 2021, to just 8 days in 2022, another incredibly positive sign.

In recent months other species have also been observed moving back into the burnt areas, most noticeably the southern brown bandicoot, which had only been detected in the few remaining unburnt refuges since the fire. TFL volunteers have been getting involved with drift line and camera trap installations and gaining an understanding about what the project is all about — what a pleasure it has been connecting with this organisation.

Our collaboration with WWF continues to grow stronger, with KI dunnarts now being detected at 23 of their 25 long-term monitoring sites. Images from these sites have been used to train a cloud-based artificial intelligence platform currently being developed by Google.Org called Wildlife Insights. This will help solve a major efficiency problem for the team, who have to manually sort through the hundreds of thousands of camera trap images generated to identify species of interest. With this new software this process will happen instantly as images are uploaded, allowing the team to spend more time on the ground and information to be more readily accessible to inform recovery actions. Recently, the team got to experience the first working version of the Eyes on Recovery Wildfire Tool, an add-on to the Wildlife Insights platform which uses built-in analytics to help land-managers assess post-fire impacts on both native wildlife and introduced predators. We have been very impressed by its potential and we wait in anticipation for the final version.

110 out of 275 sites re-surveyed for KI dunnarts

KI dunnarts detected at **23** out of **25** long term monitoring sites

10 KI dunnarts captured with **3** of these tracked for **5** weeks

Zoos SA and KILB dunnart trapping and radio tracking study

The highlight of 2022 so far has been our involvement in a very successful KI dunnart trapping and radio-tracking project, supporting Claire from Zoos SA. Karleah and Sandra from the KILB Glossy black-cockatoo Recovery Program joined the team to assist during the trapping, radio-collaring and tracking period that took place in May. A new and simplified trapping technique significantly improved the efficiency and success of getting our hands on some feisty little dunnarts for the tracking. This new technique uses corrugated iron as an artificial refuge. Under each sheet of iron a cosy little nest was set up by scooping out a small section of dirt and filling it with dry leaves, which the dunnarts have taken a particular liking to.

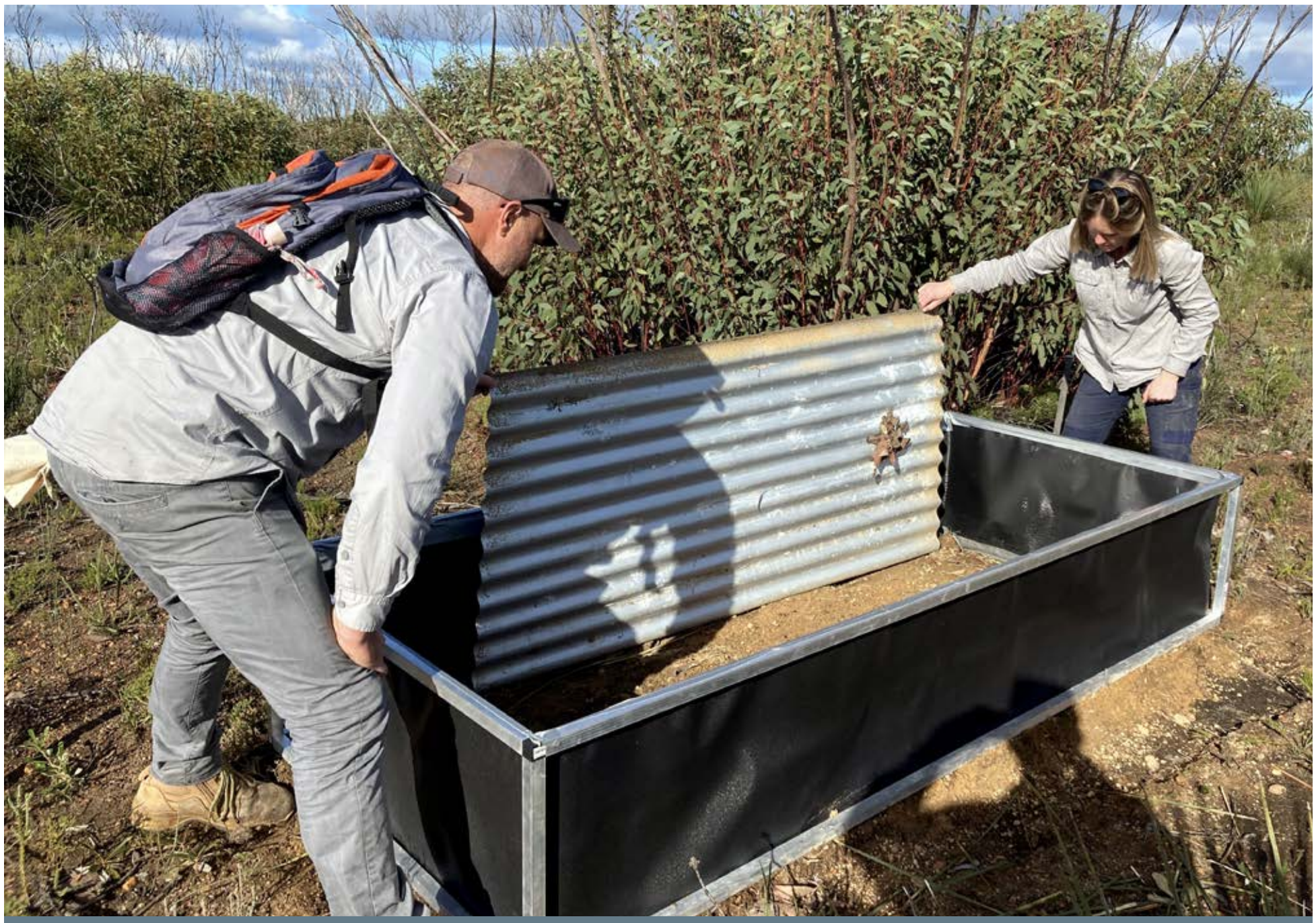


Image above: Paul and Hannah checking for dunnarts under corrugated iron. *(Martin Stokes)*

Ten KI dunnarts were successfully captured in a matter of weeks, and interestingly nine of these were male and only one was a sub-adult female. In one instance four dunnarts were all captured together under a single sheet of iron: three males and one female. You can imagine the squeals of excitement from the team, as this was something completely unexpected!

This was an extraordinary discovery, as prior to this study, the KI dunnart was believed to be mostly solitary and had been very challenging to locate consistently enough for radio-tracking purposes. It was even more of a surprise that there were three adult males shacked up together for the day, considering that males of other related species are known to be particularly aggressive towards each other. Each individual was measured, weighed, and a small genetic sample was taken before being released back underneath the corrugated iron.

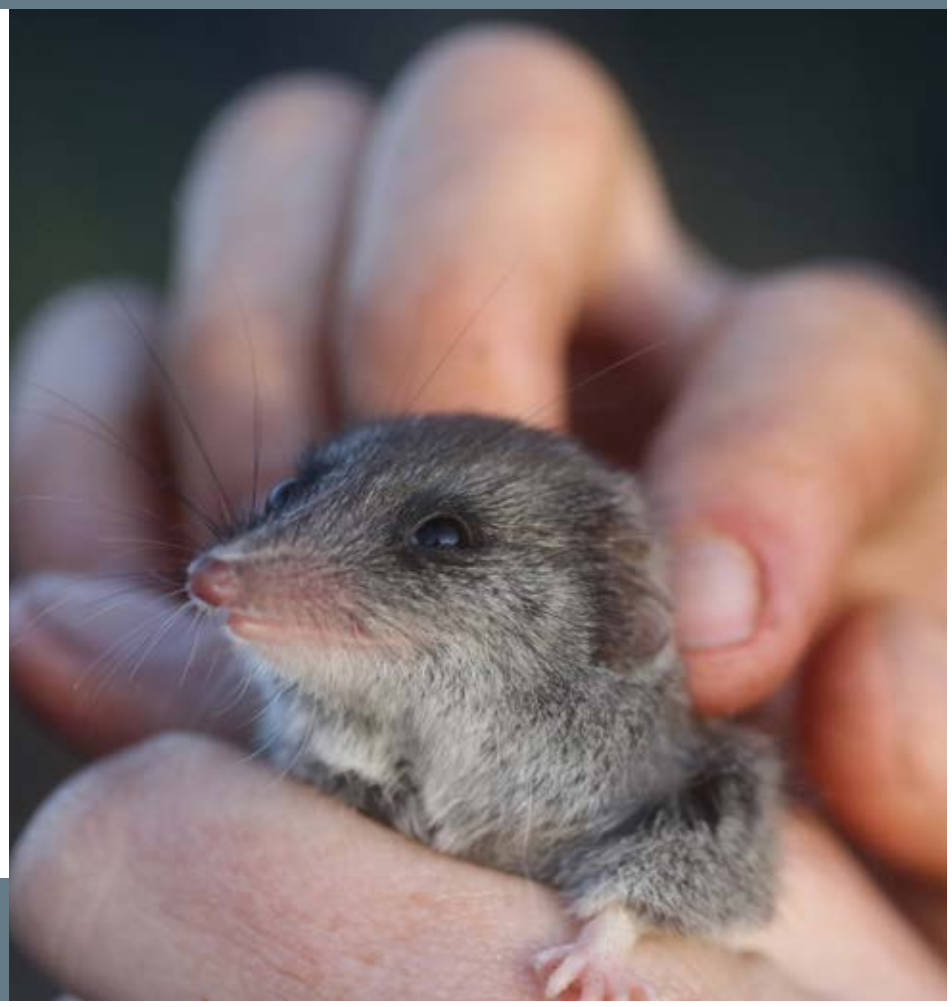


Image right: Captured KI dunnart. *(Martin Stokes)*

Three individuals were successfully fitted with radio collars, with the data giving us valuable new insights into preferred den locations, home ranges, behaviours, and a snapshot into the social lives of multiple dunnarts over the following five weeks. The radio collars weigh a tiny 1 gram (!) and consist of a collar containing a tiny radio tracker and a battery within an epoxy case, and a trailing antenna. Attaching a minuscule collar to such a small critter proved to be a very fiddly job, but the team were patient and meticulous, ensuring each collar was the perfect fit.

All collared dunnarts were male and they were named Albert Namatjira, George Gittoes and Banjo Paterson, after Australians who have 'dunn-art'. These fellas were hand tracked daily to find out where they were denning, with cameras set up at these locations to capture footage of their comings and goings. For the first time ever a sequence of two KI dunnarts in the one clip was captured on video!

In addition to the hand tracking, an array of 80 nodes, each 100 metres apart, formed a 1 km x 0.5 km array, which updated positions every 15 seconds for each of the dunnarts. Each node is linked through UHF signal to a central sensor station which stores information that can be used to track and record the collared dunnarts nocturnal movements remotely, with high precision. All tracking equipment was made by Cellular Trapping Technologies.

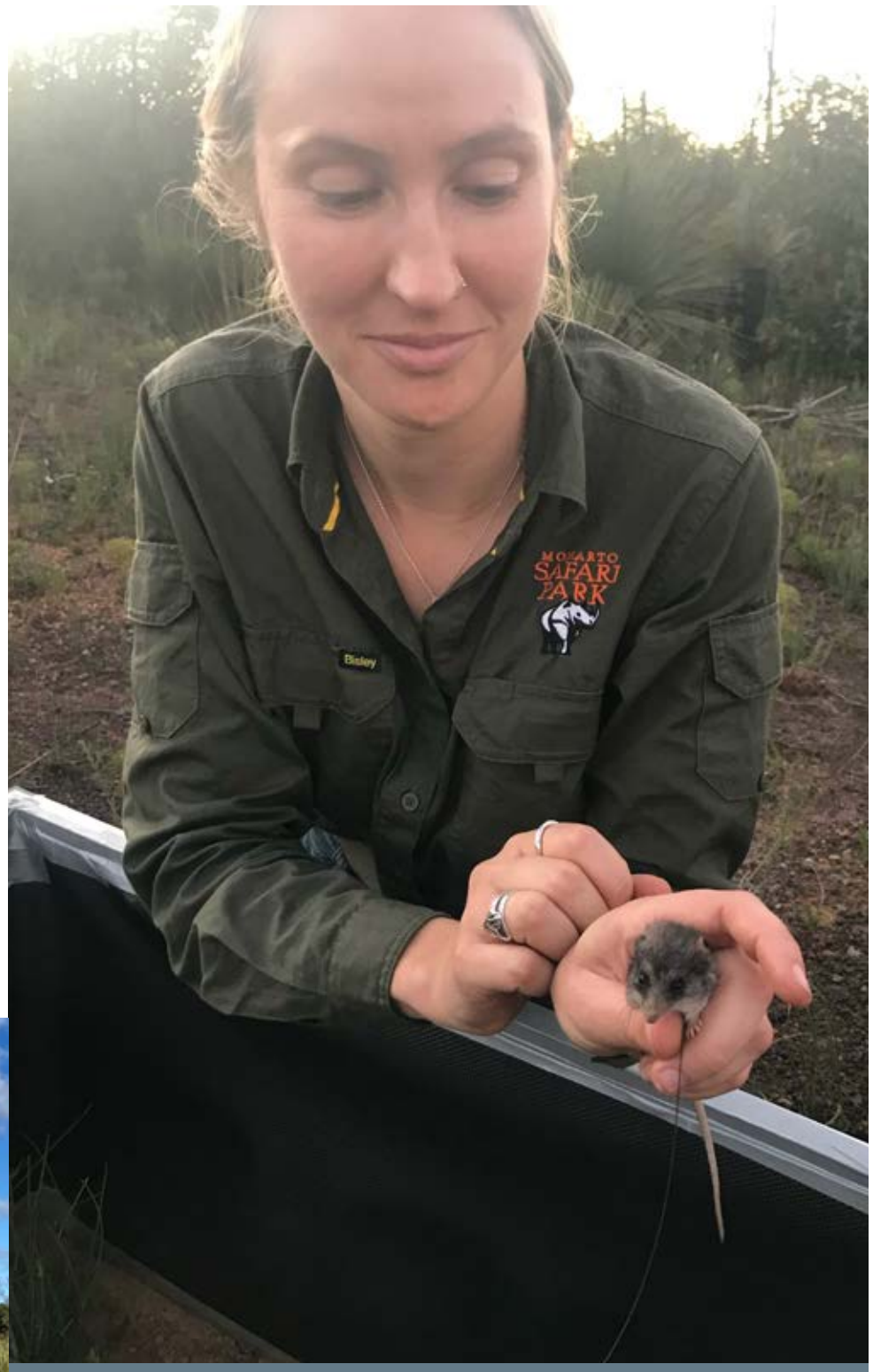


Image above right: Claire about to release a radio collared KI dunnart.

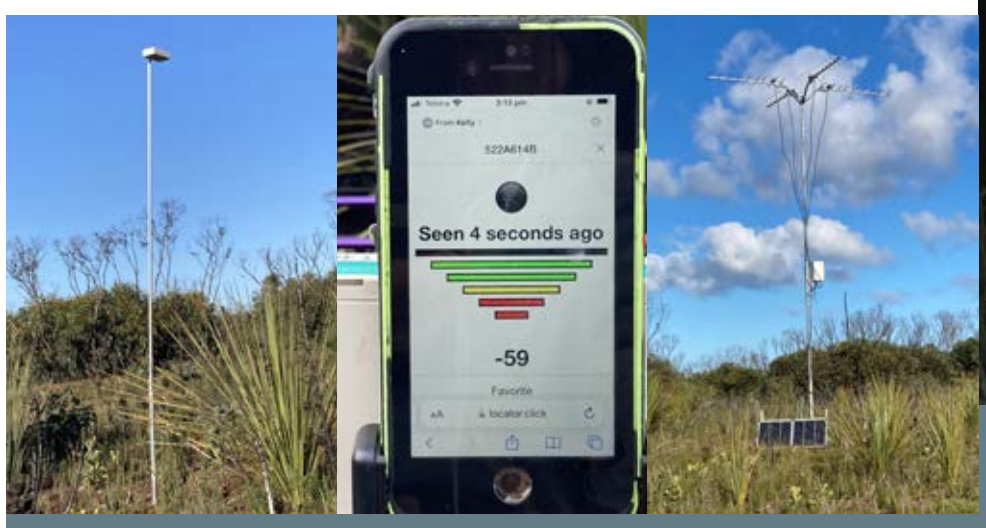


Image left: One of the 80 nodes. Middle image: Hand tracking display. Image right: Sensor station tower. *(Martin Stokes)*

Knowledge gained through the hand tracking gave us insight into the daytime den locations dunnarts are using in this recovering landscape. Dens consisted of burrows in the ground and in burnt out *Xanthorrhoea* (yacca) stumps and the corrugated iron refuges. Each KI dunnart utilised five to six den locations during the five week tracking period and regularly frequented the same dens, often sharing them with other dunnarts and even mice! After five weeks of tracking Albert, George and Banjo were recaptured and their collars removed. The health of each animal was checked and all were seemingly in good condition. The team became quite attached to these little guys, so it was sad to no longer follow their daily movements, but we are pleased to know they are still out and about — regularly being sighted on cameras at the same locations.

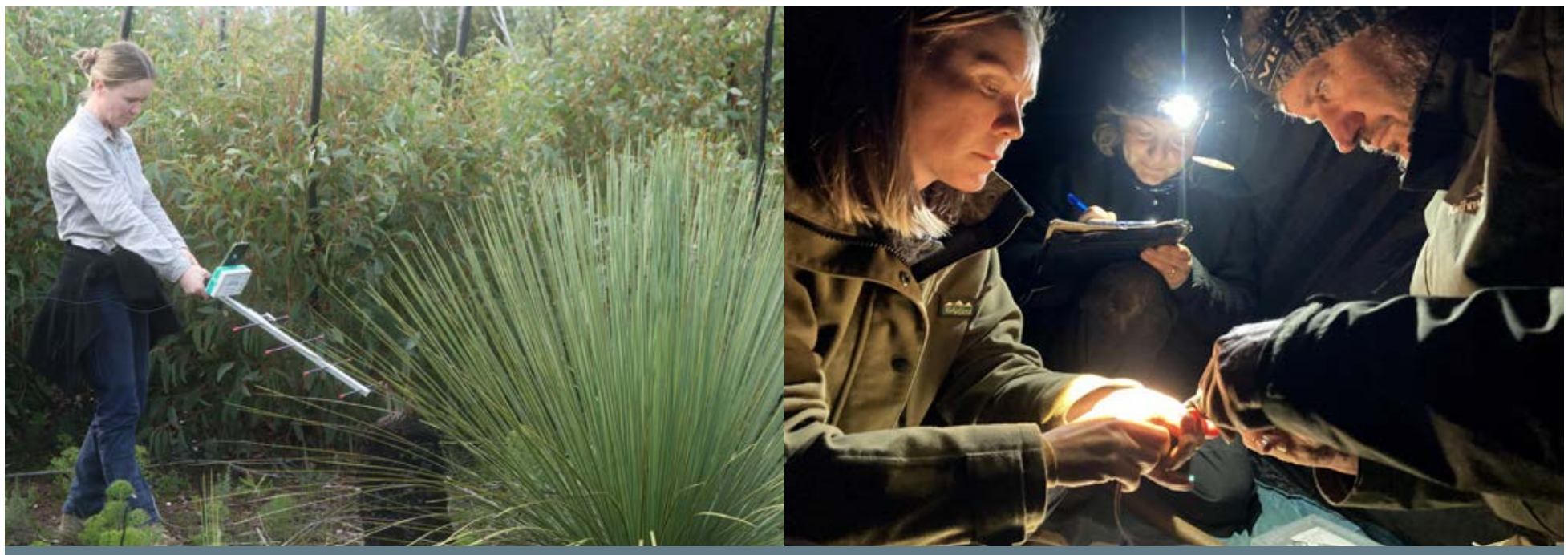


Image left: Hannah hand tracking collared dunnarts.
Image right: Hannah, Kelly and Paul processing a captured dunnart. *(All images Martin Stokes)*

Feral cat management

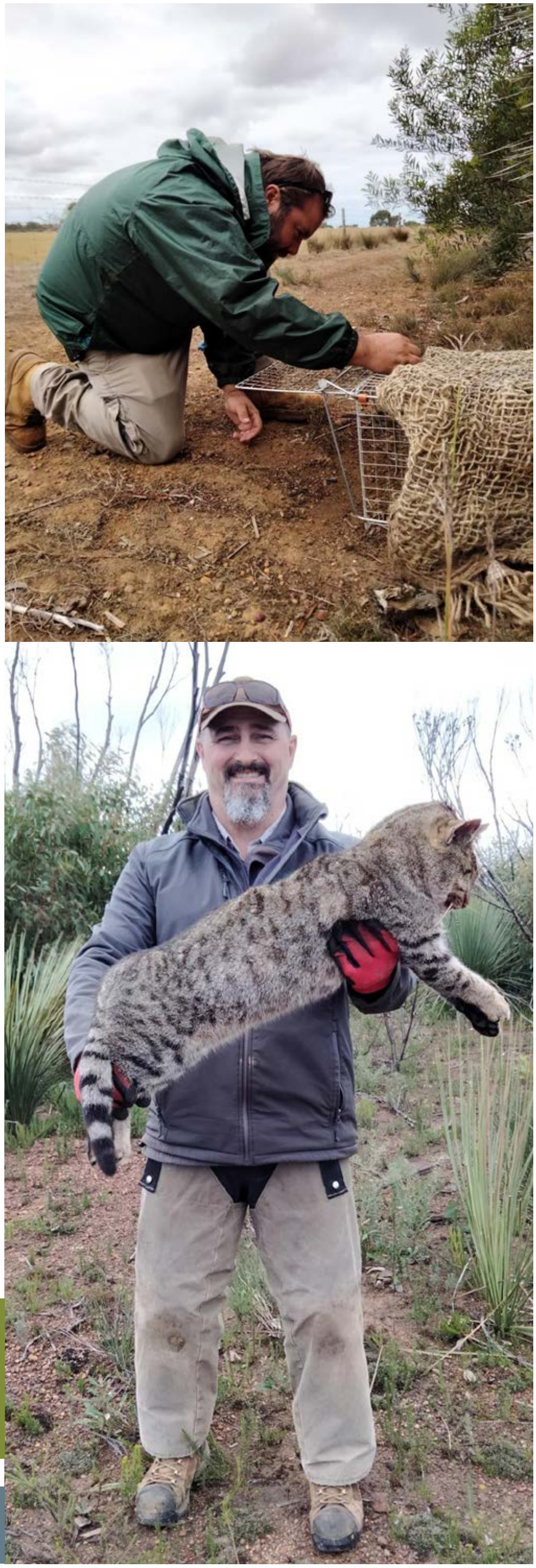
Chantelle, Joe and Rowan continue their hard work in removing feral cats from the western end of the island, with the current tally of over **1,250 feral cats removed** in over 47,000 trap nights (number of traps x number of nights deployed). Together with our project partners NPWS and with help from James Stevens, a specialist trapping contractor, over 1,400 feral cats have been removed from over more than **100,000 ha within the fire scar** and adjacent unburnt areas.

These are truly alarming figures and numbers we never thought would be encountered, especially following fire, but translate to an estimated 935,000 native animals saved from feral cat predation. On average, a feral cat in the bush kills 748 mammals, birds, reptiles and frogs in a year (Threatened Species Recovery Hub National Environmental Science Programme). This includes our favourite little toothy marsupial. The reduction in feral cat predation pressure in the wake of the fires has certainly been a factor likely to explain the increased detections of KI dunnarts and many other species.

Feral cats are renowned for being difficult to detect and control. We continue to test and refine our techniques and use new technologies to target them more efficiently, which has meant we have dramatically reduced the number of feral cats and continue to keep numbers low across managed areas. This approach has achieved outstanding results, which is a credit to the team's dedication and passion to help species recovery. Although scarily, we continue to see record breaking cats, such as the one pictured right trapped by Joe recently. This feral cat was our longest to date — measuring in at a whopping 1.02 metres.

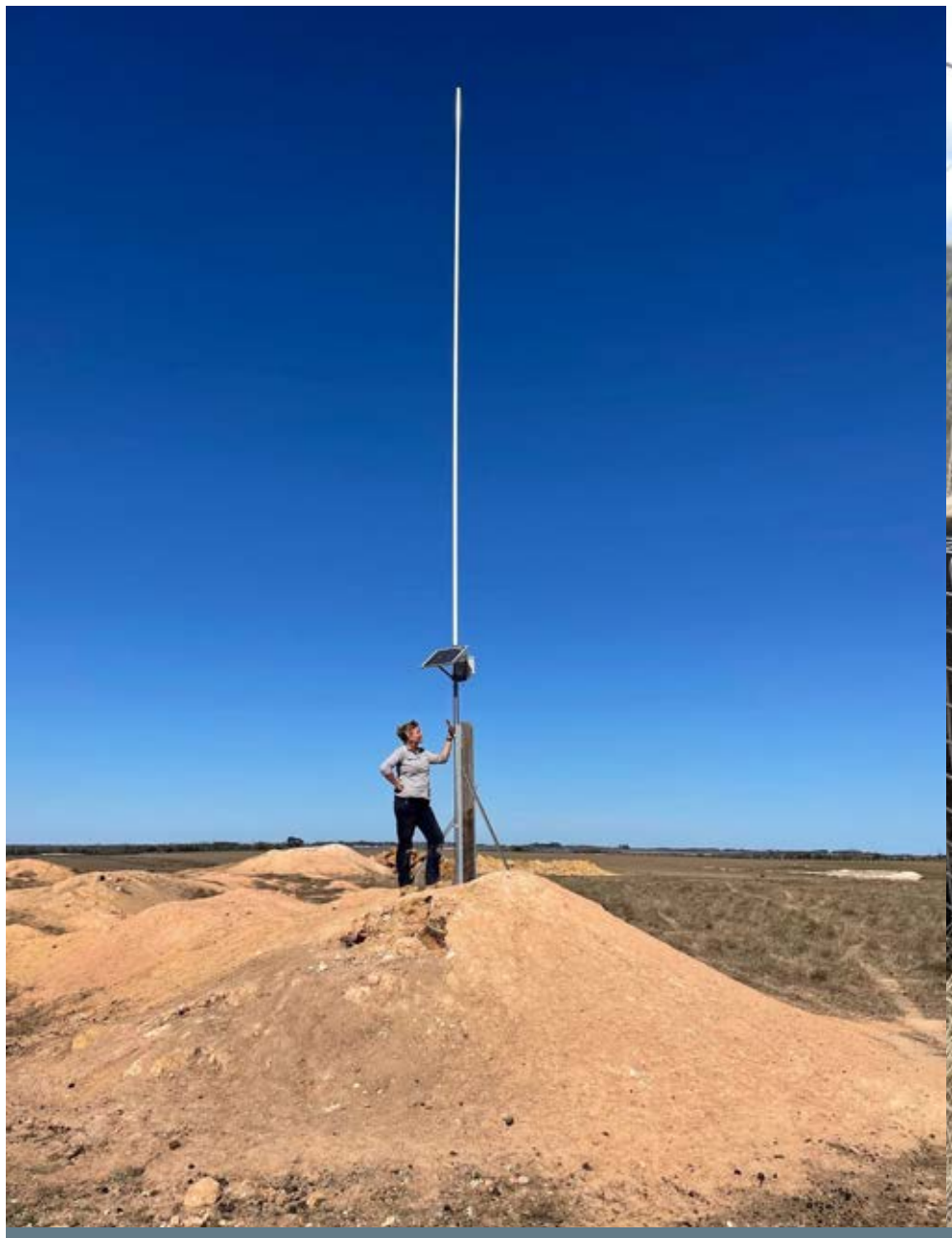
The team has been focusing on removing feral cats from roadsides, private properties, forestry plantations, and more recently within the Flinders Chase National Park. We have been able to step things up a notch through additional funding from the Landcare Led Bushfire Recovery Grants Program. This has allowed us to work with the New Zealand company, Encounter Solutions, to set up a remote wireless trap monitoring system. Previously, a large portion of the team's time was spent in checking every trap every day. Using Encounter Solutions' Celium technology, we have been able to retrofit all of our cage traps with this smart technology in an **Australian first**. With this technology, we are able to monitor our traps in real time and only need to check traps which are triggered. This represents a real game changer, allowing us to cover larger areas and have more traps open in the landscape. The next step is getting this technology onto our productive leg-hold traps. See https://www.theislanderonline.com.au/story/7681749/new-trap-alert-system-a-game-changer-in-protecting-ki-wildlife/

935,000
native animals saved from feral cat predation this year
(on average, one feral cat eats 748 native animals a year)



Top image: Rowan setting cage trap.

Bottom image: Joe with the longest feral cat caught.



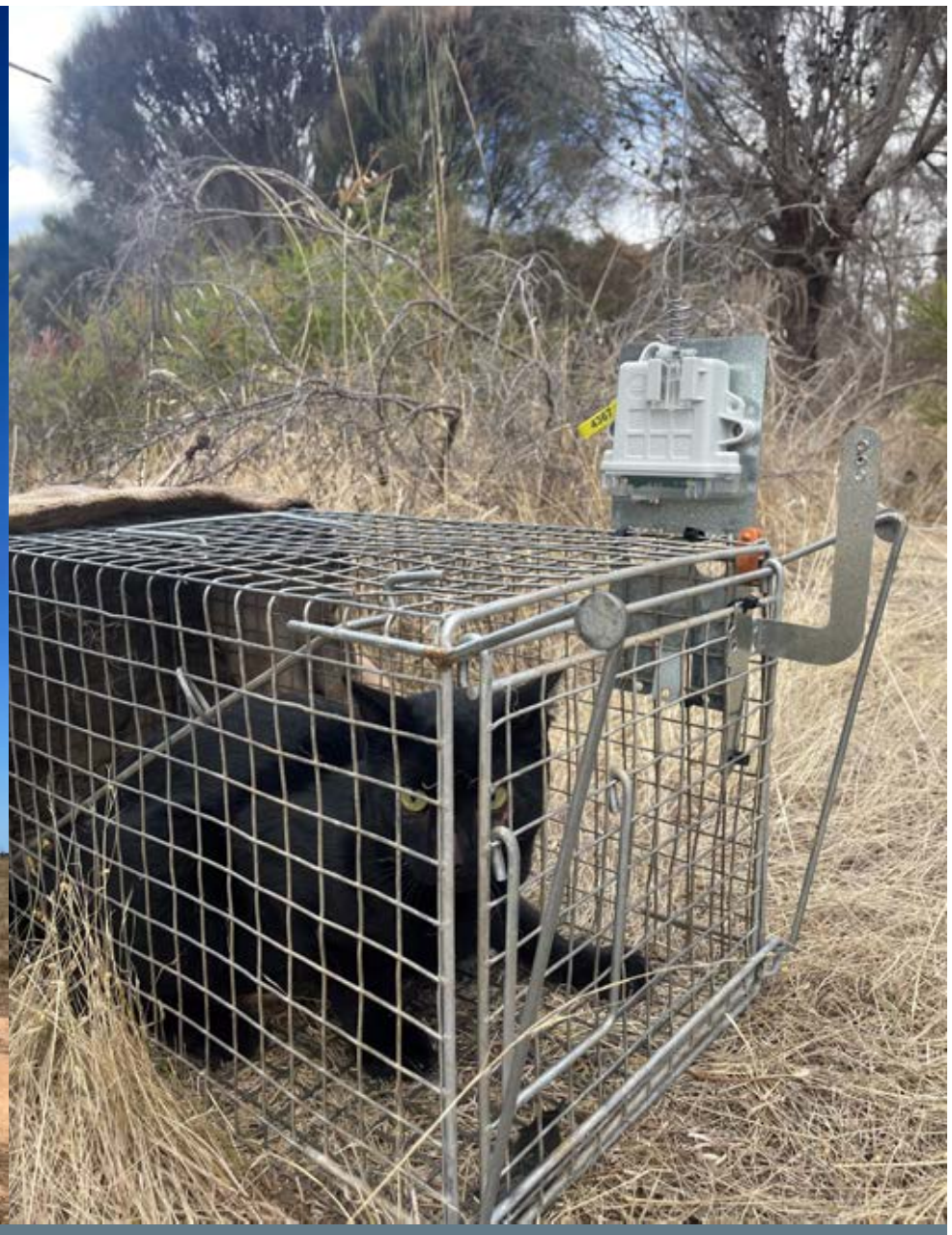


Image above left: Chantelle at a hub. Image above right: A trapped feral cat using Encounter Solutions Celium technology. Image below: Kangaroo Island dunnart. *(Martin Stokes)*

The team are stoked with all the positive outcomes and new knowledge gained through all of the achievements to date and are excited to see what else is to come for the final year of the project. A long-term KI dunnart monitoring program is in the works, which will give us a much clearer picture on how this species is fairing into the future, as well as more dunnart trapping and radio-tracking supporting Zoos SA. The feral cat trapping won't be slowing down anytime soon, and with a new partnership with Agriculture Kangaroo Island (AgKI) to develop a Landholder Led trapping blitz using the new trap monitoring system, it will allow us to cover even larger areas and work more closely with landholders to make a difference for biodiversity and production.

A big thanks to all who have been involved and continue to help and support the KI dunnart and this project.

Paul, Kelly, Hannah, Chantelle, Joe, Rowan and Claire

We would like to acknowledge funding received by the Kangaroo Island Landscape Board through the Australian Government's *Environment Restoration Fund* and *Bushfire recovery package for wildlife and their habitat*, and the World Wildlife Fund, Wildlife Insights and Google.org through the '*Eyes on Recovery*' project. Zoos SA received funding through the Australian Government's *Environment Restoration Fund*, and the *Zoo and Aquarium Association Wildlife Conservation Fund* grant to research the Kangaroo Island dunnart. This research will help inform conservation planning for the future of the species and will be used for research and conservation efforts by other organisations, including the KI Dunnart Recovery Team.

www.landscape.sa.gov.au/ki/native-plants-and-animals/ki-dunnart-recovery-program