Regional Turtle Ranger Exchange Report

1 – 2 May 2025, Nadi, Fiji

Compiled by:
Ken Kassem
Anissa Lawrence
Ledua Tuiyalani

SPREP
PROE

1. Introduction

This turtle ranger exchange followed a 2-day workshop with government officials from across the Pacific to discuss turtle policies, enforcement, and sustainability issues. It is recognised that governments and communities must work together to ensure that turtles continue to play a part in Pacific ecosystems and cultures.

2. Background

Sea turtles have played a significant role in the customs and traditions of Pacific island communities for thousands of years – and continue to do so to this day – featuring in many myths, legends, songs and traditions. Marine turtles are integral in the functioning of marine habitats. They are highly migratory, capable of traveling thousands of miles, and readily cross jurisdictional boundaries. Few survive to adulthood, with estimates ranging from one in 1,000 to one in 10,000. Their natural lifespan is estimated to be 50 - 100 years, spending most of their life at sea, except when ashore to lay their eggs[1,2,3]. They are recognised globally as at risk of extinction and species of conservation concern and face numerous threats in the Pacific including from by-catch, climate change, local consumption and trade.

However, sea turtles have been subjected to increasing pressure as customary practices have eroded and their popularity in commercial markets remains relatively unregulated. They continue to be caught as targeted or by-catch in commercial and artisanal fisheries and climate change threatens important nesting and feeding areas, along with sea turtle reproductive biology. While some information exists with respect to the by-catch of sea turtles in the Pacific from industrial fisheries such as the tuna purse seine and to a lesser extent longline sectors, less is known about levels of use of sea turtles by coastal communities and impacts of small-scale fisheries across the Pacific. Similarly, little is known of the impacts of climate change on sea turtles and their important habitats across much of the Pacific, and of the connectivity, status and trends of sea turtle populations at the local to regional levels.

A coordinated regional approach is needed to conserve marine turtles, including collaborating with SPREP Members and ensuring a healthy exchange of information at national, regional, and global levels. Major constraints to implementing management actions in the region include lack of knowing which targeted effort will have the most impact, limited financial and human resources.

From 2019 to 2025 the Bycatch and Integrated Ecosystem Management (BIEM) Initiative helped to implement the Turtle Action Plan of the Pacific Islands Regional Marine Species Programme 2022-2026. This included seeking a better understanding of coastal communities' motivations for marine turtle use and trade; patterns of direct and indirect take of different turtle species; and to record environmental

[1] Avens L and Snover ML (2013) Age and age estimation in sea turtles. In The Biology of Sea Turtles. Volume III, Wyneken J, Lohmann KJ and Musick JA, Eds. CRC Press, Boca Raton. pp 97-133

[2] Limpus CJ (2009) A Biological Review of Australian Marine Turtles. Brisbane, Queensland. Queensland Government Environmental Protection Agency. pp 324

[3] Miller JD (1997) Reproduction in sea turtles. In The Biology of Sea Turtles. Volume I, Lutz PL and Musick JA, Eds. CRC Press, Boca Raton, FL. pp 51-83

parameters at specified index beaches to inform the assessment of regional extinction risk and policy aimed at reducing the exploitation of marine turtles. Many of these activities have been conducted in collaboration with the World Wide Fund for Nature (WWF). SPREP and WWF-Pacific are committed to working in partnership to implement complementary projects, as detailed in the SPREP - WWF-Pacific MoU (11.10.2019).

Under BIEM, SPREP investigated the sociocultural use of marine turtles and monitored key index turtle nesting beaches for impacts of climate change in Tonga, PNG, Vanuatu and Fiji in partnership with WWF-Coral Triangle Program, WWF-Australia and WWF-Pacific and local NGO partners. This work builds on the turtle use survey undertaken by The Nature Conservancy in Solomon Islands in 2019, and WWF's ShellBank and Blue Corridors for Turtles programs, to identify marine turtle connectivity and those populations impacted by overexploitation, bycatch and trade in the western Pacific. The results also informed the BIEM Initiative extinction risk assessment for marine turtles in the Pacific led by Dr N. Pilcher from the Marine Research Foundation (MRF). The published data will support the achievement of identified government priorities and strengthen the knowledge of the involved communities. The results of the community turtle use surveys and the regional turtle risk extinction risk model indicate that turtles are likely declining more quickly in the region than expected and several populations may go extinct in the region within decades.

This learning exchange provided an opportunity for turtle monitors and rangers across the Pacific to come together to share and learn from each other, build their knowledge and capacity and connect with other turtle monitors within their country as well as regionally with the view to help form strong alliances and cross-border data sharing as our migratory turtle species connect us.

The BIEM is funded by the European Union with additional support from the Government of Sweden for the BIEM Initiative under the Pacific European Marine Partnership (PEUMP) programme.

Participants from the 5 BIEM countries (Fiji, Papua New Guinea, Solomon Islands, Tonga, Vanuatu), as well as Australia (online) were invited to participate. Papua New Guinea was also only able to participate via online in some sessions. Participants were nominated by governments and/or partners in each country. The exchange was aimed at turtle rangers working on the ground to protect nesting beaches and turtle populations.

Exchange Objectives

The overall objectives of the Forum included:

1. Provide opportunity for turtle monitors and rangers across the Pacific to share and learn from each other.
2. Extend latest research, techniques, best practice approaches and training opportunities for turtle monitoring, data collection and related activities with turtle monitors and rangers.
3. Provide a platform/place to share cross-border/transboundary learning and data and form stronger alliances to conserve marine turtles across their full life history.

Agenda

The agenda for the two days included sessions on:

1. Setting the scene – latest regional turtle research with presentations on:
    a. Nick Pilcher – Regional Turtle Extinction Risk Assessment results

   b. Chris Madden, WWF – Turtle Tools, Policy and Connectivity (ShellBank and Blue Corridors) – what we know and where are our gaps are likely
   c. Duncan Williams, WWF Pacific - Understanding turtle use and small scale fishery impacts to turtle populations across the Pacific
2. Sharing experiences from the field – presentation from rangers from BIEM countries and Australia
3. Turtle genetics and genetic sampling
4. Hands-on practical exercises on nest relocation, tagging, and genetic sampling
5. Talanoa on challenges, connectivity and opportunities
6. Turtle research and management presentations from:
   a. Hayley Vercace, Conflict Islands Conservation Initiative - Engaging with communities to empower and support locally led conservation and protection (online)
   b. Mannie Fisher from Western Cape Turtle Threat Abatement Alliance (WCTTAA), Australia – dealing with feral animals/ use of drone technology/data collection etc. (online)
   c. Melissa Staines, UQ – Using sand temperature to monitor turtles in the Pacific? (online)
   d. Karalaini Rereavosa, WWF Pacific – Communities driving conservation for turtles through Protected Area.
   e. Donald Konel, Wan Smol Bag - The role of drama/theatre in turtle conservation with local communities.
   f. Shritika Prakash - Using and applying the new monitoring manual and TREDS
7. Talanoa on community engagement, coordination with turtle monitors in each country, regional coordination.

3. Day 1 Proceedings: 1 May 2025

3.1 Presentation Session: Sharing Research and Review Findings

Turtle Use Survey Results – Duncan Williams (WWF Pacific)

Surveys conducted in Papua New Guinea, Fiji, and Tonga provide critical information about community use of turtles across the region. Among other findings, the studies have revealed high levels of turtle harvesting, with estimated annual takes exceeding 34,000 in Papua New Guinea; 10,000 in Fiji; and over 6,000 in Tonga. The level of take is an emerging issue for the region for species that are critically endangered (such as Hawksbill turtles and Leatherback turtles). Turtle use is driven by cultural, nutritional, and trade factors. Many communities reported that turtles caught today are smaller and less abundant than in the past.

Working with communities and traditional leaders going forward within and between countries, given the migratory corridors of turtles, is key.

Connectivity and ShellBank – Dr. Christine Madden (WWF)

Turtles migrate across jurisdictions. ShellBank is helping track these movements via genetic samples and satellite tagging. However, genetic data in the Pacific is limited, and more collaboration is needed. Tools like photo ID and small-scale genetics were proposed as more accessible alternatives to traditional tagging. Genetic sampling also provides results on connectivity much more quickly than tagging which requires resightings to provide data. It could also be useful in fisheries bycatch investigations to provide information on which populations are more at risk.

Extinction Risk Assessment – Dr. Nick Pilcher (Marine Research Foundation)

Modelling shows leatherback, hawksbill, loggerhead and olive ridley turtles are at risk of extinction in the region, with population collapse expected within 30 - 70 years without intervention. Green turtles are doing better regionally thanks to large and stable populations in Australia. In the rest of the region green turtles are also threatened.

The following key actions were recommended at national and regional levels to improve the conservation outlook for sea turtles in the Pacific region:

- Address mortality of eggs and hatchings on nesting beaches
- Address incidental capture of all age classes in commercial and artisanal fisheries
- Address the loss of nesting females on nesting beaches
- Address local consumption of sea turtles and their products
- Improve data collection – fisheries and communities

Priority actions summarised for each species were:

	Regional	National	Management required

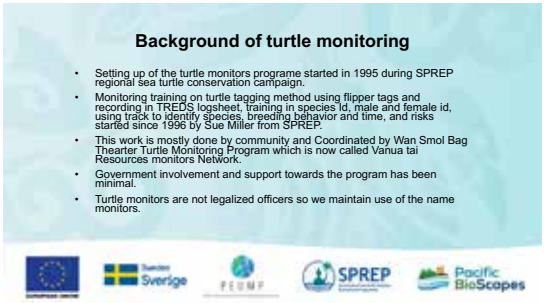
Green turtle (*Chelonia mydas*)	Least concern	Australia: Least concern Other countries and territories Endangered	Manage turtle consumption/use harvest and bycatch
Hawksbill turtle (*Eretmochelys imbricata*)	Critically Endangered	All countries and territories: Critically Endangered	Reduce egg consumption Reduce bycatch Reduce turtle consumption/use
Leatherback turtle (*Dermochelys coriacea*)	Critically Endangered	All countries and territories: Critically Endangered	Reduce egg consumption Reduce bycatch
Loggerhead turtle (*Caretta caretta*)	Critically Endangered	All countries and territories: Critically Endangered	Reduce egg consumption Reduce bycatch
Olive Ridley turtle (*Lepidochelys olivaceaII*)	Critically Endangered	Australia: Critically Endangered	Reduce egg consumption

Extinction Risk Analyses for Sea Turtles in the Pacific Region

3.2 Country Presentations

Rangers within each country were tasked with presenting the status of their turtle monitoring efforts and their biggest challenges and solutions.

Vanuatu



What type of turtle monitoring is undertaken in Vanuatu

- **Night Patrol/ Nest monitoring** – active undertaken by community monitors during nesting season.
- **Beach Scouting** – identify and counting of turtle tracks
- **Foraging monitoring** –interest decline when supply of tags drop, low tag recovery and costs.
- **Beach climate monitoring** – undertaken in 2022 to 2024 but faced setback from beach erosion from cyclone
- **Seagrass monitoring** – by projects with some existing information but uncoordinated, new seagrass policy in process
- Reporting of incidences direct to VFD via community Fisheries Authorized Officers

How is turtle monitoring undertaken?

- Nesting beaches in a nesting site are identified and divided into zones with GPS coordinates
- Data record is made by beach zones to assess differences and changes by zones and beaches.
- Trained community monitors undertake monitoring in their respective areas during nesting season since 1995, over 500 monitors are undertaking turtle monitoring in the country
- Nest monitoring is undertaken during breeding season from August to April.
- Foraging monitoring is continuous activity on a daily basis
- Data collected include species identification by tracks and physically, date and time of egg laying, size of layer in length and , tag number and count, marking of nests and date and expected hatching date and number of hatched eggs.
- Data recorded in TREDs log sheet by community monitors and send to WSB in Vila, data is entered into database and shared with main TREDs database at SPREP
- Incidences such as killing of adults, harvesting of eggs are recorded and reported to the community fisheries authorized officer or a Fisheries compliance officer.

What is working?

- **Awareness and education activities-** Most coastal communities are aware of turtle conservation and are taking steps to protect turtles.
- **Nest monitoring** is working – total number of nest per zones and beaches, total tagged, hatchings rate to determine nest production.
- **Existing nesting data held in TREDs** is generated by community through WSB turtle program, provides historical data on turtle nest production trend.
- **Enforcement** is working – no shells on sale, no meat sale, low reporting of egg harvest but need improvement
- Turtle killing and use for food has greatly reduced and there more turtles in the water and more foraging (pers comm)
- Religious belief also help turtle conservation, such as SDA worshipers

What doesn't work or challenges

a) **Foraging monitoring** –declined –no more supply of tags, count of observations also stops. Commitment issues with voluntary engagements, livelihood activities are important

b) **Relocation of nest –** relocation of damaged nests undertaken although is discouraged for now due to risk of damage –proper trainings needed

c) **Tagging of adult turtles**, many turtles were tagged and released but very recovery of tags and lack of tags.

d) **Recording of data on TREDS log sheet -**works well before but is no longer used this time, community recording on diary or exercise books, they prefer use of electronic recording tool, accurate and quick to remit data to base.

e) **Voluntary work in the community is challenging,** many young people today prefer to work for an income and this is challenging, many monitors are leaving for employment such as seasonal work in Aus. and NZ

What has been your biggest success and what are you most proud of?

- Turtle monitoring work motivates communities to better organize and initiate other developments.
- Turtle training in monitoring work generate new knowledge and appreciation of turtles and commitment to voluntary work
- Monitors receive cash incentive during travel in country for meetings, workshops or traininigs.
- Help community to better organize to do turtle work.
- Awareness on turtle regulation

What is your greatest challenge?

- Nesting season is always at cyclone season
- Climate change and sea level rise affecting nesting habitat
- Voluntary work is a challenge itself, monitors priorities family livelihood and food security to meet basic need and health and education of children.
- Lack of coordination of data collection, data management and reporting between government, partners and community
- Limited support for community monitoring work
- Lack of knowledge on turtle use
- Enforcement challenges

Solomon Islands

What type of turtle monitoring is undertaken in your country?

- In Western Solomon island we did turtle nesting monitoring program
- We have 3 main project sites in the western part of Solomon island

How is turtle monitoring undertaken?

- Our project partners including WCS, SPREP, SWOT that have been in one way or the other integral to the success of the marine turtle conservation program on our key turtle monitoring sites on Tetepare and Rendova island.

How is turtle monitoring undertaken?

- Turtle monitoring work on the beach are looked after by local rangers, they are the key people that are in charge of all the turtle monitoring activities on the nesting sites we have

How is turtle monitoring undertaken?

Strengthen local technical training and capacity building

- Training and workshop

How is turtle monitoring undertaken?

TIMING OF MONITORING ACTIVITIES

- PEAK SEASON – 6 MONTHS (November- April)
- OFF SEASON – 6 MONTHS (May- October)

How is turtle monitoring undertaken?

Activities on the beach

- Beach patrolling
- Measuring and Tagging of turtles
- Filling the turtle monitoring datasheets
- Relocation of turtle eggs
- Looking after the incubating nests

What works and what doesn't?

What works?

- Introduction of hatcheries
- Training of turtle training rangers

What doesn't ?

- *controlling creeping vines*

What has been your biggest success and what are you most proud of?

- Improved number of turtle nests over the last 2 season
- Hatchling success slowly improving.
- Church organisations, Schools and Communities supported the turtle conservation program.

What is your greatest challenge?

1. Current threat to the nesting population

- **Coastal erosion** - King tide is one of the major problem that our monitoring beaches have been struggling to with to help protect the nesting population.

Tofa turtle beach on Tetepare Island

What is your greatest challenge?

1. Current threat to the nesting population

- Creeping plant vine

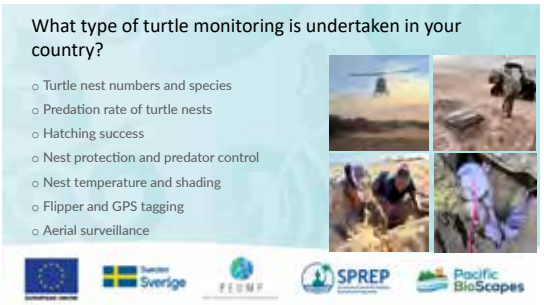
Creeping plant vine

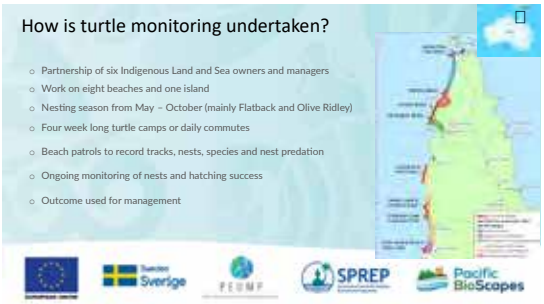
What is your greatest challenge?

2. Resource Constraints

- No proper monitoring equipment
  - *Head torches*
  - *Tags and Applicators*
  - *Tape measures*
  - *Rain Jackets*

Australia





Tonga (no presentation)

1. What kind of turtle monitoring do you have in Tonga?

We have two types of turtle, the green turtle (fonu ke loa) , and leatherback turtle (fonu leta).

It is important for Tonga to participate in this meeting to learn more about monitoring. In Tonga, turtles are only for eating. When growing up in Tonga, we did not know the important role of turtles in the ecosystem.

2. How is turtle monitoring undertaken in Tonga?

Monitoring of turtles is vital in Tonga as many species are threatened by habitat loss, climate change and illegal hunting. Various programmes for monitoring and protection have been implemented in Tonga. One of the key methods in Tonga is research and tagging programmes.

3. What works and what doesn't?

Alongside tracking and data collection in Tonga we have data collection through observation. Research and data collection on nesting beaches. During the nesting season volunteers and local community members participate in beach monitoring recording data about the number of nests and the time of nesting. This is dependent on the local community. This not only collects valuable data but raises awareness about turtles and the importance of turtle conservation.

Protecting turtles contributes to our culture, heritage, and community identity. For many Pacific island nations, including Tonga, turtles hold significant cultural and spiritual value. They are often found in local arts, stories, and traditions where they represent resilience and long life. If communities can conserve these turtles they can preserve their cultural heritage and pass it down to future generations.

Tonga has the fisheries management regulations of 2008 for turtles:

No person shall — (a) disturb, take, have in his possession, sell or purchase any turtle eggs; (b) interfere with, destroy, or disturb in any way any turtle nest; (c) use a spear or spear gun for the purpose of capturing, killing or taking any species of turtle; (d) at any time fish, capture or destroy any male turtle the shell length of which is less than 45 centimetres as illustrated in Schedule 9; (e) fish for, capture, possess, sale or purchase, or destroy any turtle during the closed season specified in Schedule 12; (f) fish, capture or destroy any Leatherback turtle of the species Dermochelys coriacea as specified in Schedule 12; (g) possess or sell turtle meat out of the shell, unless it has been certified by an authorised officer that it came from a turtle of legal size;

Our challenge from our community and district officer is working together with communities to raise awareness that we can only use spears to kill turtles, not nets or lines. We need to be aware to not catch under-sized turtles. We know the regulations for the whale watching but how can we do turtle watching. We are planning to work together for a sea turtle watching season as a community activity in Vava'u island. This can be another good income for our community and Tongan economies.

Fiji (no presentation)

WWF and other organisations approached me more than 15 years ago. I used to be a turtle hunter and traditional fisherman. I became a sea turtle protector. It was not easy for me to stop killing turtles for my chief. We regard our chiefs very highly. I managed to persuade them and others in our communities to stop taking turtles. There are alternatives for turtle meat.

Since 2012 we have been studying our turtles. We did flipper tagging since then. Recently we started with genetic sampling and this year we deployed 10 satellite tags with the help of WWF.

We have WWF volunteers who help with monitoring every nesting season for beach patrolling.

We have managed to declare two nesting islands as turtle sanctuaries. With the help of NGOs and government we can continue to monitor turtles.

One of our greatest challenges was stopping the harvest of sea turtle eggs. It's good that the nesting sites are near our villages so we can monitor the beaches. Another big challenge is climate change washing away the beaches.

On another island the community recently started monitoring turtles. But the challenges come from nesting sites being washed away by the waves maybe from climate change.

Papua New Guinea (no presentation)

CEPA coordinates turtle work in the country. Papua New Guinea has many community based organisations and NGOs that help to manage turtles, including monitoring.

Sharing in one hotspot. I have been engaged with rangers on the ground in Morobe province and Kamali. Kamali is a hotspot for leatherback turtles.

PNG has many turtle projects on the ground. In Kamiali we did satellite tagging some time ago and recently doing PIT tagging to monitor nesting leatherbacks. We have men and women working on the beaches. We do monitoring at 6 pm until 6 am. Some of our beaches have been eroded but we have an extension beach of 3 km. Three tributaries run out through these beaches. This presents a major challenge for the rangers to access the entire length of the beach. In Kamiali we note that there are tensions in the area and 10 leatherback females had been reported to be killed this year. The community suggested crocodile attacks but it needs to be investigated

Country-by-Country Summary

	Challenges	Solutions	Training Needs
Fiji	• Poaching still occurs • Lack of awareness in remote areas • Enforcement capacity lacking	• Awareness campaigns • Strengthen enforcement • Involve traditional leaders	• Turtle monitoring techniques • Law enforcement protocols • Community engagement
Solomon Islands	• Strong reliance on turtle meat (subsistence & cultural) • Limited data on nesting/hatching • Few trained personnel	• Community-based turtle management plans • Engage youth in conservation • Improve nesting beach surveys	• Data collection & reporting • Nest monitoring • Turtle tagging
Vanuatu	• Overharvesting • Gaps in local laws	• Align national laws with traditional rules	• Ranger coordination • Legal awareness

	• Uncoordinated efforts between islands	• Share success stories between islands • Use tagging data to inform protection zones	• Data sharing protocols
Tonga	• Cultural demand for turtle meat • Knowledge loss on nesting seasons • Weak enforcement in remote islands	• Involve churches and elders • Promote national awareness days • Set up island-level turtle task forces	• Nest protection • Legal training • Monitoring calendars

3.3 Practical Exercises

Turtle Genetics 101 and ShellBank

Dr Michael Jensen (WWF) presented on turtle genetics, the ShellBank project, and demonstrated methods for collecting genetic samples. Presentation in Annex 6.3

Egg and next relocation

Dr Nick Pilcher presented on nest and egg relocation do's and don'ts. Presentation in Annex 6.4

After the presentations, participants proceeded to the venue beach for practical demonstrations and practice.

4. Day 2 Proceedings: 2 May 2025

4.1 Sharing latest turtle research/ techniques/approaches relating to monitoring

Day 2 started with a series of presentations from turtle monitoring and awareness programmes from around the region. Presentations are available in Annex 6.5.

- Hayley Vercace, Conflict Islands Conservation Initiative - Engaging with communities to empower and support locally led conservation and protection (online)
- Mannie Fisher, Western Cape Turtle Alliance, Australia – dealing with feral animals/ use of drone technology/data collection (online)
- Melissa Staines, UQ – Using sand temperature to monitor turtles in the Pacific? (online)
- Karalaini Rereavosa, WWF Pacific – Communities driving conservation for turtles through Protected Area.
- Donald Konel, Wan Smol Bag, The role of drama/theatre in turtle conservation with local communities.
- Shritika Prakash, SPREP/Ika Bula Consultants, Using and applying the new monitoring manual and TREDS

4.2 Breakout Sessions

Participants engaged in group talanoa to discuss several questions:

- How engaged are your communities in turtle monitoring and conservation and how do we get them more engaged, particularly considering the results of the regional extinction risk assessment, turtle use and connectivity studies?

- How do turtle monitors within countries better coordinate with each other?

- How do turtle monitors better coordinate across the region, particularly for those countries where turtles are migrating between?

Themes discussed included:

Cultural and Traditional Leadership

1. Tonga: involve churches and elders
2. Fiji: traditional leaders and youth as enforcement allies
3. Solomon Islands: youth & cultural ties to turtle meat
4. Vanuatu: align national law with traditional rules

Monitoring & Data Collection

5. Nesting beach surveys (Fiji, Solomon Islands, Tonga)
6. Turtle tagging (Solomon Islands, Vanuatu)
7. Monitoring calendars and seasonal knowledge (Tonga)
8. Reporting protocols (Solomon Islands)

Capacity & Training Needs

9. Law enforcement training (Fiji, Tonga)
10. Ranger coordination (Vanuatu)
11. Community engagement (Fiji)
12. Legal awareness and protocols (Vanuatu, Tonga)

Community Engagement & Awareness

13. National awareness campaigns (Fiji, Tonga)
14. Storytelling and youth programs (Fiji, Solomon Islands)
15. Community incentives for turtle sightings with pay (Solomon Islands)
16. Engage community and church groups in hatchery maintenance (Solomon Islands)
17. National turtle meetings (Solomon Islands)
18. Island-level task forces (Tonga)
19. Inter-island learning (Vanuatu)
20. Beach cleanups (Fiji)

Policy & Governance

21. Enforcement gaps (Fiji, Tonga)
22. Weak legal frameworks (Vanuatu)
23. Need for national-local coordination (Vanuatu)
24. Task forces and community-led plans (Tonga, Solomon Islands)

Additional discussion points:

25. What is the role of technology in communicating and connecting? Social media in Fiji has been successful in building awareness
26. Its important to work on nesting beaches but please remember that the turtles are moving to other places and other countries.
27. Future turtle trainings can train on phone apps for monitoring
28.

5. Next steps

The BIEM Initiative ends in August 2025 but SPREP will continue to support turtle activities across its Member states. The Pacific Bioscapes Programme is a SPREP programme that is supporting turtle monitoring and capacity building across the region.

6. Annexes

6.1 Exchange Agenda

Regional Turtle Monitors and Rangers Learning Exchange

Nadi, Fiji - 1-2 May 2025

Agenda

Day 1 – 1 May 2025

Time	Agenda item	Facilitator
9.00 – 9.30am	**Welcome and introductions** Opening from Kenneth Kassem, SPREP Getting to know each other and setting the scene	SPREP
9.30 –10.30am	**Setting the scene - latest regional turtle research (15 min presentations)** • Nick Pilcher – Regional Turtle Extinction Risk Assessment results (15 min) • Chris Madden, WWF – Turtle Tools, Policy and Connectivity (ShellBank and Blue Corridors) – what we know and where are our gaps are likely (15 min) • Duncan Williams, WWF Pacific - Understanding turtle use and small scale fishery impacts to turtle populations across the Pacific (15 min) Discussion/Questions	SPREP
10.30 – 11.00am	**Morning Tea**	
11.00 am – 1pm	**Sharing experiences in the field** Plenary – rangers from each country outline their monitoring programs (5 slides - 10 min each, 1 presentation per country) – Tonga, Fiji, Vanuatu, Solomon Islands, PNG, Australia - What type of turtle monitoring is being undertaken in your country (nesting, foraging, sand temp, seagrass monitoring, track counts etc) - How is turtle monitoring undertaken in your country? (include who is involved, how and when monitoring happens, what data is collected and what happens to it). - What works and what doesn't? - What has been your biggest success and what are you most proud of? - What is your greatest challenge? Discussion/Questions	SPREP
1 – 2pm	**Lunch**	
2– 3.30pm	**Short Presentation & Practical Exercise** – ShellBank genetics 101, how does it work, how do you collect it and what can it tell you. Hands on practical on species identification and genetic sample collection. [Michael Jensen to lead]	Christine Madden, WWF
3.30 – 4pm	**Afternoon tea**	
4 - 5.30pm	**Breakout sharing** • What are some ways to solve your greatest challenges (from presentation)?	SPREP

Time	Agenda item	Facilitator
	• Which populations and locations are your turtles connected to? (look at the maps) • What are the opportunities you see to advance turtle connectivity understanding, how, where and why?	
5.30	**Close Day 1**	
6.00 – 8.00 pm	**Evening Cocktail and Networking**	

Day 2 – 2 May 2025

Time	Agenda item	Facilitator
9am – 9.30am	Reflections and getting to know each other.	
9.30am – 11am	**Sharing latest turtle research/ techniques/approaches relating to monitoring (10 min rapid fire talks)** • Hayley Vercace, Conflict Islands Conservation Initiative - Engaging with communities to empower and support locally led conservation and protection (7 min) • Mannie Fisher from Western Cape Turtle Threat Abatement Alliance (WCTTAA), Australia– dealing with feral animals/ use of drone technology/data collection etc (7 min) • Melissa Staines, UQ – Using sand temperature to monitor turtles in the Pacific? (online) (7min) • Karalaini Rereavosa, WWF Pacific – Communities driving conservation for turtles through Protected Area. (7 min) Donald Konel, The role of drama/theatre in turtle conservation with local communities. (7 min) Discussion/Questions	SPREP
11am – 11.30am	**Morning tea**	
11.30am – 1.00pm	**Shore presentation and practical exercises** Shritika Prakash - Using and applying the new monitoring manual and TREDS (10 min) - Case studies and exercises to use the monitoring guidelines/TREDS	Shritika Prakash
1pm – 2pm	Lunch	
2pm – 3.30pm	**Breakout sharing** - How engaged are your communities in turtle monitoring and conservation and how do we get them more engaged, particularly considering the results of the regional extinction risk assessment, turtle use and connectivity studies? - How do turtle monitors within countries better coordinate with each other? - How do turtle monitors better coordinate across the region, particularly for those countries where turtles are migrating between?	SPREP
3.30pm – 4.00pm	Afternoon tea	
4pm – 4.45pm	**Plenary sharing** TBD - Fundraising: what are some options, what platforms exist, how to build your presence	SPREP

Time	Agenda item	Facilitator
	- How do you want to stay connected? - What options/ projects do you see worth moving forward? - What is SPREP's role? How can they best support you?	
4.45pm – 5.00pm	Next steps and closing remarks	

6.2 Participant List

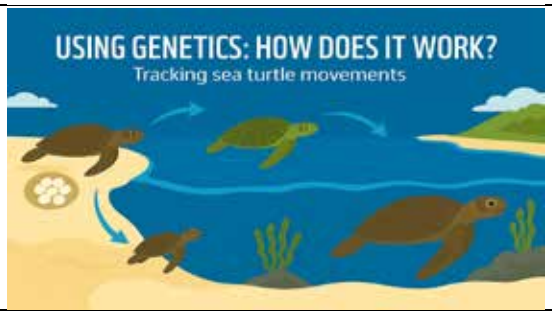
Participant	Country
Cameron Makakolo	Solomon Islands
Johnson Haron	Solomon Islands
Donald Aromalo	Vanuatu
Emosi Time	Fiji
Ratu Viliame Tuicavadra	Fiji
Nunia Lolohea	Tonga
Ulaiasi Vaisima	Tonga
Passimata Vaisima	Tonga
Hayley Vercace	Conflict Islands Conservation Initiative
Melissa Staines	University of Queensland
Mannie Fisher	Western Cape Turtle Alliance, Australia
Christine Madden	WWF
Micheal Jensen	WWF
Nicolas J. Pilcher	Marine Research Foundation
Duncan Williams	WWF Pacific
Karalaini Rereavosa	WWF Pacific
Anish Maharaj	SPREP – SpatialWorks
Anissa Lawerance	SPREP – TierraMar
Belinda Norris	SPREP
Kalo Pakoa	SPREP – Bluecoast Enterprise
Kelera Macedru	SPREP
Kenneth Kassem	SPREP
Ledua Wati Tuiyalani	SPREP
Seema Deo	SPREP – Footprints in the Sand
Shritika Prakash	SPREP – Ika Bula Consultants

6.3 Genetics and ShellBank presentations

How does it work?

How do you collect a DNA sample?

And what can that sample actually tell us about turtles?



HOW DO WE TRACK TURTLES?

Different tags, different stories

FLIPPER TAGGING	SATELLITE TRACKING	GENETICS
• Tags are cheap (about $3 each) • You only get data if someone finds and reports the tag • Most turtles are never seen again after tagging • Long term commitment • Great for mark recapture studies • Can show migration — but only for adult females	• Each tag costs a lot (> $1,000) • Need lots of turtles tagged to see full patterns • Shows where turtles travel in real time • You get detailed data, but only from a few turtles - Great for learning full migration routes • Battery runs out after a few months	• All turtles come pre-tagged (in their DNA) • Works on any turtle — big or small • Helps us find out where they were born • Affordable, if the baseline is strong • Doesn't show movement, just where they're from • You can use it on live turtles, stranded ones, or even shell from trade

WHAT ARE WE TRYING TO LEARN FROM GENETICS?

Two basic questions

With genetics, we want to figure out:

On the nesting beaches:
- Are the turtles on my beach part of the same population as those on the next beach over? - How connected or isolated are different nesting sites?
- Nesting is when we see turtles the most — so it's our best chance to collect samples.
- Even though turtles spend little time here, **this is where populations are defined**.

In the water:
- Turtles spend **most of their lives** foraging at sea.
- But where did they come from?
- Genetics helps us trace foraging turtles back to their nesting population.
- This is essential for understanding migration and protecting turtles beyond the nesting beach.

NATAL HOMING LEAVES A GENETIC SIGNATURE

Female turtles return to their birth beach — and it shows in their DNA

Flipper tags showed us...

- Turtles return to the **same nesting area** year after year
- But **we didn't know** if they were born there.

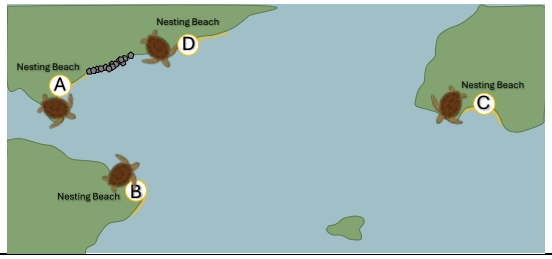
Genetics revealed...

- Turtles from each beach share a unique **mtDNA fingerprint**
- Populations are **genetically distinct**, even between nearby beaches
- This confirmed **natal homing** — turtles return to their **birth beach**

Why it matters:
- Each nesting population is **demographically independent**
- If one is lost, it won't be replaced by others
- Genetics helps define and protect these **critical stocks**

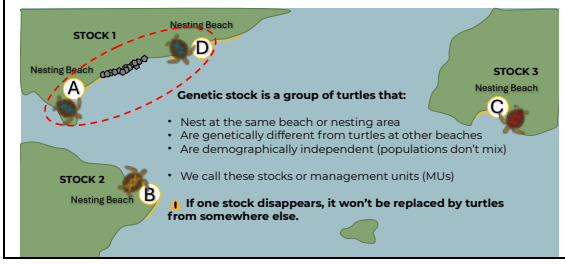
DO ALL NESTING TURTLES BELONG TO THE SAME GROUP?

What we see in the field doesn't tell us the full story



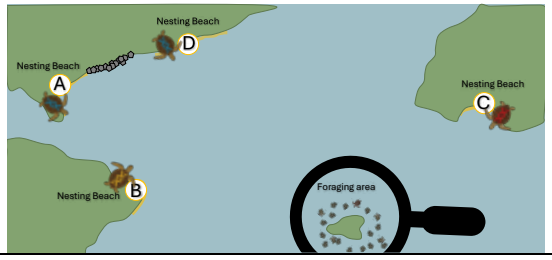
WHAT IS A GENETIC STOCK (OR MANAGEMENT UNIT)?

Turtles from the same nesting beach that stay genetically distinct from others



ONCE WE KNOW THE NESTING BEACH SIGNALS...

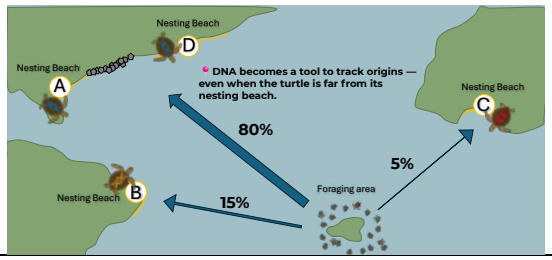
We can trace turtles back to where they were born



WHAT HAPPENS WHEN WE LOOK AT THEIR DNA

We compare foraging turtles to nesting beach DNA to find out where they came from

HOW GENETICS HELPS US TRACE TURTLES BACK TO NESTING BEACHES



WHY GENETIC STOCKS MATTER

Two powerful uses for conservation

1. Define and Protect Nesting Stocks

- Each nesting area is genetically unique
- Populations are **demographically independent**
- If one stock is lost, it **won't be replaced**

This helps us manage and protect each rookery properly

2. Trace Turtles Back to Nesting Beaches

- We **compare DNA** to our nesting baseline
- Works for turtles in the water, bycatch, or trade
- Helps us see which populations are at risk from threats far from nesting beaches

This helps connect the dots between threats and where turtles were born

Part 2

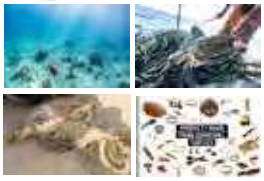
COLLECTING DNA SAMPLES FOR TURTLE CONSERVATION

TWO TYPES OF SAMPLES

Reference (nesting) samples and turtles we want to trace

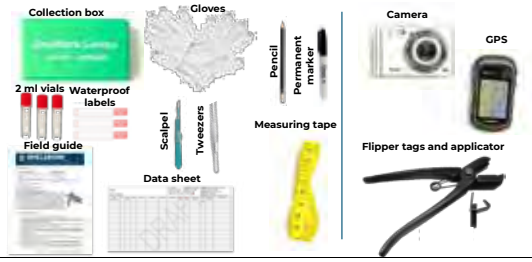
NESTING

IN-WATER



WHAT YOU NEED TO COLLECT A DNA SAMPLE

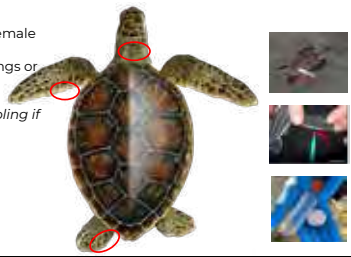
Basic equipment for field sampling and ShellBank collection kits



WHERE TO COLLECT A DNA SAMPLE

Start with the best option: a tagged nesting female

- **Best:** Tagged nesting female
- **If not possible:** Hatchlings or fresh eggs
- ⚠ *Risk of double-sampling if turtles aren't tagged!*



TAG THE TURTLE BEFORE YOU SAMPLE

Prevent double-sampling and keep the data clean

- Always tag the female if possible
- Turtles nest multiple times each season
- Tagging ensures each turtle is only sampled once

HOW AND WHEN TO TAKE A DNA SAMPLE

Wait for the right moment — and watch out for flying sand!

- Wait until after egg laying finishes
- Sample before the turtle starts covering the nest
- Small skin sample (0.5 cm) from flipper, neck, or shoulder
- Use clean, sterilized tools each time

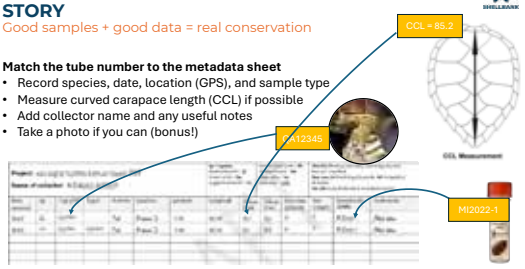
HOW TO STORE YOUR DNA SAMPLE

Preserve it properly to keep it from spoiling

- Put the tissue directly into **95–100% ethanol**
- Fill the tube about 2/3 full — don't overflow
- Label the tube **inside and outside**
- Keep samples **cool and out of direct sunlight** (Use a cooler box, fridge, or shaded area)
- Protect the DNA you worked hard to collect!

METADATA: LINKING EVERY SAMPLE TO A TURTLE STORY

Good samples + good data = real conservation



Match the tube number to the metadata sheet

- Record species, date, location (GPS), and sample type
- Measure curved carapace length (CCL) if possible
- Add collector name and any useful notes
- Take a photo if you can (bonus!)

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

NESTING BEACHES

Genetic data from nesting turtles helps identify genetic stocks or Management Units that make up the baseline – this is where genetic traceability starts

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

FORAGING AREAS

Helps track which populations use and share feeding grounds.

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

FISHERIES BYCATCH

Linking bycatch turtles to their nesting population, informing mitigation strategies

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

STRANDINGS

Identifies the population origin of stranded turtles.

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

HARVESTING

Estimate the populations impacted by harvesting of turtles and turtle parts (e.g. meat and eggs).

APPLYING SHELLBANK TRACEABILITY

Nesting & Foraging Areas, Bycatch, Strandings, Harvest and Trade

ILLEGAL TURTLE TRADE

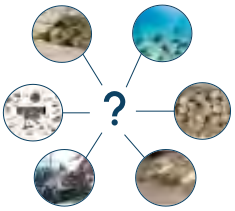
Traces seized turtles or turtle products to their population, supporting law enforcement.

APPLYING SHELLBANK TRACEABILITY

The Big Question

THEY ALL TRY TO ANSWER THE SAME QUESTION:

WHERE ARE THESE TURTLES OR TURTLES PARTS ORIGINATING FROM?

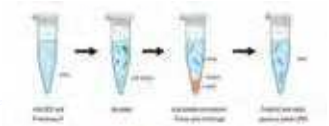


WHAT HAPPENS AT THE LAB?

Nerd is lab coats

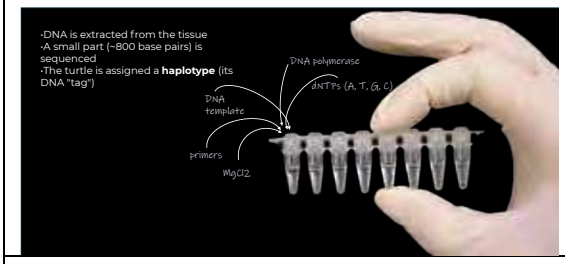
FROM SAMPLE TO DNA SEQUENCE

Every sample tells a story through its haplotype



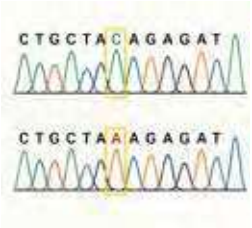
FROM SAMPLE TO DNA SEQUENCE

Every sample tells a story through its haplotype



FROM SAMPLE TO DNA SEQUENCE

Every sample tells a story through its haplotype



Haplotype CmP49.1

Haplotype CmP20.1

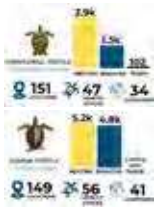
WHAT IS A GENETIC STOCK (OR MANAGEMENT UNIT)?

Turtles from the same nesting beach that stay genetically distinct from others

SHELLBANK GENETIC DATABASE

DNA + metadata = conservation maps

Over 15,000 entries and counting



TOOLS TO TRACK TURTLES & UNDERSTAND CONNECTIVTY

	Flipper Tagging	Satellite Tagging	Genetics
Adult females	✓	✓	✓
Immature turtles			✓
Fisheries bycatch	(✓)		✓
Turtle products			✓
Eggs, meat			✓

Genetics is the only tool capable of tracing the population origin of immature turtles, untagged turtles, or turtle parts and products.

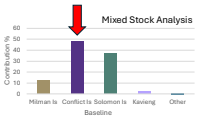
Case study: FLIPPER TAG RECAPTURES & GENETIC ORIGINS

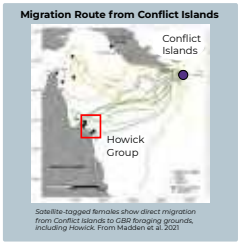
Flipper tag returns from the Howick Group align closely with genetic data, confirming that the majority of recaptured turtles originated from Conflict Islands, matching their genetic proportions.

TAGGING OF HAWKSBILLS IN WESTERN PACIFIC

Conflict Island Nesting Females Migrate to Howick Group

Most turtles at the Howick group originate from Conflict Islands

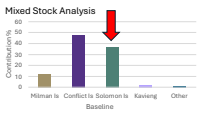


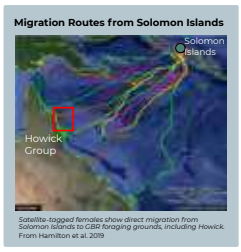


TAGGING OF HAWKSBILLS IN WESTERN PACIFIC

Solomon Island Nesting Females Migrate to Howick Group

A significant proportion of the turtles at Howick Group originate from the Solomon Islands. This highlights the critical migratory and foraging connections between these regions.



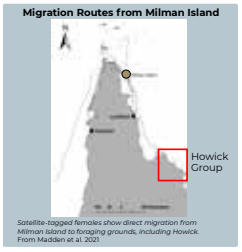


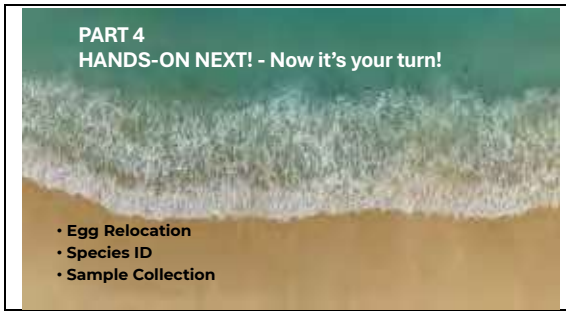
TAGGING OF HAWKSBILLS IN WESTERN PACIFIC

Milman Island Nesting Females Migrate to Gulf of Carpentaria

Only one Hawksbill migrated to the Howick Group, matching genetic results.

A critical observation for management strategies – to recover PNG/SI turtles, protection is needed at the Howicks.





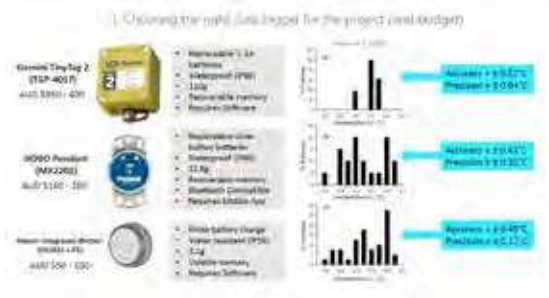
6.4 Egg relocation presentation

6.5 Day 2 presentations

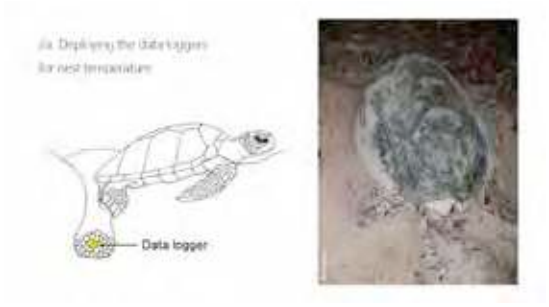
Monitoring sand temperature – Melissa Staines

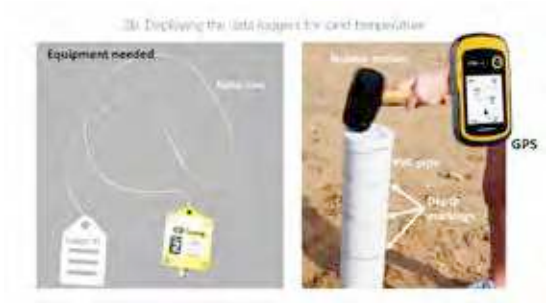

Using sand temperature to monitor turtles in the Pacific
Dr Melissa Starnes


I acknowledge the Traditional Custodians of the land on which I am presenting on today, the land of the Jagera and Turrbal people.
I pay respects to their ancestors and their descendants, who continue cultural and spiritual connections to Country.




What is your main research question?
Do you need to know individual nest temperatures or general trends across the nesting habitat?

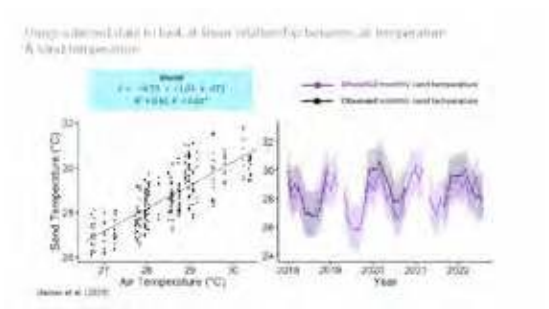

Data logger

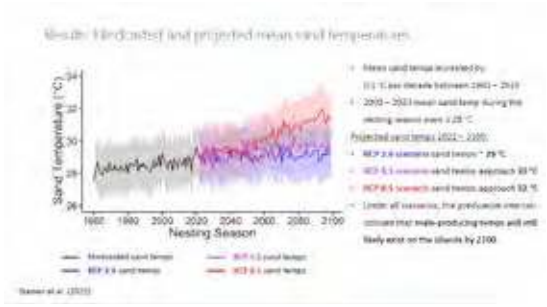

Equipment needed
GPS

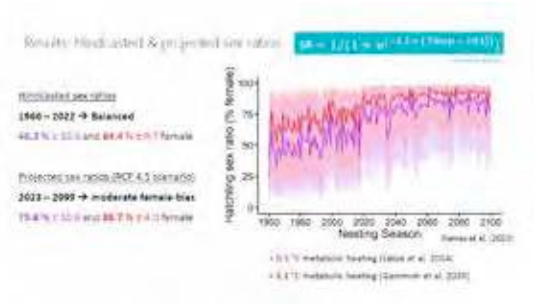

Protocol


Take lots of photos!

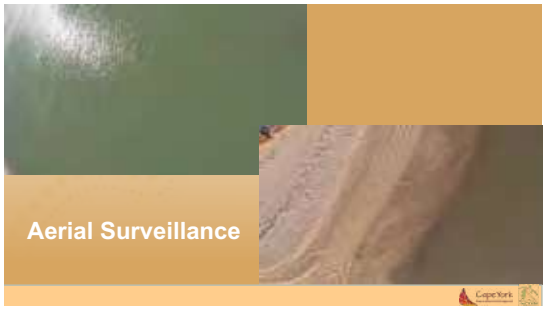

3. Selecting appropriate sites for deployment
Panaesa
Irai
Key to successful deployment:

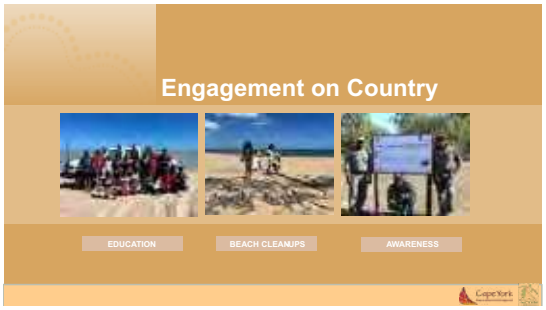

Sand Temperature (°C)
Air Temperature (°C)
Year



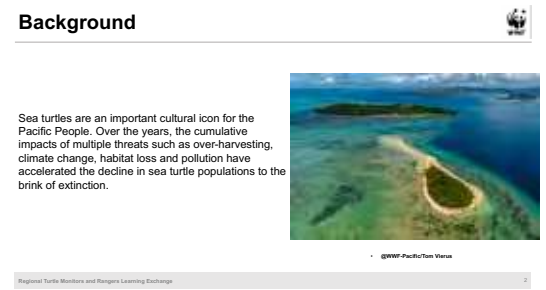


Cape York turtle programmes – Mannie Fisher

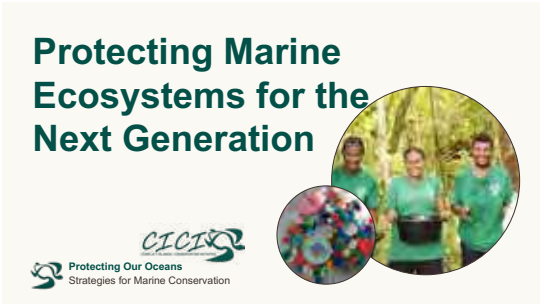


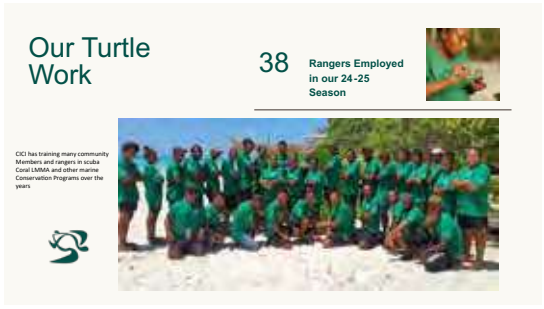


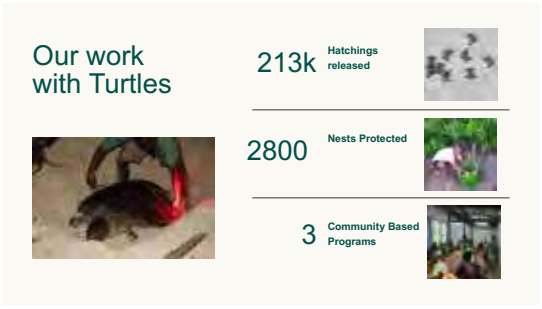
WWF – Fiji – Karalaini Rereavosa

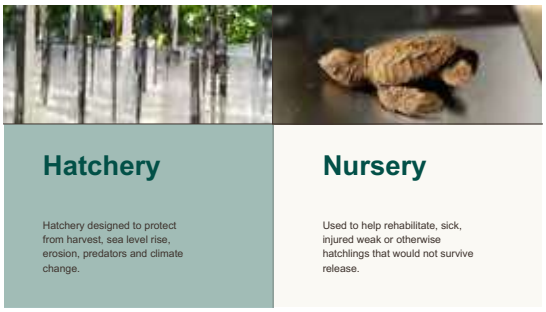


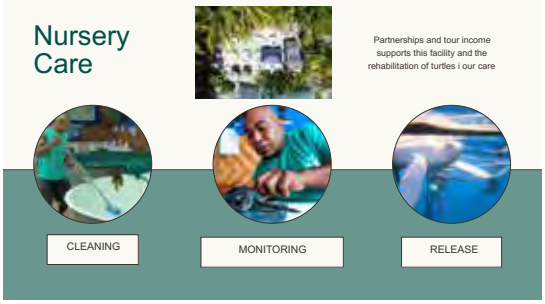
Conflict Islands Conservation Initiative – Hayley Vercace

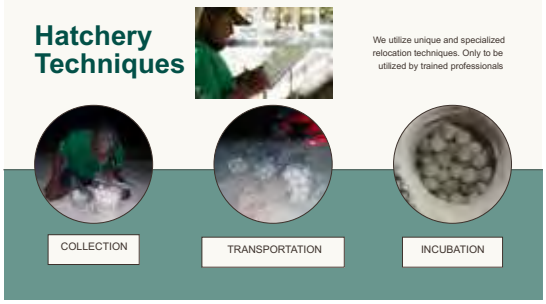












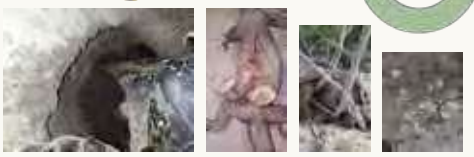
HATCHERY SUCCESS

We are have not done any published research but are using techniques we have developed and adapted from other programs around the world to get such great numbers in our hatchling success

When done correctly **AMAZING** results can be achieved.

NATURAL NEST SUCCESS

One monitor lizard ate 45 eggs from one nest!!



Current Research

Lecuistic Hatchlings

Currently Awaiting genetic analysis of 78 hatchlings from 2 mothers over 3 clutches from 2023 - 2024 season

Revolutionizing Data Collection

EARTHRANGER
A product of ⟡AI2

Partnerships & Community

A.

We aim to partner with as many participants who share the same ethos of conservation for all life. Protection of ecosystems and all species, including humans that rely on them.

B.

Changes seen in the community have led to an in ability to cater to all communities wishing to develop and partner with CICI for turtle conservation in their villages

OTHER PROGRAMS

OTHER PROGRAMS

- Coral Reef Restoration and Monitoring
- Where they Walk - Epaulette Sharks
- Manta Rays
- Marine Debris
- Livelihood Development

OUR FUTURE

- WE WISH TO BECOME AN EDUCATIONAL & TRAINING FACILITY FOR COMMUNITIES TO LEARN FROM OUR WORK ACROSS ALL OUR PROGRAMS
- WE ALSO WISH TO ENABLE MORE PACIFIC & PNG UNIVERSITY STUDENTS TO UNDERTAKE THEIR PHD'S & FURTHER STUDIES USING OUR PLATFORM
- WE WISH TO BE INCLUDED IN MORE DISCUSSIONS AROUND THE PACIFIC TO ENCOURAGE & INFLUENCE POSITIVE ENVIRONMENTAL CHANGES IN BOTH POLICY & PRACTICES FOR THE FUTURE OF THE PACIFIC.

CICI

Wansmol Bag Theater Turtle Awareness – Donad Konel

Wansmol Bag Theater, Turtle awareness program Vanuatu

Background

- Wan Smolbag Theatre is a NGO based in Vanuatu. It is a community theatre and development organization focusing on Awareness engagement and education on wide ranging issues of health, governance, gender, youth and politics conservation network and has expanded its activity to health clinic and youth and sports.
- Turtle monitoring is part of the Conservation program of the organization which is the main awareness and education medium for Turtle conservation in the country.
- Today the NGO (WSB) is 36 years old and has grown to include many more programs for youth and sports, a clinic, with new branches in Santo, Pentecost and Ambrym Island.
- The WSB Turtle Monitoring Program is celebrating its 30 years anniversary in June 2025

WSB Turtle awareness and education product

- WSB Theatre's Turtle Monitoring Program is a network of village volunteers who monitor turtle nesting and advise communities on turtle conservation.
- First turtle awareness products was a drama called "**I am a Turtle**' or "Mi wan mama totel" produced as part of the SPREP 'Year of Turtle' ' in 1995. Script written by WSB
- The Drama was performed in public, schools, villages first in Port Vila and Efate and move to rural areas.
- Followed by training of drama members on biology and life cyclone of turtles by Vanuatu Fisheries and SPREP

Beginning of WSB Turtle awareness and education product cont.

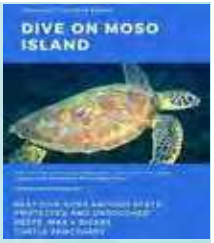
- WSB Theatre's form five groups, 3 based in Port Vila and 2 in the outer islands, main turte drama actors train these groups about the "I am a Turtle" play.
- From few communities on Efate to promote sustainable management of declining turtle populations.
- Awareness expand to the whole country resulting and attracted people and community leaders leading to the formation of the WSB Turtle Monitoring Network of turtle monitors to educate their communities about sea turtle conservation

Turtle Training Activities

- Trainings on species identification
- Lifecycle
- Tagging method
- Recording

One Small Bag for Tourists Brings Big Benefit

- Turtle awareness was brought to tourist
- Tour operators using turtles as an ecotourism products
- Include educate via raring of babe turtles for educational purposes and swimming with Turtles



WSB Turtle monitoring network continue to be active today

- 500 + trained monitors continue to monitor turtles in their areas
- Visits made to main breeding sites annually
- Biannual Monitors forum brought together all monitors discuss challenges and progress and new ideas and keep interest alive
- Movie was promoted across the region, radio program, notice board and poster and flyers etc

"I am the Turtle" drama and education program made huge Impact at home and in the region

- Resulting in increase number of turtle monitors.
- Voluntary ban on harvests of adults and harvest of eggs by communities and protection of nest and mother turtles.
- Increase in uptake of turtle education and awareness by hotels and resorts as well
- Today 500+ turtle monitors across almost all islands in the country
- Reduction in harvesting of adults and eggs.
- Improve reporting of incidences of catching, killing, or stranded turtles

"I am the Turtle" drama and education program made huge Impact at home and in the region

- Also promoted in the region with regional training exchange with some countries including Kiribati and Solomon and CNMI in Vila and in-country
- In 9 WSB turtle monitors become Fisheries authorized fisheries officers in 2019 – have the power to enforce fisheries laws and impose fines for violations
- Environment Department also instituting Rangers
- Turtle become the top well known marine species today across the country
- Harvest had dropped and number of turtles increased by community perception but we need surveys to confirm.

Tangio tumas

Monitoring Manual and TREDS - Shritika Prakash

Overview on Pacific BioScapes Programme

Pacific Sea Turtle Conservation, Monitoring and Survey

Shritika Prakash
Principal Consultant
Ika Bula Consultants
Email: shritika.prakash@gmail.com

Karen Baird, Threatened and Migratory Species Adviser
Email: karenb@sprep.org

Etienne Delattre. Programme Manager, Pacific BioScapes Programme
Email: etienned@sprep.org

Belinda Norris. Coastal and Marine Specialist, Pacific BioScapes Programme
Email: belindan@sprep.org

Source: George Harvey Balazs

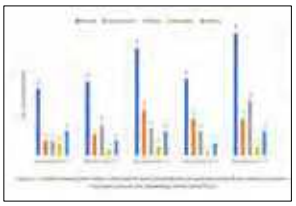
"Our very own Pacific Champion in Marine Species Conservation"

National Marine Turtle Coordinators

- TONGA — *Siosina Katoa*
- FIJI — *Joseva Raqitawa*
- VANUATU — *Jayven Ham*
- PNG — *Marzena Ann Marinjembi*
- PALAU
- COOK ISLANDS — *Phoebe Argyle*
- TUVALU
- SAMOA — *Irae Tufuga**
- KIRIBATI — *Moana Tiua*
- TOKELAU
- FSM — *Dave Mathias*
- MARSHALL ISLANDS — *Bryant Jeffery Zebedy*
- SOLOMON ISLANDS — *Serah Devi*

Workshop Series

- Nov 2024-March 2025
- 5 workshops
- Participants (Figure 1)



Reference:

Pilcher NJ, 2023. The SPREP Sea Turtle Monitoring Manual - A guide to selecting the best tools for sea turtle research and monitoring. Secretariat of the Pacific Regional Environment Programme, Apia, Samoa. 96 pp.

Chapter 1: Marine Turtle Biology

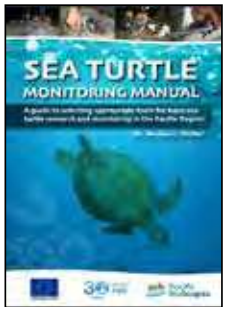
Chapter 2: Current knowledge of marine turtles in Pacific Islands

Chapter 3: What is it exactly you want to know?

Chapter 4: Approaches to sea turtle research in the Pacific Islands

Chapter 5: Contribution to global and regional data summaries and data archiving

Chapter 6: The TREDs database



In chapter 3 of sea turtle monitoring manual, Dr. Pilcher poses three key questions:

1.How many turtles do I have?

2. Where are they?

3. What are the main threats?

"A useful way of approaching the question "what do you want to know?" is to also ask "why do you want to know it?" Indeed, very often these two are so interlinked that we can't pull them apart. A way I like to work through this is to first clearly articulate the objective of the study. The objective will often help define the question." - Nicolas Pilcher

25 KEY SEA TURTLE STUDIES

1. Literature review
2. Key informant interviews
3. Full season track counts
4. Peak season track counts
5. Full season night monitoring
6. Peak season night monitoring
7. Nesting success studies
8. Clutch size surveys
9. Hatching/Emergence success
10. Clutch incubation – Incubation temperatures
11. Clutch incubation – sex ratios
12. Clutch incubation – Incubation duration
13. Satellite tracking post-nesting females (using Argos or Fastloc)
14. Satellite tracking in-water (using Argos or Fastloc)
15. Genetic sampling programme– nesters and in-water.
16. Coastal zone – aerial surveys (Coastal zone (vehicle or foot surveys))
17. Aerial transect survey
18. Boat transect survey'
19. Coastal drone survey
20. Over-water drone survey
21. In-water photo ID
22. Threat specific studies on nesting beaches
23. Wide area threat studies
24. By-catch questionnaire surveys
25. Water sampling surveys

Source: Sea Turtle Monitoring Manual Guide

Chapter 4: Approaches to sea turtle research in the Pacific Islands

No programs (yet)

Some known beaches

Have known index beach

Set data collection standards

Community rangers /engagement in data collection

Annual seasonal data (>1 year)
- Nesting females, nests, hatchlings

Established program (>5 years)
- Nesting and feeding sites, Reporting

TAKEAWAY

Where in this scale you belong?

Linking to programs and databases:

- Shellbank project
- Blue Corridors
- Databases: TREDs, SWOT

Literature Review

	Priority			
Criteria	High (4 points)	Medium (3 points)	Low (2 points)	Very low (1 point)
1.Recentness of information	event occurred between 2010 and 2015	event occurred between 2000 and 2009	event occurred between 1999 and 2000	event occurred on or before 1999
2.Type of information	Nests and tracks	Tracks only	Stranded hatchlings	No sightings
3.Number of nests	>15	5-15	<5	0
4.Accessibility from Suva	Easy	Distant but manageable	Hard to reach	Extremely difficult to reach

Source: Prakash, 2020 - MSc Thesis

Nesting Sites: Hawksbill

- 27 active nesting sites
- 147 nests recorded
- Highest number of nests in Northern division (n =99), followed by Western (n =33), eastern (n=9) and central (n =6)

Reference: Prakash SS, Tuiono M, Clay S, et al (2020) Temporal and geographic distribution of hawksbill turtle Eretmochelys imbricata nests in Fiji, South Pacific. Testudo 9:12–23

Conservation Implications

- In terms of management, priority should be given to those nesting sites that host a relatively large number of nests.
- Other active nesting sites present require further effort in particular, the Lau group, Kadavu, and the Yasawa group.

Flipper tags

- Since 1980s…
- **On beach: Nesting females**
- In-water: Juvenile, sub-adult and adult turtles

Example - Fiji

Nesting season 2022/2023
Island Name: Yacata
Beach Name: A - Tagani
Species: *Chelonia mydas*
Tag ID code: FJI2420 –FJI2421
CCL (cm): 110
Date of first encounter: 06/01/2023 Second encounter: 26/01/2023

(Source: A project of Vatuvara Foundation)

Flipper tags

- Since 1980s…
- On beach: Nesting females
- **In-water: Juvenile, sub-adult and adult turtles**

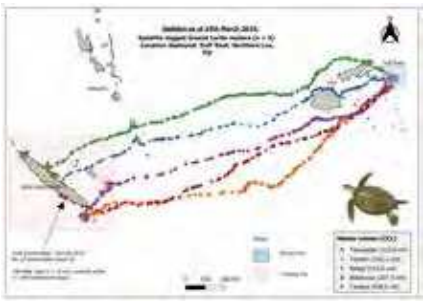
Piovano /USP Sea Turtle Project 2014-2022

Satellite tracking

A project of Conservation International Fiji

Satellite tracking

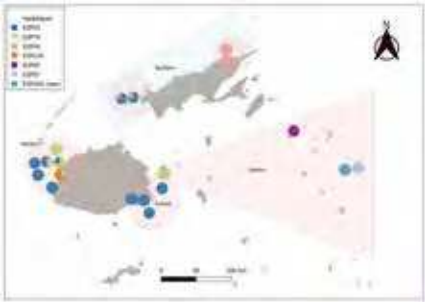
A project of Conservation International Fiji



Genetics for hawksbill: Fiji

*almost complete!

Piovano /USP Sea Turtle Project 2014-2022



Data keeping

- Microsoft excel
- Create your own database
- Available databases
  e.g. TREDs database (SPREP) – also available offline.

TREDs reports

Trevor (2009) SPREP Turtle research and monitoring database system (TREDS).

Siota (2011) Cook Islands TREDS report for 2010. SPREP.

Turtle research and monitoring database: a TREDS of summary Pacific turtle data recorded from 1970 to 2018. Apia, Samoa : SPREP, 2024.

https://treds.sprep.org/user/login?destination=/projects

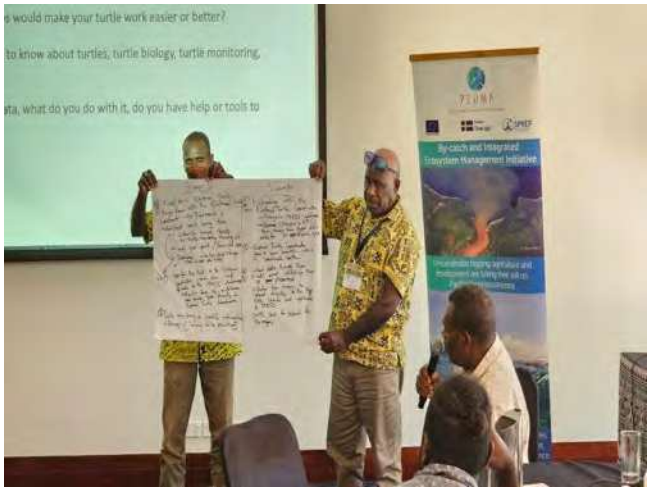
6.5 Photos from the Exchange

Photographic highlights from the event, including opening sessions, group discussions, and closing activities. [Images to be inserted]

	Ms Passimata Vaisima presents turtle monitoring activities in Tonga

y 	Mr Cameron Makakolo presents turtle monitoring activities in Solomon Islands
	Mr Emosi Time presents turtle monitoring activities in Fiji

	Ranger exchange plenary presentations
	Ranger exchange plenary presentations

	Breakout session report back from Vanuatu
	Breakout session report back from Fiji

	Ms Karalaini Rereavosa presents on WWF-Fiji's turtle monitoring activities.
	Ms Shritika Prakash presents on the use of regional turtle monitoring guidelines.

	Mr Johnson Haron from Solomon Islands responds to a question about leatherback monitoring.

Mr Donald Aromalo and Dr Nick Pilcher matching hatchlings with adult turtles.

	Ms Passimata Vaisima (Tonga) and Mr Johnson Haron (Solomon Islands) match hatchlings with adults

	Ratu Viliame Tuicavadra (Fiji) matches hatchlings with adults.

	Mr Duncan Williams (Fiji) and Ms Nunia Lolohea (Tonga) match hatchlings.

	Mr Cameron Makakolo (Solomon Islands) and Ms Nunia Lolohea (Tonga) observe Mr Johnson Haron demonstrating how to take genetic samples from a nesting turtle.

	Workshop participants talking about different turtle tracks on beaches.
	Turtle rangers from Fiji, Solomon Islands, Tonga and Vanuatu

This document has been prepared and printed with the financial support of the Pacific-European Union Marine Partnership (PEUMP) Programme, funded by the European Union and the Government of Sweden. Its contents do not necessarily reflect the views of the European Union or the Government of Sweden. This document has been compiled in good faith, exercising all due care and attention. SPREP does not accept responsibility for inaccurate or incomplete information.