REPORT:

MOTURIKI COMMUNITY TURTLE MONITORING WORKSHOP

12 - 13 March, 2013
Moturiki, Fiji Islands.

SPREP PROE

NEW ZEALAND MINISTRY OF FOREIGN AFFAIRS & TRADE Aid Programme

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Acknowledgement

The Secretariat of the Pacific Regional Environment Programme (SPREP) and Ministry of Fisheries (Fiji) acknowledge the following for their contribution and support to the implementation of this workshop:

1. Communities of Moturiki district
2. Uluibau Village as a host village to the workshop
3. Moturiki Environmental Committee
4. Lomaiviti Provincial Council
5. World Wildlife Fund – South Pacific Programme
6. Partners in Community Development Fiji (PCDF)
7. Dau ni Vonu from Kavewa and Kia Islands
8. Fish wardens from Yanuca island (Serua)
9. The manager and staff of Leleuvia Island Resort
10. The manager and staff of Caqalai Island resort

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This workshop report was compiled by Saras Sharma-Gounder [a] ; Matelita Kedrayate [b]; Catherine Siota [c]; Penina Solomona [c]; Laitia Tamata [d]; Ilisoni Tuinasavusavu [b].

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[c]: Secretariat of the Pacific Regional Environment Programme.

[d]: WWF South Pacific Programme Office.

1. EXECUTIVE SUMMARY.

This workshop delivered on the 'Capacity building, education and training' output of the 'Turtle Monitoring and Eco-tourism Development' project, which is being funded by the New Zealand AID Programme and delivered in partnership with the NZ Department of Conservation. The project will be implemented in four Pacific Island countries, and Fiji is the first to initiate activities.

Following on from stakeholder discussions in 2012, the Department of Fisheries and national partners decided on Moturiki Island based on anecdotal information about nesting and foraging turtles as well as its proximity to two island resorts, Leleuvia and Caqalai, thereby facilitating another expected outcome of this project. The workshop was initially scheduled for December, 2012, however, due to the untimely passing of the SPREP Marine Species Advisor who was leading on this project, it was deferred and eventually took place on the 12th and 13th March, 2013.

The workshop was jointly facilitated by SPREP (Secretariat of the Pacific Regional Environment Programme), the Fiji Department of Fisheries, Partners in Community Development - Fiji (PCDF) and the WWF South Pacific Programme Office (WWF SPPO). It was implemented on the island of Moturiki at which all 10 villages were represented, and also included participants from Yanuca, Makogai, Ovalau, Kia and Kavewa islands, bringing the total participation number to 63.

The workshop was designed in that it spent the first day in theory sessions covering a wide range of topics including marine turtle population status, biology, ecology, threats, and the existing legislation, research and community initiatives protecting turtles. All presentations aimed to provide the participants with a global, regional and national view, and where possible, the data presented would be made local (ie) village level.

The selection of monitors was made after exposing all 63 participants to the numerous topics including the expected project outcomes and the roles and responsibilities of monitors. The village representatives collectively agreed on their nominations, and this resulted in the selection of 17 monitors across the 10 villages of Moturiki, and neighboring islands of Caqalai and Leleuvia. This process of monitor nomination was significantly assisted through the presence of two current monitors, who were later able to provide a more germane perspective, based on their own experiences as turtle monitors.

The second day of the workshop focused on providing the newly nominated monitors with more in-depth information on the methodologies used for conducting turtle surveys, including beach patrols, flipper tagging, species identification and differentiation, completion of data forms as well as familiarizing themselves with the process of report submissions to the nearest Fisheries office. The monitors later had an opportunity to practice these new skills, and while unfortunately, a live turtle was unavailable, provisions were made in order to enable the monitors to undertake this practical session.

A total of 16 nesting and foraging monitoring sites were successfully identified by the monitors. This is across all the 10 villages of Moturiki Island and the neighboring eco-resorts. A commitment was made by the Department of Fisheries and PCDF in that a further refresher session for the monitors would be undertaken in September, prior to the nesting season.

The workshop, training, facilitators and donors were gratefully acknowledged by the attending communities who also expressed their keen interest in seeing the successful implementation of the project and its intended objectives.

2. INTRODUCTION.

The Turtle Monitoring and Eco-tourism Development project is funded by the NZ AID programme in partnership with the Secretariat of the Pacific Regional Environment Programme - the latter organisation being the key coordinator of the project. It aims to enhance the capacity and commitment in the Pacific Region to conserve and sustainably manage endangered marine turtle populations, and to achieve increased skills, sustainable economic benefits and improved livelihoods for local communities through turtle-related management and ecotourism activities. The project is being implemented across Fiji, Tonga, the Solomon Islands and Kiribati.

Populations of marine turtles, once abundant in the region, are in decline with some species considered to be seriously endangered or may have already disappeared from some islands. Turtles are being unsustainably hunted (for meat, eggs or shell) for food and sale in many countries, and this has been the major reason for their drastic decline in numbers. Other factors are the loss and degradation of nesting habitats, feeding grounds, marine pollution, bycatch and climate change.

Across the Pacific Islands region however, there are some notably growing examples of community based initiatives seeking to halt or reverse this population decline. The model upon which this project is based, is that of the Vanuatu Wan Smolbag Community Turtle Monitors. In partnership with managed economic activities around turtles, the Vanuatu monitors are contributing to the protection and management of sea turtles, whilst generating income and awareness to support community economic aspirations.

The goal of this project is to therefore adopt, adapt and replicate this model in the four countries across the Pacific region and ultimately improve the status of marine turtle populations and the capacities of local communities involved.

3. ENGAGEMENT OF MOTURIKI COMMUNITIES.

Following on from a stakeholders meeting in September 2012, the Department of Fisheries and partners determined the implementation sites for this project which lead to the selection of Moturiki Island, one of the six islands in the Lomaiviti group. The site was selected ideally because of historical anecdotal nesting reports which had not been verified with actual surveys. The site was also in close proximity with the two eco-resorts Caqelai and Leleuvia which perfectly addressed our objective of setting up a community based ecotourism project.

Like other Pacific islands, the people of Moturiki regard marine turtles as a source of protein. The communities are aware of the declining turtle numbers as well as the Moratorium that exists for their protection including the exemptions granted for traditional use. For this particular reason, the communities of Moturiki have always regarded the monitoring and protection of marine turtles to be a government responsibility.

Through their engagement in other community resource management initiatives which look at ecosystem management, all villages in Moturiki have natural resource management action plans and designated Marine Protected Areas (MPAs). The delivery of this training was thus thought to further

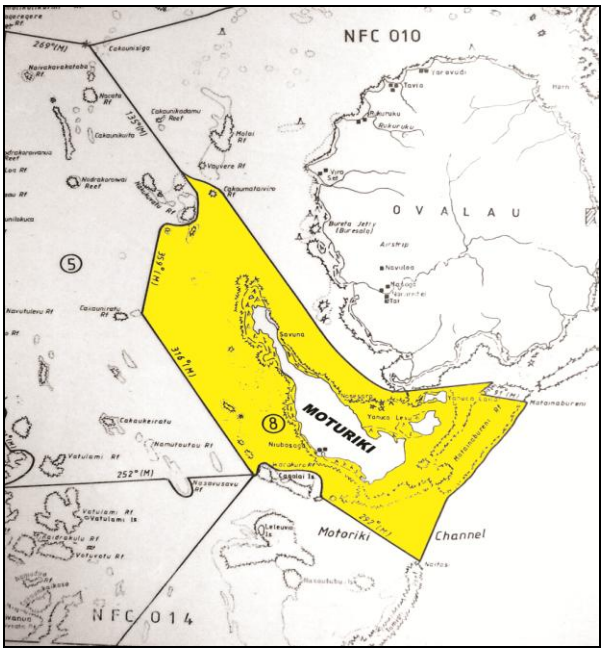
provide communities with more capacity to further strengthen these action plans and reduce the effects of increasing fishing pressure.

4. WORKSHOP OBJECTIVES.

The key objectives of the workshop were to:

1. Raise awareness with Moturiki communities on sea turtle conservation;
2. Introduce the 'Turtle Monitors' concept;
3. Invite nominations from the communities for their turtle monitors;
4. Train nominated monitors on basic research skills including flipper tagging, nesting beach survey techniques, and data recording;
5. Identify monitoring sites and develop a monitoring schedule.

5. WORKSHOP SITE.



The island of Moturiki is located in the Province of Lomaiviti. As illustrated in ***Fig.1***, it lies adjacent to the southwest side of Ovalau Island and has a land area of 10.9 km^2 with 10 villages.

Fig. 1: **The island of Moturiki with the fishing boundary highlighted (Source: Native Lands and Fisheries Commision, 1996)**

6. WORKSHOP AGENDA.

The two day workshop was designed to focus the first day on awareness raising on sea turtle conservation aspects. All agenda items were covered, and the evening was dedicated to a session on experience sharing from current turtle monitors of the Macuata Province. The second day was designed specifically for the nominated turtle monitors and included a practical session. The full workshop agenda is attached as Appendix 01.

7. PARTICIPANTS and FACILITATORS.

A total of 63 participants were engaged in the workshop. The composition of the participants were representative of the ten villages in the district of Moturiki , Yanuca in Serua , Kavewa and Kia Island of

Macuata, Vanua Levu. A representative of the Lomaiviti Provincial Council, Moturiki Environment Council, Makogai Research Station were also present. Participant details can be found in Appendix 02. The workshop was facilitated by SPREP's Penina Solomona and Catherine Siota; Fisheries Principal Research Officer, Aisake Batibasaga; Fisheries Officer, Saras Sharma-Gounder and WWF SPPO's Marine Species Officer, Laitia Tamata.

8. WORKSHOP PROCEEDINGS.

Following is a summation of presentations delivered and the consequent 'question and answer' sessions.

8.1. OPENING.

Traditional i sevusevu presentation being delivered. ©Solomona / SPREP.

As is customary in most Pacific Island meetings, a prayer was said to open proceedings and bless the discussions over the next few days. The *Mata ni Tikina Moturiki* (District Head) then welcomed participants to the training and to Uluibau village. This was followed by a round of introductions of the 64 participants of the training. A traditional presentation (*i sevusevu*) was then delivered and concluded with a short speech delivered by the Principal Fisheries Officers on behalf of the workshop facilitators.

8.2. BACKGROUND and PROJECT INTRODUCTION.

8.2.1. Marine Turtle Species and their Status: Global and Pacific- Catherine Siota (SPREP)

This presentation provides an overview of the marine turtle species and their status both globally and in the Pacific region.

- **Marine turtle species status globally**
    - Under the IUCN Redlist for threatened and migratory species, the global status of the marine turtles are:
        1. Hawksbill turtle-Critically endangered;
        2. Green turtle-Endangered;
        3. Leatherback turtle-Critically endangered;
        4. Olive ridley turtle-Vulnerable;
        5. Loggerhead turtle-Endangered;
        6. Flatback turtle- Data deficient;
        7. Kemp's ridley turtle-Critically endangered.
    - Under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). All species of sea turtles (Cheloniidae species and *Dermochelys coriacea*) are listed in Appendix I of CITES.
    - Under the Convention of Migratory Species of Wild Animals (CMS), all sea turtles species are listed in Appendices I and II.

- **Marine turtle species status in the Pacific**
  The status of most sea turtle stocks in the Pacific Ocean is poorly understood. Many stocks have been reduced significantly, while some (eg) Eastern Australia and Hawaii, are increasing.

Questions and comments received from the participants included the following:

- Can a copy of the types of marine turtles be distributed? Perhaps 1 or 2 copies per village.
  - ACTION- Fisheries to provide PCDF with copies to distribute to communities.

The presentation is attached as Appendix 03.

8.2.2. Status of Marine Turtles in Fiji - Saras Sharma-Gounder (Fisheries).

The presentation provided an overview of the different species of turtles found in Fiji waters and their abundance and nesting status. There are five species of turtles that are found in Fiji either foraging, nesting or migrating through. These are the:

1. Green Turtle ***Vonu dina***
2. Hawksbill ***Taku***
3. Loggerhead ***Tuvonu***
4. Leatherback ***Tutuwalu* or *Dakulaca***
5. *Olive Ridley* ***Vonu damu***

Nesting estimates for the species based on estimates from 2000, are as follows:

- Green turtles : 50-75
- Hawksbill turtle : 150-200
- Loggerhead turtle: not known to nest in Fiji (just recruited from other populations in the Pacific
- Leatherback turtles : 20-30 (opportunistic or sporadic nesting from other rookeries

Some of the threats that this species face in our waters are illegal commercial harvest for meat, shell and eggs, together with the destruction of habitats and nesting grounds for this populations. The presentation also briefly discussed the current 10 year Moratorium in place from 2009 – 2018 and certain measures such as “no take” policy during nesting season.

Questions and comments received from the participants included the following:

- Uluibau community members reported a turtle found that morning. Approximately 3 - 4 years ago, a turtle was found between the villages of Daku and Uluibau.
- Why does the *tuvonu* (loggerhead) not nest in Fiji?
  - **Response:** *Aisake Batibasaga*- Climatic condition plays a critical part in determining the nesting place of a turtle. Taking into account the temperature of the sites. Equatorial current is the main factor that helps the turtle migrates to Fiji. Their nesting place is mostly Japan.
- The tuvonu was reported to be found in and around Moturiki.
- How many years does it take of a turtle to be able to give birth?
  - **Response**: They may take between 30 - 40 years while the leatherback can take up to 55-60 years.
- Are leatherback turtles only found in the deep sea?
  - **Response:** *Aisake Batibasaga* - At some point, they will come ashore to lay their eggs, but they do tend to stay out at sea mostly. Pollution has also contributed to their decreased numbers for example, the plastics found out sea are mistaken by leatherbacks as their food (jellyfish).

- During one of the Provincial Council Meetings, the *Mata ni Tikina Boro*(Lovoni) played around with the turtle calling practice and to the shock of people Tui Naikasi togerther with his children and grandchildren surfaced. There may be a disconnect between linking traditional hunting to threats as the belief is that people, when in need of turtles, will not hunt for the turtles as the animals will present themselves.
    - Agree that traditional hunting is not the threat. Rather it is the loss of traditional practices and the increase in the use of 'tradition' as a justification for hunting turtles. Rather, the practice may be more modern / commercial in nature.

The presentation is attached as Appendix 04.

8.2.3. Introduction to the Project - Penina Solomona (SPREP)

Participants were given an overview of the project to establish a clear understanding on the objectives of the workshop as well as the intended goals of the project. The presenter introduced the rationale behind protecting marine turtles due to their cultural significance for the people of Fiji as well as it being an important livelihood resource. However, with the erosion of traditional practices, turtles have become over-hunted and their numbers in the decline. This project therefore seeks to address this decline by merging community capacity with economic activities. This is based on a successful example in Vanuatu (ie: Vanua-Tai Resource Monitors). The presenter emphasised that the project looked to building capacity of key community members and over the course of the next four years, would look to establishing a small-scale eco-tourism venture that could generate income for the communities.

The planned activities of the project therefore include capacity building workshops and field training; establishing turtle monitoring and conservation management programmes; education and awareness-raising; investigation and establishment of turtle-related eco-tourism initiatives. This current workshop is already the beginning of the capacity building, education and awareness raising and turtle monitoring and conservation management programme establishment components of the project.

The presentation is attached as Appendix 05.

8.3. Marine Turtle Biology, Ecology and Threats

8.3.1. Marine Turtle Occurrence and Nesting: Pacific and Globally - Catherine Siota (SPREP).

This presentation gives an overview of marine turtle species occurrences and nesting in the Pacific and globally. The key points included:

- That the most common turtle species found in the Pacific region are the green and hawksbill turtles;
- The major rookeries for green turtles in the Pacific region are found in Palau, PNG, Australia, New Caledonia, Hawaii, Fiji and the Polynesian stock in few Polynesian countries);
- The major rookeries for hawksbill turtles in the Pacific region are found in the Solomon Islands and Australia.

The presenter reiterated that the status of most marine turtle stocks in the Pacific Ocean are poorly understood.

Questions / comments received from the participants included the following:

- How long does it take for the eggs to hatch?
    - **Response:** While there are general rules of thumb, it can also be dependent on weather conditions. For example if the weather is hot it may take a shorter period (eg) 45-50 days, for the eggs to hatch with possibly more females. If it's cooler weather, it may take longer for the eggs to hatch and possibly more males than females.

The presentation is attached as Appendix 06.

8.3.2. Marine Turtle Occurrence and Nesting in Fiji - Laitia Tamata (WWF SPPO).

In this session, the presenter informed the forum on the nesting statistics data estimated in the last decade. This was specifically for the Green and Hawksbill turtles. However, it was evident that most of the data needed verification and there was a need for more work on turtle monitoring so that more informed decisions can be made with regards to turtle conservation. A detailed map of the recent and old nesting sites were displayed together with known harvesting sites, feeding and migratory sites.

Questions / comments received from the participants included the following:

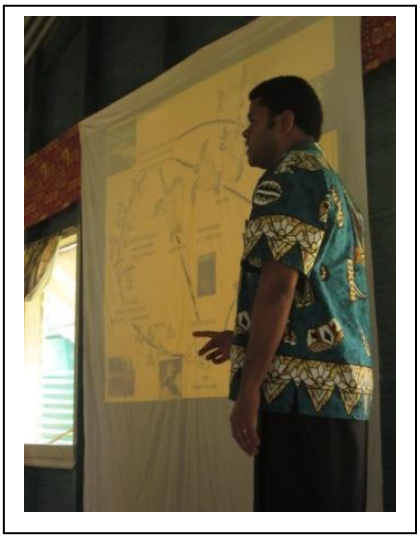
- How can one distinguish or differentiate the male from female turtles?
    - **Response:** Firstly the female turtles are the one that lays the eggs. Also, as fully mature adults, the males usually have the longer tail.

The presentation is attached as Appendix 07.

8.3.3. Marine Turtle Life Cycle and Migration in the Pacific Islands region - Catherine Siota / Laitia Tamata.

This session was critical in illustrating the complexity and longevity of the marine sea turtle's life cycle. Therefore proper and thorough explanations were given to the representatives of Moturiki. The presenter emphasized on the sensitivity in nesting and hatchlings fighting their way out to the open ocean, foraging life span, mating and migration.

All of the information regarding the life cycle of a marine turtle is summarized in ***Fig. 2***.



(L) Aisake Batibasaga and (R) Laitia Tamata presenting to participants. © Solomona / SPREP

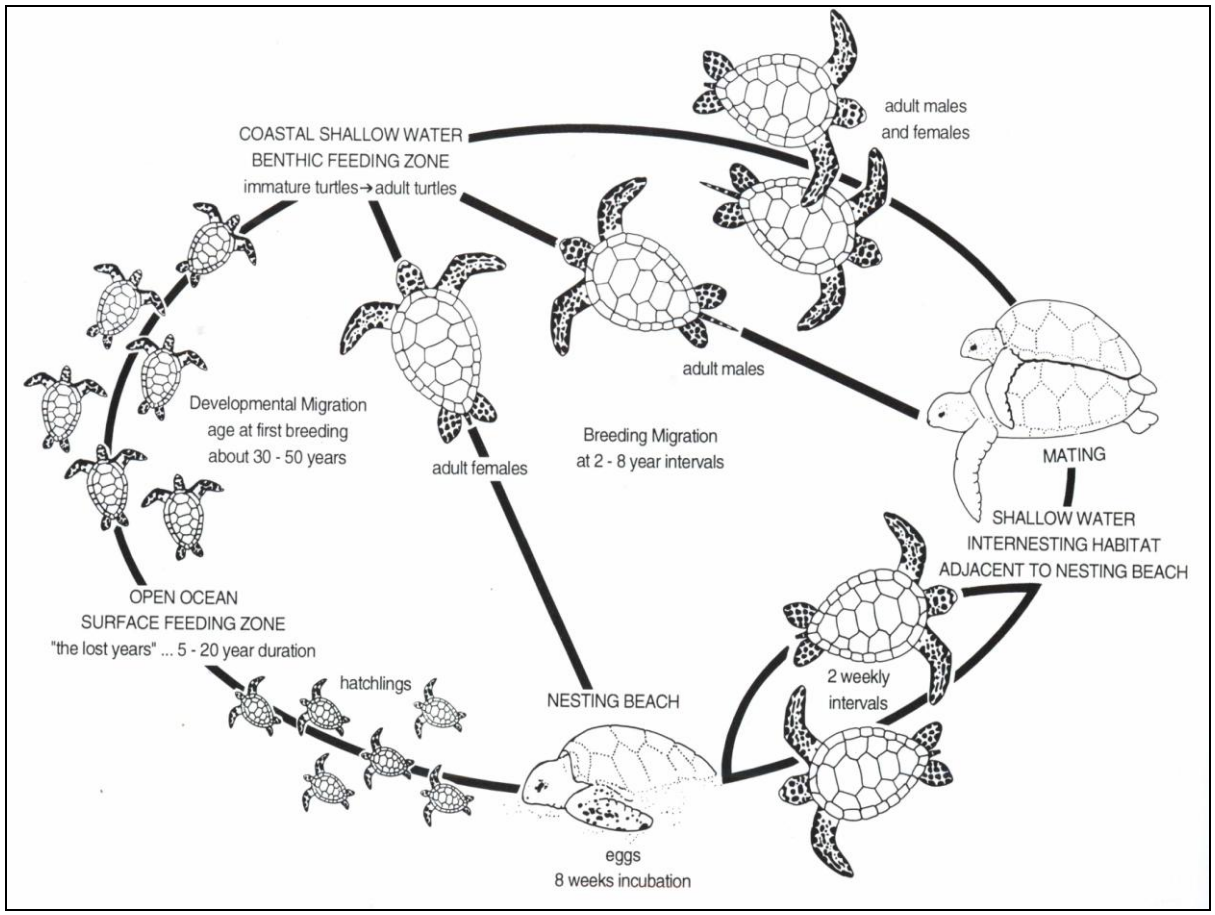


***Fig. 1*. The Marine turtle life cycle.**

The second part of the presentation covered the work of SPREP, NOAA, PICTs and partners on marine turtle satellite tagging in the Pacific region, but focusing mainly on Fiji. The presenter highlighted Fiji's importance as a key foraging area for Pacific turtles and particularly those, migrating from islands east of Fiji. She reiterated that important responsibility Fiji has for the protection of the region's marine turtles. Interestingly, through all the flipper and satellite tag data received to date, there has only been one example of a turtle tagged in Fiji that has been recovered in another country's waters - the initial tagging data however needs to be verified.

Questions / comments received from the participants included the following:

- Will the mother turtle not wait around to meet the hatchlings?
  - **Response:** No, this is not typical behaviour of the female turtle. She will continue on with her reproductive cycle.
- It is a common story passed down through generations that once the mother lays her eggs, she goes out to sea and awaits the hatchlings only to eat them - myth / fact?
  - **Response:** This is a myth as we know turtle diets to be mainly seagrass, coral polyps and jellyfish.
- What are the roles of turtles in the sea?
  - **Response:** Turtles help to maintain the health of the marine ecosystem. They act as controls by feeding on seagrass / coral polyps / jellyfish and prevent these from over-populating and possibly 'stamping' out other species.

- Please clarify the difference between foraging and nesting populations as there is a lot of confusion about the terms.
    - **Response:** This will be further clarified, but simply put, 'foraging' refers to turtle populations in a particular area for feeding purposes, while 'nesting' refers to populations in an area for reproduction.
- It is interesting to note that no turtle tagged in Fiji has been recovered outside of Fiji. There may possibly be a first record (tag recovered in New Caledonia), but this will need to be confirmed through data from Fisheries.
    - **Response:** It is also important to note that most turtle from the Pacific come foraging in Fiji, thus making it more important for Fiji to be engaged in their protection.
- How long does it take for a turtle to surface?
    - **Response:** They surface daily on average 15min and that is when the satellite picks up the signal.
- Can more clarification be given on why turtles surface?
    - **Response:** For various reasons including to breathe, feed or rest.
- What are some signs to know that a turtle is pregnant?
    - **Response:** When turtles come up to the beach, it is most likely because they are and ready to lay their eggs. They may be also appear quite big.

The presentation is attached as Appendix 08.

8.3.4. Marine turtle role in the marine ecosystem - Aisake Batibasaga (Fisheries).

A verbal presentation was delivered to introduce the important roles marine turtles play in the marine ecosystem. Areas covered in this presentation essentially were that sea turtles maintain the health of seagrass beds and coral reefs, which are important habitats for other forms of marine life. Without constant grazing from marine turtles, these seagrass beds can become overgrown and obstruct currents or begin to decompose and provide suitable conditions for the growth of slime moulds. Similarly, the grazing activity of turtles on coral reefs provides opportunities for corals to grow and spread without being dominated by sponges. Essentially, turtles are also important in maintaining the balance of marine food webs and facilitating nutrient cycling from water to land.

8.3.5. Threats to Marine Turtles - Laitia Tamata (WWF-SPPO).

This session started off with the presentation of the different marine turtle species and their IUCN RED List status so that the participants can gain some understanding on the seven extant species. Following this, participants were introduced to the different types and intensities of threats that challenge marine turtles. The presenter illustrated the more common threats which are direct take of turtles and eggs, fisheries impacts, coastal development, pollution and pathogens, global warming and animal predation.

The presenter also challenged the participants based on the threats that marine turtles were facing and that it was only responsible for them to make a stand for turtle protection and conservation.

The presentation is attached as Appendix 09.

8.4. Marine Turtle Conservation and Research Efforts

8.4.1. SPREP and the Regional Marine Turtle Action Plan- Penina Solomona (SPREP)

The presenter provided participants with an overview of the Secretariat of the Pacific Regional Environment Programme (SPREP) noting that the organisation was established in 1993 with it's headquarters in Samoa and has 26 members. SPREP has a five year strategic plan (2011 - 2015) which reflects the mandate and the vision of the organisation. It also contains details of the priority areas on which SPREP focuses including Threatened and Migratory Species (TMS), under which this project falls.

- The TMS programme focuses on three groups of animals, namely, cetaceans (whales and dolphins), dugongs and marine turtles. In 2012, a 5 year plan was developed by members and partners of SPREP to guide the conservation of these animals. This document is the 2013 - 2017 Marine Species Action Plan (MSAP) and copies were made available for the workshop participants. The presenter spent a bit of time on the Marine Turtle Action Plan and noted that it had eight themes ranging from information / awareness raising to capacity building - all elements relevant to the workshop and the project.

The presenter drew linkages between the regional plan and national initiatives such as the implementation of Fiji's Sea Turtle Recovery Plan, Fisheries Act (Moratorium) and the National Biodiversity Strategy and Action Plan (NBSAP). Additionally, examples were provided of the different activities SPREP has undertaken in the delivery of these regional plans that have had direct impact at the national level including production of awareness and educational materials; conducting capacity building workshops; supporting policy reviews and much more.

Questions / comments received from the participants included the following:

- Is Moturiki included in the action plan?
  - **Response:** Under the umbrella of Fiji, Moturiki is included and that is what this workshop is for. However, there is still a lot of work required to consolidate all national efforts including Moturiki.
- Could the presenter provide a description of a dugong?
  - **Response:** It looks like a seal and often referred to as a sea cow. While it has not been officially documented to be found in Fiji, some anecdotal reports site an animal nearing it's description found in the Yasawa group of islands.
- The Mata ni Tikina commented that all stakeholders should meet in the same platform with the Moturiki Yaubula Committee so that they could work together in the managing and conservation of natural resources.

The presentation is attached as Appendix 10.

8.4.2. Overview of Marine Turtle Conservation efforts in Fiji - Laitia Tamata (WWF SPPO).

Focusing down to Fiji from the regional efforts presented previously, the participants were introduced to an overview on Fiji's efforts dating back to the celebration of the Pacific Year of Sea Turtle in 1995, establishment of a Fiji National Sea Turtles Committee, the Turtle Moratorium to the endorsement of the Fiji Sea Turtle Recovery Plan by cabinet in 2009.

Fig. 3 illustrates the Sea Turtle Conservation framework for Fiji adapted from the regional framework.

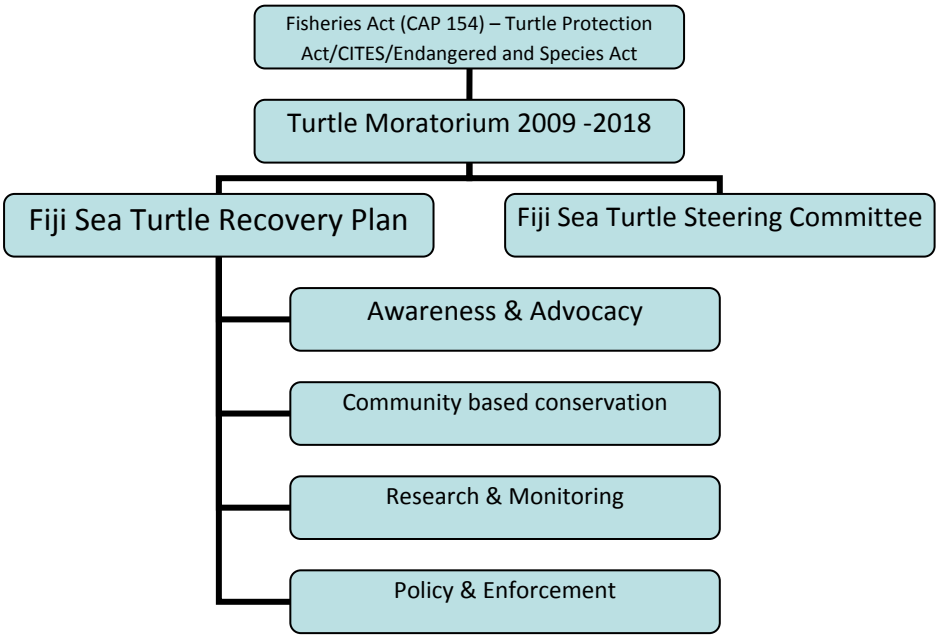


Fig. 3: Fiji Sea Turtle Conservation Framework.

The presenter also emphasized the goal of the Fiji Sea Turtle Recovery Plan which states that *"**by 2026, the sea turtle populations in Fiji have measurably recovered to levels allowing for sustainable harvest & traditional use***."

Apart from the establishment and successes, there were also challenges and issues involved which included funding limitations, the geographical expanse of the 300+ island archipelago in providing enforcement, outreach and research challenges and the FSTSC (Fiji Sea Turtle Steering Committee) being unable to meet given their different departmental / organizational schedules.

Questions / comments received from the participants included the following:

- The participants made known that there were 10 fish wardens present in the workshop.
- There is a nesting site right on the road, and the children are playing digging the nest and playing around with the eggs. Is it possible to relocate them without damaging the eggs?
  - **Response:** It is recommended to relocate them right after they have been laid. If they are relocated now, there is a possibility that they will be damaged.
- The representatives from Yanuca reported that in 2006, three villagers participated in a workshop held by the Fisheries Department about turtle conservation, and they went back to village and relayed the message and lesson learnt from workshop. To this day, harvest of turtle in Yanuca has been prohibited and they are seeing the increase in the number of turtles in the island.

The presentation is attached as Appendix 11.

8.4.3. Turtle Conservation & Legislation in Fiji - Aisake Batibasaga (Fisheries).

This presentation gave an overview of the current legal mechanisms in place to protect turtles. The first Moratorium on molesting, taking or killing of turtles came into effect in March 2004 and expired on

December 31, 2008. A second 10 year Moratorium was endorsed by Cabinet from 2009 – 2018, which is currently in place. A fine of $20,000 applies if anyone is found trading turtle shells or selling turtles as well as imprisonment of up to 5 years. Most of this enforcement on ground level or by the communities is done by Fish wardens. Fish wardens are selected community members who are trained on Fisheries Acts and legislations for the conservation of our marine environment against illegal poachers and destructive development.

Questions / comments received from the participants included the following:

- What action is to be taken when you see a wounded turtle?
  - **Response:** You have to fill in a report and send it over to the Dept. of Fisheries, and they will advise on the next steps.
- Get the two Island resort owners to work together with the villagers to promote eco-tourism?
  - The workshop is the first step to get the resort to work together to promote eco-tourism through the preservation and conservation of marine turtles and other marine species.
- When issuing a fishing license if it could be reviewed by the Fisheries Dept. so that it can also include the protection of the natural resources.
  - **Response:** After the workshop , we will try and get the fish warden and DnV's to monitor the type of fish caught and fishing method used so that the natural resources are not damaged.

The presentation was verbally delivered.

8.4.4. Marine Turtle Conservation and Research Programmes in Fiji - Aisake Batibasaga (Fisheries).

This presentation focused on the conservation and research programs in Fiji. It highlighted what communities, non-government organizations and government organizations were doing in terms of turtle conservation. Projects such as the *Dau ni Vonu* network where community members took the onus on themselves to monitor and enforce protection of turtles from illegal poachers. They also attended various training programs to educate and empower them. The project at Makogai was also discussed outlining the tagging program that is ongoing. Satelite tagging was briefly touched on as well to show the global linkage in terms of these migratory species. One of the key messages delivered was the emphasis on resource owners taking ownership and conserving this traditional icon.

The presentation was verbally delivered.

8.5. The Project

8.5.1. Community involvement - Penina Solomona (SPREP)

This presentation focused primarily on the involvement of the community and talked through the expected roles and responsibilities of those involved. In relation to the community, their involvement would be key in consultations throughout the duration of the project and in the formulation of any community agreements. Additionally, as this project is primarily a community based initiative, it was reiterated that the monitors would be selected by the communities and co-ordination and / or support mechanisms for these monitors would be established within the framework of existing community structures. The community monitors would be responsible for the maintenance of any and all equipment supplied to them for the purposes of this project. Finally, the community monitors in association with the involved communities, would be responsible for collecting agreed to data and

ensuring their proper storage. They would also be key in the analysis and reporting of this data that they had collected.

Questions / comments received from the participants included the following:

- Turtles do not just nest in the villages of Uluibau and Daku, rather they are found around the island. A proposal was put forward to select a representative from each village.
  - **Response:** This was agreed to by all participants and facilitators.

The presentation is attached as Appendix 12.

8.5.2. Appointment of Turtle Monitors - Laitia Tamata (WWF SPPO).

The participants were directed to utilise their afternoon tea break to work in village groups and nominate two people as their turtle monitors. These nominees would then undertake the training scheduled for Day 2 and be responsible for undertaking the conservation activities in their respective villages. A total of 17 names were put forward and these are reflected in Appendix 13.

8.5.3. Turtle Community Monitors and their Roles/Responsibilities - (Dau ni Vonu)

This session was held in the evening to accommodate the arrival of the two *Dau ni Vonu* (DnV), Emosi Time and Akuila Tutora, from Vanua Levu. Additionally, it was thought at this informal setting, a lot more discussion is forthcoming.

In summary, the two monitors stressed that being DnVs is a voluntary role. One needs to have a passion for the environment and the animals in order to successfully conduct their duties. This is particularly important as the monitors will face many challenges when carrying out the responsibilities of the DnV. In some of their experience, it has created conflict between themselves and other families or within their own extended families. Mr. Time shared an experience of when he had to free a captured turtle from his mother's village and this was not well received. One's passion will be important as it will get other people to see the importance of protecting turtles as in reality, it is part of their diets. It was also important to note that a DnV is not alone and that they belong to a network that meets every six months to share experiences, challenges, solutions to assist each other in their different areas. At these meetings, it was important to bring the data collected to share with WWF or with the Department of Fisheries.

The DnVs were questioned as to whether equipment was provided to enable them to conduct the work. The response from the DnV was that while some equipment was supplied, they also encouraged the nominees to use alternative items.

8.6. DAY 2: TRAINING OF TURTLE MONITORS.

8.6.1. Re-cap of Day One

At the commencement of Day two, a brief recap of issues covered in the day before was undertaken . The following items were recalled by participants.

- Migration surveys and results conducted in Fiji and the Pacific;
- Initially knew that there were two species of turtles, but after yesterday's session, now knows that there are at least four found in Fiji waters;
- Learned of the various threats facing the turtle species and the need to protect them. Also recognised the role that one can play in preventing turtles from going extinct;
- The roles of turtles and their lifecycle - interesting to note how long it can take for a turtle to come back to its beach of birth.

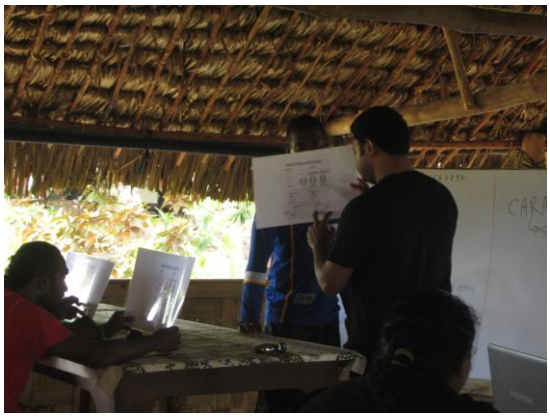
8.6.2. How to Identify Marine Turtle Species - Penina Solomona (SPREP)

This presentation discussed in detail the physical anatomy of the seven species to give the nominated turtle monitors an opportunity to learn how to differentiate between the species. The presentation covered features such as lateral and costal scute numbers; prenucchal scute pairs; claws; carapace colour, shape, width and length; and some encountered abnormalities including albinism and two-headed individuals. Participants were also reminded of the endangered nature of these animals according to the IUCN Red List.

Questions / comments raised by the nominated monitors included:

- What is the difference between the tails?
  - **Response:** This can help one differentiate the sexes if the turtles are fully mature adults. The longer the tail, the likelier that it is a male and vice versa.
- Since hawksbills are critically endangered, are there possibilities for cross-breeding?
  - **Response:** No it is not possible because it is not something we encourage. All we can do is protect their habitat and help conserve them.
- Emosi (Kavewa DnV) shared with participants his experience when handling turtles. Important to remember that they are long and heavy and that it will try to protect itself. Therefore, monitors should always keep their safety in mind. They should never grab the turtle from the front, but rather approach from the side. Covering the turtles eyes, but minding your fingers, has been known to stop the animal from moving and allowing you to take the measurements necessary.
- Could the 10 year Moratorium and harvest permits be clarified?
  - **Response:** The Moratorium was declared by the Government in 2009 to further protect sea turtles. It does however allow for the traditional use of turtles, however, only when there is a permit issued by the Department of Fisheries. The process would be to write to your nearest Fisheries Extension Office / Department or the Provincial Council offices and they would follow on with processing the permit. The permit, once issued, will state the number of turtles you are allowed to use and the permit is only valid for that one occasion. The DnV who are also qualified Fish Wardens, will have the authority to enforce regulations of the Moratorium particularly if one is found in breach of them. Additonally, Emosi and Akuila, the latter being the DnV ni Vonu from Kia, shared that it is important for the DnV's to work with Fish Wardens and the village elders to monitor their *i qoliqoli* and those using that area.

- Akuila also noted that while there are many more women in the North who are keen to engage in the DnV activities, as reflected in their attending their workshops, they are also trying to encourage more males given the strenuous and physical demands of the tasks involved.



Monitors learning to differentiate between the species of turtles. ©Solomona / SPREP

The presentation is attached as Appendix 14.

8.6.3. Conducting marine turtle nesting surveys - Catherine Siota (SPREP) / Emosi Time & Akuila Tutora (DnV).

This presentation provided an overview of the protocols for conducting marine turtle nesting surveys. There are two parts to this survey, namely the:

1. day-time turtle nest/track monitoring survey whose purpose is to:
    - record past turtle nesting activities (that is in order to estimate nesting population)
    - confirm peak nesting time.

The presentation also covered what to do during the surveys, the identification of track types for each species, how to look for nests, false crawls, successful nests, what to record.

2. night-time nesting surveys whose purpose is to collect data through:
    - observing actual nesting turtles and behaviour;
    - obtaining biological information e.g. number of eggs, tissue samples;
    - confirmation of species;
    - collecting turtle measurements;
    - conduct turtle tagging for measuring growth and tracking migration;
    - estimate actual annual nesting population (if done consistently).

Additionally, Mr. Emosi Time (Kavewa DnV) reiterated that at times they are unable to find tracks at night and have found that there is a better chance of finding them during the day, and particularly at low tides. He also shared that at after some time doing these day and night surveys, they have learned to identify signs that signal a nest has been dug. The could include:

- looking at broken branches and dried leaves gathered in clumps;
- sand is piled up in certain places;

Questions / comments raised by the nominated monitors included:

- If a turtle has laid an egg after 4 days can you still determine where the nest is?
  - **Response**: Yes it is even easier if there has been no rainfall on previous nights. Additionally, look for other signs e.g. the place where the sand is clear and look for anything that seems out of place.
- Why does the depth of the egg chamber differ every time it comes to lay egg?
  - **Response:** It is possibly related to the number of eggs it lays each time. The first time it puts down a clutch, there are more eggs and thus more depth is required. The next few times, there are fewer eggs and so not much depth is required.
- When turtle eggs hatch, how do they come out of the chamber?
  - **Response:** When female turtles have laid their clutch, they level the sand which is then exposed to conditions such as rain, tidal influences etc. and this can create a loosening of the compact sand. Additionally, the hatching of one will trigger similar reactions in other eggs. In what is described as the 'hatchling frenzy' the hatchlings will crawl over each other with those at the top knocking down the sand from the roof of the nest. This sand trickles down and those on the bottom will stamp on it. As this continues, the nest rises slowly helping the hatchlings out of their chamber.
- When attempting to determine the number of eggs in a chamber, count all shells - hatched, damaged or unhatched eggs.
- Why isn't the tag labeled "Fiji"?
  - **Response:** Clarified that the country name on the tag is simply the return address (ie) Samoa, Hawaii. The important information is that carried by the Tag Identification Number. This number will show where the turtle was tagged and released from (eg) Fiji.
- Are tags specifically designed for foraging, nesting or migrating turtles?
  - **Response:** There are typically 2 tag sizes. A smaller one is usually used for those foraging (feeding) or juveniles and a bigger one is used for those found nesting.
- SPREP reminded participants that a t-shirt is offered as a reward for those who write in to report recovered tags.
- Do the DnV have any power to take baby turtles home for captive rearing?
  - **Response:** We do not encourage captive rearing, unless absolutely necessary, as it tends to disrupt the natural life cycles and development of the turtles (eg) navigation.
- A participant shared how his experience with captive rearing did not go so well due to the difficulties they encountered in terms of caring for the turtles. It was difficult to maintain feeding them, changing their water and at one point, the basin it was kept it because too small for the animal.
- The *Mata ni Tikina* also called upon Fisheries to undertake a refresher workshop for the Fish Wardens in light of this new information on turtle conservation.
  - ACTION: Fisheries to liaise with PCDF regarding this refresher training.

The presentation is attached as Appendix 15.

8.6.4. Marine Turtle Flipper Tagging - Catherine Siota (SPREP).

This presentation covered the importance of turtle tagging and information derived from the tagging activities. The presenter also provided the participants with instructions on how and where to tag a turtle. This was followed by hands on training session on how to apply a flipper tag and measure a turtle on the beach with assistance from Fisheries and DnV.

The presentation is attached as Appendix 16.

Monitors practicing the application of flipper tags. ©Solomona / SPREP

8.6.5. Identification of Nesting and foraging sites - Laitia Tamata (WWF SPPO)

In identifying the nesting and foraging sites around the island, an aerial map of Moturiki, sourced from Google Earth, was projected onto a white screen. This was efficient in that it allowed zooming and out into specific areas accordingly for the participants to point out nesting and foraging sites on the island.

Apart from pointing out the sites, the foraging and nesting sites were given names (if they had not been previously labeled) for the benefit of the project. The identified sites are illustrated in ***Fig. 4*** and their corresponding names in Table 1.

Fig. 4: **Google map indicating selected monitoring sites**

SITE SELECTION

Table 1: Names of foraging / nesting sites selected for monitoring by Moturiki monitors.

VILLAGE	MONITORING SITE / ACTIVITY	
	Nesting	**Foraging**
Uluibau	Natuvu	NA
Daku	Naitabale	NA
	Dromuni	NA
Yanuca	Nukueceece	NA
Naicabecabe	NA	Waiwainidrose
Nasauvuki	Nadraya	Vatukauouo
Navuti	NA	Cakaunikalawa
Nasesara	NA	Solevu - Waivurena
Savuna	NA	(North East - North West coastline) Nukutoro
Wawa	NA	Menawai (South - Western coastline up to Nukutoro)
Niubasaga	Caqalai	Koroloaloa
Caqalai	Sunset / Sunrise	NA
Leleuvia	(Entire island)	Primarily the northern end.

8.6.6. Monitoring schedule - Laitia Tamata (WWF SPPO)

Participants and facilitators discussed the monitoring schedule and the agreement reached was that the Department of Fisheries, PCDF and WWF SPPO staff would make a second visit to Moturiki and undertake a follow up session on tagging with the Moturiki DnV. At this point, foraging tags will be distributed and DnV will be able to tag foraging turtles. A refresher training programme will subsequently be undertaken in September, prior to the start of the 2013 - 2014 nesting season and at this point, the monitoring schedule will be finalised.

9. CLOSING.

The two day training was brought to a close and on behalf of the workshop participants, Mr. Laitia Tamata provided a quick summation of areas covered. Additionally, he thanked all the participants for their perseverance through the two days and welcomed their enthusiasm for taking on this new challenge.

The *Mata ni Tikina,* on behalf of the participants and the community, thanked the facilitators for their work and again voiced the support of the communities behind this initiative.

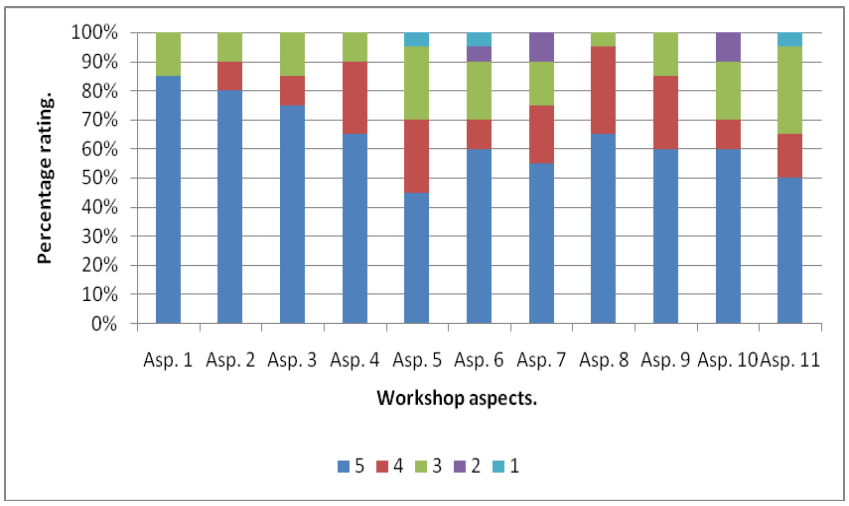
The workshop and training then closed with a word of prayer.

10. WORKSHOP FEEDBACK.

A survey questionnaire was distributed to participants at the conclusion of Day 1 to capture those who would not be joining the second day of training. The summary of the populated questionnaires are as follows:

Section A: <u>Questions about the workshop.</u>

1: How satisfactory to you were the following aspects of the workshop?
Ratings were from 5 (Yes, definitely) to 1 (Not at all).



- Aspect 1: The information was clear and well organised.
- Aspect 2: The presenters knew the topic well.
- Aspect 3: The presenters answered the questions clearly.
- Aspect 4: There were enough opportunities for asking questions.
- Aspect 5: There was enough time to absorb all of the information presented.
- Aspect 6: There were good opportunities for participants to share their knowledge.
- Aspect 7: There were good opportunities for networking with other participants.
- Aspect 8: I was able to keep up with the rate at which the information was presented and discussed.
- Aspect 9: My cultural needs were acknowledged in the workshop.
- Aspect 10: The timing of the workshop was suitable.
- Aspect 11: The venue was suitable.

Any other comments about the workshop organisation?

1) Thank you very much - everything was wonderful.
2) It's good for us, because we had no prior knowledge of our turtle species.
3) Thank you for your time, saving our future turtles.
4) The workshop was excellent. It was properly organised.
5) It was very good for the community. The workshop is a necessity.
6) It was good to know the importance of marine turtles and the role they play in our lives.
7) Need more people to learn the importance of saving turtles. Not only men, but women also.
8) We need more time to have a good understanding of the workshop.

9) A three or four day workshop would have been good. However, this was good as I learned quite a bit from it.
10) It would be good to consider having a workshop like this every year.

VALUE OF THE WORKSHOP

The following two questions were asked with a rating scale of 5 to 1 (5 = Lots; 1 = Nothing) and in general, participants indicated that their knowledge had increased after the workshop. As mentioned above, in certain areas where the questions were related to skills capacity building, these did not record any change as these participants were not a part of the monitors training. Rather, they were just a part of the theory session on Day 1. A comparative representation of the questions are included as Appendix 17.

2: *How much did you know about the workshop topics before you attended the workshop?*
3: *How much has your knowledge about the workshop topics increased as a result of attending the workshop?*

Additionally, the following two questions were asked to rate the skills of each participant prior to and after the workshop. Generally, again, the feedback received was the skills were increased after having been exposed to the training session. A comparative representation of the questions are included as Appendix 18.

4: *What skills did you have in turtle monitoring and management before you attended the workshop?*
5: *How much have your skills increased as a result of attending the workshop?*

Participants were asked on the workshop topics that they had found to be the most useful, and a summary of these, based on responses included:

TOPIC	**VALUE TO YOU**
Status of marine turtles in Fiji.	To help us with our efforts to protect turtles in our village.
Marine turtles and roles in the eco-tourism.	The purpose of their being created.
Threats to marine turtle survival.	Protecting turtles and understanding how they're threatened and understanding the purpose God created them for.
SPREP Regional turtle action plan.	Linking community efforts to national and regional ones.
Conducting turtle nesting surveys.	Result in more turtles in the future.
Understanding the critically endangered natures; nesting and foraging behaviours.	My impact on these animals and their habitats.
Marine turtle biology, their ecology and threats.	To understand the importance of turtles and the hard work people do to keep them alive.
Flipper and satellite tagging.	Shows their movements and helps me understand the need to create partnerships beyond fishing grounds and countries.

Participants were asked to identify ways in which they will utilise the information gained at the workshop. Responses provided include:

INFORMATION IN THE WORKSHOP	WAYS IN WHICH YOU WILL USE IT
1) Save turtles 2) Keep away from threats 3) Marine turtle populations decreasing	1) Spread it out to the community members - mostly those who depend on sea resources. 2) No violence to species. 3) Save species to increase.
1) Capacity building 2) Monitoring 3) Education & awareness	1) Field training 2) Conservation management programmes. 3) Conservation.
1) Types of turtles 2) Nesting season 3) Their roles in the ocean	1) Identify them whenever I see them 2) Protect them 3) Pass it down to the younger generation so they can protect and save them from harm.

Participants were asked to identify one thing in the workshop that had the biggest impact on them. A summary of responses were:

- Marine turtles general life cycle, habitat and movement at different stages, food and migration.
- Species almost becoming extinct.
- Taking care of turtles and their breeding places.
- Importance of not killing turtles.
- Their value in the ocean.
- Community engagement.
- To form a network of monitors to save the turtles.

Participants responses to how the workshop could be improved included the following:

- The workshop was very excellent as mostly it was efficiently organised. Thank you very much. Keep it up, SPREP and partners.
- Translate presentations into local dialect and conduct the workshop in Fijian.
- Through cooperation and hard work it's possible to conserve turtles.
- To have more workshops like this - perhaps every year or two.
- By providing handouts, rather than presenting on slides. Reading documents will stay with the the participants for some period compared to the slides.

Section B: <u>Questions about you.</u>

These questions on age and gender are included in the participants list (Appendix 02). Of the 63 participants, all were community representatives except for:

- three resort employees;
- four government employees;
- one non-government representative.

16.0 APPENDICES.

Appendix 01: Workshop Agenda.

Awareness Workshop Agenda **Date:** 12 March, 2013 **Venue:** Moturiki		
TIME	**1. Opening**	
08:00 am	Prayer	Fisheries Rep as MC
08:10 am	Welcome	Turaga ni Koro
08:15 am	Welcome notes	SPREP/ Fisheries/ WWF
08:20 am	Roundtable introduction	All
	2. Background and Project Introduction	
08:35 – 08:50 am	Marine Turtle Species and their Status: Global and Pacific	SPREP – Catherine Siota (CS)
08:55 – 09:10 am	Status of Marine Turtles in Fiji	Fisheries – Saras Sharma-Gounder (SSG)
09:15 – 09:30 am	Introduction to Project	SPREP – Penina Solomona (PS)
09:35 – 10:00 am	MORNING TEA	
	3. Marine Turtle Biology, Ecology and Threats	
10:05 – 10:20 am	Marine Turtle Occurrence and Nesting: Pacific and Globally	SPREP (CS)
10:25 – 10:40 am	Marine Turtle Occurrence and Nesting in Fiji	WWF (Laitia Tamata)
10:45 – 11:00 am	Marine Turtle Life Cycle and Migration in the Pacific Islands region	SPREP (CS)/ WWF (LT)
11:05 – 11:20 am	Marine turtle role in the marine ecosystem	SPREP (PS)
11:25 – 11:40 am	Threats to Marine Turtles (including impacts of climate change)	SPREP (PS)
12:00 pm – 12:50 pm	LUNCH	
	4. Marine Turtle Conservation and Research Efforts	
1:00 pm – 1:15 pm	SPREP and regional Marine Turtle Action Plan	SPREP (PS)
1:20 pm – 1:35 pm	Overview of Marine Turtle Conservation efforts in Fiji	WWF (LT)
1:40 pm – 1:55 pm	Turtle Conservation in Fiji: Legislation, Moratorium, Fish Wardens	Fisheries (SSG / A. Batibasaga)

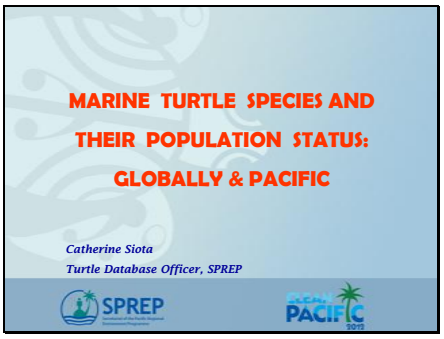
Appendix 02: Workshop Participants

	Name	Age	Gender	Village	Phone contact
1	Viliame Sucuinawaqa	32	M	Leleuvia Island Resort	9442169
2	Seru Saumakidonu	25	M	Leleuvia Island Resort	7657273
3	Jone Jitoko	30	M	Leleuvia Island Resort	9304156
4	Inia Qiorua	42	M	Uluibau	8308093
5	Samuela Sagone	30	M	Uluibau	8696939
6	Viliame Kuruyabaki	35	M	Yanuca	
7	Sevanaia Waqa	48	M	Yanuca	
8	Setariki V.	52	M	Yanuca, Serua	9320505
9	Ilisoni Tuinasavusavu		M	PCDF	9326097
10	Viliame Draunidalo	23	M	Niubasaga	8334705
11	Waisale Draunidalo	52	M	Niubasaga	8334705
12	Vuli Lesi	23	M	Navuti	
13	Timoci Wasarua	40	M	Savuna	9068747
14	Sakiasi Karavanua	46	M	Nasesara	9029611
15	Sakesasi Sivaromatana	23	M	Wawa	7830823
16	Sailosi Matakili(?)	53	M	Uluibau	
17	Waisake Sauni	34	M	Savuna	
18	Timoci Kolinivalu	27	M	Uluibau	
19	Gordon Upton	32	M	Uluibau	8698154
20	Jone Loloyi	35	M	Uluibau	7102368
21	Asiki Nasawaqa	45	M	Uluibau	
22	Nasaroa Balaiwasa	34	M	Niubasaga	8338088
23	Sailosi Volaivalu	25	M	Uluibau	9444860
24	Waisake Vuki	34	M	Naicabecabe	
25	Maciu Seru	27	M	Naicabecabe	
26	Timoci Vulaono	46	M	Daku	
27	Jone Waqa	45	M	Navuti	
28	Kelevi Donu	42	M	Nasesara	9345175
29	Solomoni S.	64	M	Uluibau	
30	Timoci Buka	62	M	Uluibau	
31	Manasa Delavasa	42	M	Wawa	
32	Isireli Lilo	58	M	Uluibau	
33	Manueli Rawaibula	30	M	Uluibau	
34	Jone Uale	40	M	Uluibau	
35	Asaeli Naqa	17	M	Uluibau	
36	Kameli Vutoa	19	M	Uluibau	7570113

37	Anasa	22	M	Niubasaga	
38	Peni Cola	37	M	Uluibau	
39	Joji Namosimalua	24	M	Uluibau	
40	Josaia Qalotaki	20	M	Uluibau	
41	Kitione Naivaurereca	21	M	Uluibau	9052635
42	Nemaia Salavou	40	M	Nukutocia, Levuka	
43	Savenaca Tagavesi	43	M	Uluibau	
44	Simeli Tamaniuga	65	M	Uluibau	
45	Asaeli Soro	34	M	Uluibau	
46	Livai Moli	41	M	Uluibau	
47	Tevita	33	M	Makogai	6030741
48	Maata Inoki	28	M	Levuka	3440396
49	Kameli Lovata	49	M	Makogai	6030471
50	Tevita Mataiasi	59	M	Nasauvuki	
51	Sireli T. Waqatabu	43	M	Nasauvuki	9092953
52	Akuila Koroi	22	M	Nasauvuki	9092953
53	Josevata	61	M	Uluibau	
54	Josateki S.	55	M	Nasesara	8653053
55	Manueli Vouvou	47	M	Uluibau	9075227
56	Sakiusa B		M	Uluibau	3606030
57	Jone Salele	52	M	Daku	9595979
58	Neima Ratumaimuri	45	M	Yanuca	
59	Laisiasa Baleiroi (??)	64	M	Yanuca	3578145
60	Kelepi K. Kubunameca	42	M	Provinicial Administrator: Lomaiviti	kkubunameca@gmail.com
61	Nemaia Salavou	40	M	Nukutocia, Levuka	
62	Avenai Salabiau	55	M	Uluibau	6303060
63	Sitiveni Namua	36	M	Uluibau	

Appendix 03: Marine turtle species and their status: globally and in the Pacific.

Slide 1



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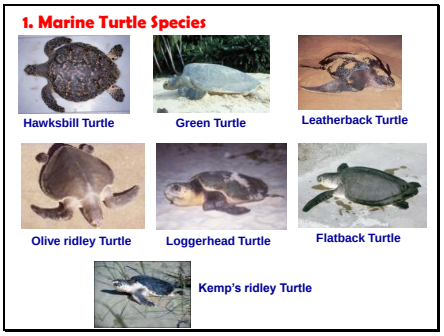

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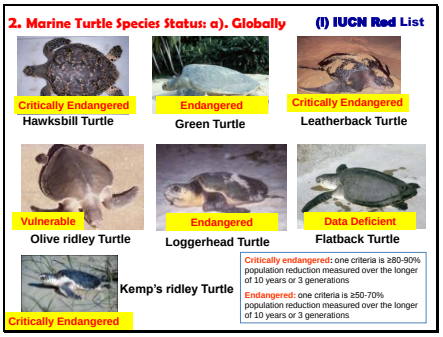

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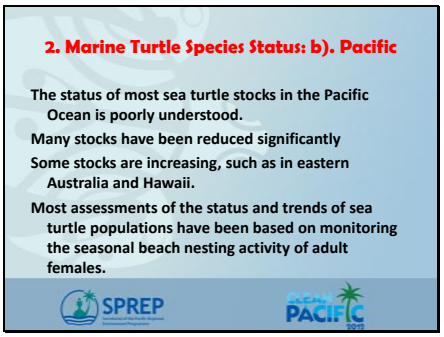

Slide 8

Appendix 04: Status of marine turtles in Fiji.

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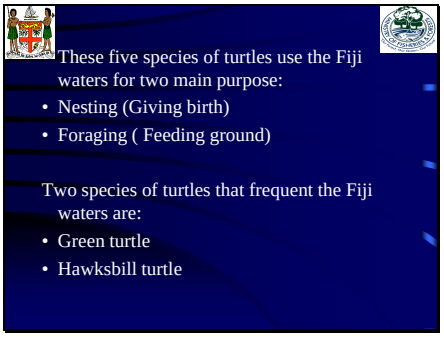
Slide 2

Slide 3



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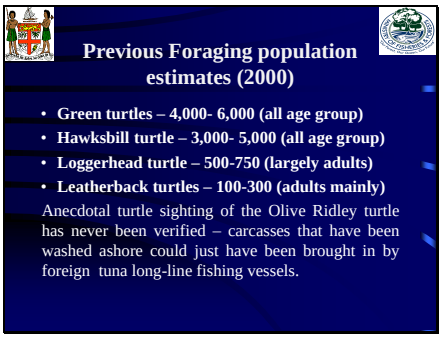

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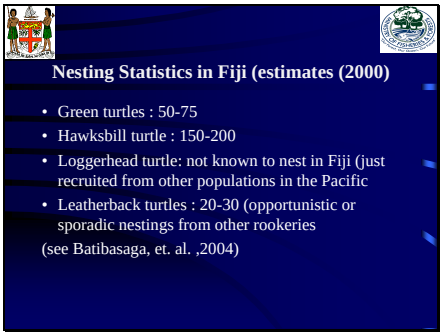

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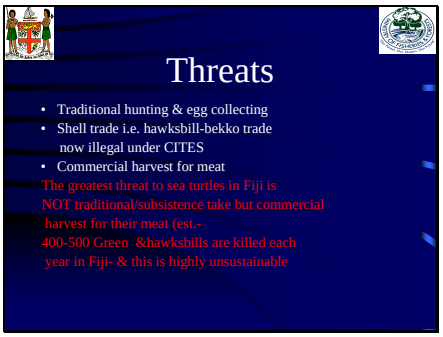

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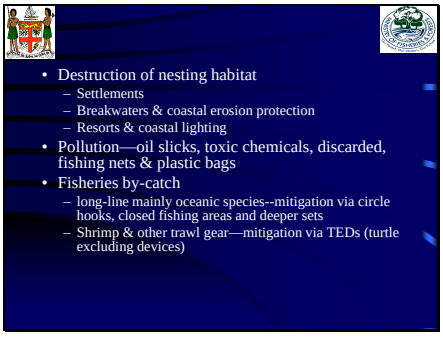

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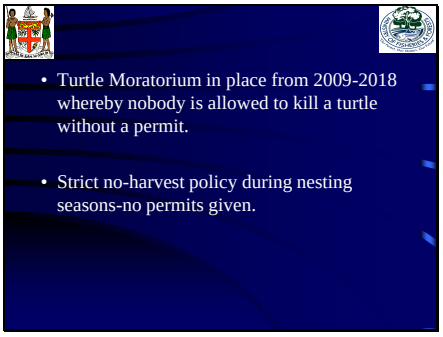


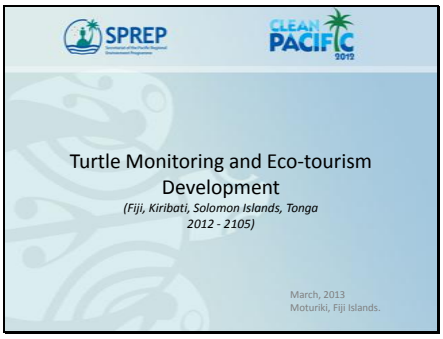
Slide 13

Slide 14

Slide 15

Appendix 05: Introduction to the project.

Slide 1



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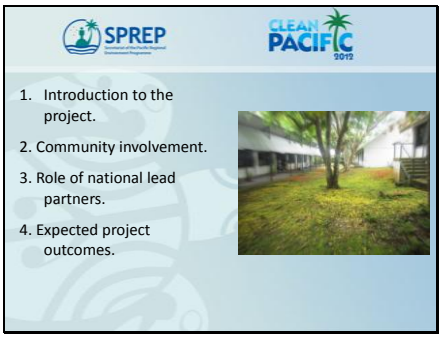

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Appendix 06: Marine turtle occurrence and nesting: Pacific and globally.

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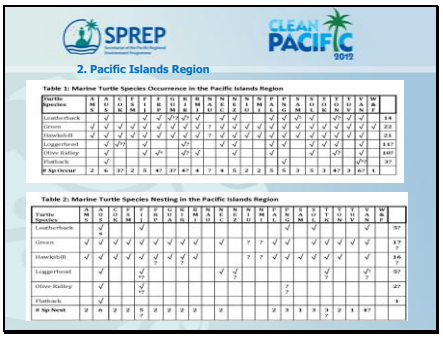

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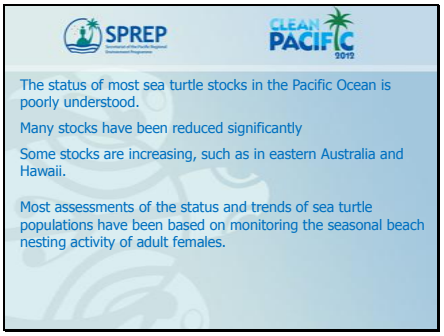

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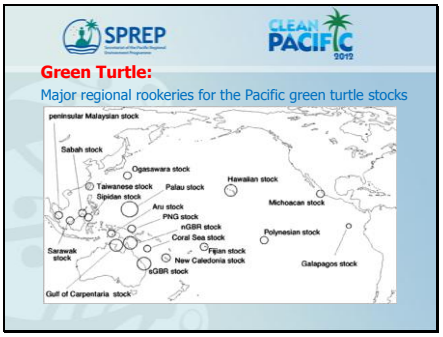

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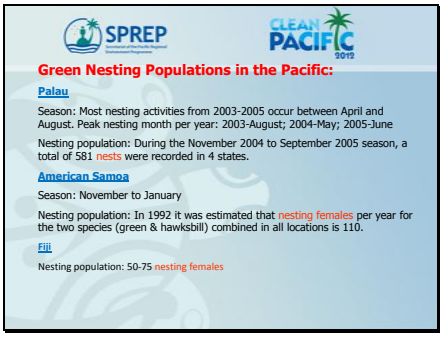

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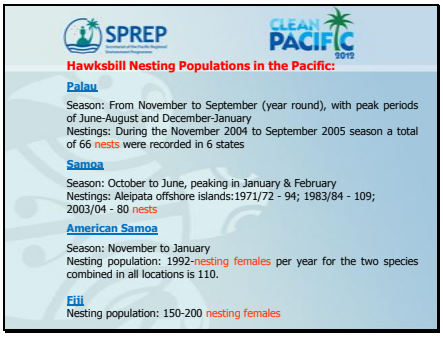

Slide 8

Appendix 07: Marine turtle occurrence and nesting in Fiji.

Slide 1

Marine Turtle Occurrence and Nesting in Fiji

Laitia Tamata Jnr
WWF SPPO

Slide 2

Nesting statistics

Nesting Statistics in Fiji (estimates (2000)

- Green turtles : 50-75
- Hawksbill turtle : 150-200
- Loggerhead turtle: not known to nest in Fiji (just recruited from other populations in the Pacific.
- Leatherback turtles : 20-30 (opportunistic or sporadic nestings from other rookeries

(see Batibasaga, et. al. ,2004)

Slide 3

Nesting statistics

Green Turtle nesting data estimate

Island	Nest counts	Breeding females	Data status	Literature
Rotuma –Hatana	50	30	needs to be verified	Neema thesis
Kadavu	15	9	Needs to be verified	
Mamanuca	20	12	Needs to be verified	
Nukusemanu	25	15	Needs to be verified	Fisheries survey report
Nukuporeti	20	12	Needs to be verified	
Nukubalati	15	9	Needs to be verified	
Vetau'ua	60	35	More field surveys	Fisheries survey report
Southern Lau/ Islets	45	26	Nesting surveys to verify	
Duff Island	40	24		
Total	290	172		

Slide 4

Nesting statistics

Hawksbill nesting data estimate

Island	Nest counts	Breeding females	Data status	Literature
Rotuma	15	9	needs to be verified	Fisheries estimates
Hemskercq and Ringgold Islands	50	30	Needs to be verified	
Duff Island	15	9	Fisheries data sets	
Motoriki and associated Islands	15	9	Needs to be verified	
Yasawa	25	15	More field assessment	
Total	510	319 females		

Slide 5

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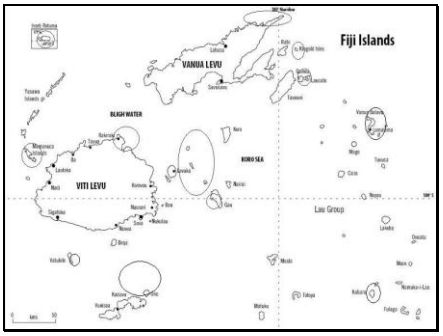

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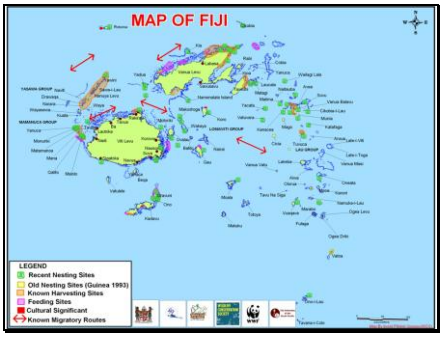

Slide 8

Sa vinaka…

- Taro?

Appendix 08: Marine turtle life cycle and migration in the PIR.

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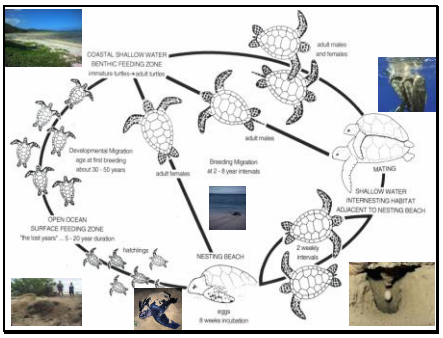

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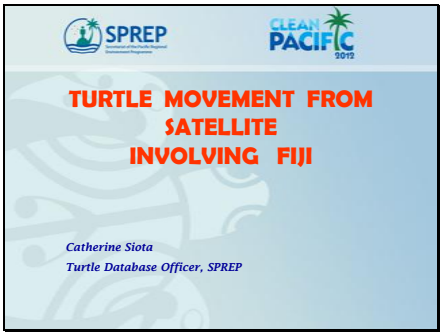

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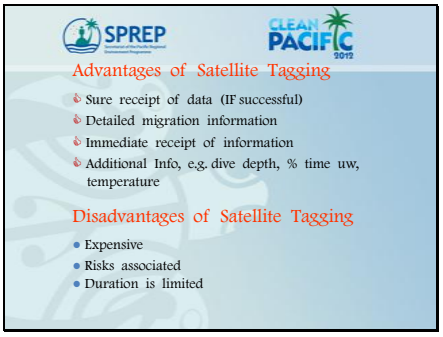

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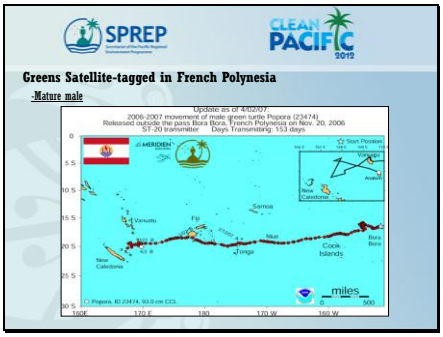

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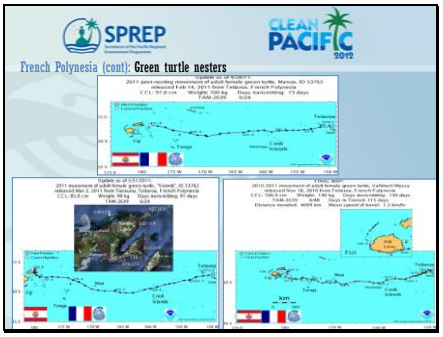

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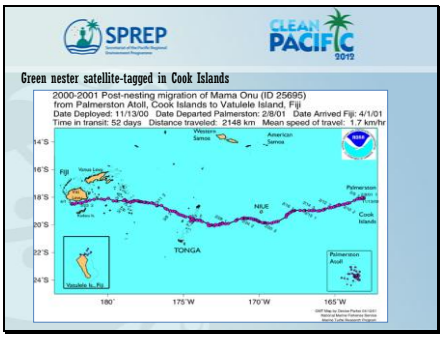

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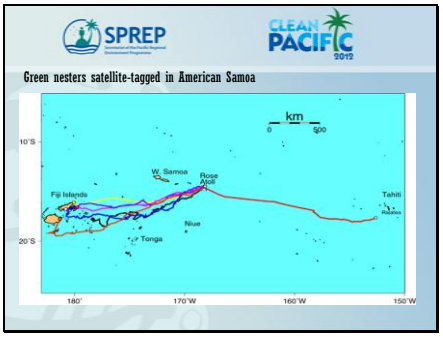

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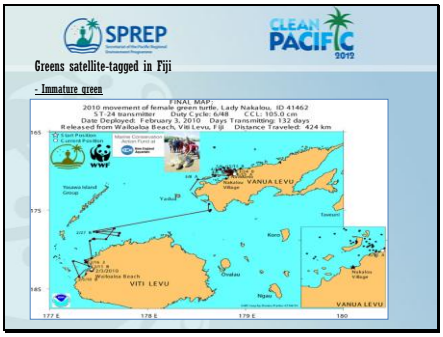

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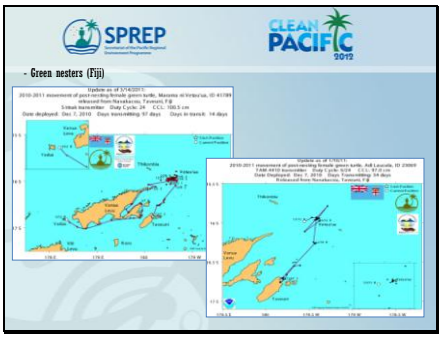

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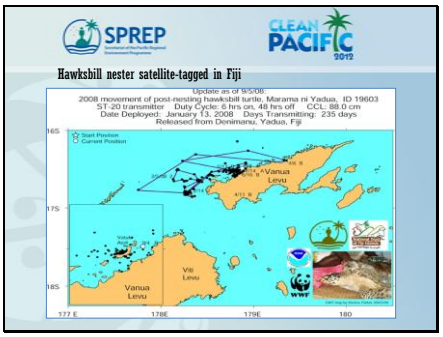

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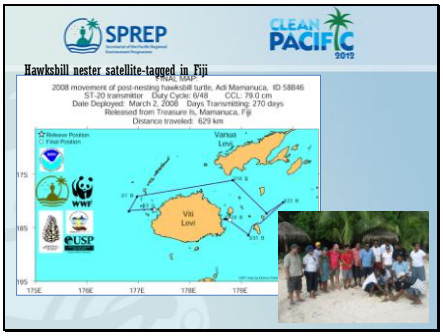

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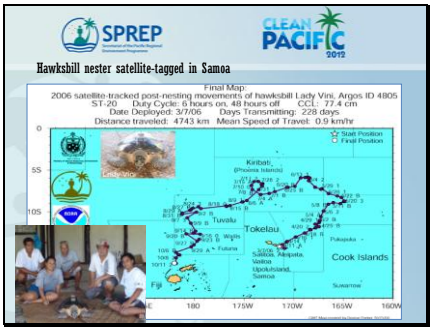

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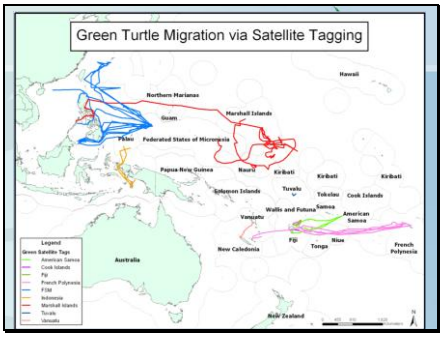

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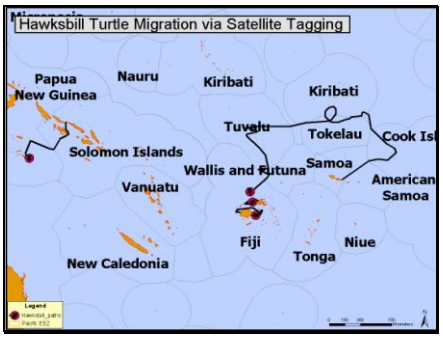

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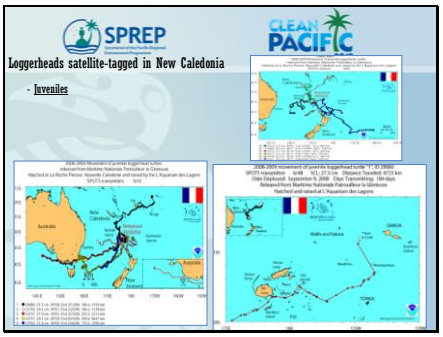

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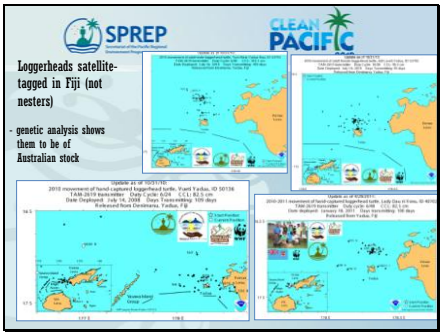

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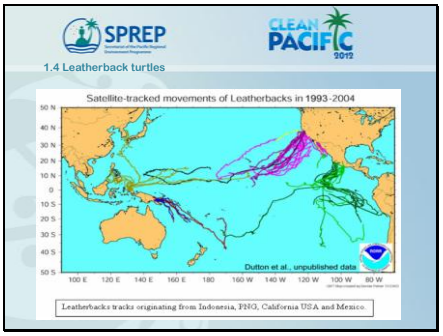

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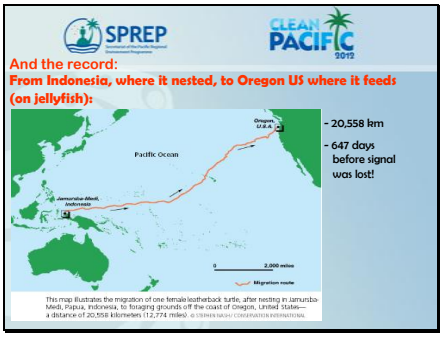

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Appendix 09: Threats to marine turtles.

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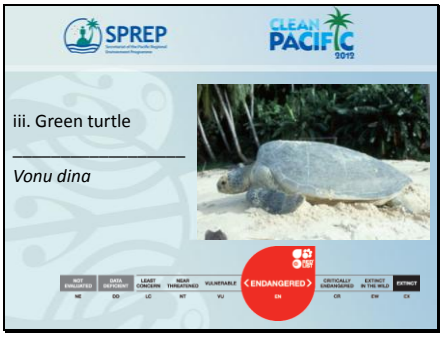

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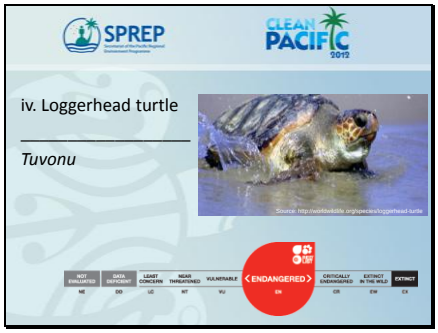

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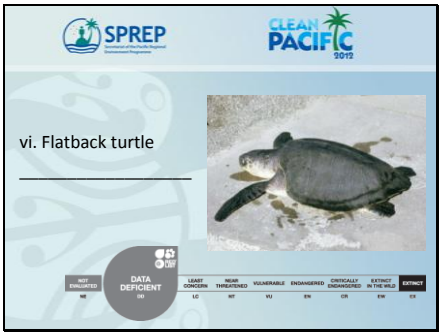

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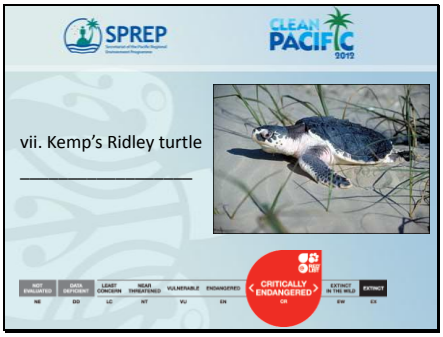

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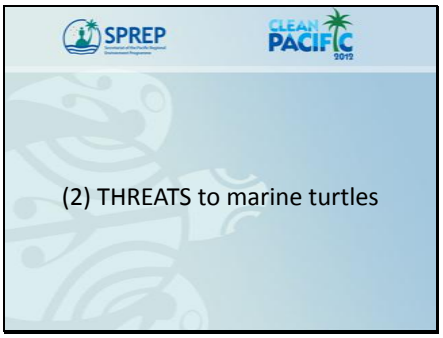

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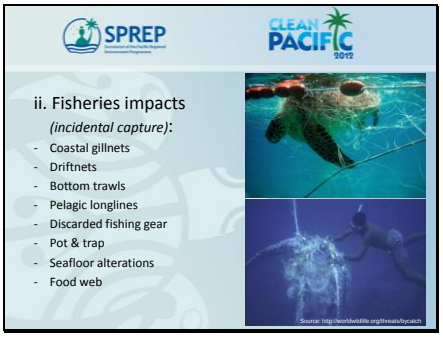

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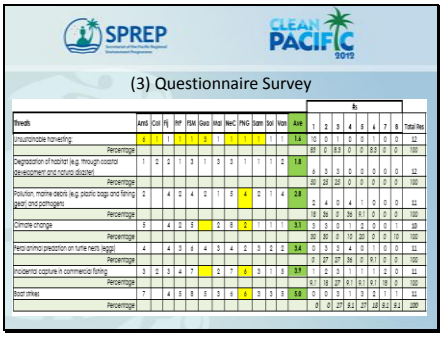


Threats	Aitutaki	Cook Islands	Fiji	Niue	Palau	Samoa	Tonga	Vanuatu	Average	Rank							
										1	2	3	4	5	6	7	8
Unsustainable harvesting	3	1	1	1	1	3	1	1	1.2	10	0	1	0	0	1	0	0
Percentage										83	0	8.3	0	0	8.3	0	0
Degradation of habitat (e.g. through coastal development and natural disaster)	1	0	2	1	3	1	0	0	1.8	4	3	3	0	0	0	0	0
Percentage										33	25	25	0	0	0	0	0
Pollution: marine debris (e.g. plastic bags and fishing gear), and pathogens	2		4	0	4	0	1	0	2.0	2	4	0	4	1	0	0	0
Percentage										18	36	0	36	9.1	0	0	0
Climate change	0		4	0	0		0	0	0	1.1	5	0	1	2	0	0	1
Percentage										50	50	0	10	20	0	0	10
Feral animal predation on turtle nests (eggs)	4		4	3	4	4	3	4	3.6	0	3	3	4	0	1	0	0
Percentage										0	27	27	36	0	9.1	0	0
Incidental capture in commercial fishing	3	2	3	4	7		2	7	4	3	1	1	2	0	1	2	0
Percentage										9.1	18	27	9.1	0.1	9.1	18	0
Boat strikes	7		4	5	8	0	3	4	5	0	0	3	1	3	2	1	1
Percentage										0	0	27	9.1	27	18	9.1	9.1

Slide 18

Appendix 10: SPREP and the Regional Marine Turtle Action Plan.

Slide 1

SPREP

and the

REGIONAL MARINE TURTLE ACTION PLAN

Slide 2

1. SPREP Programme
   1. Regional Marine Species Programme
   – Regional Marine Turtle Action Plan
2. Link to National Programmes
3. RMSP in ACTION
4. Partnerships

Slide 3

Secretariat of the Regional Environment Programme

- Established in 1993 with headquarters in Samoa.
- 26 members
- Mandate: To promote cooperation in the Pacific region and provide assistance in order to protect and improve its environment and to ensure sustainable development for present and future generations.
- Vision: The Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures.
- Strategic Priorities:
  - Climate change
  - Biodiversity and Ecosystem Management
  - Waste Management and Pollution Control
  - Environmental Monitoring and Governance

Slide 4

Biodiversity & Ecosystem Management

- Islands & Oceanic Ecosystems
- Threatened & Migratory Species
- Invasive Species

Slide 5

Regional Action Plans for:

Dugongs

Marine Turtles

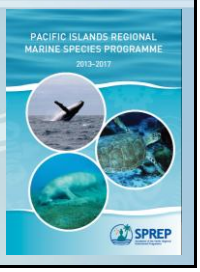
Whales & Dolphins

Sharks (recent)

Developed by Members & Partners

Endorsed by Council

Are the collective responsibility of SPREP member states, SPREP and partner non-governmental and intergovernmental organizations, and private sector organizations



Slide 6

Marine Turtle Action Plan 2013 - 2017

GOAL: To conserve marine turtles and their habitats, in keeping with the traditions of the people of the Pacific Islands region.

Slide 7

Marine Turtle AP: Themes & Objectives

THEMES	OBJECTIVES
1. INFORMATION, AWARENESS/ EDUCATION AND COMMUNICATION	- Provide assistance to participating member agencies to enable them to deliver effective and accurate information, awareness and education programme to the people of the Pacific Islands region.
2. CAPACITY BUILDING	- Improve capacity within each participating country and territory for marine turtle protection, management, population research and monitoring as well as resourcing.
3. THREAT REDUCTION	- Improve the management and protection of marine turtles and their habitats by reducing threats to them, emphasising community-based approaches.
4. LEGISLATION, POLICY AND MANAGEMENT/ RECOVERY PLANS	- Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories to support the Regional Marine Turtle Conservation Programme that incorporates traditional knowledge and customary marine tenure. - Ensure sufficient supporting frameworks are in place to support national efforts and initiatives
5. TRADITIONAL KNOWLEDGE AND CUSTOMARY PRACTICES	- Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories that incorporates traditional knowledge and customary marine tenure.
6. RESEARCH AND MONITORING	- Identify and monitor all major marine turtle nesting beaches in the Pacific Islands region. - Identify major marine turtle stocks in the Pacific Islands region. - Identify and monitor all major marine turtle foraging grounds in the Pacific Islands region. - Implement the turtle Research and Monitoring Database System (TREDS) in SPREP member countries and territories
7. SUSTAINABLE DEVELOPMENT	- Encourage the sustainable use of marine turtles.
8. COLLABORATION AND PARTNERSHIP	- Increase national, regional and international collaboration and partnership for turtle conservation and management.

Slide 8

(2) Link with National Programmes

Slide 9

Implementation Mechanisms

National Action
Sustainable development strategies; National development plans; National Capacity Self Assessments; National Biodiversity Strategy and Action Plans; Established Protected Areas; Enabling legislation, etc

Technical advice/assistance; resources; coordination, facilitation; advocacy

Define priorities, advise level & type of assistance needed

Sustained livelihoods and natural heritage

Strategic Programmes (2011 – 2015)
Marine Species Action Plans (2008 – 2012)

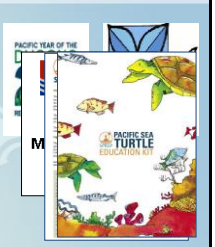
Slide 10

(3) RMSP in ACTION

Slide 11

i. Awareness & Information

- Campaigns
- Regional reviews and compilation of data, e.g. Marine turtles profiles & turtle nesting populations.
- Information sheets, Educational material, Posters.
- Networks.



Slide 12

ii. Capacity Building

•Support country attachments and participation in training and meetings.

• Conduct/support in-country training .

• Conduct/coordinate/support national / regional training workshops/meetings.

Slide 13

iii. Research & Monitoring support

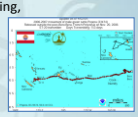
- Equipment (turtle tagging, cetacean stranding kits etc).
- Database (Turtle database-TREDS).
- Community Turtle Monitoring Project .

Slide 14

• National surveys /research (including planning)

Examples:

- Turtle nesting,
- Turtle marketing,
- Impacts of whale watching,
- Dugong habitat,
- Turtle satellite tagging



Slide 15

iv. Species Management

• Regional arrangements (e.g. Cetacean MoU under CMS).

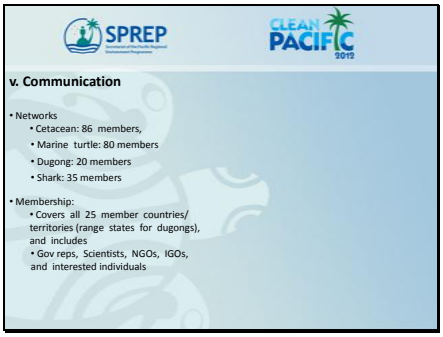
• Promote accession to species conventions, esp CMS.

• Support national efforts (e.g. development of sanctuaries, management plans, legislation, guidelines, review of licenses).

Slide 16

- Review of legislation e.g. marine turtles
- Regional/national guidelines, protocols, manuals (e.g. cetacean watching/ stranding, turtles in captivity).

Slide 17



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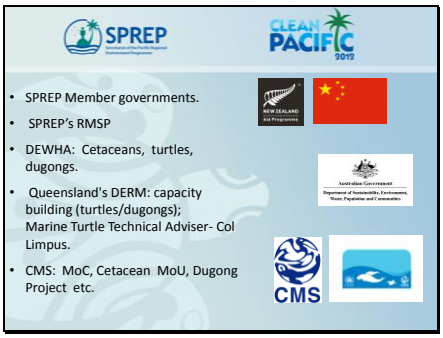

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Slide 21

Slide 22

Appendix 11: Overview of marine turtle conservation efforts in Fiji.

Slide 1

Overview of Marine Turtle Conservation efforts in Fiji

Laitia Tamata Jnr
WWF SPPO

Slide 2

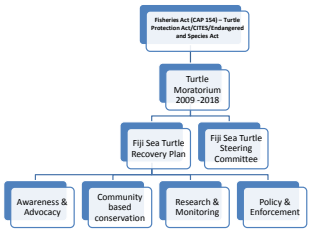
History of Sea turtle conservation and management in Fiji

- 1995 Year of Sea Turtle (SPREP) celebrated by Fiji
- Fiji national sea turtles steering committee was established
- 2000 – 2004 a break on the turtle moratorium
- 2004 – 2008 Turtle Moratorium
- 2006 National Sea turtle Committee was revived
- 2007 – 2008 Drafting of the Fiji sea turtle recovery plan
- 2009 – 2018 Turtle Moratorium extended
- 2009 – Fiji Sea turtle recovery plan was endorsed by cabinet
- Implementation – continues from 2006

Slide 3

Conservation and management of Sea turtles in Fiji

'Sea turtle conservation framework'



Slide 4

Policy and Enforcement

- Policy
- 10 years Turtle Moratorium (2009 – 2018) & Endangered & Protected Species Act
- Fiji Sea Turtle Recovery Plan: Goal – "By 2026, sea turtle populations in Fiji have measurably recovered to levels allowing for sustainable harvest & traditional use.

Slide 5

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Policy and Enforcement

- Enforcement
- 10 years Turtle Moratorium (2009 – 2018) & Endangered & Protected Species Act (regulation)
- Community based turtle monitoring programme – 'Turtle monitors licensed to strengthen enforcement'

Slide 7

Community based sea turtle conservation

- Community based conservation - conservation programme focusing in enhancing and empowering communities to take ownership and stewardship of the protection and conservation of its resources for the betterment of their present and future generation.

Slide 8

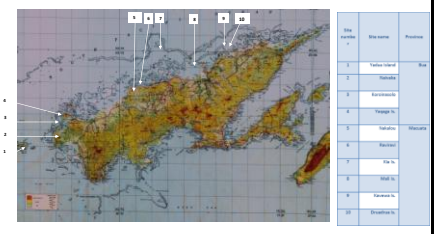
Slide 9

Community based sea turtle conservation

- 'Achievement on community based turtle monitoring project'

Slide 10

Community based turtle monitoring sites



Slide 11

Research & Monitoring

I. Flipper tagging and recording into TREDS (SPREP)

II. Satellite tagging (SPREP/NOAA)

III. Nesting beach and feeding ground survey

IV. Sea turtle shells and derivatives trade and market survey (annual monitoring)

V. Consumption surveys (Subsistence/Traditional)

Slide 12

Slide 13

Challenges on the Sea turtle conservation and management in Fiji

- Extension of the community turtle monitoring programme to other parts of Fiji
- Funding limitation to support expansion of the sea turtle research and monitoring to other parts of Fiji
- The geographical expanse of the 300+ island archipelago providing enforcement, outreach and research challenges;
- Increasing numbers of local communities equipped with boats and who can now access remote islands that have rookeries;
- Limited capacity to pursue prosecution of those found to have breached regulations;
- Fiji Sea Turtle steering committee and associated working groups – all members having busy schedules that prevent regular meetings.

Slide 14

Sa vinaka…

- Taro?

Appendix 12: Community involvement.

Slide 1

2. COMMUNITY INVOLVEMENT

- Consultation and community agreements
- Community monitors and co-ordination/support mechanisms established
- Supply and maintenance of turtle monitoring equipment
- Data collection, storage, analysis and reporting

Slide 2

3. Role of national lead partners

- Department of Fisheries
  - national implementation & coordination
  - data collection and reporting
  - licensing of monitors as wardens
  - enforcement of relevant legislation / regulations
- WWF South Pacific programme (WWF SPPO)
  - supporting national implementation of turtle monitoring in Fiji (field, policy and communications),
  - Engage Dau ni Vonu network

Slide 3

4. Expected Project Outcomes

- Enhanced government and community capacity and commitment to conserve and sustainably manage marine turtles
- Marine turtle populations recovering to sustainable levels
- Economic benefits and improved livelihoods for local communities based on environmentally-friendly turtle-related eco-tourism ventures

Slide 4

Vinaka vakalevu

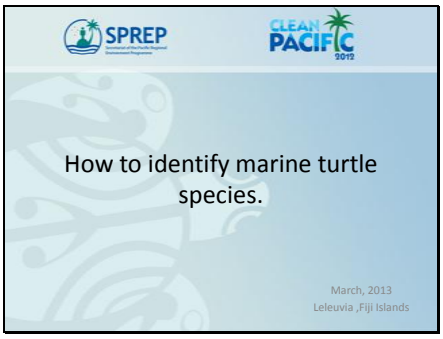
www.sprep.org/Threatened-and-Migratory-Species/threatened-and-migratory-species

Appendix 13: List of nominated turtle monitors for Moturiki / Leleuvia.

Koro (Village)	Yaca (Name)
Uluibau	1. Jone Loloa 2. Mataiasi Colamatanisiga
Daku	3. Jone Salele 4. Taione Vulavou
Yanuca	5. Laisiasa Baleiwai
Naicabecabe	6. Waisake Vuki
Nasauvuki	7. Akuila Koroi
Navuti	8. Jone Waqa
Nasesara	9. Sakeasi Karanavanua
Savuna	10. Waisake Sauni
Wawa	11. Manasa Delavasa
Niubasaga	12. Peni Nasaroa
Caqalai	13. Waisale Draunidalo
Leleuvia	14. Seru 15. Jitoko 16. Milika 17. Sucu

Appendix 14: How to identify marine turtle species.

Slide 1



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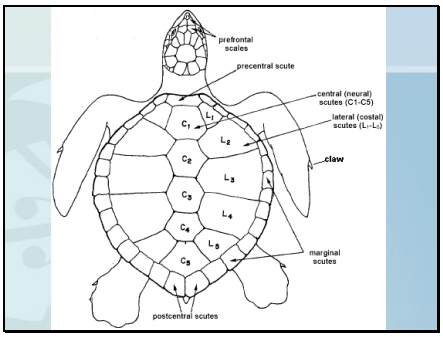

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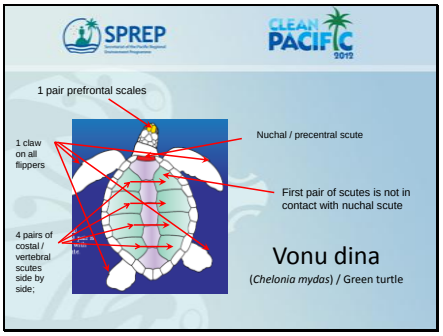

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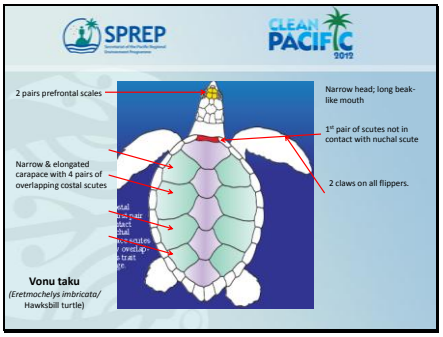

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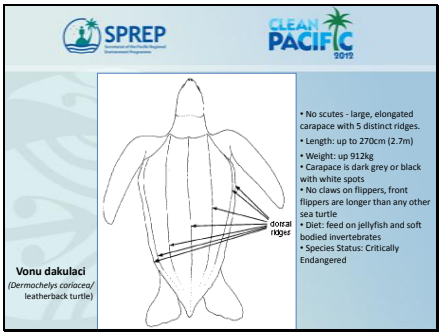

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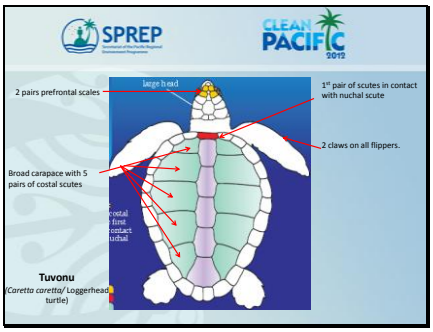

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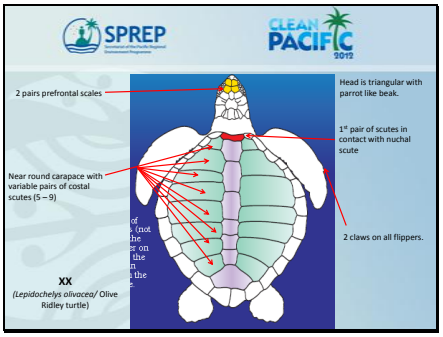

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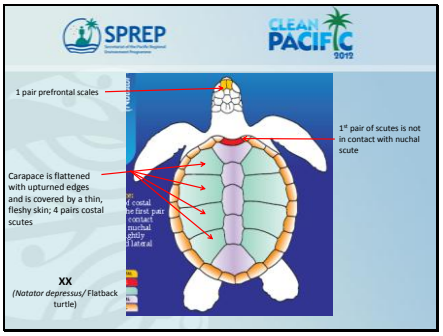

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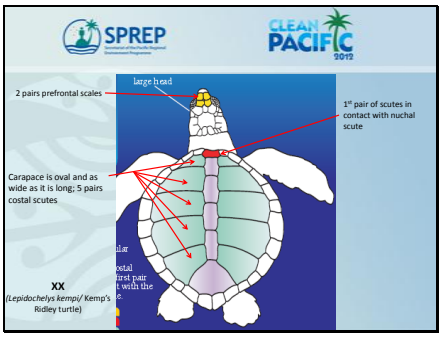

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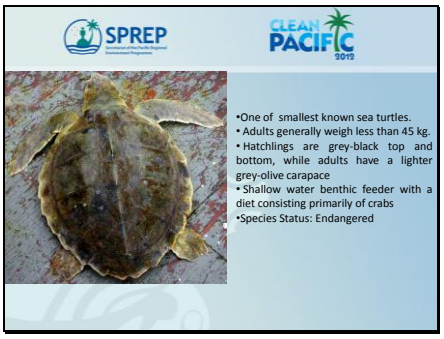

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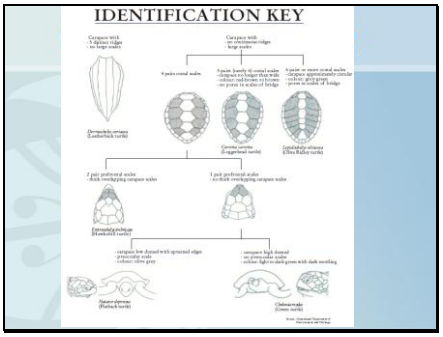

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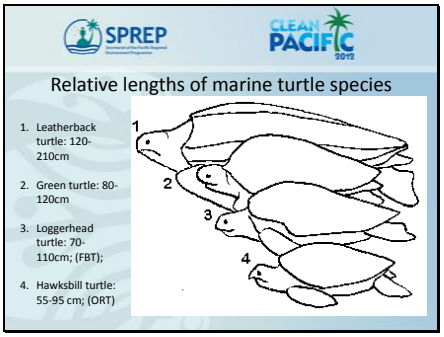

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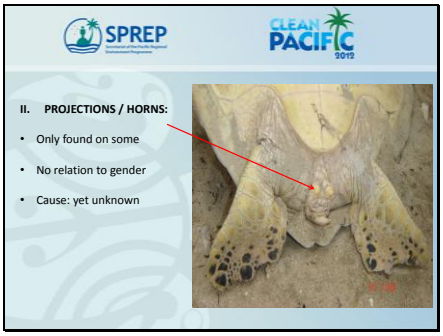

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Appendix 15: Conducting marine turtle surveys.

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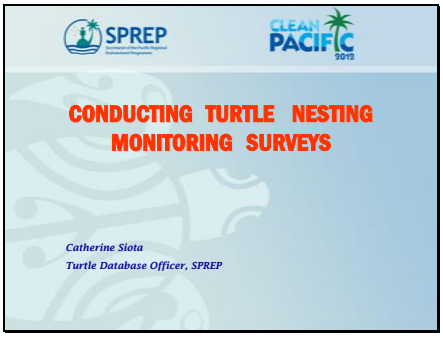

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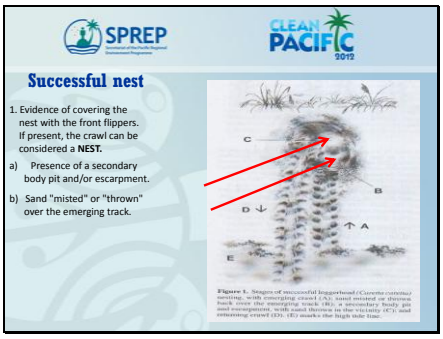

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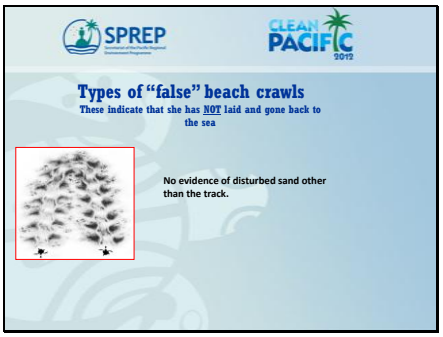

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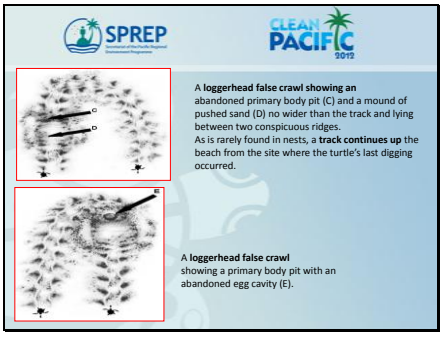

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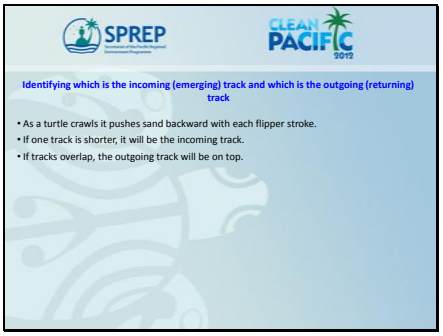

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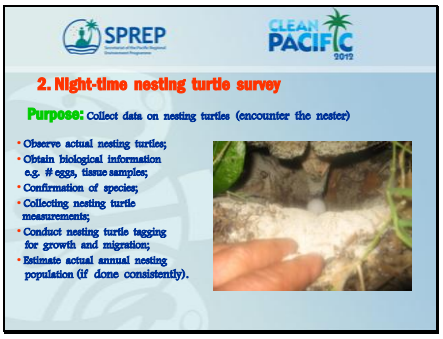

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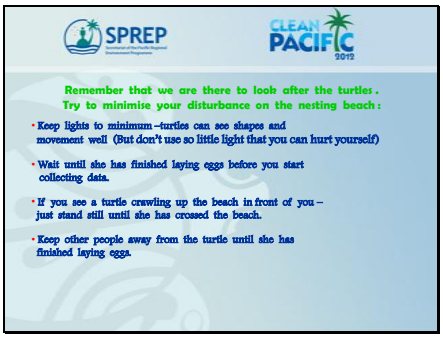

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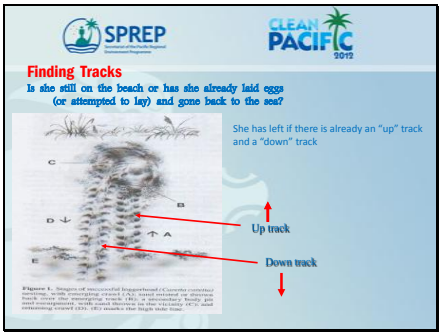

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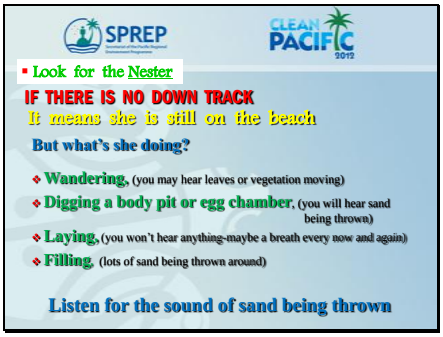

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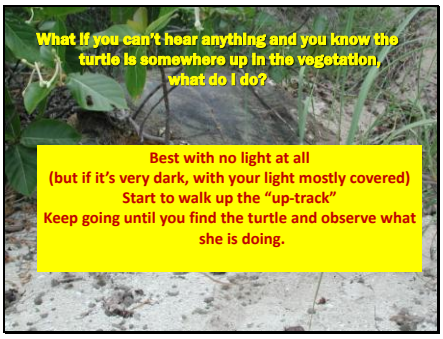

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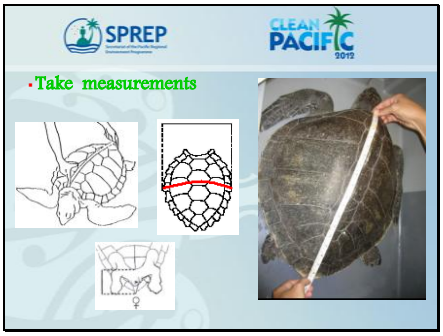

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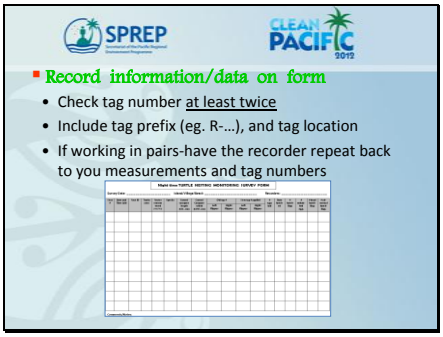

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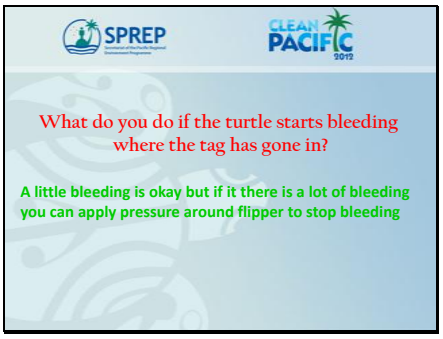

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Appendix 16: Marine turtle flipper tagging.

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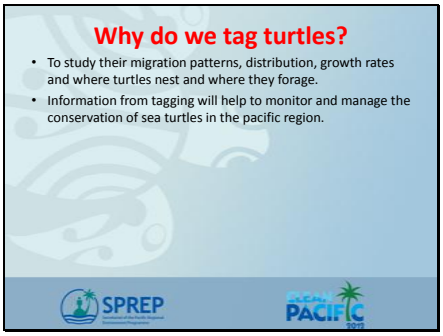

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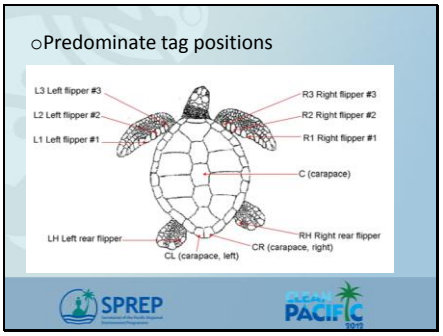

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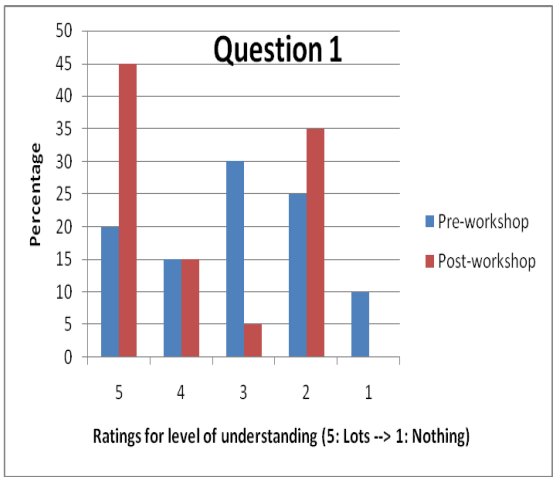
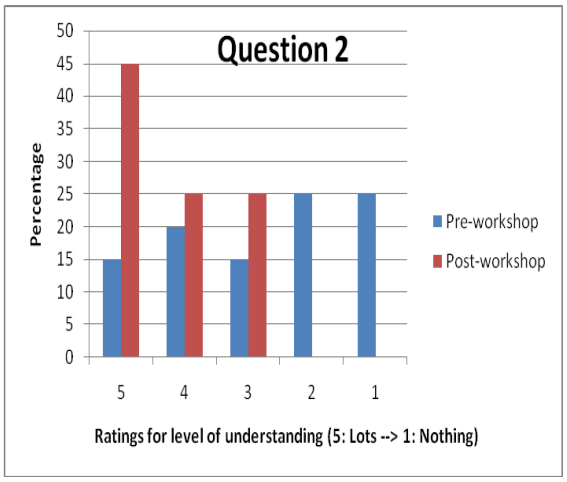
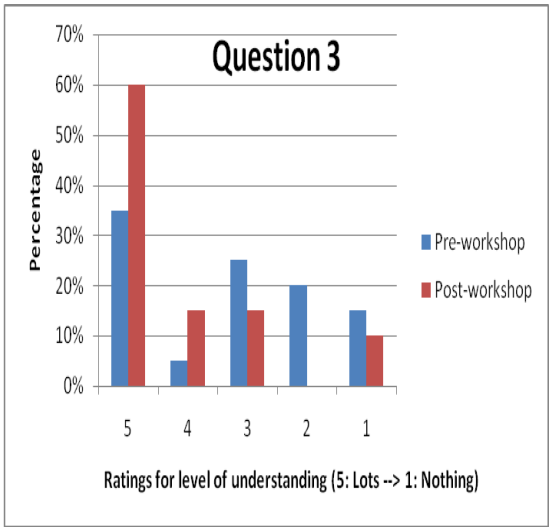
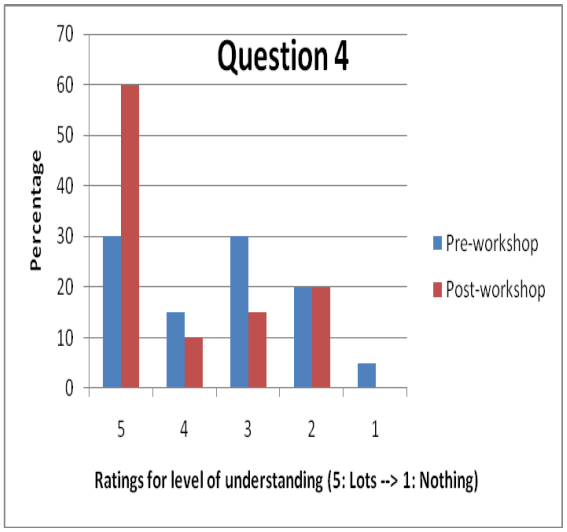
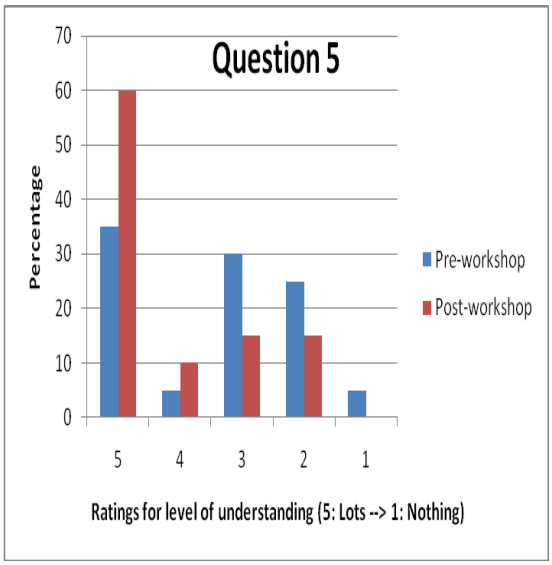
APPENDIX 17: SURVEY QUESTIONNAIRE QUESTIONS 2 and 3.

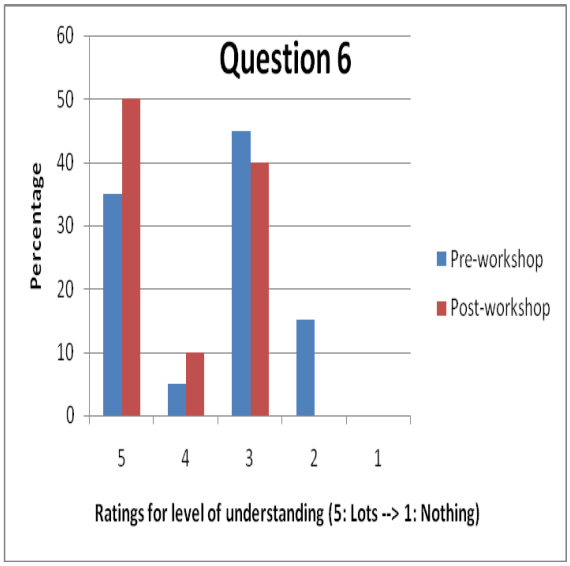


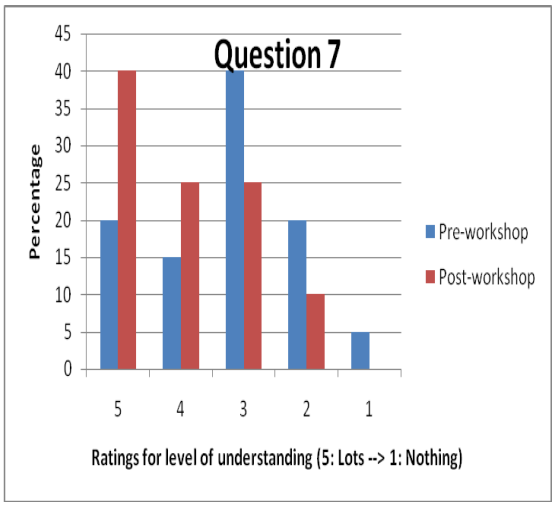








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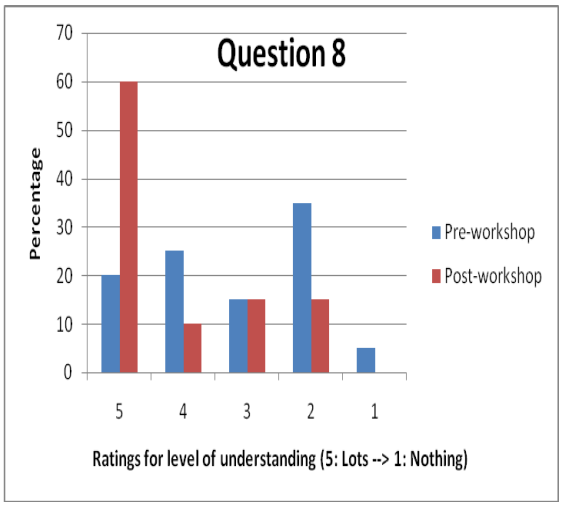
Percentage
45
40
35
30
25
20
15
10
5
0
5
4
3
2
1
Pre-workshop
Post-workshop
Ratings for level of understanding (5: Lots --> 1: Nothing)


Question 8
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Pre-workshop
Post-workshop
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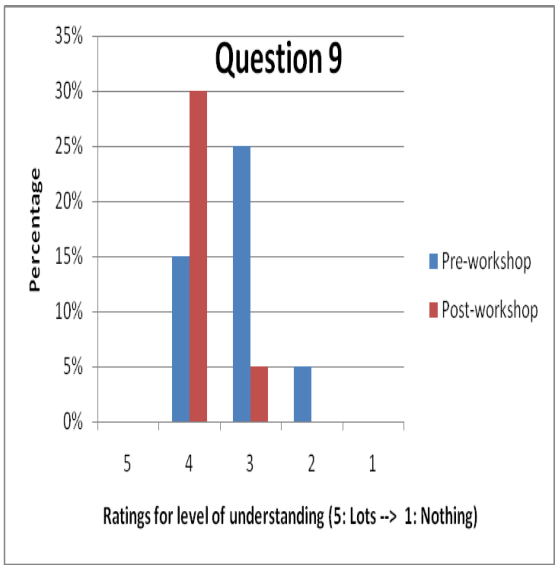
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10%
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0%
5
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Pre-workshop
Post-workshop
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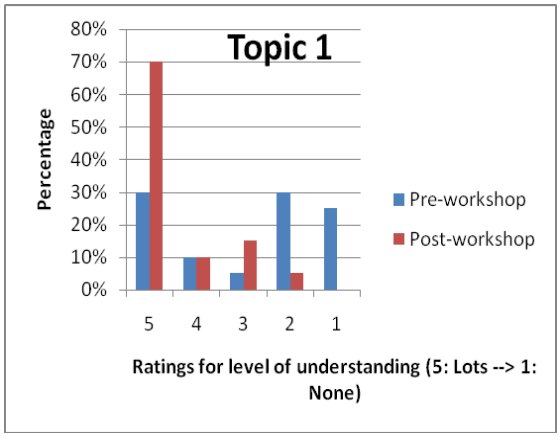
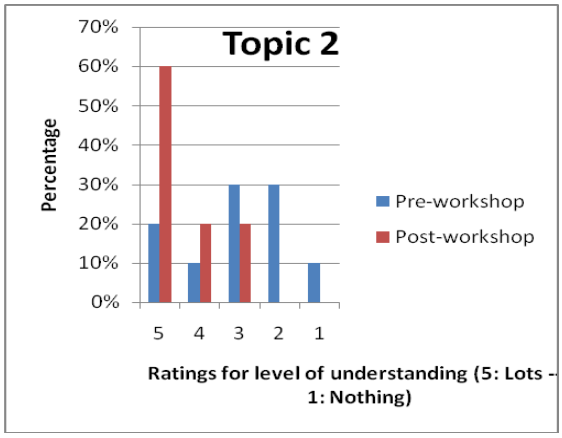
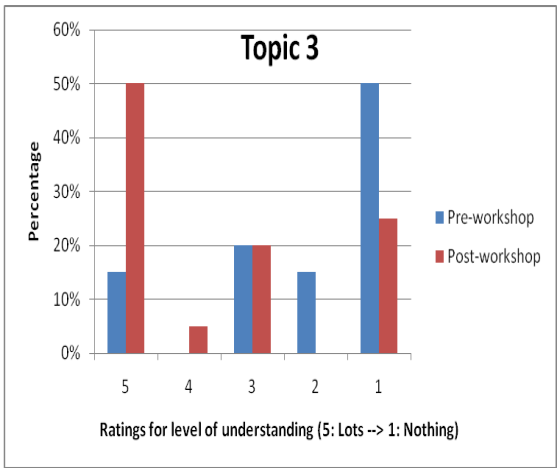
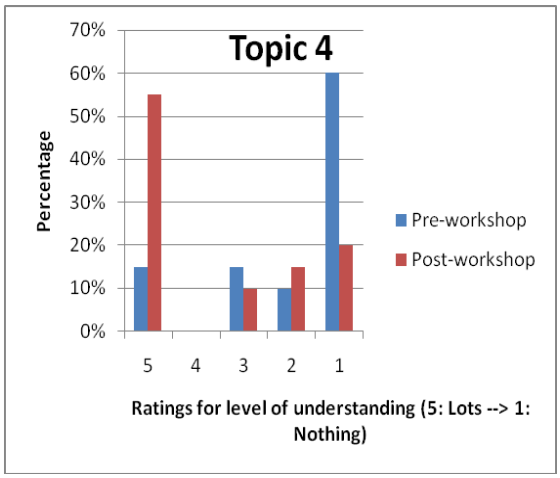
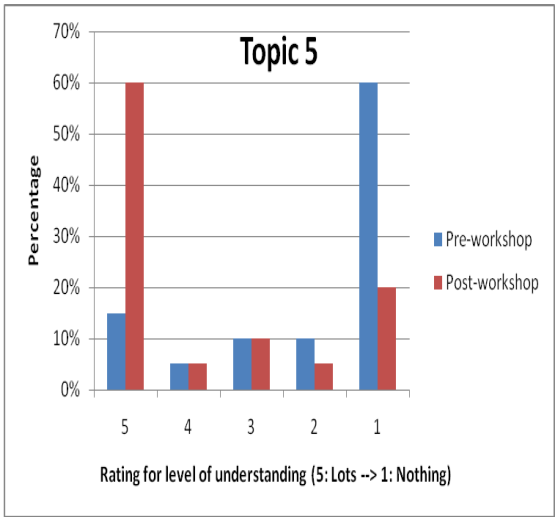
APPENDIX 18: SURVEY QUESTIONNAIRE QUESTIONS 4 and 5

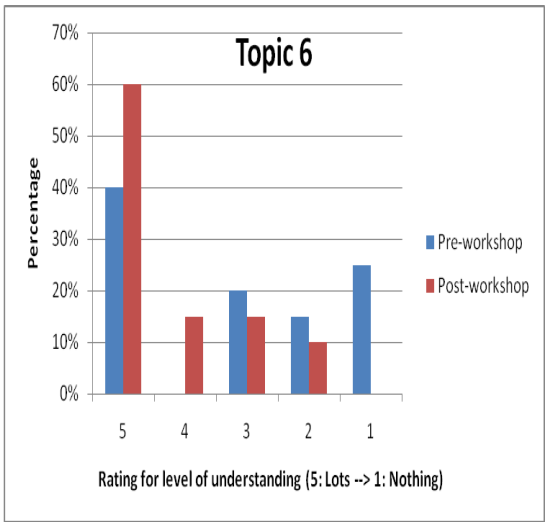


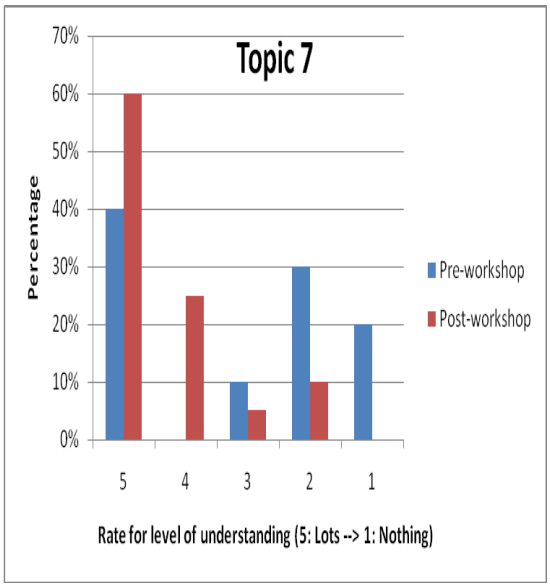








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10%
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Percentage
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4
3
2
1
Pre-workshop
Post-workshop
Rate for level of understanding (5: Lots --> 1: Nothing)