

# ShellBank

*Christine Madden Hof*

*Marine Turtle Use and Trade Initiative  
Lead*

*WWF-Coral Triangle*

Asia-Pacific Marine Turtle Genetic Working Group  
Workshop 6: *Illegal trade, forensics and ShellBank*  
23 June 2021



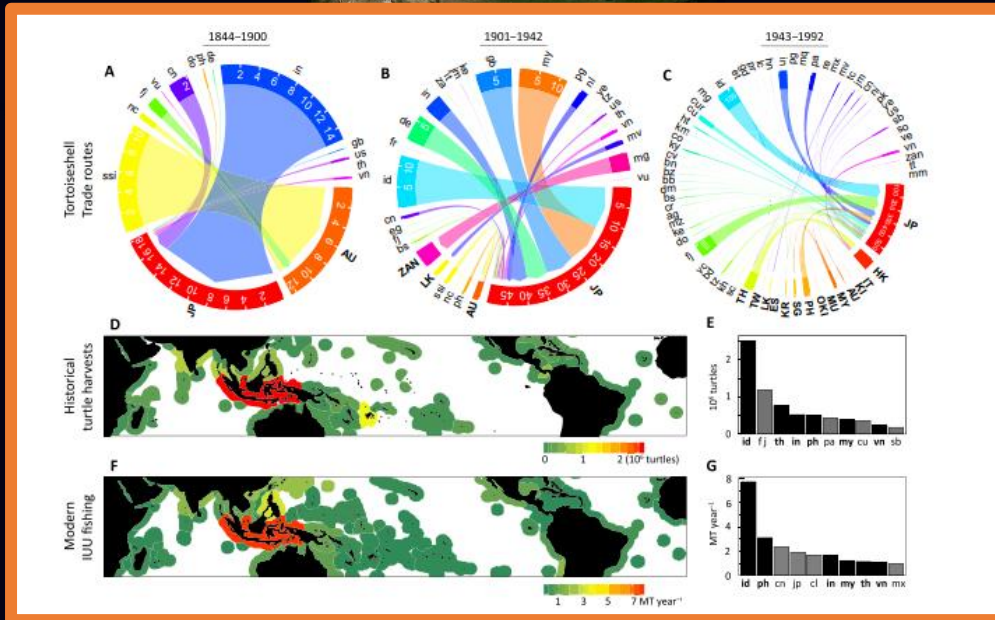
A large sea turtle, likely a hawksbill, is shown swimming in clear blue water. The turtle's head is in the foreground, looking towards the camera. Its shell is dark with a distinct pattern of scutes. The background is a deep, clear blue.

What's the  
problem?





Asia-Pacific is the epicenter of use & trade in turtles (particularly hawksbill)

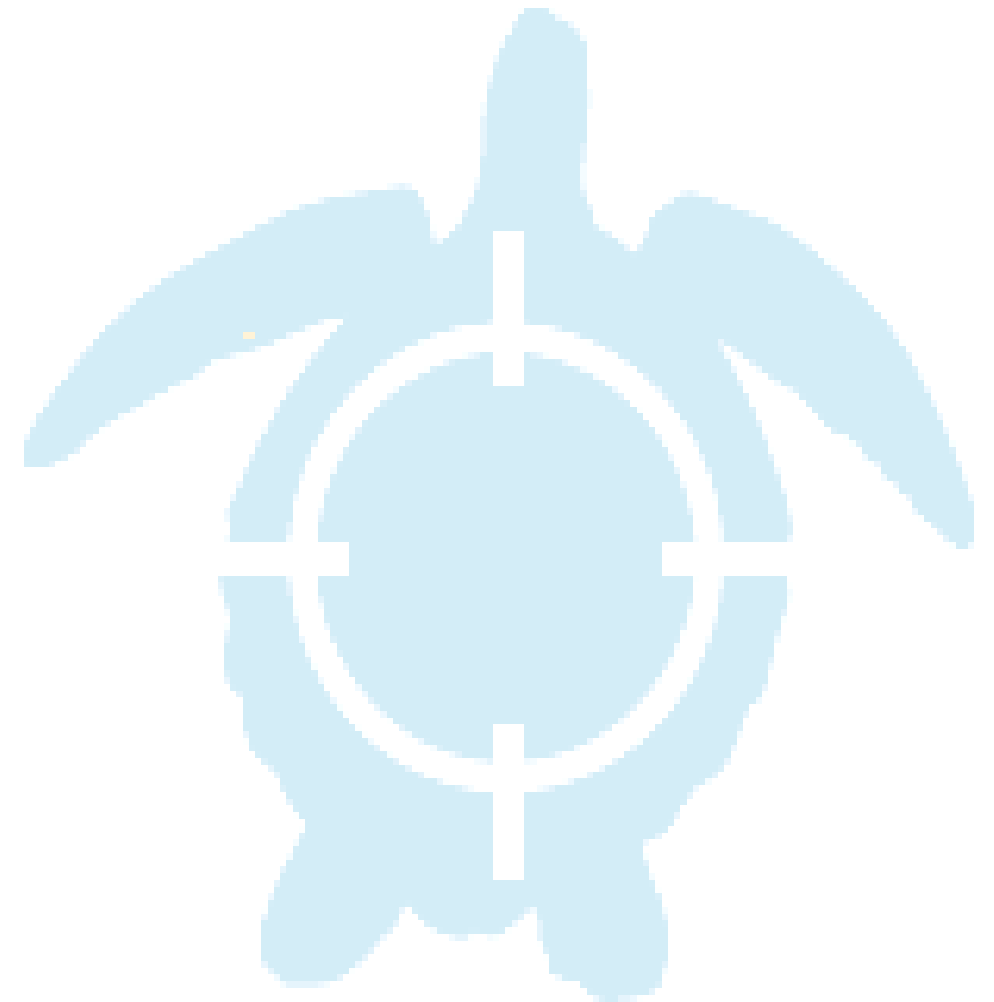
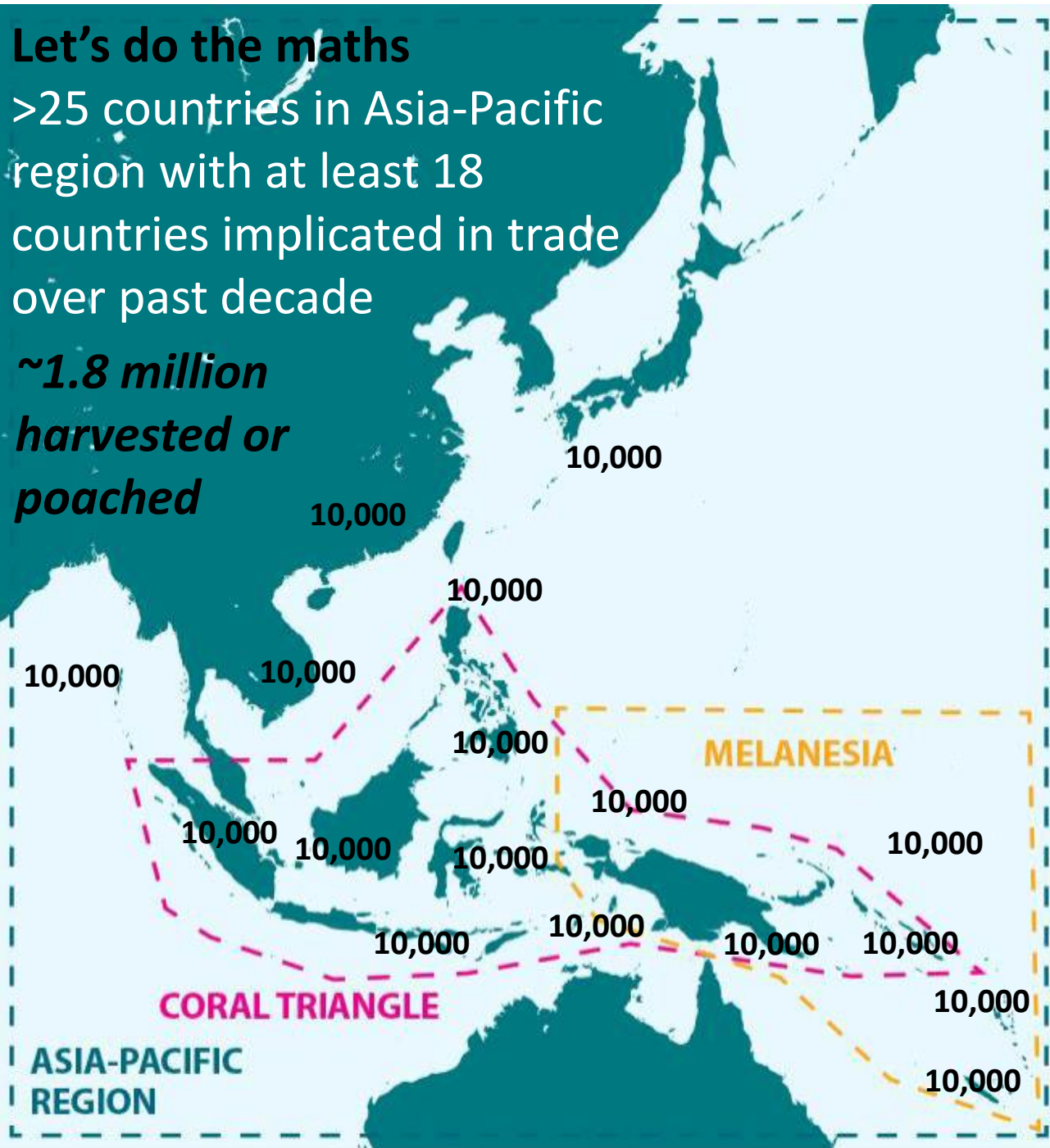


- Miller et al. 2019 shows historical trade numbers grossly underestimated from **1.4 to 9 million hawksbills**
- Substantial exploitation continues
- Parallels current patterns of IUU fishing [**small-scale coastal communities implicated in supply/ demand**]
- Populations 80% lower than historical levels

## Let's do the maths

>25 countries in Asia-Pacific region with at least 18 countries implicated in trade over past decade

*~1.8 million harvested or poached*





**3,900** tigers remain  
across Asia region



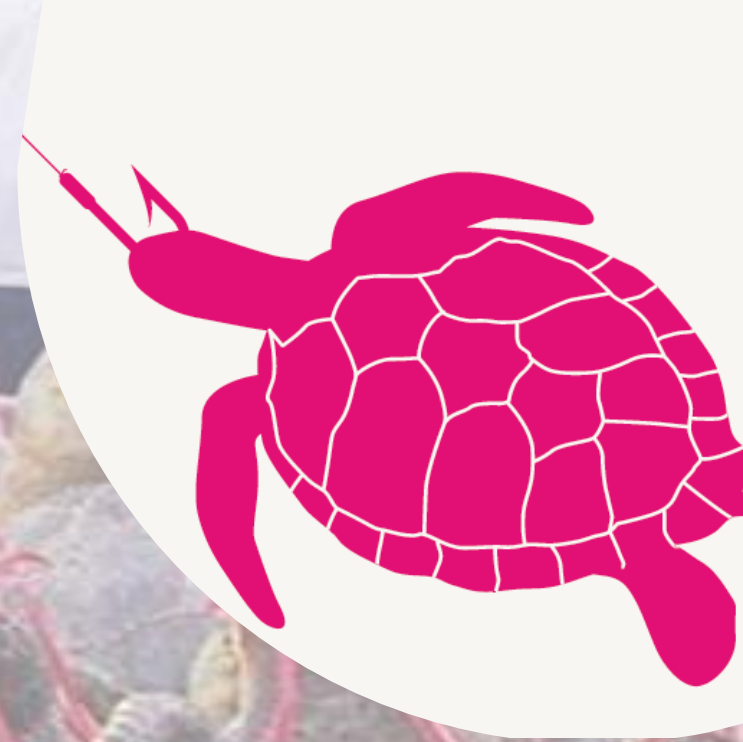
**~40,000-50,000**  
elephants now exist in  
Asia



**~4,800** hawksbill  
females left in Pacific  
Ocean









# Tackle the problem head on ...



**Better traceability tools**



**Drive change in community use**



**Stronger Decisions & collaboration**



**Marine  
Turtle Use  
& Trade  
Initiative**

# Marine Turtle Use & Trade Initiative



**PARTNERSHIP VISION:** Safeguard the hawksbill turtle from extinction and so they are no longer targeted for trade

A

Develop the world's first marine turtle DNA source detection tool & trial in a demand country

B

Establish 'Shell Bank' – a trans-national citizen science forensic study

C

Establish current trade market trends in demand countries, train enforcers in forensics

D

Evaluate the economic and environmental 'value' of marine turtles

E

Develop baseline nesting trends & undertake socio-cultural 'use' drivers

F

Develop training guide & toolkit to underpin monitoring & enforcement intervention

G

Spearhead transboundary policy reform for zero poaching

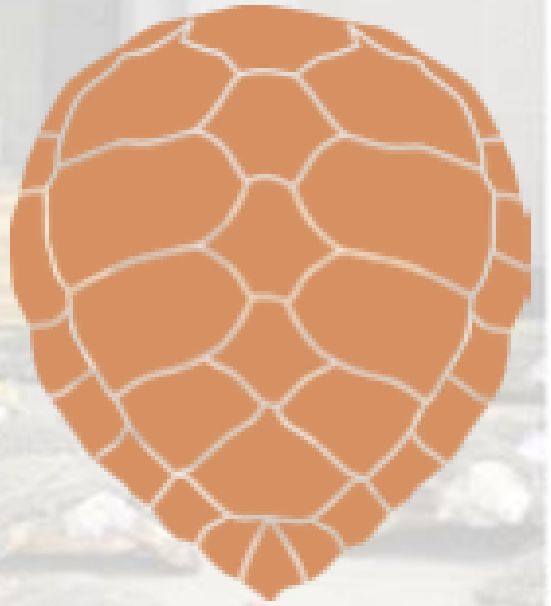
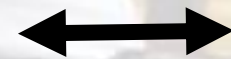
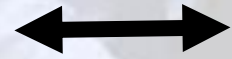
H

Develop advocacy & communication products & engage in at least 2 awareness campaigns



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# WHAT IS SHELL BANK?

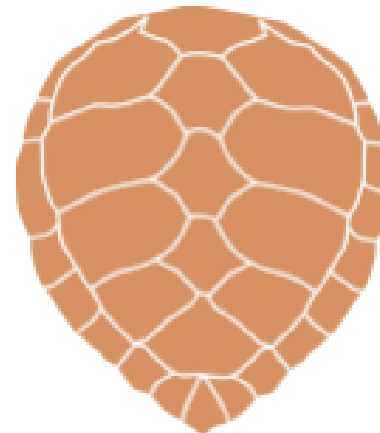
Tools to track the tortoiseshell trade and turtles most at risk:

- Build & advance *traceability knowledge and technologies*
- Coordinate access to & *expand the 'bank' of genetic data*
- *Train in-country and embed as common practice*

## WHY IS SHELL BANK NEEDED?

To help halt illegal trade by:

Enabling scientists, conservationists and policy makers to **track the illegal trade** of hawksbill turtle products (from “**sale to source**”) and to identify **populations most at risk**.







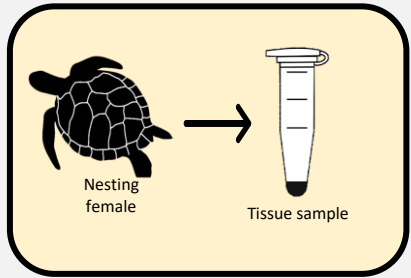
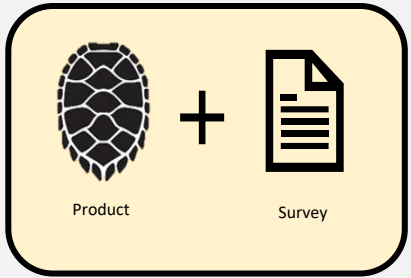
# Shell Bank: How does it work?

## 1. Sample Collection

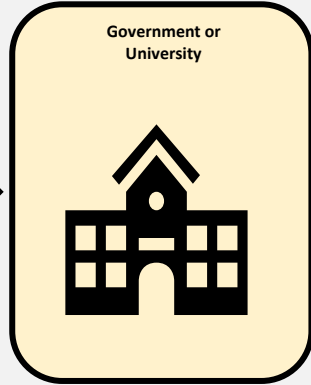
## 2. Sample Curation and Storage

## 3. Analysis and Reporting

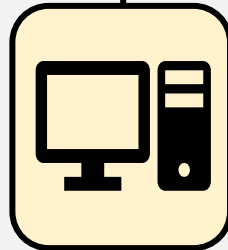
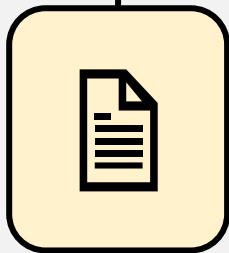
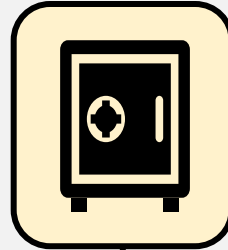
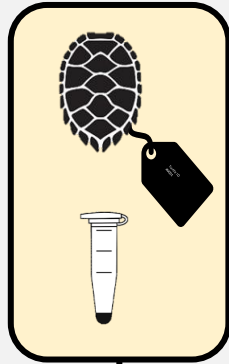
Confiscated tortoiseshell products and survey



Nesting samples for population genetic baseline

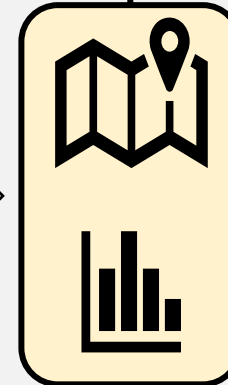
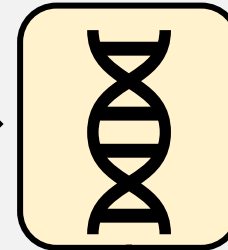


Samples get curated/stored



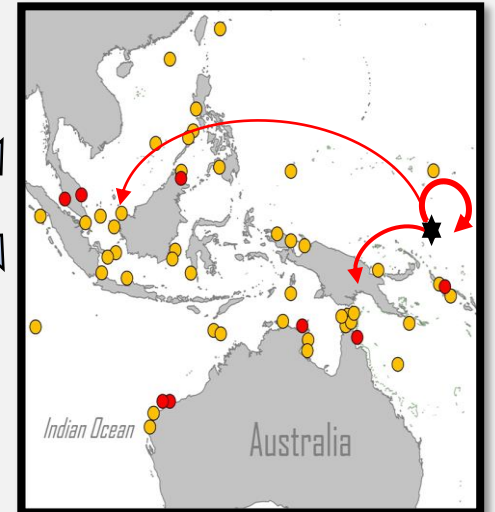
Metadata get stored in the *Shell Bank* database

Lab/analysis



Identify trade hotspots + population boundaries

Determine population boundaries for conservation management and identify populations impacted by illegal trade





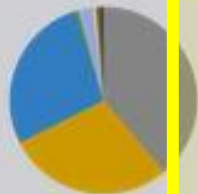
Malaka, Malaysia



Redang Is, Malaysia



Sabah Turtle Islands, Malaysia



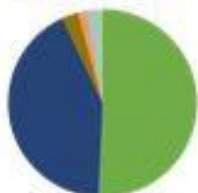
Indonesia

Ashmore Reef

Varanus & Rosemary, Australia



Groote Eyeland, Australia



New Ireland, PNG

Conflict Islands

Torres Strait

Milman Is, Australia



Arnavon Is, Solomon Islands

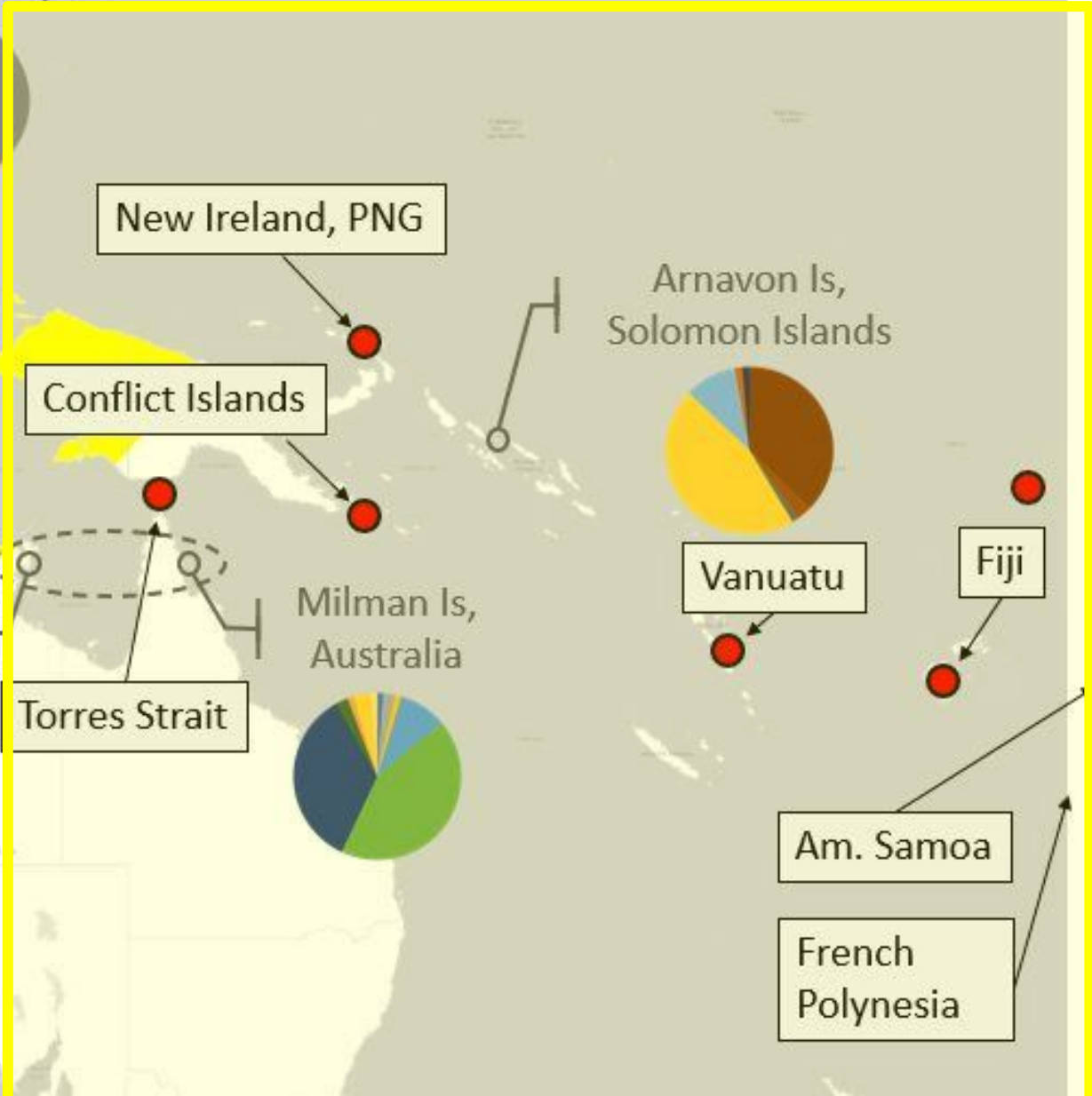


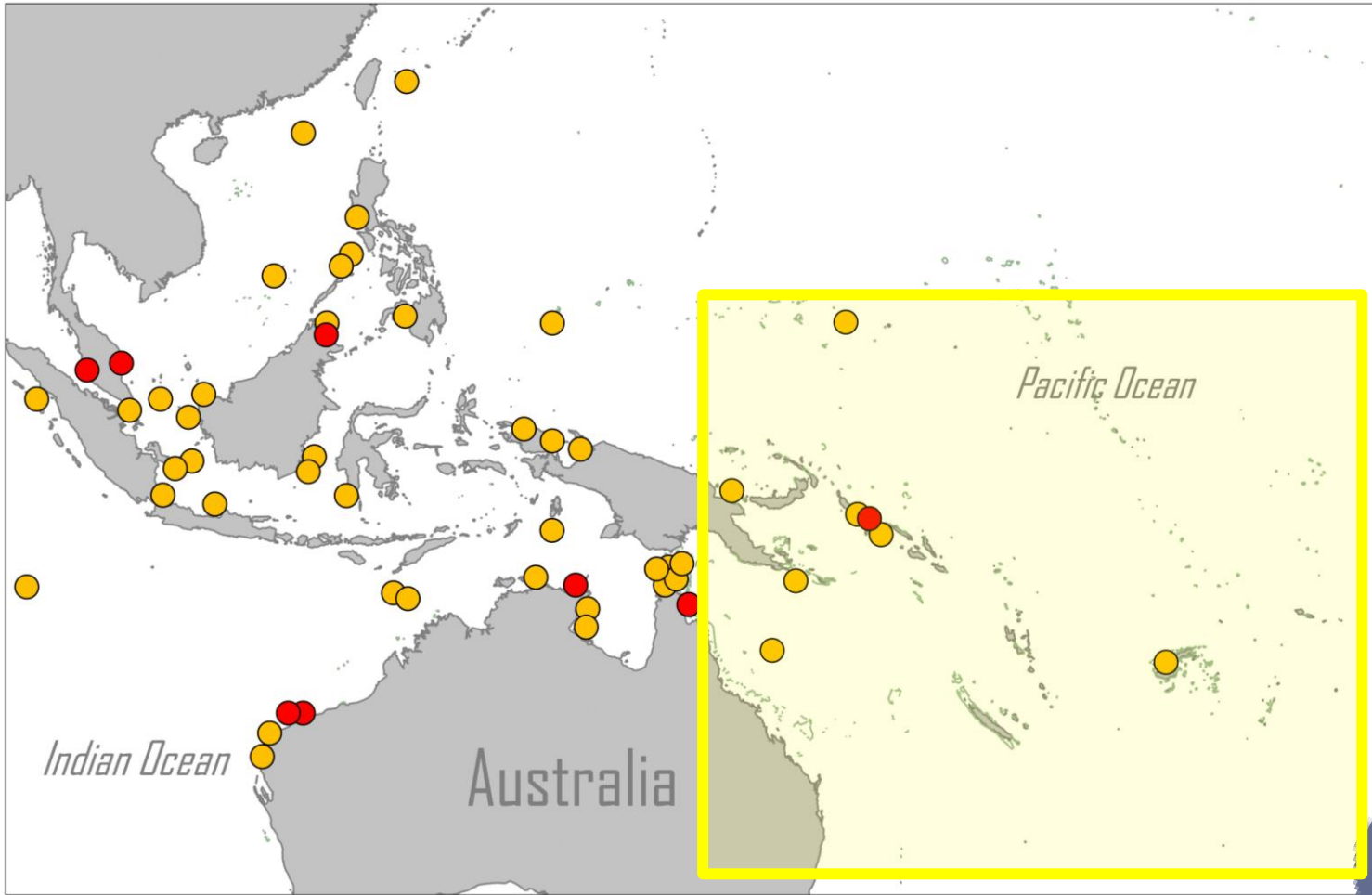
Vanuatu

Fiji

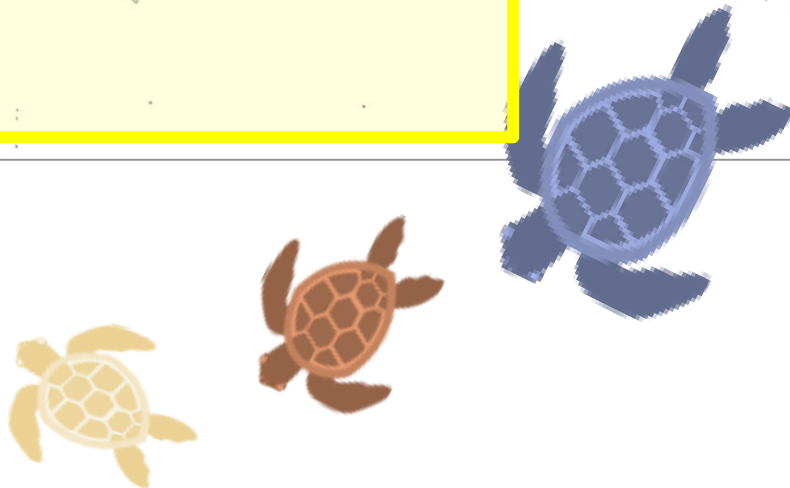
Am. Samoa

French Polynesia





- Red dot = current projects
- Orange dot/box = future project needs



Chris Madden Hof – project manager, WWF



Michael Jensen – project coordinator & Working Group lead, WWF



'bank' of genetic samples (from the wild)

- **Key priority:** Collaborate on improving stock structure for hawksbills in the region (build the genetic baseline)
- Formalise Hawksbill Genetic Working Group (GWG), Steer Asia-Pacific MT GWG
- Share & publish existing data
- Identify genetic gaps (yellow dots)
- Coordinate additional sampling
- Identify regional labs for analysis
- Train / build in-country capacity



'bank' of genetic samples (from stockpiles & from seizures as law enforcement tool)

- **Use the DNA shell detection method**
- **Key objective:** Use genetic baseline to ID stock origin of hawksbill products – sale to source
- Embed in-country as traceability tool



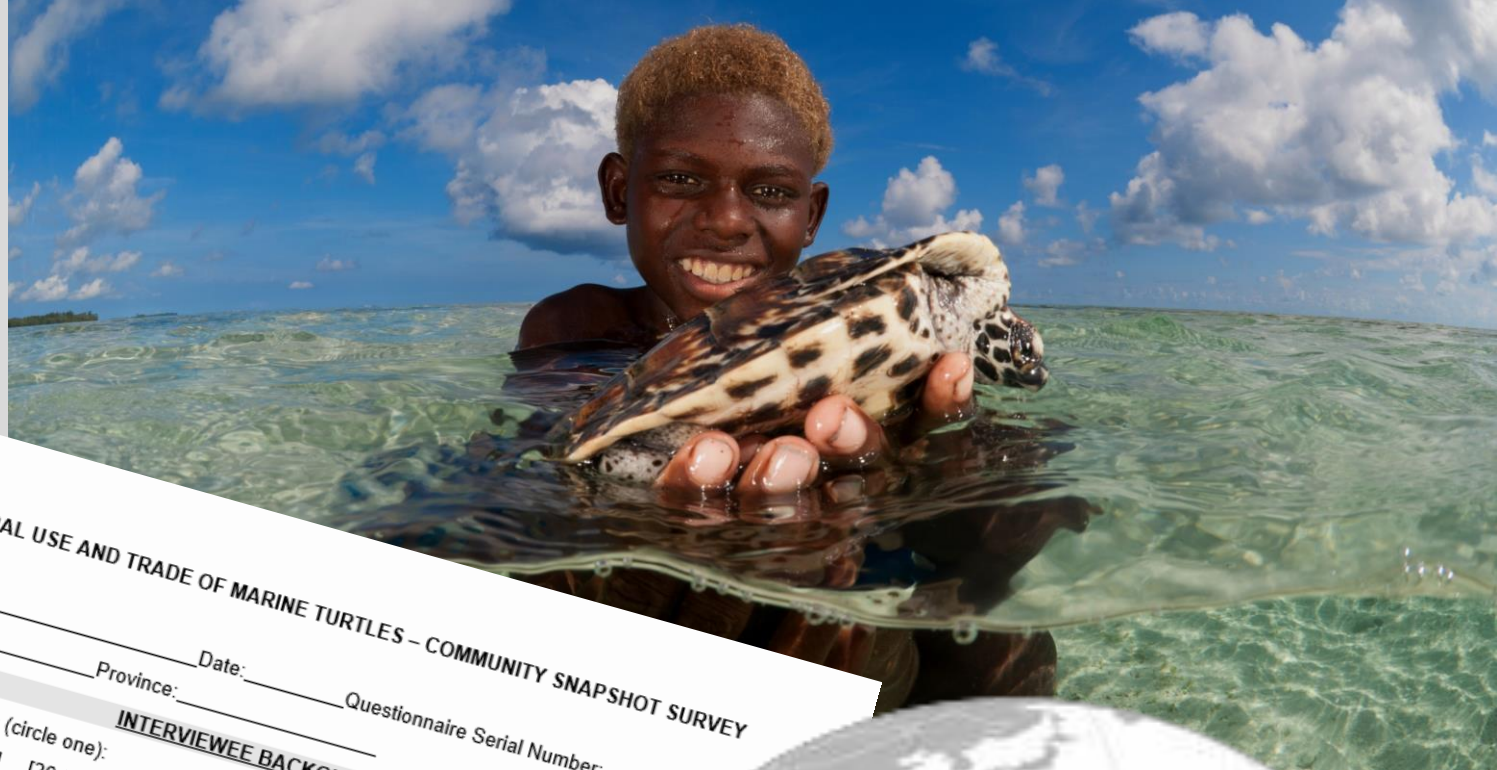


Understanding  
the social,  
cultural &  
economic  
pressures on  
hawksbills



# A report on turtle harvest and trade in Solomon Islands

August 2019



**SOCIOCULTURAL USE AND TRADE OF MARINE TURTLES – COMMUNITY SNAPSHOT SURVEY**

Interviewer Name: \_\_\_\_\_ Date: \_\_\_\_\_ Questionnaire Serial Number: \_\_\_\_\_  
Town/village: \_\_\_\_\_ Province: \_\_\_\_\_

**INTERVIEWEE BACKGROUND**

- Age range in years (circle one):  
[Under 18] [18-25] [26-35] [36-45] [46-55] [56-65] [Over 65]
- Gender: Male  Female  Prefer not to say  Other: \_\_\_\_\_
- How long have you lived in this village/town? \_\_\_\_\_ years \_\_\_\_\_ months
- Highest level of education completed? (Choose one)  
a. No formal education  
b. Primary school  
c. Secondary school  
d. University degree (circle: BSc MSc PhD)  
e. Trade or vocational school  
f. Prefer not to say
- What is your monthly household income? (Choose one)  
a. Under 100 USD  
b. 100-500 USD  
c. 500-1,000 USD  
d. 1,000-3,000 USD  
e. 3,000-6,000 USD  
f. 6,000-10,000 USD



Compiled by:

Simon Vuno, Richard Hamilton, Christopher Brown, Peter Waldie, John Pita, Nate Peterson,  
Christine Hof and Col Limpus

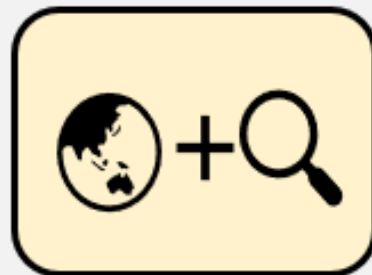
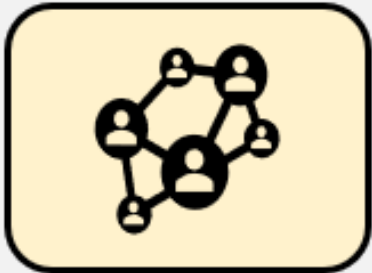




# Turtle Use Project: How will it work?

## 1. Asia-Pacific participation

Stakeholders opt in



Turtle use and trade 'hotspots' identified in 4 Asia-Pacific countries

## 2. Deliver surveys

Socio-cultural surveys in communities



Data collected via trained community monitors and workshops

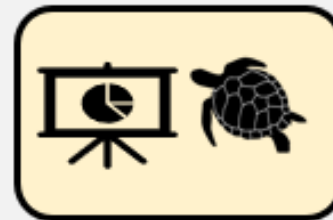
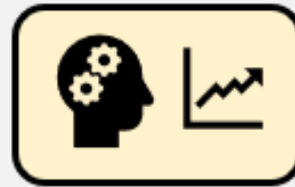
Economic value survey online



Distributed to general public

## 3. Identify trends & solutions

Analysis by statisticians and social scientists



Determine trends at local, national and regional scales to inform conservation policy

## 4. Share findings & inform policy

Results are shared with governments, communities and regional partners to progress equitable and sustainable solutions



Helps nations meet commitments to conservation legislation, e.g. CITES, CMS, IOSEA-MoU, CTI-CFF

## Decisions 18.211-18.213



### Status, scope and trends of the and illegal international trade marine turtles, its conservati impacts, management options mitigation priorities

18.211

Decision directed to: Parties

Parties are urged to:

- review the findings of the study presented in information document CoP18 Inf. 18 and use these to inform targeted conservation and management efforts;
- fully implement the provisions of CITES that are relevant to the seven species of marine turtles listed on Appendix I;
- develop and/or update management and action plans for the conservation of marine turtles inclusive of the recommendations in information document CoP18 Inf. 18;
- use CITES fora, including the Animals Committee and Standing Committee, to raise and discuss challenges relating to illegal trade in marine turtles;
- collect in a standardized manner, including at different governance levels, illegal wildlife trade data, that can be used for monitoring trade in CITES-listed marine turtles; and submit comprehensive and accurate information on illegal trade in marine turtles in their annual illegal trade reports to the Secretariat;
- improve monitoring, detection and law enforcement activities related to marine turtles in coastal areas and at transaction points (e.g. in the marketplace, online, maritime areas, and at air- and seaports);
- collect samples of marine turtles for DNA analysis, including from seized specimens, to determine species involved and populations of origin and provide these to forensic and other research institutions capable of reliably determining the origin or age of the samples in support of, for example, research, investigations and prosecutions;
- improve intra- and interregional cooperation, collaboration and exchange of actionable intelligence regarding illegal take of and trade in marine turtles;
- ascertain key trade routes, methods, volumes, and trade 'hot-spots' using available technologies, and enforce national and international regulations or other mechanisms that apply to marine turtles take and trade;
- improve accountability for the practices undertaken by all vessels and improve the monitoring and control related to CITES-listed marine turtles at landing sites;
- support fisheries management authorities in implementing turtle mitigation and safe handling practices;
- coordinate efforts at the regional level, involving Parties and bodies with relevant mandates, to identify and address trade, use and other threats, such as fisheries' interactions with marine turtles (particularly bycatch), with a view to supporting multilateral environmental agreements; and
- respond to the Notification issued by the Secretariat per Decision 18.210, paragraph f) on the implementation of Decisions 18.210 to 18.214.

18.212

Decision directed to: Parties

Parties that are marine turtle range States are urged to:

- develop, and where such legislation already exists, conduct a thorough review of legislation that protects marine turtles, taking account of its effectiveness in enforcement and management including direct and incidental harvest, and standardization or alignment with other national and sub-national legislation, neighbouring states, as well as international regulations and commitments;
- where domestic harvest of specimens of marine turtles, including eggs, is legal, ensure any domestic harvest quotas are established based on robust science-based methods and the principles of sustainability, including accounting for existing quota or no-take quotas in other States that share marine turtle stock(s), taking into account national enforcement capacity;
- respond to the Notification issued by the Secretariat pursuant to Decision 18.210 paragraph f) on the implementation of Decisions 18.210 to 18.215.

Parties, governmental, intergovernmental and non-governmental organizations and other entities are invited to provide financial or technical assistance for, *inter alia*:

- training and capacity building of relevant authorities at the national and regional level, including on the implementation and enforcement of national and international regulations that apply to marine turtles, and on identification, monitoring, reporting and wildlife enforcement capability;
- community and political awareness on the conservation status of marine turtles and on the importance of promoting the conservation of the species through compliance with CITES at the national level;
- research into the socioeconomics associated with the legal and illegal harvest and use of specimens of marine turtles, including eggs, including assessments of the sustainability of alternative livelihood options for communities depending on marine turtles and the motivations for their use;
- research that establishes a baseline for the status and distribution of marine turtles in the different countries/regions; and
- research into the scale and impact that national (and its international) artisanal, semi- industrial and industrial fisheries, including illegal, unreported, and unregulated fishing, have on marine turtle populations and their linkage to illegal trade.

- **Support baseline genetic studies (for conservation & as a traceability tool)**
- **Establish domestic harvest quotas**
- **Research socioeconomics of legal/illegal harvest/use**



# What's required?

1

**MAJOR GENETIC SAMPLE collection (nesting, foraging, bycatch, stockpiles/seized, surrendered)**

2

**ANALYSE SAMPLES, building in-country capacity and reference baselines**

3

**EMBED IN LAW ENFORCEMENT CHAIN, as traceability tool**

3

**IDENTIFY TURTLES MOST AT-RISK, for future protection**



*For more information or to be part contact:  
[chof@wwf.org.au](mailto:chof@wwf.org.au)*

**TOGETHER, IT'S POSSIBLE.**

