



# Sea Turtle FOUNDATION

*January 2008*

## **Regional Marine turtle workshop: Connections between North Australian Marine Turtle populations**

Darwin 18<sup>th</sup>-20<sup>th</sup> September 2007

By Sara Bell

In early September I received an invitation from WWF to join about 40 other delegates for three days to map known distributions of sea turtles from Indonesia to the Pacific Islands, identify the potential threats to these populations and talk through management options. Eight countries were represented including Australia (including Torres Strait), Indonesia, Papua New Guinea, Fiji, Solomon Islands, Vanuatu, Samoa and Thailand.

Our first day's task was to work with some GIS experts to put known sea turtle populations on a map. We split into groups with expertise in green, hawksbill, flatback, loggerhead, leatherback and olive ridley turtles. The task proved to be extremely time consuming, but was worthwhile. So many populations of green turtles were identified (both nesting and foraging) that we ran out of time to note them all.

The second day was the most interesting where all participants shared their knowledge of the threats facing turtles in their region. The catalogue of threats was just amazing and made me wonder that we have any sea turtles left at all. In Indonesia commercial fishing in some areas posed a massive threat whilst in

Papua New Guinea illegal take was the major issue. Torres Strait participants were particularly concerned to hear about this given that they share many of their turtles with PNG and have noticed large decreases in numbers. Again we identified areas and threats on large maps.

The plan now is for WWF to use the GIS information to develop a booklet containing maps showing the various populations and the threats in each region. This may take some time to produce and further funding needs to be found for it's development. This will be an especially useful tool when looking at the migration pathways used by turtles that move between countries. It will hopefully help to prioritise actions required to mitigate the multitude of threats that turtles face in the Indo-Pacific.



WWF Workshop Delegates at Litchfield National Park

## Shifting Sands

17-19 September 2007

By *Tim Harvey*

Apart from the highly successful Mon Repos turtle project, Bundaberg is famous for rum and Bert Hinkler as far as my fleeting visit could discover. I was representing the Sea Turtle Foundation – previously IPSTCG - at Queensland's first coastal conference, 'Shifting Sands', and the packed program left little time to explore local landmarks. The conference covered a broad spectrum, including not just iconic beaches and azure seas but also wetlands, rivers, catchments, urban development, wildlife conservation, outer islands, indigenous engagement, engineering, and surfing.

My purpose was threefold: to see what lay ahead for coastal communities and possible affects on sea turtle populations; to launch the STF/Burdekin Dry Tropics NRM Community Service Announcement on boat strike – 'Watch Out, Turtles About'; and to meet with representatives from other conservation group along the Queensland coast.

There were several talks on threats to sea turtles and other wildlife, including Ricki Gunn's interesting insights on the ghost-net clean-up program being undertaken by several indigenous communities around the Gulf of Carpentaria. It was heartening to hear of efforts to rectify the problem of ghost-nets and sea turtle deaths in the Gulf, even though the problem seems almost insurmountable without increased state and federal government support. Leonie Maddigan from the Burdekin Dry Tropics NRM board gave a talk on community awareness and involvement in wildlife conservation, that showed what can be done when the will and effort are there.

The highlights for me were the rallying calls from the keynote speakers; the lessons learned from other states, such as the dangers of unplanned urban development; the diversity of attendees that enabled wide discussion, including refreshing input from 'non-professionals' about what is valued in the coastal environment; and the launch of the STF/Burdekin Dry Tropics Community Announcement, which was well received

despite technical delays. Several people commented on the Announcement's original approach and how effective it was (for further details on the Community Announcement see elsewhere in the newsletter)

Coastal development is a major issue and the majority of Australians live on the coast. Queensland has the fastest growing population of any state and pressure on its coast is mounting rapidly. Queensland coastal waters contain some of the world's largest remaining populations of sea turtles. The major challenge facing planners, councils, wildlife managers and conservation organizations is how to minimise destruction of the coastal environment, including globally important sea turtle habitat, in the face of constant pressure to develop as more people chase the 'seachange' phenomena. The major take-home message from the conference was the urgent need for a coordinated plan to protect Queensland's coast and prevent incremental ribbon development from creeping along a 50 km wide coastal strip from Brisbane to Cooktown. The next coastal conference is scheduled for 2009 and it will be interesting to see what progress has been made toward a state plan in the intervening two years.

The Sea Turtle Foundation would like to thank the Burdekin Dry Tropics NRM board for generously sponsoring a representative to attend the Conference.



## Local Students Help Turtle Conservation

The Willows State School have produced a wonderful brochure on the conservation of local sea turtles. The brochure will be distributed at school and public events, and outlines the threats to local sea turtle populations and actions the community can take to help conserve sea turtles. The students are to be congratulated on their efforts to educate the community on the biology of turtles and threats facing local populations. The Willows State School has been a Great Barrier Reef Marine Park Authority "Reef Guardian School" since 2004. Students have previously donated money to IPSTCG and Reef HQ's Turtle Rehabilitation Centre after fundraising activities and we greatly appreciate their efforts.



## Sea Turtle Foundation Annual General Meeting and Board of Directors Meeting

The IPSTCG AGM was held on the 10<sup>th</sup> November 2007. Elected to office were David Savage (President), Sara Bell (Secretary), Laura Willems (Treasurer), Andrea Phillott (Scientific Advisory Committee; Newsletter Editor), Michelle Ramsay (Membership Secretary) and Michelle Patfield (Education Officer).

The inaugural meeting of the Sea Turtle Foundation Board of Directors met on the 16<sup>th</sup> November. Items discussed included the direction of future conservation and education campaigns and the recruitment of international members to broaden the focus of our group so we can have a greater impact.

## Boating Speed Restrictions Needed to Protect Turtles

By Julia Hazel

James Cook University PhD candidate Julia Hazel recently published a paper in the journal "Endangered Species Research" that describes her research on the responses of green turtles (*Chelonia mydas*) to an approaching vessel. Julia's extensive experimental trials confirmed a significant relationship between vessel speed and the responses of green turtles inhabiting seagrass beds in Moreton Bay near Brisbane. The majority of turtles were able to detect and evade a vessel approaching at 4 km per hour (2 knots), but at 11 km per hour (6 knots) more than half the turtles did not react in time. At 19 km per hour (10 knots), the fastest speed used in the study, almost all turtles (95%) directly in the path of the vessel failed to respond at all. Results of the study strongly support the use of speed restrictions to prevent vessel injuries to turtles. However an extremely slow speed of about 4 km per hour is necessary to ensure 'turtle-safe' travel across shallow foraging sites. These findings imply that management authorities face a complex challenge in determining the trade-off between minimising inconvenience to vessel operators and protecting marine wildlife.

Julia's paper is available online at [www.int-res.com](http://www.int-res.com): Hazel J., Lawler I.R., Marsh H. and Robson S. 2007. Vessel speed increases collision risk for the green turtle *Chelonia mydas*. *Endangered Species Research* 3: 105-113.



This large green turtle died in Cleveland Bay near the port of Townsville, with severe injuries suggesting it was killed by vessel strike. Photo: Guido Parravergara.

## Turtle Monitoring at AIMS Beach

Sara Bell, Mariana Fuentes, Andrea Phillott and Tom Stevens co-ordinated the annual IPSTCG turtle monitoring at AIMS beach this year. Between the 24<sup>th</sup> and 30<sup>th</sup> November, we saw 3 turtles with 27 volunteers. Those who were lucky enough to watch a turtle nest were very happy, while those who didn't still appreciated a night spent walking such a beautiful beach.



Volunteers with nesting flatback turtle at AIMS beach November 2007

Of the 3 turtles that nested, 2 were tagged for the first time. The remaining turtle, K18993, was first tagged on the 5<sup>th</sup> December 2005 by IPSTCG at AIMS beach. This is her first observed nesting since that time. All of the nests were marked so they can be dug up after the hatchlings have emerged to work out how many eggs hatched successfully.

Sara Bell buried 3 temperature data loggers on the first night of monitoring, to measure and record the sand temperature for 2 months during the turtle nesting season. In previous years the AIMS beach temperature has risen so high that many eggs were killed before hatching. Beach temperatures are being monitored around the world to determine the potential effect of global warming on the nest hatch success and hatchling sex ratio's.

Nest Excavations and retrieval of data loggers are planned for Sunday February 3<sup>rd</sup>. Please let us know if you would like to be involved.

## ID Cards for Aboriginal Hunters

The Kuku Yalanji people of north Queensland have hunting rights on their traditional country in the Port Douglas to Cooktown region. However, other indigenous hunters from north Queensland have been taking wildlife from their areas and not obeying the self-imposed hunting regulations of the Kuku Yalanji community which include the use of traditional hunting weapons and the take of a single animal only. To help the community, police and government officials identify poachers, identity cards have been issued to Kuku Yalanji men permitted to hunt. The card has a photograph, and outlines the hunting regulations and boundaries of the community. Men must prove their tribal links before being given an identity card. The Kuku Yalanji people hope other Aboriginal groups will follow their lead in promoting sustainable hunting by traditional hunters (The Australian 19 November 2007-11-23).

The Sea Turtle Foundation is against indiscriminate, unsustainable hunting of sea turtles. However we do not oppose hunting of sea turtles by indigenous communities that is humane, sustainable and is carried out for subsistence or cultural purposes

## Sad Death of Lance Ferris

Lance Ferris passed away on Sunday 14<sup>th</sup> October. Known as "The Pelican Man", Lance established Australian Seabird Rescue in Ballina in 1992. The group predominantly focuses on the rescue and rehabilitation of



Lance Ferris, Photo from Australian Seabird Rescue Website.

seabirds, but also runs a turtle hospital with 5 pools to treat beach-washed turtles. The hospital is entirely manned by volunteers. Lance's work with seabirds, turtles, and other marine animals will be continued by Marny Bonner and the Australian Seabird Rescue. Sea Turtle Foundation extends their condolences to the group and all who knew and worked with Lance. He was a tireless champion for the rescue of injured and ill marine wildlife.

## Sea Turtle Rescuer is Animal Planet's Hero of the Year

Jean Beasley is the founder and director of The Karen Beasley Sea Turtle Rescue & Rehabilitation Center located in North Carolina, USA. Jean opened the centre in 1997 in memory of her late daughter's love of sea turtles. The centre rescues and rehabilitates sick sea turtles, returning them to the wild when recovered. The hospital also allows students with an interest in wildlife medicine and rehabilitation the opportunity to gain valuable experience.

Animal Planet accepts on-line and public nominations for their Hero of the Year for 8 months before choosing 10 finalists and allowing the public to vote for their favourite. The winner receives a US\$10,000 donation to the animal welfare organization of their choice.



Photo from [http://animal.discovery.com/convergence/hero\\_of\\_the\\_year/nominees/2007/winner.html](http://animal.discovery.com/convergence/hero_of_the_year/nominees/2007/winner.html)

## Satellite Tracking Nesting Green Turtles at Raine Island

Raine Island is the largest known green turtle rookery in the world. In some years there are thousands of turtles per night, in others there may only be ten. While these dramatic fluctuations in nesting numbers from year to year are common in green turtles, the population at Raine Island face other serious challenges. A significant proportion of the nesting turtles are doing so for the first time, the average size of a turtle nesting for the first time is slowly decreasing, and there has been an increase in the number of years between nesting events for experienced turtles. These are all signs of a population in crisis.

Australian Geographic is currently raising funds via sales and donations to support collaborative work by QPWS researcher Ian Bell, Sea Turtle Foundation and Undersea Explorer at Raine Island in the 2008/9 nesting season. We will attach satellite transmitters to nesting turtles so they can be tracked between nesting attempts and on the return migration home.



Picture courtesy of Mark Hamann from [www.seaturtle.org](http://www.seaturtle.org)

## Green Turtles of Green Island: Where do they go and what do they eat?

By Stewart Page

In the months from May through to August 2007 the spatial ecology of green turtles, *Chelonia mydas*, at Green Island was investigated, including mapping of the habitat and identifying the resources available to

foraging turtles. The principal investigator for the study were Honours student Stewart Page and his supervisors Dr Ivan Lawler, Dr Emma Gyuris and Ian Bell. Green turtles are a well-known and much-loved component of the marine megafauna of Queensland.

While much is known about them, one area of their lives about which little is known is where and what they are eating. Main study objectives were to discover how turtles actually used their habitat by tracking their movements over space and time, and to see if this could be described in terms of the type and distribution of available resources. It is well understood that green turtles eat seagrasses and algae, but how or why they make their choices between them is not understood.



Ian Bell and Stewart Page discuss flipper tagging

Green Island is a coral cay located approximately 25 km off the coast of Cairns. The extensive reef flat (15 hectares) supports high density seagrass beds and hosts a variety of marine flora and fauna. The island is a marine park and a hot spot for national and international tourism with up to 1200 visitors per day and is impacted by indigenous users



Turtles being released

who hunt and fish in the area. As a result the island and reef require well informed management practices. Such intense use can have important implications for the health of the resident population of green turtles utilising the waters around the island, so it is important to understand how they use the area.

Over a period of four months 355 sites around the island were sampled providing information on substrate type and the amount and type of plant life. The island provides a diverse range of dietary items for green turtles. Seagrasses are the dominant plant type, and constitute the main dietary of item of turtles, but algal growth may be dense in patches.. In total 55 individual turtles were caught and tagged and morphometric information and dietary habits recorded.

Of these 55 turtles, 12 were fitted with an acoustic transmitter for tracking purposes, providing information on where individuals were going and how they were utilising the surrounding reef.



Attaching a sonic "pinger" to a juvenile green turtle.

Turtles around Green Island are seagrass specialists utilising the eastern and western ends of the island on high tides particularly during the night, becoming scarce on the reef flat during low tides and day time. The turtles also appeared to spend longer periods of time and more bites in denser patches of seagrass, with a decrease in bite rate and resident time when visiting less dense patches.

Previous investigation have identified that the island may support up to 160+ individuals and that they were selective in their feeding, not necessarily just eating the most abundant plants. However, to really understand the important resources requires knowing not just

what they eat, but where they eat as this is a crucial part of knowing what prey items they are selecting. This study is the first to do so because it examined diet, movements and food plant distribution all together.

The study has provided useful insights into the spatial ecology of green turtles around the island. While analysis is not yet complete (Stewart's honours thesis is in preparation) we can say that turtles did not use most of the reef flat, but instead concentrated their activities on the northern and eastern sides of the island, surprisingly close to shore. The core areas used tended to be characterised by dense patches of mixed seagrass (*Cymodocea* sp, *Syringodium* sp and *Thalassia* sp) with the presence of a number of algal species. It appears that they use high tides to access food resources while at low tide (when the reef flat is exposed) retreat to adjacent deeper waters to wait until the tide rises again.

A special thanks is extended to the support and help of IPSTCG who provided valuable field equipment, as well as the EPA, DPI, QPWS, Quicksilver and JCU community who helped provide the necessary logistical, field and operational support required for the completeness and success of this project. I would also like to thank IPA photographers for their photo of Green Island.

**Please remember that a Sea Turtle Foundation membership makes a wonderful gift for those family and friends who seem to have everything! For details email [membership@seaturtlefoundation.org](mailto:membership@seaturtlefoundation.org)**

## **Our New Email Address**

We have a new email address at last. For all general enquiries please contact us at [info@seaturtlefoundation.org](mailto:info@seaturtlefoundation.org) and for membership enquiries, please use [membership@seaturtlefoundation.org](mailto:membership@seaturtlefoundation.org). The old [ipstcg@beyond.net.au](mailto:ipstcg@beyond.net.au) email will be phased out over the next few months.