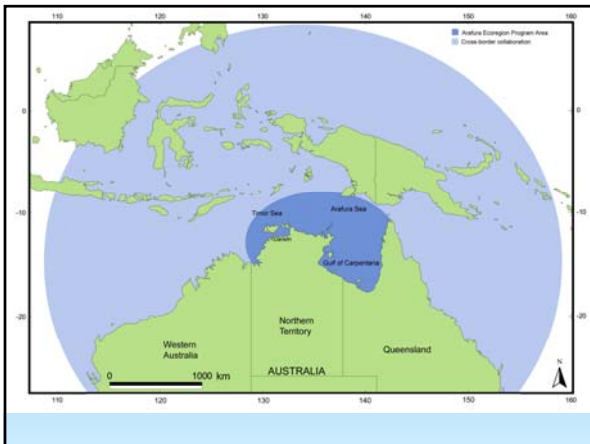






Research and Management of Sea Turtles along the Indigenous Coast of Northern Australia

Scott Whiting, Damian White, Linda Cuttriss and Karen Cook
WWF Australia - Darwin Office



WWF Arafura Eco Region




Coastal Population - Sparse

- Only one major city
- 5 Coastal Towns
- 10 Coastal Indigenous communities
- 200 Indigenous outstations (1 or 2 houses)
- Most of the coastline is remote and inaccessible by road

Existing Natural Resource Management

- Over 85% of coastline is Indigenous owned
- Indigenous harvest is allowed
- Indigenous Sea Rangers

Goal



- **Achieve sustainable sea turtle populations in Arafura and Timor Seas region while enhancing and maintaining community capacity to monitor and manage these populations.**



Question for WWF Australia is how???

Through

- Research
- Management
- Education

within a framework of capacity building

Research Goals



- Contribute to existing knowledge
- Monitor existing impacts and identify potential impacts
- Form research partnerships to address specific management issues
- Develop the capacity of Indigenous communities to monitor their own natural resources

Management Goals





- Find and implement solutions to threats
- Involve all stakeholders in the management process
- Develop an integrated approach to managing sea turtles using both Indigenous and Western methods
- Develop management actions across borders
- Increase awareness and education
- Work towards achieving objectives of existing frameworks (Recovery Plans, Indian Ocean Sea East Asian Marine Turtle Memorandum of Understanding (IOSEA))
- Be active on committees and in fora that specialise in sea turtle issues




Research - Project Outlines

- Marine Debris Monitoring
- Turtle Research and Monitoring

Joint Projects - Partnerships with all stakeholders especially Indigenous groups




Marine Debris - The Problem

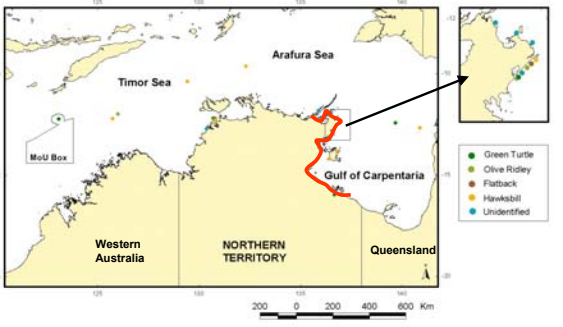



- Excessive amounts of debris
- Entanglement
- Ingestion

Photo: DLMAC






Project Initiated from Reports


Quantifying the Problem

- Beach Surveys
- Public entanglement reports
- Helicopter surveys by Dhimirru Land Management (Indigenous Rangers)

Beach Surveys

- Annual beach surveys at 5 sites

Beach Survey Data



- Items sorted into categories
 - Record number of items and weight of categories
 - Identify origin using labels or bar codes
 - Surveys 2002
 - 10,000 items weighing 5 t from 20 km of beach
 - From those identified
 - > 75% from SE Asia
 - 20% from Australia
- (White 2002)**



Ingestion Data



50 - 320 Plastic bottles/km

100 - 500 shoe items/km



Greater than one third of all bottles and rubber shoes items show evidence of bite marks (turtles and fish).

Net Identification



- **Net Kit**
 - Nets identified based on colour, mesh and twine size
 - 40% of the 180 net types have been ID to a country of origin
 - Beach Survey - 2002
 - 60 nets/ km
 - 220 kg / km
 - 70-90% Foreign Origin
- (White 2002)



Entanglement Data



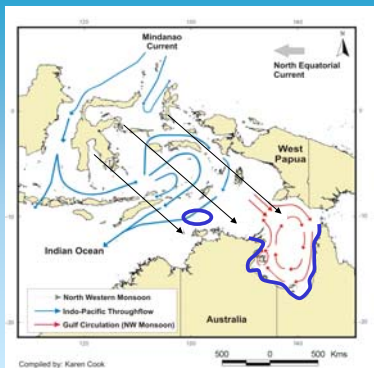
- **Beach Washed Reports**
 - Annually - 5 to 55 turtles 40 km of coast. Tot. 194
 - 27% hawksbills, 17.5% green, 13% Olive Ridley, 10% flatback 32% unidentified



- **Oceanic reports**
 - 40 turtles
 - 77% hawksbill, 15% green
 - size <30cm ccl

Photos: Woodside Endeavour

Entanglement Reports



Turtle Monitoring



• Objectives

- Long-term
- Scientific
- Capacity Building of Indigenous Sea Rangers
- Achieve Objectives of Existing Frameworks, Management Plans, IOSEA etc



Turtle Monitoring



Focus

- Collect Biological data
 - Nesting numbers
 - Nesting and nest success
- Monitor local impacts
 - disease,
 - fishing mortality
 - marine debris strandings
- Investigate harvest levels



Why Harvest Issues?



- Over-harvest issues have been raised in recent media
- Some Indigenous communities are asking about sustainable levels of take
- Unknown levels of take at the moment
- WWF is investigating integrated approaches to management using science and culture



Turtle Projects



Three Projects

- Monitor nesting populations (Sea Rangers)
- Olive Ridley Tracking
- Sick Turtles



Biological data



- Two Locations
- Provide Training, education and equipment to Indigenous Sea Rangers
- Start as baseline data collection
- Develop into long-term monitoring



Olive Ridley Tracking



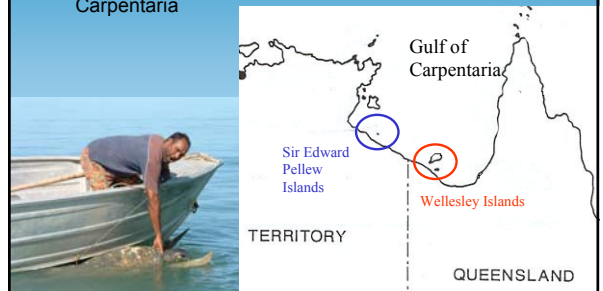
- **Post-nesting**
 - Least known turtle in Australia (nesting, foraging, migrations)
 - Listed as Endangered in Australia
- **To identify**
 - Interesting movements
 - Migration route post-nesting
 - Foraging areas



Sick Turtle Study



- **Problem** - Indigenous Communities report high numbers of sick Green turtles and Dugongs in Gulf of Carpentaria



Sick Turtles



• Reports from 2 local Indigenous Communities

- Poor condition
- Unable to dive
- Many washed ashore dead
- Turtles have black fat or jelly-like fat
- Dugongs sick and adults very small (dwarf)
- Turtles and dugongs tasted different



Sick Turtles



• Project - Autopsies of traditionally hunted animals plus any sick or moribund turtles.

- Max. of 20 green turtles and 20 dugongs over 2 years
- Indigenous Sea Rangers, Gov't Vet., WWF assistance and Gov't grants
- Pathology and analysis of tissue samples including heavy metals



Management



◆ Develop Indigenous and Western Solutions

- Indigenous Sea Ranger Training and Education
- Management Plans
- Protected Areas

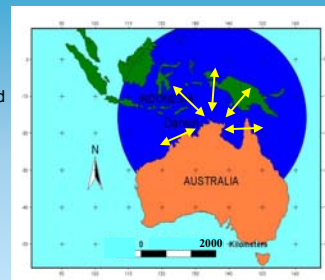


Management



Across Borders Approach

- Investigate management actions and options across borders
 - Facilitate meetings
 - joint proposals developed
- Marine debris and turtle conservation are cross borders issues

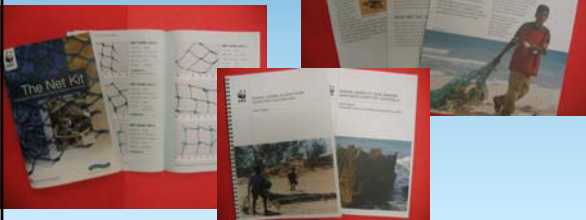


Management



Public Awareness and Education

- Reports
- Brochures
- Displays
- Talks



Acknowledgments



- Tony and Lisette Lewis Foundation
- Dhimirru Land Management Corporation
- Northern Territory Government - Fisheries Group
- Lianthiwirriyarra Sea Rangers
- National Heritage Trust - Australian Gov't
- Marthakal Homelands Resource Centre
- Anindilakwa Angurugu Land Council
- Conservation Volunteers Australia
- Charles Darwin University





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