Monkey Mia News

Issue 6 Winter 02

GOVERNMENT OF WESTERN AUSTRALIA
DEPARTMENT OF Conservation AND LAND MANAGEMENT
Conserving the nature of WA
SHIRE OF SHARK BAY

***Welcome to the sixth issue of* Monkey Mia News.**
This newsletter is produced twice a year, giving an update on what's happening in this important region, the Shark Bay World Heritage Area. Monkey Mia News is a non-profit publication to give visitors an understanding of the happenings at Monkey Mia, including the important research undertaken in Shark Bay. Why not become a Monkey Mia Dolphin 'Friend' and receive regular newsletters and other benefits? See back page for details!

Fishing, foraging or fun?

Dolphin News

The last few months at Monkey Mia have seen some fascinating developments in the daily lives of the dolphins.

Perhaps the most interesting spectacle has been their fantastic displays of beach fishing in the afternoons.

During April and May there were some high afternoon tides which brought an influx of Striped Butterfish (a local fish species that is seasonally abundant) to shore.

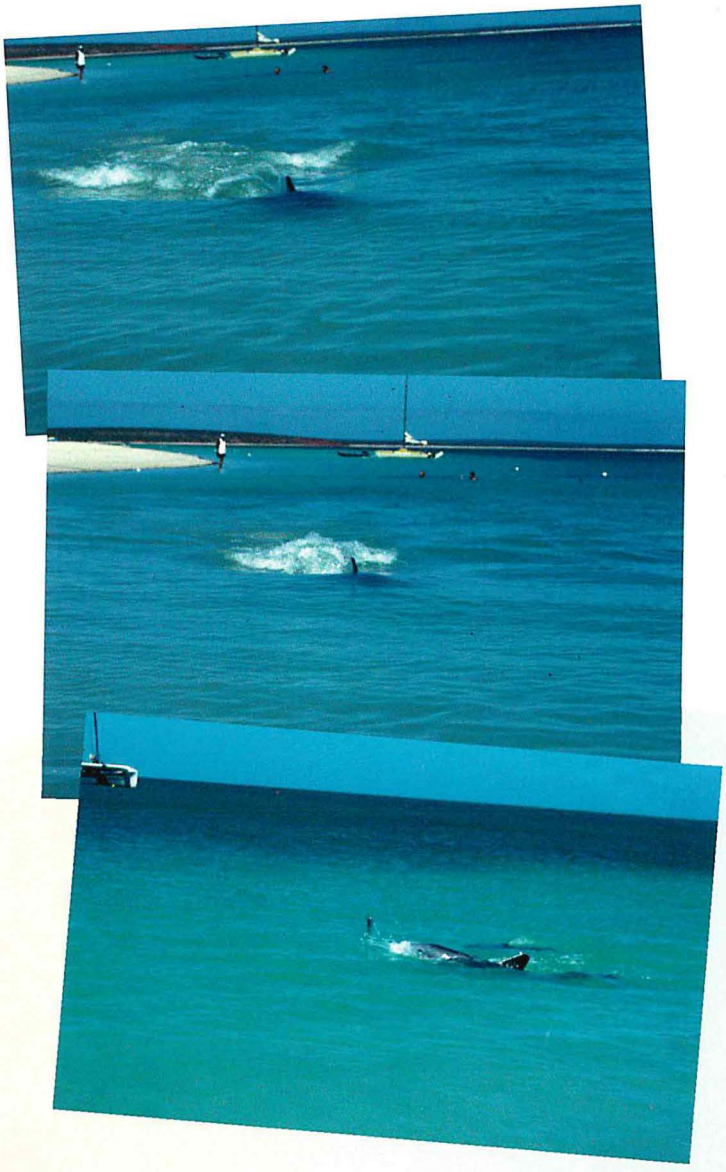
The regular beach visiting dolphins were involved in the hunting, and often cooperated to herd schools of fish up to the water's edge. At times they travelled up to 40 kilometres an hour, and occasionally the rangers were forced to move people out of the water because the fish would often seek refuge behind people's legs – meaning recreational swimmers risked being knocked over by a 120 kilogram dolphin!

So many fish were caught that the dolphins appeared to hunt as much for the thrill of the chase rather than to catch themselves a feed.

On many occasions Nicky and Puck (in particular) appeared to be playing with their fish rather than eating them!

The calves on the other hand seemed to use this opportunity to refine their hunting skills. It takes a number of years for a young dolphin to become proficient at catching its own food and those that cannot master the various different techniques are unlikely to survive to adulthood.

Shark Bay dolphins use a wide variety of strategies to find prey. Research at Monkey Mia, conducted by Dr Janet Mann and



'Nicky in hot pursuit of a Striped Butterfish on Monkey Mia beach'.

colleagues from Georgetown University in Washington has revealed that dolphins use 11 techniques to find fish. These include:

- **bird milling**, where dolphins are attracted to large groups of seabirds (usually cormorants and pelicans) that gather in shallow water around schools of fish;
- **bottom grubbing**, where dolphins use their rostrum to dig out fish buried underneath the sea floor or under seagrass beds;
- **sponge-carrying**, which is a significant technique because it is the only known example of tool use by a wild dolphin. A dolphin forages using a conical shaped sea sponge over its rostrum to hunt out prey living beneath the seafloor (see the following article);
- **snacking**, which tends to be used by calves more than adults and may be a crucial part of learning how to isolate and capture fish. The dolphins swim upside down and rapidly force and trap fish at the water surface;
- **rooster tailing**, where the dolphin chases fish at high speed near the surface of the water with its dorsal fin breaking the surface, creating a trail of water off the fin reminiscent of a rooster's tail;
- **leap and porpoise feeding**, where dolphins forage near large schools of fish. A large group of dolphins comes together from all areas, leaping continuously in different directions to contain and move a school of fish; and
- **beaching**, a technique the Monkey Mia dolphins use. Fish are chased into shore, up to the water's edge and are effectively trapped on the shore. The dolphin launches half or all of its body out of the water to grasp the fish.

An interesting feature of Dr Mann's research is that it appears that the beach visiting dolphins use a wider variety of techniques for finding fish than dolphins that do not visit the beach.

This includes feeding by people from the beach and unfortunately – in a few cases – boat begging. While feeding of dolphins from the beach at Monkey Mia can be controlled, boat feeding is much harder to manage.

It is now illegal to feed dolphins without authorisation anywhere in Western Australia. At Monkey Mia research has shown that uncontrolled feeding of dolphins can lead to dependence on handouts, particularly for calves. This is why calves are not part of the feeding program. As the different hunting strategies described above show, calves already have enough to learn.

To find out more about this and other research visit the website **www.monkeymiadolphins.org**

Do dolphins in Shark Bay use sponges as a tool during foraging?

By Lars Bejder

Many animal species use tools to capture prey or find food.

Chimpanzees use wooden sticks to withdraw honey from beehives, to dig up edible roots and to extract termites from mounds. They insert short twigs into termite holes, wait until the termites crawl up on the stick, pull the stick out, and pick off and eat the attached delicacies.

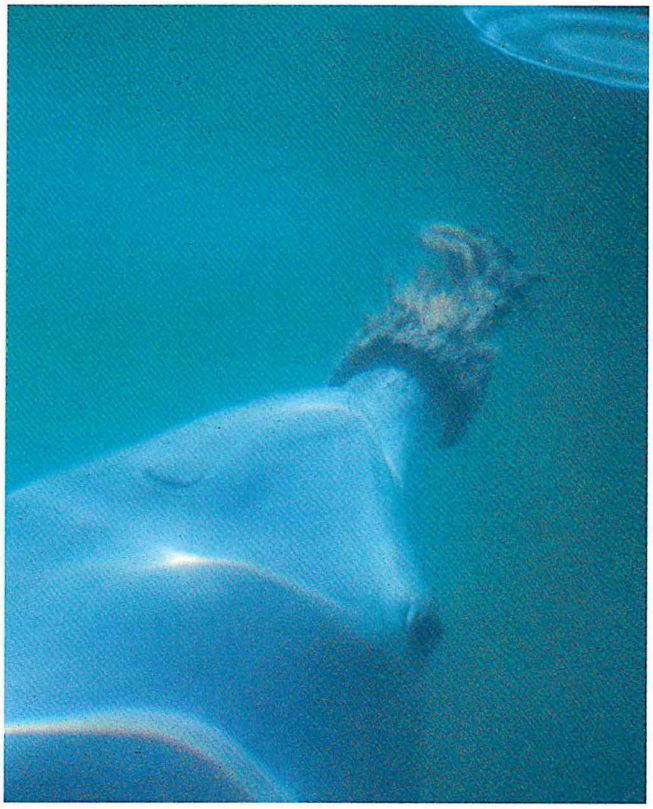
Californian sea otters, while floating, often use rocks to crack open hard-shelled prey such as sea urchins so they can eat the soft tissue inside.

Insects, other primates and birds also use tools.

Why is tool use interesting?

Tool use in animals may highlight similarities between humans and animals in terms of problem solving skills, adaptation and intelligence.

Does the ability of animals to use tools signify intelligence? This depends on how intelligence is defined. Some define intelligence as the ability to actively adapt to a changing environment, and animal tool use could symbolise that definition.



'Speck - one of the sponge carrying dolphins'. Photo - Lars Bejder.

Dolphins and tools?

Throughout the past twenty years, several dolphins off Monkey Mia have been seen carrying sponges on their mouths (or rostra).

They carry the sponges by inserting their rostrum inside the conical shaped sponges like a glove.

Based on existing data, the Shark Bay Dolphin Research Group (SBDRG) has revealed that approximately 20 dolphins use sponges on a regular basis.

There are at least three hypotheses explaining this peculiar behaviour.

The first is that dolphins are extracting chemical compounds from the sponges for medicinal purposes. The second is that dolphins use the sponges for play and the third is that dolphins are using sponges as a foraging tool. Behavioural observations and acoustic recordings of sponge carrying dolphins best support the foraging hypothesis.

Do sponges help dolphins during foraging bouts?

Dolphins not only forage in the water column - they also venture to the sea bottom where they poke their rostra in the weed and sand to flush out prey.

Evidence suggests that dolphins use sponges as a shield to protect themselves from cuts and injuries caused by poking their mouths and faces in the bottom substrate. Dolphins may also use sponges to disturb the sea bottom and stir up fish burrowed in the bottom.

Research by the SBDRG aims to shed light on the ability of dolphins using sponges by filming the activity under water using a pole-cam, an underwater camera attached to a long pole that is bracketed on the side of a boat. This will allow the SBDRG to observe and record dolphins at various depths. If successful, it will document the detailed behaviour of the sponge-carrying dolphins.

Lars Bejder, Dalhousie University, Canada.
www.dal.ca/~whitelab/lb/lars.htm.

Turtle Tales

Keep your eyes focused on the waters around the jetty at Monkey Mia and you may see something unusual.

Popping up for a second or two at regular intervals is one of three juvenile green sea turtles that have made a temporary home around the jetty's safely shadowed waters.

The green sea turtle (*Chelonia mydas*) is one of four species of turtle found in the Shark Bay World Heritage Area. The other three are the leatherback, hawksbill and loggerhead turtle. While leatherbacks and hawksbills are rarely seen in the bay, the loggerhead turtle (*Caretta caretta*) exists in relatively high numbers.

Dirk Hartog Island lies on the outer reaches of Shark Bay. It is a large barrier island that protects the bay's inner waters and is also the largest island in Western Australia. On the island's northern end is Turtle Bay, which is home to the largest nesting colony of loggerhead turtles in Australia. The loggerhead is the most endangered turtle in Australia so the protection of this habitat is critical for their long-term survival.

A monitoring and tagging program was established on Dirk Hartog Island by the Department of Conservation and Land Management 10 years ago in response to the turtles' endangered status. This program allows the department to evaluate any fluctuations in the number of nesting turtles in the bay each year.

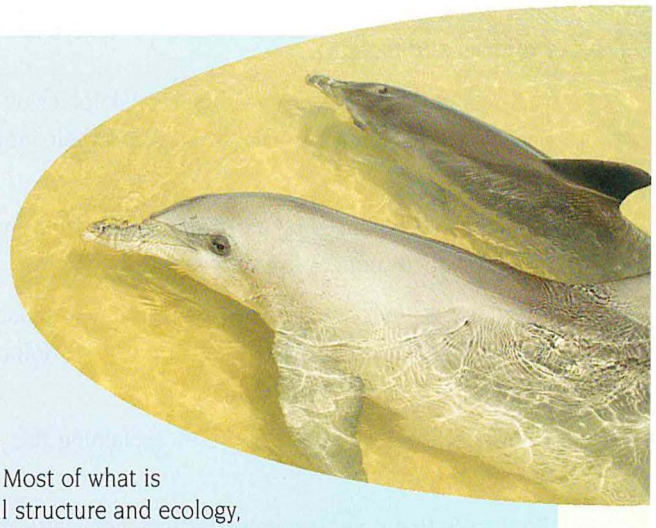
The odds of a newly hatched turtle surviving to maturity are less than one percent. The struggle for survival starts from the moment they hatch, when they make the perilous journey from the hatching site to the relative safety of the sea. At Turtle Bay, predation by gulls, birds of prey and ghost crabs accounts for large losses of hatchlings. Hatchlings then have to survive the threat from marine predators. Only a small proportion of young turtles reach maturity and even then will face the ongoing threat of shark attacks and human activities.

While predation from sharks is a natural, (albeit unfortunate) aspect of turtles lives, deaths related to human activity can be avoided. Each year in Australian waters, many turtles die by drowning in fishing nets, boat strikes, strangulation by rubbish, ingestion of plastic bags and poaching for their meat, eggs and shells.

If you are lucky enough to catch a glimpse of one of these gentle and fascinating animals, you are observing an animal that has beaten substantial odds to reach its age, which can be more than 100 years. Ongoing research, protection within the Shark Bay Marine Park and cooperation from the public (particularly boat users and fishers) will ensure these turtles will exist to delight generations to come.

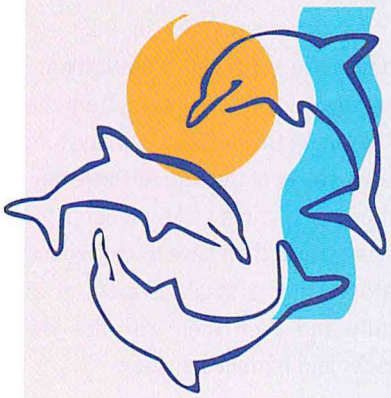
'A loggerhead turtle seen offshore from Monkey Mia'. Photo - Lars Bejder.

Dolphins of Monkey Mia Research Foundation



The mission of the Dolphins of Monkey Mia Research Foundation is:
'To better understand and protect the dolphins and wildlife in Shark Bay through research.'

Long-term research on the Shark Bay and Monkey Mia dolphins has been conducted by an international team of researchers since 1982. This is the second-longest running dolphin project worldwide. Researchers come from Australia, Europe and North America. Most of what is known about dolphin behaviour, social structure and ecology, comes from the Shark Bay team. *The Dolphins of Monkey Mia Research Foundation* was established in 1998 to support the long-term research on the Monkey Mia and Shark Bay dolphins. Your donations will help protect and monitor more than 600 dolphins and will assist in this exciting scientific endeavour! Contributions to research can be forwarded to the address below.



For more information, please contact us by mail or through our website.

The Dolphins of Monkey Mia Research Foundation
PO Box 140, Claremont, WA 6010
www.monkeymiadolphins.org

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