Montes turtles fitted with tracking devices

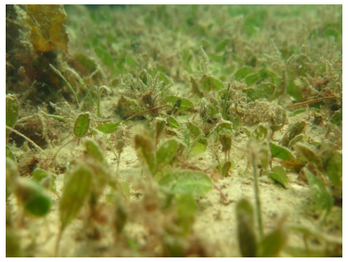
Staff and volunteers from Parks and Wildlife recently visited the Montebello Islands Marine and Conservation Park, where they fitted satellite transmitters to 12 flatback turtles, five green turtles, five hawksbill turtles and one loggerhead turtle. The project is part of the Department's long-term strategic research and monitoring approach to improve knowledge of nesting female turtles in the Pilbara. Information gained by tracking the turtles will reveal inter-nesting movements, the number of times the turtles nest during the season, and will help identify foraging grounds, migration routes and potential threats.

School students from across the City of Karratha and the Shire of Ashburton were invited to name the turtles — which resulted in some interesting suggestions!

All four species of marine turtle that nest in the Pilbara are listed Threatened and are fully protected under Australia's *Environment Protection Biodiversity and Conservation Act 1999*. To follow the turtles' movements visit http://www.seaturtle.org/tracking/?project_id=1175

Above: Flatback turtle wearing a harness fitted with a satellite transmitter.
Photo – Joanne King/Parks and Wildlife

The importance of our submerged pastures



Top: A mixed patch of *Halophila ovalis* and *Halodule uninervis* seagrasses.
Above: A bright red sea urchin that lives just under the sand in the seagrass.
Photos – Margaret Mohring/Parks and Wildlife

Seagrasses are found throughout shallow Pilbara marine waters, generally on sandy and muddy substrates and rarely forming the dense meadows seen in WA's south. Pilbara seagrasses can be small and difficult to see, and often go overlooked when compared to the region's stunning coral reefs. However, seagrasses play a key role in marine ecosystems by providing food and shelter for many other species. Seagrass is the main food source for dugongs, which forage in the sediment searching for rhizomes and creating sometimes obvious feeding trails of disturbed silt. Seagrass also provides habitat for juvenile fish, delicate pipefish, different types of urchins and many molluscs.

Recent surveys in the Pilbara found six species of seagrass, including four species of *Halophila*. *Halophila ovalis* has small round leaves about 1–4cm long, *Halophila decipiens* has elongated oval leaves, the tiny *Halophila minor* is very small, and the more complex *Halophila spinulosa* has a branching form.

Other species are *Halodule uninervis*, which has very thin strap-like leaves, and *Syringodium isoetifolium* which has thin, tube-like leaves.

Seagrasses can be threatened by sedimentation, reduced light levels, and increased water temperature, and in certain cases, these threats are caused by human activities such as dredging, boating, anchoring and coastal development. Parks and Wildlife is now undertaking research to improve knowledge of seagrasses across the Pilbara, with a particular focus on the Montebello Islands and the Dampier Archipelago. As well as identifying species, abundance measures are collected by counting the number of seagrass shoots in square quadrats along transects on the seabed. These baseline data will assist Parks and Wildlife to gain an improved understanding of these important and delicate communities and begin to protect and conserve them for the future of the Pilbara.

Visit us online parks.dpaw.wa.gov.au/park/montebello-islands

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Department of Parks and Wildlife

IN THIS ISSUE

Points of interest

- New Marine Program Coordinator for the Montebello/Barrow Islands
- Archaeologists find evidence of human occupation dating back 50,000 years on Barrow Island
- Australian ex-servicemen make pilgrimage to the Montes to commemorate 60 years

Marine park update

Throughout 2016, a range of projects were accomplished within the Montebello/Barrow Islands marine and terrestrial reserves from air, sea and land.

Aerial surveys were undertaken to gain information on coral health, marine wildlife and recreational activities, including camping, fishing, diving and vessel movement. Underwater projects included deploying and retrieving coral settlement tiles, changing water temperature data loggers, conducting coral bleaching assessments and counting crown-of-thorns starfish. On the islands, Parks and Wildlife staff and volunteers collected data on turtle nesting and performed general park management tasks, such as patrols, sign installation, infrastructure audits and rubbish collection.

Above: The new Parks and Wildlife Marine Program Coordinator Tim Hunt.
Photo — Department of Fisheries

Off reserve, Parks and Wildlife staff participated in a State-wide oil spill response exercise in Onslow coordinated by the Department of Transport. Parks and Wildlife, along with the Australian Marine Oil Spill Centre were responsible for the oiled wildlife component of the exercise.

In November 2016 Parks and Wildlife welcomed Tim Hunt as the new Marine Program Coordinator for the Montebello/Barrow Islands Marine Reserves. Tim replaces Rachael Marshall who has moved to Queensland after being in the role for five years. Parks and Wildlife would like to take this opportunity to thank Rachael for her dedication and hard work in the coordinator role, and wish her the very best for the future. Tim is thoroughly enjoying his new role and is settling in well with his family to life in the Pilbara. Tim is very much looking forward to establishing himself in this role throughout 2017 and beyond, and working to achieve positive conservation outcomes for marine reserves in the Pilbara Region, in collaboration with other agencies and the community.

New, improved access to recreational fishing rules

The Department of Fisheries has improved the delivery of the recreational fishing rules to fishers on it's website. The new format, which is also mobile phone-friendly, includes all the fishing rules that apply to around 180 fish species and groups of species found in WA. It features enlarged fish illustrations to assist with catch identification, bag and size limits, and information about seasonal closures and licences that apply. Each listed species contains information about legal and illegal fishing gear, boat limits, how to measure your catch and a **FishWatch 24 hour hotline** (with a quick-dial to call it directly from your smartphone).

It is also now much simpler to access the rules by location – either from the spot where you are fishing or for where you are intending to fish. Using the location search will direct you to common species found in each bioregion, as well as any nearby marine protected areas through interactive maps.

To view recreational fishing rules in the new format, go to the Department of Fisheries website www.fish.wa.gov.au or go directly to http://rules.fish.wa.gov.au

FISHWATCH
REPORT Illegal Fishing Aquatic Pests Aquatic Diseases
1800-815-507

Not just beachcombers — the first people of the Pilbara

The small, dry limestone islands of the Montebellos are an unlikely place for evidence of tens of thousands of years of human pre-history to be preserved. But in the early 1990s a team of archaeologists lead by Professor Peter Veth discovered just that - cave floor deposits that showed people had lived there for over 30,000 years, and that they lived in a diverse and bountiful environment. They feasted on a wide range of marine and terrestrial creatures, including dugongs, marine turtles, fish, crocodiles and molluscs, as well as kangaroos, wallabies, bandicoots, quolls, possums, fruit bats, rodents and reptiles, and they made tools and ornaments from local and imported stone and shell.

How was such a rich legacy left by people on these tiny islands so long ago? The answer is in the dramatic changes that have occurred to the Western Australian coastline and environments since people arrived here over 50,000 years ago.

This story became even richer when Professor Veth, now based at the University of Western Australia, led a large international team back to the North West in 2013. Barrow Island, 20km south of the Montebello group, has caves and rock shelters occurring along it's western coast. The largest of these, Boodie Cave, holds a rich record of continuous human occupation since the time people first settled on this continent. The small deposits on the Montebello Islands could provide only a glimpse of this ancient human story. And of course, in the intervening 20 plus years, the techniques of scientific archaeology had advanced enormously.

With support from Chevron Australia and Parks and Wildlife, the archaeologists found an enormous deposit of habitation debris, charcoal, stone and shell tools, and other cultural objects to a depth of two metres below the floor of Boodie Cave. As at the Montebello's sites, the top layers of the deposit were devoid of any indication of human activity – for over 7,000 years these caves had been unvisited by people. This was due to a very rapid and continuous rise in sea level, from approximately 18,000 years ago until about 7,000 years ago. As the sea approached it's present level, Barrow Island and the Montebello group became too far off-shore for people to access. The chain of continuous human presence was broken until European sailing vessels started to appear from the 1600s onward (but that is another story).

Above: UWA Professor Peter Veth carefully examines possible archaeological material from an excavation in Boodie Cave as part of the Barrow Island Archaeology Project. *Photo — Brad Daw/Parks and Wildlife*

Professor Veth and his colleagues have confirmed that the Boodie Cave deposits have good stratigraphic integrity, that evidence of the earliest human habitation dates from approximately 50,000 years BP, and that while there was a much weaker archaeological signal detected during the last ice age, people have lived continuously in Boodie Cave until the rising seas isolated it from these coastal people. In the early period of this human story, food items seem to be mainly the mammals and reptiles typical of the arid interior. As the sea approached, more and more seafood appeared in the diet, until the period just before abandonment the density of the food remains left on the floor of Boodie Cave indicated great abundance. Stone tools made from both local limestone and from high quality Pilbara and Ashburton materials carried to the island were within the deposit and elsewhere across the island. And as the sea approached, tools made from marine shell became more and more common.

In addition to the utilitarian tool objects, which included pieces of advanced edge-ground axes, the team found a series of shell beads (dated to 12,000 years ago), and a large piece of baler shell with incised dots and lines. Professor Veth, his colleagues and students will continue to work on the material found inside Boodie Cave for years to come. They are building a detailed picture of the lives of these peoples, as well as reconstructing the past environments that they lived in.

Help keep the Montes free from white spot

Above: Prawns with white spot disease have a loose shell with numerous white spots inside the shell and a pink to red discolouration.
Photo — Queensland Department of Agriculture and Fisheries

Aquatic diseases can be damaging and pose a threat to our fisheries and aquatic resources. Following the recent white spot disease (WSD) outbreak on prawn farms in Queensland, recreational fishers can do their bit by not using uncooked food-grade prawns as bait when fishing in WA. Talk to a local bait supplier about alternative baits to prawns or only buy locally caught WA bait. This is because many imported prawns come from countries where WSD is very common.

The Department of Fisheries also urges fishers to check their bait for signs of WSD. If you think you have seen WSD please retain a sample and report it immediately to the **FishWatch 24 hour hotline** on **1800 815 507.** For more information on WSD visit the Biosecurity Incidents webpage at www.fish.wa.gov.au/biosecurity.

Disturbance distances — everyone loves a beach!

We all agree that the Pilbara has some special beaches, but humans aren't the only species with a deep and abiding appreciation of a good beach!

Many seabird and shorebird species, including the Beach Stone-curlew, Pied Oystercatcher and Roseate Tern call the Pilbara islands their home. Other species, such as the Red-necked Stint or Critically Endangered Eastern Curlew, visit the islands between August and March each year to rest and feed before flying tens of thousands of kilometres to their breeding grounds in the northern hemisphere. These migratory species use island sandspits and beaches as places to rest and recuperate when they aren't foraging.

Seabird and shorebird numbers are declining worldwide due to local and global impacts, including loss of habitat through development and reclamation of wetlands, altered water regimes, and continued disturbance of breeding birds on ocean beaches.

Islands are especially important to seabirds and shorebirds as they provide a safe haven away from mainland terrestrial predators like foxes and black rats, and disturbance by people is much less likely.

Why is disturbance bad? Because it creates stress and wastes the energy reserves birds have worked hard to gain. Disturbance is particularly a problem for migrating species as it can lessen their chance of surviving the great distances travelled.

Disturbance to nesting birds means chicks or eggs are exposed to predation, or risk overheating in the sun without parents to provide shelter for them. How to recognise disturbance:

Above left: Roseate Terns preening or resting - some feel secure enough to nap on the ground. These birds feel safe.
Above right: Ruddy Turnstones, Golden Plover and Grey-tailed Tattlers in an "alert posture" – straight craning neck and a wide eye toward the source of disturbance. Note that some birds appear more concerned than others; certain species are warier than others and have different disturbance distances – some will fly off when a person is 200m away, whereas others will wait until a person is only 50m away. The Golden Plover will take off first, but once it flies off the rest of the flock will follow. This is disturbance. *Photos—Parks and Wildlife*

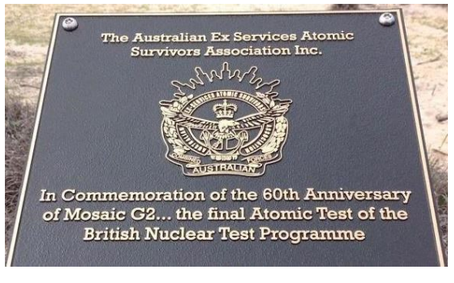
HOW CAN YOU MINIMISE YOUR DISTURBANCE?

- **Keep your distance; admire from afar using binoculars or a camera.**
- **If approaching an island by boat, minimise speed to walking pace and avoid areas being used by birds.**
- **Whilst on the island walk along the water's edge and keep visits ashore brief.**
- **Don't take pets onto islands.**

The Montebello's explosive past

In the 1950s, the Montebello Archipelago was the site of three nuclear tests. In 1952 the first nuclear weapon was detonated on the war-surplus frigate HMS *Plym* in the channel off Trimouille Island. The second and third weapons were detonated in 1956 on 31m towers on Trimouille and Alpha Islands.

2016 marked the 60th anniversary of British nuclear testing involving Australian servicemen at the Montebello Islands. In recognition, local Karratha company RCR donated a custom sign plate, which was installed at the test site on Trimoulle Island by Parks and Wildlife staff. In June 2016, 17 members of the Australian Ex-Servicemen Atomic Survivors Association made a pilgrimage back to the Montebello Islands to place a plaque onto the sign plate.



Above left: Ex-servicemen commemorating 60 years after the last nuclear test was conducted. **Above right:** Plaque erected at "ground zero" on Trimouille Island. *Photos – Australian Ex-Servicemen Atomic Survivors Association*