

# Report on Marine Turtles Tagged and Released from the Malua Theological College Pond August 2010



Pulea Ifopo<sup>1</sup>, Titimanu Simi<sup>2</sup>, Setoa Apo<sup>3</sup>



GOVERNMENT OF SAMOA

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT



DIVISION OF ENVIRONMENT & CONSERVATION

1. MPA (Marine Protected Areas) Officer
2. Marine Conservation Officer
3. Waste Management Principal Officer

## **1. Background**

Marine turtles have existed for over 200 million years with the ability to adapt to the changing conditions of the environment. They are highly migratory animals capable of travelling thousands of miles to and from their feeding and nesting grounds. However, their migratory nature means they are highly vulnerable to a variety of threats and therefore require a rigorous continuous effort to ensure their survival.

Marine turtles play an integral part in traditions of Pacific Island people, featuring in legends and traditional uses. In Samoa, they are considered a sacred fish (*i'a sa*) and are only used for special occasions. However, the breakdown of these traditional practices along with the overexploitation of turtles for their meat and shell has led to the rapid decline in their populations. This decline in population has been hastened by the harvesting of turtle eggs and several cases of entanglement from discarded fishing nets.

The three marine turtle species found in Samoa are the Green turtle (*Chelonia mydas*), Hawksbill turtle (*Eretmochelys imbricata*) and the Leatherback turtle (*Dermochelys coriacea*). The Hawksbill turtle is the only species that nests in Samoa and their main nesting grounds are on the offshore islands of Aleipata which is protected under the Marine Protected Areas Program.

Of the three species found in Samoa, two are listed as 'critically endangered' and the third as 'endangered' under the IUCN Red List of Threatened Species. As a consequence of these listings, the Division of Environment & Conservation under the Ministry of Natural Resources and Environment, along with SPREP and the Fisheries Division of MAF, have been working together in an effort to reverse the declining population trend of marine turtles in Samoa and the region as a whole.

Currently, these conservation efforts have included the annual surveying of the nesting areas of the Hawksbill turtle by the Marine Conservation staff of MNRE. The surveys are to determine the current status/situation of nesting hawksbill turtles on the nesting beaches. Also, since 2004, MNRE and SPREP have been working together on the Flipper Tagging Program and the recently used TREDS (Turtle Research & Monitoring Database System), which aims to record all data of tagged turtles to monitor their migration and status.

## **2. Flipper Tagging Program**

The Flipper Tagging Program, which is undertaken by the DEC of MNRE, and the Fisheries Division of MAF in partnership with the SPREP, involves the tagging of marine turtles with titanium flipper tags and/or satellite tags.

The flipper tags which are applied on both front flippers contain information such as the returning address of the tag and its unique tag number which is used to identify the turtle. This tag number is also used to register the turtle into the TREDS.

The satellite tags are less common because of the high costs involved. They are simply radio transmitters that are attached to the carapace (shell) of the turtle. The signals received from these transmitters are used to plot the migration route of a satellite tagged turtle.

By tagging turtles, we are able to study their migration patterns, distribution and growth rates. Furthermore, with these tags we can identify and monitor where they nest and forage.



Flipper tag being applied



Flipper tag with its tag number



Turtle with satellite tag

### 3. Turtles tagged from Malua Theological College

The 'turtle tag and release' partnership between the MNRE and Malua Theological College started in 2004 when the Principal, Reverend Otele Perelini at the time requested the Division of Environment and Conservation to tag and release some of the adult turtles that were kept in their pond as it was becoming overcrowded. Turtle recruitment sources for the pond were and are mainly turtles caught or found by members of the public, mainly fishermen and taken for keeping in the Malua pond. These fishermen and public have some awareness of turtle conservation in Samoa.



Students in the process of netting turtles



Turtle being carried out of the pond

Since 2004 up to 2010, the tag and release of turtles from Malua by the Division of Environment & Conservation, in response to requests from the Malua Theological College, has become an annual event.

Table 2 below presents some details of all the turtles that were tagged and released from Malua in 2004, 2005, 2006, 2007, 2008 and 2010. It must be noted that no tagging was done in 2009 as the DEC staff were not available on the day the College requested for.

#### 4. The 2010 'tag and release' activity

On the 12<sup>th</sup> August 2010, a total of 13 turtles were retrieved for tagging by students of the college using two large fishing nets. Of the 13 that were caught, two juvenile Hawksbills were tagged and released at Sogi along with two juvenile and two sub-adult Green turtles. These turtles were tagged and released mainly because of their unhealthy conditions and to avoid congestion within the pond. The measurements and conditions of these turtles were recorded, as illustrated in Table 1. The remaining seven turtles that were caught were retained in the pond.

Species	Age	Right Flipper	Left Flipper	CCL min (cm)	CCL notch-tip (cm)	CCW(cm)	Comments
Hawksbill	Juvenile	RI00678	RI00679	32.4	33.8	28.7	Underweight. Unhealthy condition.
Hawksbill	Juvenile	RI00691	RI00692	34.9	37.2	32.4	Underweight. Unhealthy condition.
Green	Juvenile	R39434	R39435	55.1	55.6	49.4	Strong & active.
Green	Juvenile	R39432	R39433	59.4	64	52.1	Healthy & active.
Green	Sub-adult	R39459	R39458	66.8	67.3	63.1	Strong & active.
Green	Sub-adult	R39430	R39431	63.8	65.3	56.9	Healthy condition.

**Table 1: Measurements and observations of tagged turtles**



A juvenile Hawksbill turtle



DEC staff applying a flipper tag



A tagged turtle being released

Year	Total kept in pond	Total tagged	Total released	Total retained
2004	8	7	7	1
2005	19	19	19	0
2006	31	15	12	19
2007	8	7	6	2
2008	31	15	9	22
2010	13	6	6	7
<b>TOTAL</b>	<b>110</b>	<b>69</b>	<b>59</b>	<b>51</b>

**Table 2: Total number of turtles tagged and released in 2004, 2005, 2006, 2007, 2008 and 2010.**

## 5. Discussion

Since the Flipper Tagging Program was first carried out at Malua in 2004, the total number of turtles retrieved from the pond every year has fluctuated. The highest number of turtles retrieved from the pond was recorded at 31, both in 2006 and 2008. The lowest number of turtles retrieved was recorded at 8, back in 2004 and in 2007. Although the number of turtles retrieved in 2010 is a decrease from 2008, the total of 13 turtles is still consistent with the average number of turtles retrieved annually.

Accordingly, it is safe to say that members of the public, especially those who are bringing the turtles to the pond, have some awareness of the importance of conserving our marine turtles.

## 6. Recommendations

- To release all hawksbill turtles kept within the pond. The hawksbill turtles look unhealthy, possibly due to the turtles not eating the right food.
- To use smaller tags for the juvenile turtles with carapace CCL>35cm up to CCL=65cm straight carapace length.
- To avoid keeping turtles in captivity and to encourage the public to contact DEC to report the capture or findings of any turtles.

## **7. Acknowledgements**

We would like to extend our gratitude and thanks to the Principal of Malua Theological College, Reverend Otele Perelini as well as the church ministers for allowing the Division of Environment and Conservation to tag and release their turtles, and in contributing to the ongoing efforts in the conservation of turtles.

We would also like to thank all the students who undertook the major task of catching and retrieving the turtles, in particular, Reverend Ma'afala Lima who supervised the process.

We also acknowledge the presence and assistance of Mrs. Catherine Siota-Manu, the Associate Turtle Database Officer for SPREP who took part in the tag and release process of the turtles.

Lastly, we would like to thank Mr Leo'o Polutea and Mr Peni Mealofa, who were previous staff members of MNRE, for assisting us in identifying and assessing the turtles.