

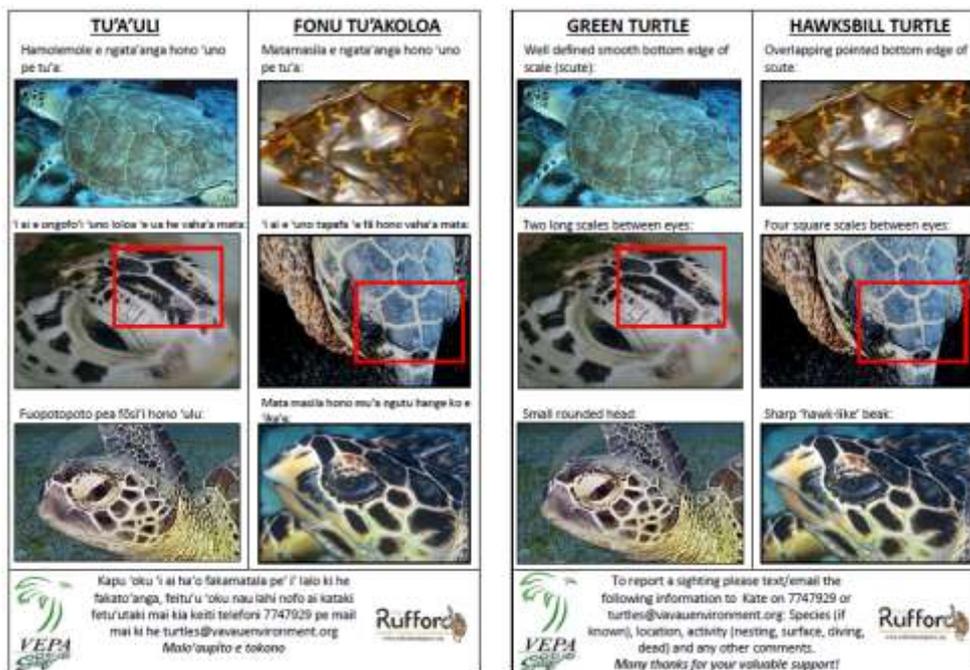


Vava'u Community Turtle Monitoring Project  
12073-1  
Interim Report: September - November 2012



### Sightings database

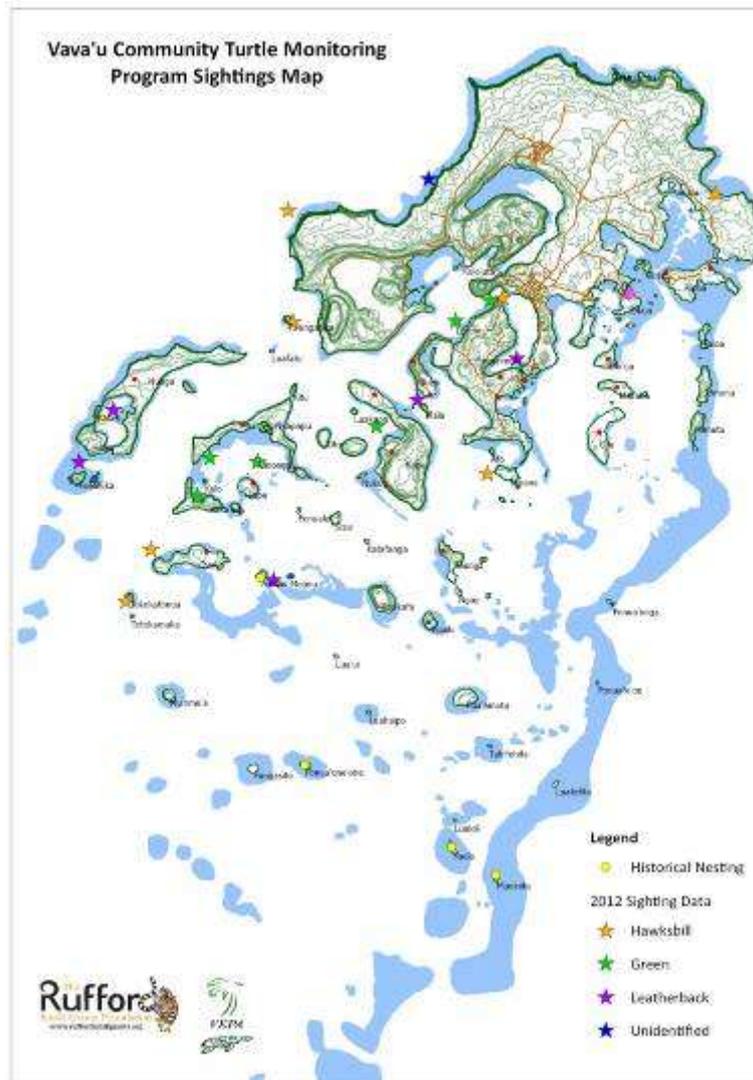
The project has published a number of ID guides for the two main turtle species here in Vava'u: Hawksbill (*Eretmachelys imbricate*) and green turtle (*Chelonia mydas*) to aid the public in identifying the species of turtles that they are seeing. The guides have been designed in both Tongan and English for widespread use. We are working with dive centre operators, yacht charters, whale watching operators, outer island resorts and residents to gather incidental turtle sighting data throughout Vava'u.



ID guide for main turtle species for distribution as a sightings guide

A GIS mapping project has been started to record all of the turtle sightings reported for analysis and communication. As no data currently exists for the relative distribution or abundance of turtles residing in Vava'u (either foraging or nesting), this project is determining the baseline dataset. Nesting season starts in December 2012, therefore sightings collected to date are for turtles observed in-water. Already several areas have become apparent as key foraging zones with several big specimens of green turtles being located there. There are more sightings recorded for green turtles than hawksbills, and green turtles have a wider reported distribution across the island group than hawksbills. The main diving season here in Vava'u is from April to October therefore we expect the hawksbill sighting data to become more complete as the next diving season commences.

As the areas of interest become more defined through repeated observations, a survey plan will be designed for in-water monitoring of these sites.



Turtle sighting GIS project, initial in-water sightings map.

## Turtle Fishery Monitoring

The closed season for the turtle fishery in Tonga is from July 31<sup>st</sup> to February 1<sup>st</sup> to coincide with the breeding and nesting season. The project has not yet had the opportunity to monitor the legal fishery due to the closed season but we have had the opportunity to record some of the illegal fishing. To date, there have been five turtles caught illegally in Vava'u that have been reported to us. Out of these five, we have been able to release three back to the wild after examination and two of these were given individual flipper tags.

All illegal landings are reported to the Ministry of Fisheries for their records. There is a lack of enforcement of the turtle fishery legislation, however, there is also a lack of documented instances of illegal fishing, therefore it is important for us to communicate our findings with the ministries representatives.

All tagging information is recorded in the projects records, recorded with the pacific wide database (TREDS) and sent to the Ministry of Fisheries for their records. In addition to this we have become contributors to the State of the World Turtle (SWOT) database.



Three turtles released by the Vava'u Turtle Monitoring Program in October and November 2012. Two of the turtles were tagged; the individual on the right also shows a spear gun injury from its capture.

At present any injured turtles found will be released back to the wild as the Vava'u Turtle Monitoring Program have neither the funds nor the facilities for a rehabilitation tank.

### **Project Partners**

The Government of Tonga in association with the Secretariat of the Pacific Regional Environmental Program (SPREP) and funded by the New Zealand Department of Conservation have agreed upon a four year Eco-Tourism Development and Community Turtle Monitoring Program which dovetails perfectly with our project. We have been accepted as project partners within this government initiative and will act as an extension of their project while meeting our own objectives and schedules. This partnership benefits the project greatly as we can use the weight of the government support while remaining financially and politically independent.



Government turtle project meeting in Nuku'alofa, October 2012

The initial consultative meeting took place in the capital of Tonga, Nuku'alofa with representation from the Ministry of Fisheries, Ministry of Environment, Ministry of Tourism, Vava'u Turtle

Monitoring Program, Vava'u Environmental Protection Association (VEPA, NGO), NZ Department of Conservation and private business.

## Communication and Outreach

Several outreach materials have been developed for raising awareness of the plight of marine turtles. It became apparent in the first few months of the project that even the most basic facts of turtle life history strategies were not known to the communities at large but there is a keen interest to learn. The project has therefore developed ID guides, legislation guides and an information pamphlet in both English and Tongan. The outreach materials are aimed at visitors, expatriate residents and Tongan residents and are distributed at no cost from the projects base of operations in Vava'u. There are plans to make these materials more widely available from the public library and schools.

**Marine Turtle Factsheet**

**Marine Turtle Ecology**



**Species:** Two main species can be found here in Vava'u, Hawksbill (Stomatochelys radiolata) and Green (Chelonia mydas).

**Size:** The average carapace length for a Hawksbill turtle is 65-70cm (max 90), green turtles average a length of 80-110cm (max 1.5m).

**Life spans:** The life span of marine turtle species in general is unknown but estimates for Hawksbill range from 30-50 years and for green, at least over 30 years.

**Diet:** Hawksbills also consume mainly of sponges, their sharp beak being used to tear at sponges and reaching outwards in the reef. Green turtles feed mainly on sea grasses in near-shore waters.

**Life stages:** During their post-larval pelagic years, juvenile Hawksbills float in the ocean currents on the surface amongst Sargassum sea-urchin patches. In the rest of the life stage is unknown, some turtles suggest that they are feeding on small marine animals that are also associated with these drift communities.

**Migration:** When they reach older shore plate size they switch to a coastal associated life stage and roost on the tropical reef or seagrass beds of nearby land masses. Once this switch occurs, turtles change their diet to sponges (for Hawksbill) or sea grass (for Green). Turtles will stay in these foraging grounds until they reach reproductive age and are ready to mate.

**Reproduction:** Female turtles breed every 2-3 years, migrating hundreds of miles from their foraging grounds to beaches near to their original place of foraging. Once the sea is calm and is ready to lay, the female comes ashore at night, selects a nesting site, digs an egg chamber and lays 80-140 eggs. She then covers the eggs and returns to the sea. Females nest approximately 4 times in each breeding season, leaving their nest approximately 2 weeks apart.



**Marine Turtle Facts**

Only 1/1000 hatchlings will survive to become mature breeding adults. This makes every nest critical to survival of the species as one female will only lay a maximum of 600 eggs every 2-4 years.

The carapace (shell) of marine turtles is made from keratin, the same material as our hair and fingernails. This material grows over the spine and between the ribs to form a solid shell which the spine and ribs are attached to.

**Threats to Marine Turtles**

As with all marine turtles, there are many anthropogenic threats to their survival. The IUCN Red List records the Hawksbill turtle as critically endangered and most of this decline is due to harvesting for the jewellery trade. The carapace of a Hawksbill can be polished to reveal a beautiful natural pattern which has been popular for decoration for hundreds of years.

Green turtles are listed as endangered and this is mostly associated with hunting for food. In many small island nations there still exists a demand for turtle meat and eggs with legal and illegal harvesting of adults and their nests leading to declines in localised populations. Green turtles have white flesh with a slight green colour, hence the name.

Marine debris also poses direct threats to marine turtles. Plastic bags in the ocean look very similar to jellyfish and are often ingested by turtles leading to an obstructed gut and starvation.

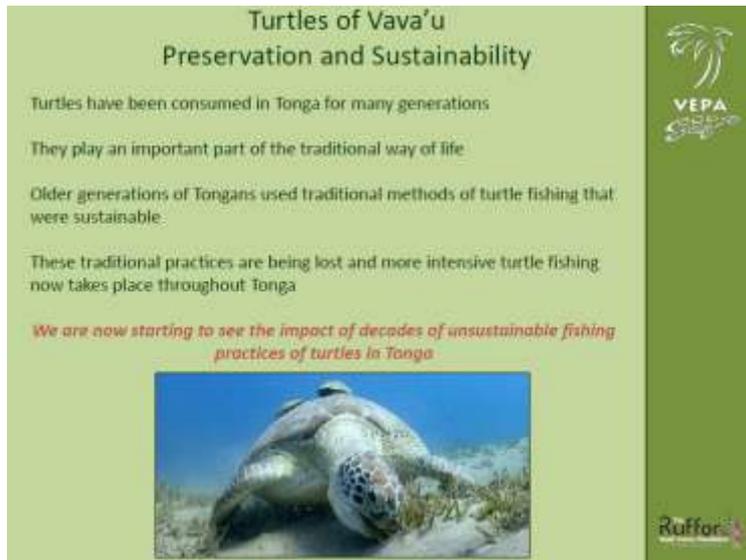
In addition to this, coastal development threatens the integrity and suitability of nesting beaches with artificial lights leading to disorientation of hatchlings and in some cases, coastal development leads to their erosion of the nesting beaches.

There are also indirect threats to the survival of this species through climate change and rising sea levels. Marine turtles nest on fringing beaches of tropical islands, in the zone which will be most directly impacted through rising sea levels, leading to a loss of nesting habitat. An additional potential threat to survival from climate change is the associated rising temperatures. The male/female ratio of hatchlings is determined by nest temperature and with rising temperatures leading to hotter sand, there is a risk of a male population skewed towards females leading to a loss of potential mates.

Sample of turtle project brochure

A Nature Explores Club activity day has been developed for a youth group aged 16-21 and is scheduled to take place in December. In addition to this, women's groups have been contacted and have expressed interest in receiving presentations about the project. There are also plans for the project to be incorporated into the Vava'u Environmental Protection Associations monthly school program and this is scheduled to take place early in the new year.

A meeting of Town Officers of all the villages in Vava'u was scheduled for November and this was going to be the introduction of the project to all of the communities, however, this meeting was delayed and we are now awaiting a new date.



Developed presentation for Vava'u Town Officers meeting

In addition to the local outreach, social media has also been used with a successful facebook page being launched. This page is updated several times a week and generates a relatively high number of interactions both locally and internationally. You can follow this page at [www.facebook.com/vavauturtle](http://www.facebook.com/vavauturtle).

The Vava'u Turtle Monitoring Program website has been launched but is still in need of additional content. This will be improved on an ongoing basis.