

WIRRUWANA NEWS

UPDATES FROM DIRK HARTOG ISLAND NATIONAL PARK

SPRING 2020

The Dirk Hartog Island National Park *Return to 1616* Ecological Restoration Project Stage Two is well under way with four species already translocated to the island including the banded and rufous hare-wallabies, Shark Bay bandicoot and dibbler. With this comes new priorities to keep track of all the new arrivals, build a body of knowledge to pave the way for new recruits, and ensure visitors are provided with information to help protect the new island inhabitants.

Cryptic grasswrens



The return of native animals to Dirk Hartog Island National Park is well on its way with four species already translocated to the island as part of the Department of Biodiversity, Conservation and Attractions' (DBCA) *Return to 1616* project. But the 'one-way, all-expenses-paid' trip to their new island home is just the first step in the establishment of sustainable populations on the island. To lay the foundations and ensure success, lots of information must first be gathered on each species well before their trip.

The western grasswren (*Amytornis textilis textilis*) is currently planned for reintroduction to Dirk Hartog Island National Park. This secretive species now only occurs on the mainland in the Shark Bay area (within WA) and very little is known about them. Aline Gibson Vega, PhD student from The University of Western Australia, aims to fill this information gap.

Naturally the first step was to find some grasswrens. Together with the DBCA *Return to 1616* team, Aline visited Peron Peninsula and Bush Heritage Australia's (BHA) Hamelin Station Reserve over several field trips in 2019 and 2020. Assisted by BHA ecologists and project collaborators Michelle Hall and Ben Parkhurst, a special set of 'mist nets' were designed to catch ground-dwelling birds, such as



grasswrens. Mist nets are so fine they're almost invisible. When set in the correct place, birds become gently entangled as they hop or fly into it.

Once this method for capturing grasswrens was perfected, individuals were banded with a metal ring and a unique combination of colour bands on their legs. Grasswrens can then be identified from a distance using binoculars or spotting scopes. This helps researchers to learn about group behaviour, breeding success, dispersal, population genetics and how long grasswrens live. After many weeks of trapping, 120 individuals have now been banded, representing approximately 60 family groups that occupy an area of approximately 150 hectares. A huge effort for a very cryptic species.

Information provided by Aline's research on the ecology of this secretive species will be used in the future to help plan for their successful reintroduction to Dirk Hartog Island National Park.

Above left Western grasswren planned for reintroduction to Dirk Hartog Island National Park. Photo – Aline Gibson Vega

Above PhD student Aline Gibson Vega holding a western grasswren.



Above Ryan Hicks presents the King family with their welcome pack. Photo – Suze Gerovich/DBCA

Island protection

As Stage two of the *Return to 1616* Ecological Restoration Project goes from strength to strength and animals breed and proliferate on their new island ark, it's important that visitors have an understanding of the threatened animals living there and know how they can help to protect them.

To help spread the word, Edel Land rangers Ryan Hicks and Suze Gerovich have been handing out welcome packs to island visitors. The packs have something for all the family and contain some great *Return to 1616* information and island protection tips for travellers. For example, thoroughly cleaning your vehicle before driving to the island and packing food in sealed plastic containers can prevent the introduction of harmful pests.

In addition, it can be a surprise to find that native animals often use vehicle tracks on the island as an easy way of

moving from place to place and they're most active from dusk to dawn. Given that there are no pedestrian crossings and native animals don't know the road rules, avoiding driving at these times or slowing right down, can be a huge help in protecting them.

Small things can make a big difference and visitors to Dirk Hartog Island National Park now have the opportunity to contribute to the success of the *Return to 1616* project.

Scan the QR code to download the island protection brochure.



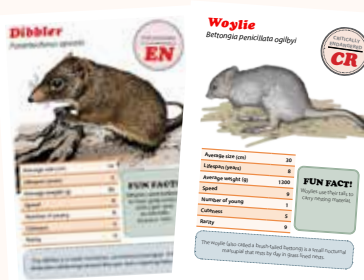
School holiday fun

Keep the kids entertained whilst learning about the *Return to 1616* animals next holidays. Visit www.sharkbay.org for some fun activities for the kids on our new School Holidays Activities page.

Print and colour in our *Return to 1616* animals



Download, print out and play our new *Return to 1616* Wild Challenge card game



Use this code to find the School Holiday Activities page



Working smarter not harder – finding clues in poo

By Saul Cowen and Wendy Payne

With the ongoing success of the *Return to 1616* project, one of the biggest challenges for the fauna team is keeping tabs on all of the new arrivals as they establish and breed in their new island abode. Thirteen species of animal will eventually be translocated to the island. When you consider that they all have their own little behavioural foibles, keeping track of their 'comings and goings' across a huge island is an enormous task. So, it's a case of working smarter not harder and a new 'bag of tricks' is required! Fortunately, innovative new techniques are being developed that might help.

After an animal has been translocated, radio collars have been traditionally used to find them. However, these can only be used to estimate a single location of one animal at a time. It takes many weeks of tracking to build up a picture of what the animal is doing as it explores its new home. The information gained is critical, but the process of radio tracking is time consuming and labour-intensive.

Enter GPS technology! Just as many cars now have Tom Toms for navigation, GPS (Global Positioning System) tags for animals are now available and the fauna team have put this into practice with the rufous and banded hare-wallabies. This records ALL of an animal's movements creating a more complete picture of an animal's territory, quickly and easily.

Even with this technology, however, if animals wander too far, they can be hard to find with some hare-wallabies travelling 20km! The fauna team have spent days in the field searching for some of these animals doing a Harry Houdini 'disappearing act'. As height gives a signal over longer distance, the team have sometimes had to resort to radiotracking from a plane.

Recent technological advances promise an alternative to plane flights. Drones can search and locate up to 100 animals at once. After a little trial and error, this technology appears to be working well and it's hoped drones will be a part of the monitoring toolkit in the future.



Above Michael Johnston using an antenna and a receiver to locate radio-collared animals.



Above A hare-wallaby caught blowing a "raspberry" at a camera trap.

Another popular monitoring tool is the camera trap that automatically captures photos of animals passing by. Camera traps are great for finding out 'what' animals are out there. With the help of new research techniques, they can be used to estimate the population size of animals on Dirk Hartog Island, and other islands. However, camera traps have their limitations. Hare-wallabies for instance represent a challenge because these sneaky hoppers are not only shy of conventional cage traps but show a healthy disrespect for camera traps as well. To locate them and estimate their population size on nearby islands, the team use spotlighting which is costly and time consuming.

More recently, the team have been working on a more innovative approach using DNA...from poo! Every time a wallaby leaves behind some poo (or scats to give the more scientific term), they also leave behind cells containing DNA. The DNA in these cells can be used, in the best forensic "whodunnit" tradition, to work out which animal it belonged to. An estimation of population size can be made simply by collecting scat samples within a given area. Although still in the trial phase, the results of this technique so far suggest a promising new, low-cost, easy and efficient tool in the monitoring tool-kit.



Above Drones can be used to swiftly collect large amounts of information on collared animals.

Greater stick-nest rats – ‘Romeo’ of the rodent world

The greater stick-nest rat (*Leporillus conditor*) is a threatened, native rodent that was once widespread across the semi-arid and southern arid zones of Australia. By the 1930s, predation by feral cats and foxes and habitat destruction from rabbits and livestock had driven them to extinction on the mainland, leaving the species dependent on human intervention for survival. They persisted only on East and West Franklin islands in South Australia. In the last 30 years, reintroductions have helped to bring them back from the brink of extinction, but they are still confined to only a few islands and fenced reserves on the Australian mainland. Shark Bay has one of those precious island populations on Salutation Island. This population originally came from the Franklin Islands (via a captive-breeding program at Monarto Zoo) and planning is underway for their island-hopping reintroduction to Dirk Hartog Island National Park in 2021.

The term ‘rat’ tends to bring to mind the introduced pest rat species. Unlike the black rat (*Rattus rattus*), greater stick-nest rats or ‘stickies’ have many endearing qualities. Male greater stick-nest rats can be described as the ‘Romeos’ of the rodent world, being the only native mammal known to present their partners with flowers to impress them! Their shortened blunt snout, large eyes and fluffy yellow-brown fur definitely gives them an edge over the introduced black rat in the appearance stakes.

“Stickies” band together and use their large incisor teeth to pick up and carry sticks to build large communal nests. Like ‘brickies labourers’ building a house of bricks and mortar, their nests are held together with a cement-like substance made from their own urine and droppings. Passed down from mother to daughter, nests can increase in size over the generations to be a metre high and 1.5 metres wide! They survive on leaves, fruit and seeds and have a particular fondness for fleshy plants that give them the moisture they need to survive in arid areas.

Preparation for their return to Dirk Hartog Island National Park has been underway for several years now with regular monitoring of the Salutation Island population by Parks and Wildlife Service staff. This is vital to help understand the



Above Greater stick-nest rats have a shortened blunt snout that gives them a ‘Walt Disney character’ appearance. Photo – DBCA

Below Male greater stick-nest rats are the only native mammal known to present their partners with flowers to impress them.

dynamics of the population on this island and to ensure there are enough stickies on the island to allow some to be translocated. It’s the Goldilocks principal – not too many, not too few – just the right number to establish a founder population on Dirk Hartog Island. This reintroduction if successful, will be Shark Bay’s ‘insurance policy’ for the greater stick-nest rat.



Long-term management may require that additional individuals are moved to Shark Bay from the Frankland Islands to top up the population and maintain genetic diversity. Future research will help to ensure the success of the greater stick-nest rats in Shark Bay.

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Contributions to this biannual newsletter from outside the *Return to 1616* project are welcome.

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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*