

WIRRUWANA NEWS

UPDATES FROM DIRK HARTOG ISLAND NATIONAL PARK

AUTUMN 2022

New conservation innovations help threatened species being returned to Dirk Hartog Island National Park with the *Return to 1616* Ecological Restoration Project and a fun new education package aims to take the national park's conservation efforts to primary schools across the globe.



Dibblers in training

Above Research scientist Dr Saul Cowen checking on dibblers in a “soft-release” pen.
Photo – Mike Meinema Right A dabbler reared at Perth Zoo. Photo – Perth Zoo

The reintroduction of dibblers to Dirk Hartog Island National Park began in 2019 and each year, small numbers of animals bred at Perth Zoo's Native Species Breeding Program have been released onto the island. With low initial numbers on Western Australia's largest island, finding them again to monitor their progress has been a challenge.

To improve the ease with which the scientists can relocate the dibblers, the fauna team got a bit more creative with their release methods in 2021. Of the 36 dibblers released in October, nine were held in ‘soft-release’ pens, a scaled-up version of their Perth Zoo, glass tank accommodation. In the pens they were supplied with a nest box for shelter, water and their regular zoo diet supplemented with wild-caught moths, katydids and grasshoppers. After 10 days their pens were opened up and they were allowed to roam free.

This technique is aimed at encouraging dibblers to establish a home around the release site, making it easier for scientists to find them and their offspring again. If successful, this technique may be used in future dabbler translocations, as well as for other smaller species.

In another innovation designed to improve the success of future dabbler monitoring efforts, and in a similar fashion to Pavlov's dog, Perth Zoo staff trained dibblers to associate traps with food prior to release. Whilst in their ‘soft release’ pens, this appears to have worked as many of the dibblers wasted no time entering traps for their regular, monitoring ‘weigh ins’.

On such a large island, dibblers will remain a tricky species to relocate until their numbers start to build up. Until then, these new techniques will hopefully help the team keep tabs on their progress.

Return to 1616 Education

Editor's Note

At school, I was fascinated to learn about the animals and plants of the incredible world around us. But as I was studying the amazing boom/bust cycles of the North American lynx and the snowshoe hare I couldn't help but wonder..... what about Australia?

Students in schools across Australia are eager to learn about biodiversity and conservation but study examples that refer to Australia can be hard to find. With this in mind, the Dirk Hartog Island National Park *Return to 1616* Ecological Restoration Project has developed an education package for primary school children that is designed to help fill a gap.

Interactive and web based, the education package is available for students anywhere in the world to study one of Australia's most important islands for mammal conservation and the critical conservation work that's happening there. But it's not all hard slog! The package is peppered with plenty of fun stuff to whet the education appetite.

Take a tour!

The *Return to 1616* project has been going for many years and there's a lot to it. So how do you "ease yourself in" and begin your voyage of discovery? Easy! – Take a virtual tour and "travel" to the island from anywhere in the world on your computer or mobile phone.

Or dive into the virtual world and totally immerse yourself in the sights and sounds of the project using a virtual reality headset. Learn about the island's recovery after years of grazing by sheep and goats. Discover how the island's wildlife is flourishing without feral cats. See the amazing suite of threatened Australian animals that are now being returned and understand how they are "ecosystem engineers" of their environment, changing their new island home with their day-to-day activities including scratching, digging, eating and pooping.

Start your virtual tour journey of discovery on the Sharkbay.org *Return to 1616* page or upload a link (bit.ly/ReturnTo1616) to your VR headset.



Above Primary school students can explore the project with a virtual tour.

Return of the native carnivores

The last two species to be returned are carnivores. Once all 13 animal species are returned to Dirk Hartog Island National Park, ongoing research will show how well they are surviving and determine any changes they are making to the environment.



Use this code to explore the *Return to 1616* Virtual Tour.



Small animals such as skinks, geckoes and native mice are caught as they run along the netting and into the pitfall trap.

BONEHEADS

So how do scientists know which animal species to return to Dirk Hartog Island? Skulls, bones and other remains, were some of the clues that helped researchers to know which animals once inhabited the island. Following the eradication of feral cats, the “coast was clear” and it was safe to return these species to the island. In more virtual world fun, the package contains an exercise called Boneheads to help students play “detective” with 3D skulls of *Return to 1616* threatened animals. Students are able to manipulate the image on their computer to study parts of the skull including teeth and eyes to discover how the animal lived and whether it was predator or prey.

There’s something for all school years in the package. Fun card games, memory games, a quiz and even ‘colour ins’ help students to learn about threatened animals and how the project is helping some of these to bounce back from the brink. Even rangers and the scientists involved in all of the hard on ground work found time to get involved through interviews and video, sharing their experiences of maintaining the island and how the conservation project is being carried out.



A series of new and colourful **animal fact sheets** give students cutting edge information and fun facts on what the *Return to 1616* threatened animals eat, where they live and how they breed.



Above The chuditch – one of seven 3D skulls that are a fun way for students to learn about the *Return to 1616* project.



Wild Challenge Card Game A series of fun playing cards is used to teach food chains with “who eats who” not to mention memory games and the “Wild Challenge” game to reinforce learning.

The project complements a previous year nine *Return to 1616* education package by Science Teachers Association of Western Australia (STAWA) and is now available for school students around the world to study the conservation of threatened animals in Australia. As with all projects of this size, many people gave of their time, skills and knowledge to help create the package. In addition to the Gorgon Barrow Island Net Conservation Benefits Fund, the project was generously supported by:

- Nathan Ducker and Mandy Bamford from Bamford Consulting Ecologists,
- Micheal Bryant,
- Curtin University HIVE,
- Curtin University Micro-CT Facility,
- The Harry Butler Institute and the Veterinary Anatomy Department - Murdoch University,

- Western Australian Museum,
- DBCA Perth Zoo,
- DBCA Biodiversity and Conservation Science
- Shark Bay School
- Global Digital Citizen Foundation; and
- Wabisabi Learning.

'Sharkie' Conservation Innovations

The early stages of translocations can be perilous for small mammals and the Shark Bay mouse (or 'sharkie') is no different. To ease their transition into a new environment and increase their chances of survival, the *Return to 1616* research team dug up research by scientist Dr Peter Speldewinde whose previous study revealed the shape of 'sharkie' burrows on Bernier Island. In a new conservation innovation, *Return to 1616* senior technical officer Kelly Rayner emulated sketches of the burrow layout to create an artificial refuge using lengths of plastic pipe, including blind cavities for nesting. These artificial burrows were christened 'pseud-home-mys' after the species' scientific name *Pseudomys gouldii*. Shark Bay mice were released into 'pseud-home-mys' buried in soft sand dunes with only the entrances exposed and camera traps were deployed to monitor their use.

A month after the mice were released, the team went to check their cameras and were pleasantly surprised. Not only did they find mice investigating the pseud-home-mys, they were also filmed investigating burrows, going in and out regularly and even socialising (and fighting) around them.

'Pseud-home-mys' also provided an extra benefit. Shark Bay mice have distinct shaggy fur and are larger than any other mice on DHI but they can still be tricky to identify on photographic images from camera traps. Fortunately, the size of the artificial burrow entrance provided a useful reference guide to differentiate between different native mouse species based on size.

Months later, not only are some of the burrows still in use, but Shark Bay mice appear to be spreading across the island which is a good reminder for island campers not to assume any "mouse-like" animals they come across are the common house mouse. They may be MUCH more special!



Above A Shark Bay Mouse "pseudo home". Photo – Kelly Rayner



Above Arrows mark the hidden front doors of fancy new real estate designed especially for the Shark Bay Mouse. Photo – Kelly Rayner



Above A Shark Bay Mouse being released in September 2021. Photo – F Knox

Contributors: *Return to 1616* Research Scientist Dr Saul Cowen, Regional Interpretation Officer Wendy Payne.

Editors: Dr Karl Brennan, Wendy Payne.

Contributions to this biannual newsletter are very welcome.

The *Return to 1616* project is funded by the Gorgon Barrow Island Net Conservation Benefits Fund.



Scan this QR code to keep up to date with what's happening with the Dirk Hartog Island National Park Ecological Restoration Project – *Return to 1616*