

SPREP Shark Plan 2021

Sharks and rays of the Pacific: status, threats, opportunities



andrew.chin@jcu.edu.au

[@spinnershark7](#)



To begin



Artwork by Irene Doughboy, Yuku Baja Muliku

Topics covered

- Overview of the Shark Search Indo-Pacific effort
- What we know and what this means
- What we don't know
- Opportunities
- Discussion

Everything begins with an idea



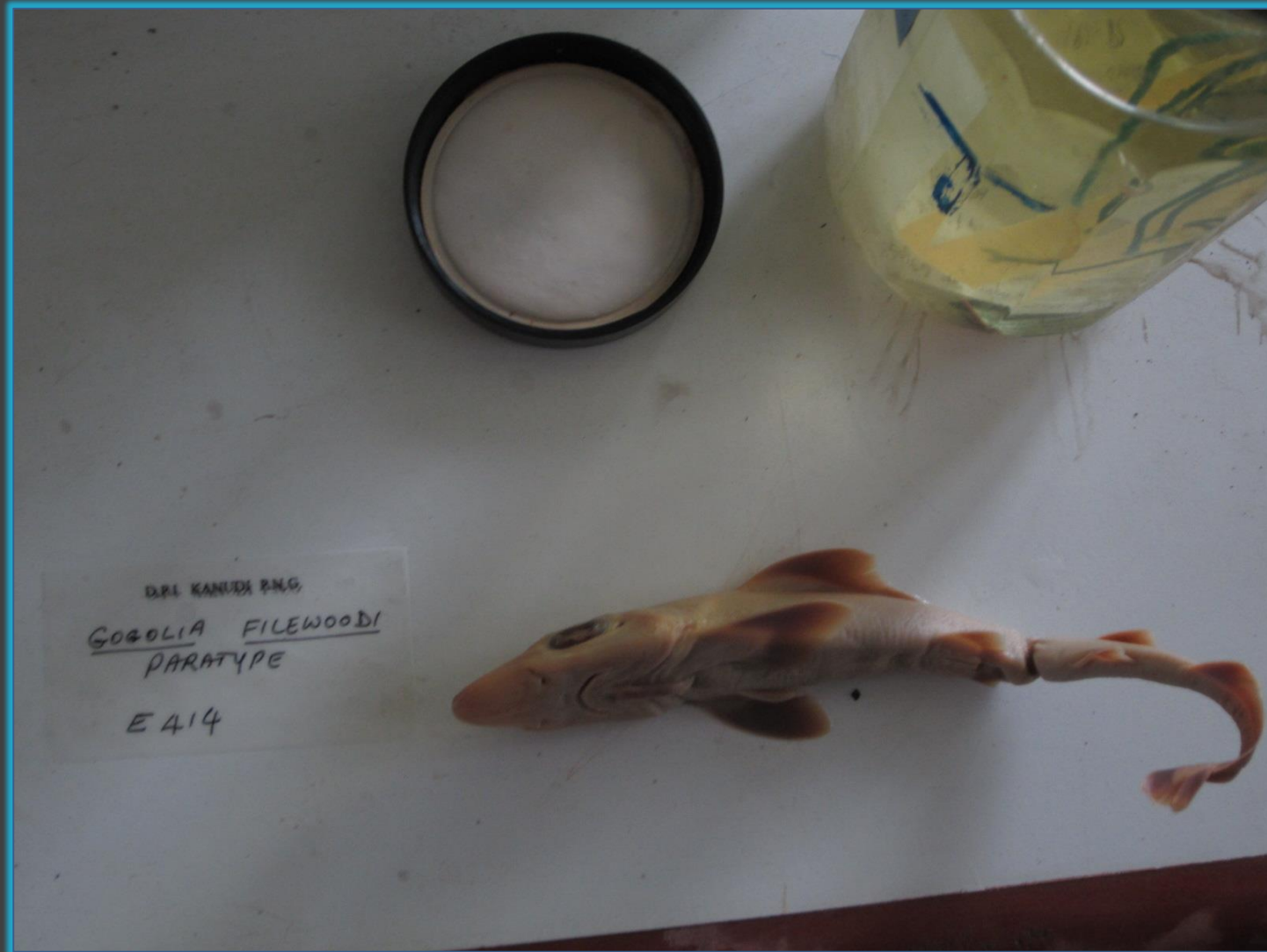
Dr Reuben Sulu



So many Pacific species ...



So little knowledge ...



So much to (re)discover...?

RESEARCH ARTICLE


Rediscovery of the Threatened River Sharks, *Glyphis garricki* and *G. glyphis*, in Papua New Guinea

William T. White^{1,2*}, Sharon A. Appleyard^{1,2}, Benthly Sabub³, Peter M. Kyne⁴,
Mark Harris⁵, Rickson Lis³, Leontine Baje³, Thomas Usu³, Jonathan J. Smart⁶,
Shannon Corrigan⁷, Lei Yang⁷, Gavin J. P. Naylor⁷

1 Australian National Fish Collection, National Research Collections Australia, Commonwealth Scientific and Industrial Research Organisation, Hobart, Tasmania, Australia; 2 Australian National Fish Collection, National Research Collections Australia, Commonwealth Scientific and Industrial Research Organisation, National Capital District, Port Moresby, Papua New Guinea; 3 National Research Collections Australia, National Capital District, Port Moresby, Papua New Guinea; 4 Department of Biology, University of Florida, Gainesville, Florida, USA; 5 Department of Biology, University of Florida, Gainesville, Florida, USA; 6 Department of Biology, University of Florida, Gainesville, Florida, USA; 7 Department of Biology, University of Florida, Gainesville, Florida, USA



The more we look...

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Article

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ISSN 1175-5334 (online edition)

<http://doi.org/10.11646/zootaxa.4083.4.5>

<http://zoobank.org/urn:lsid:zoobank.org:pub:5FF5AC63-D26C-4456-84ED-B9DD218C100D>

Taxonomic status of maskrays of the *Neotrygon kuhlii* species complex (Myliobatoidei: Dasyatidae) with the description of three new species from the Indo-West Pacific

PETER R. LAST^{1*}, WILLIAM T. WHITE¹ & BERNARD SÉRET²

¹ CSIRO National Research Collections Australia, Australian National Fish Collection, Castray Esp. TRALIA. E-mails: peter.last@csiro.au; william.white@csiro.au

² IRD Muséum national d'Histoire naturelle, Département Systématique et Evolution, 55 rue Buffon, cedex 05, FRANCE. E-mail: seret.bernard@orange.fr

*Corresponding author

2016: Three
new *Neotrygon*
species

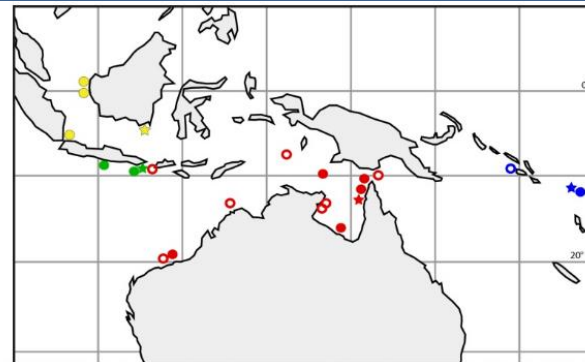


FIGURE 8. Map showing the locations of the type material and other specimens examined of *Neotrygon kuhlii* (blue), *Neotrygon australae* sp. nov. (red), *Neotrygon caeruleopunctata* sp. nov. (green) and *Neotrygon orientale* sp. nov. (yellow). Stars denote primary types (holotype or lectotype), solid circles denote secondary types, and open circles denote non-type material examined.



The more we find

- Three new stingrays (Myliobatiformes: Dasyatidae) from the Indo-West Pacific. (PMID:27515624)

[Abstract](#) [Citations](#) [BioEntities](#) [Related Articles](#) [External Links](#)

[Last PR¹](#) [White WT²](#) [Naylor G³](#)

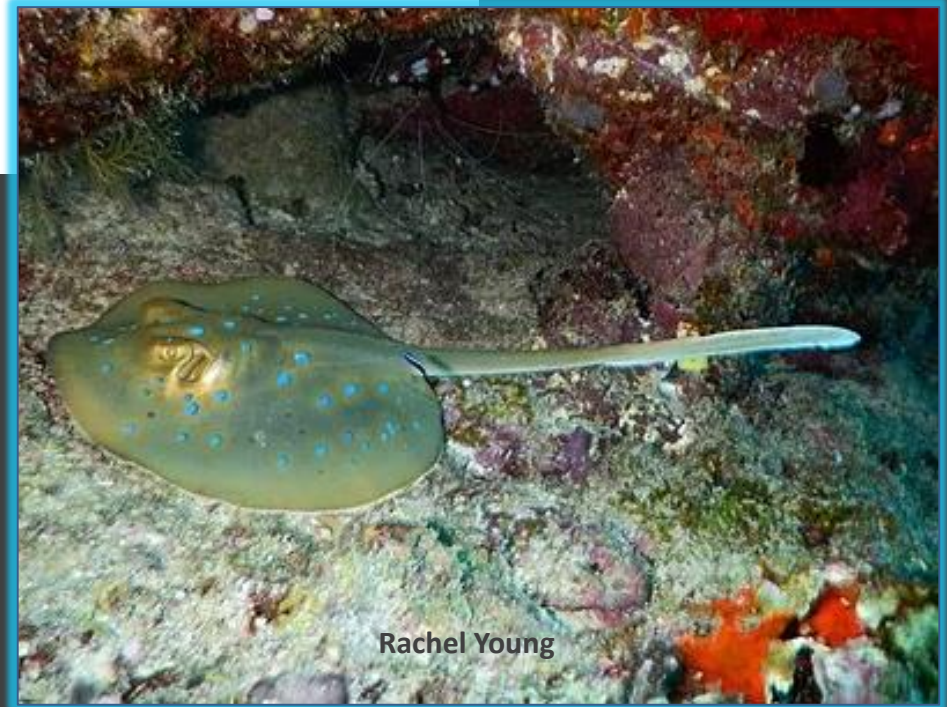
[Affiliations](#) ▶

[Zootaxa](#) [05 Aug 2016, 4147(4):377-402]

Type: Journal Article

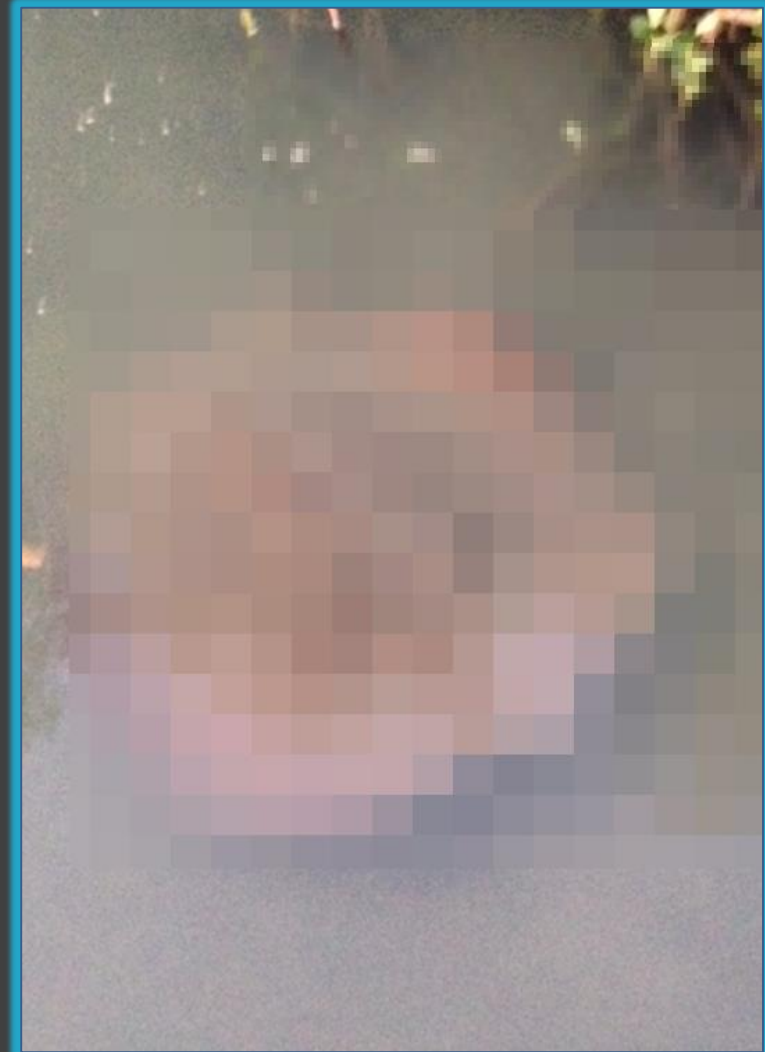
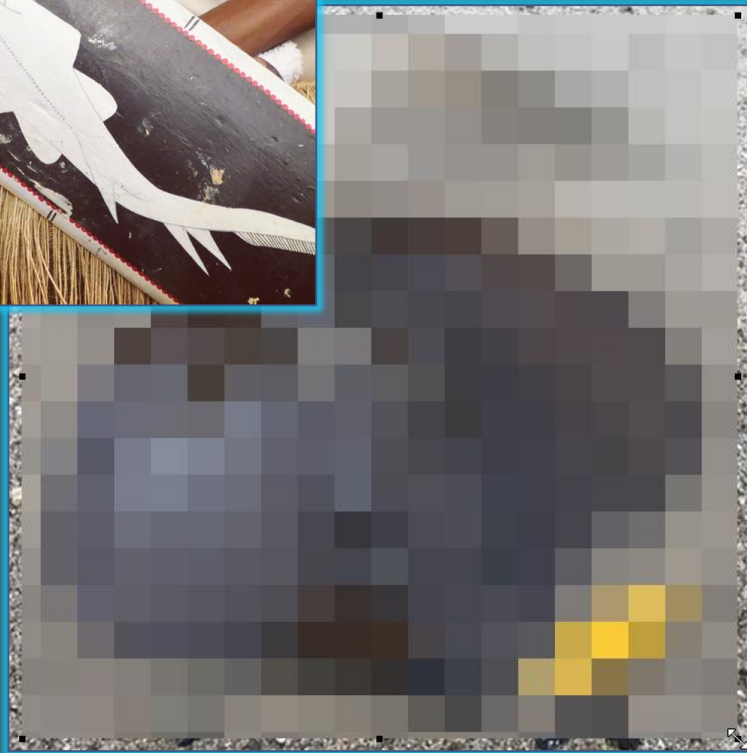
DOI: [10.11646/zootaxa.4147.4.2](https://doi.org/10.11646/zootaxa.4147.4.2)

2016: Another
three new
species



The more we find . . .

Locals know . . .



The unexpected....

Kavachi volcano Solomon Islands



Values and threats . . .



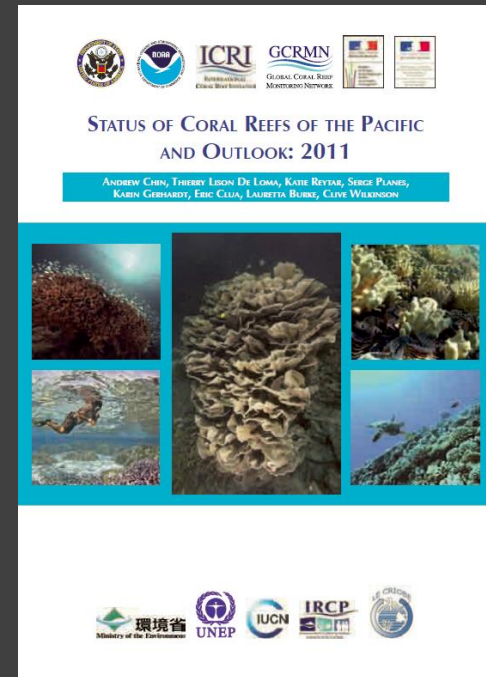
From ideas to action

- What do we know?
- What don't we know?
- What do we need to know?

What do we do about it?

To document, promote and enhance the social, cultural, economic, biological, and ecological values of sharks and rays for Indo-Pacific communities, both now and for future generations.

- Starting by building robust S&R profiles for every country and territory in the Pacific by 2022
- Accompanying conservation overviews
- Reference point and foundation for future projects



Building country profiles

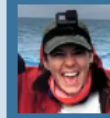
- Harnessing student power
- Part of masters qualifications
- Fair treatment!
 - Training and mentorship
 - Opportunity to publish
 - Applied projects with real outcomes
 - Learning how to mine data

Research Students



Sheila Villora 
James Cook University
Checklist - Mozambique

Sheila Villora is a postgraduate student from Germany studying Fisheries Science and Management at James Cook University. She is interested in improving the current knowledge on Shark and Ray importance to the marine ecosystem and further understanding the human aspects involved in shark conservation. Her close relationship to the Philippines shaped her view on shark conservation. Sheila is currently working on the shark and ray checklist for Shark Search Indo-Pacific in Mozambique.



Sanna Persson (2018)
James Cook University
Checklist - Kiribati 

Sanna Persson is in her third year of her Bachelor of Marine Science at James Cook University. Her passion is the ocean, and everything that inhabits it, from nudibranchs and sea cucumbers to giant trevallies and manta rays, but the favourite is of course sharks. She is interested in shark research and wants to improve fisheries in the tropics as well as shark conservation worldwide. Sanna is now working on a checklist of shark and ray species and reviewing the trends in populations in Kiribati as part of the Shark Search project.



Taylor Patterson (2018)
James Cook University
Checklist - Tonga

Taylor Patterson is a postgraduate student at James

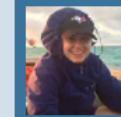
Students 2019



Metavee (May)
Chuangcharoendee 
James Cook University
Checklist - Singapore

Metavee Chuangcharoendee or May is a Thai post graduate student at James Cook University studying Marine Biology and Ecology. She completed a Bachelor's degree in Environmental Science at Mahidol University International College in Thailand. She has always been passionate about sharks and the ocean since she was young. She would like to improve her knowledge on sharks and fisheries for the purpose of conserving her country's natural resources in the future. She is also volunteering with the Global FinPrint project to enhance her knowledge in identifying elasmobranch species. May is now working to create a checklist of elasmobranch species and review the trends of populations in Singapore for Shark Search Indo-Pacific project.

Students 2018

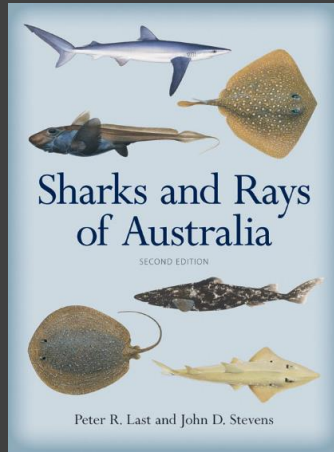
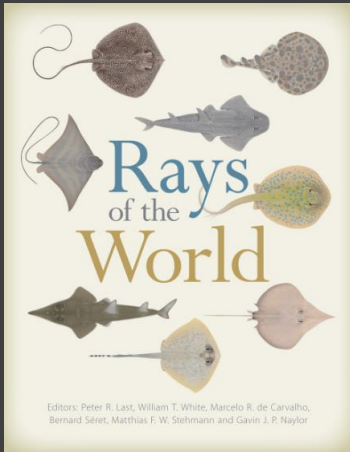


Katelyn Hari (2018)
James Cook University
Checklist - Palau 

Katie Hari is a third-year undergrad from Vancouver, Canada studying a Bachelor of Marine Science. She grew up around the ocean in a family cabin and that's where she found her passion for the water. She knew she wanted to pursue conservation when she started to volunteer at the Vancouver Aquarium in the education department and with the Marine Mammal Rescue centre. Her passion is shark research and would like to help conserve these animals through sustainable fisheries. She is interested in shark telemetry under changing environmental conditions. She is currently working on the Shark Search checklist and overview for Palau.

Building country profiles

- Data mining



Google SPREP Secretariat of the Pacific Regional Environment Programme

HOME ABOUT US NEWS EVENTS WHAT WE DO RESOURCES NETWORKS MEMBERS SPREP MEETING

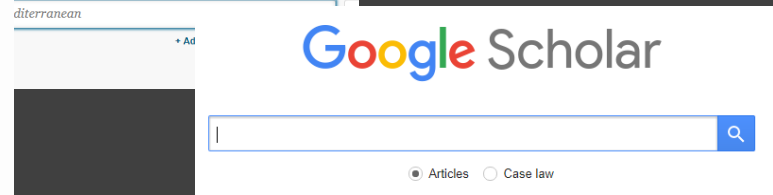
PEIN COUNTRY PROFILES AND VIRTUAL LIBRARIES

The Pacific Environment Information Network (PEIN)

E-Resources

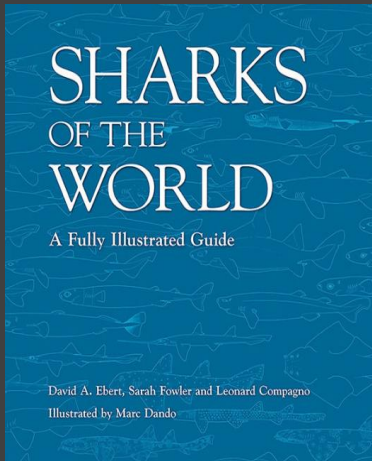
Country Reports Directory

is a browsable directory of national reports for the countries of the Pacific Islands. The intention of the PEIN Country Profiles Directory is to provide a browsable access point for the range of environmental indicators and country documents produced under the various environment programmes in effect in the Pacific. Contributions of documents, whether in hardcopy or digital form are welcome and can be sent to SPREP IRCA



Google Scholar

Articles Case law



SEA AROUND US FISHERIES, ECOSYSTEMS & BIODIVERSITY

TOOLS & DATA GETTING STARTED PUBLICATIONS

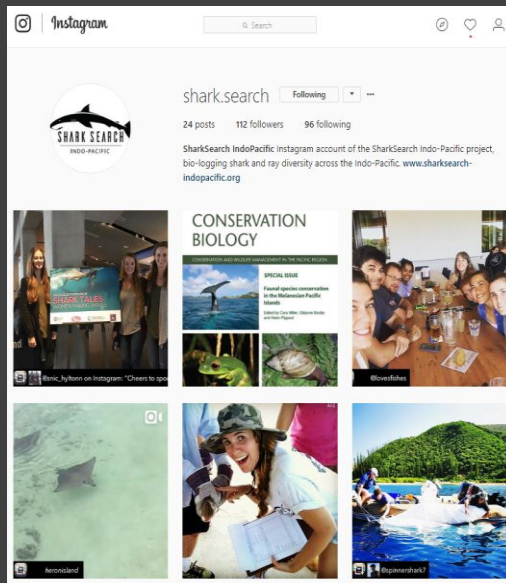
We present fisheries and fisheries-related data of relevance, such as by Exclusive Economic Zone



Our interactive graphs »

Citizen scientist records

- Ask for photographs to validate species records
- Photos verified by taxonomic experts



SharkSearch Indo-Pacific About Us Science & Research Checklists & Photos Get Involved More

French Polynesia Checklist Scheduled for 2017

Research student: Ms Lisa Stevenson (James Cook University)
In-country partners: Dr Johann Mourier (CRILOBE/CNRS), Dr Eric Clua (CRILOBE/CNRS), Nicolas Buray, (Observatoire des Requins de Polynesie)

Checklist of French Polynesia sharks and rays

Current number of shark species
Current number of ray species
Current number of chimaera species

French Polynesia shark and ray photos

If you have photos of sharks and rays that are not shown here, please contact us!

A B
C



Grey reef shark (*Carcharhinus amblyrhynchos*)
Photo : © Nicolas Buray




Blacktip reef shark (*Carcharhinus melanopterus*) Moorea, 24/09/2010,
Location: -17.488083 S; -149.803904

But how do we know this is accurate?

In-country partners are vital

Data identification, validation, networking, disseminating results

SharkSearch Indo-Pacific About Us Science & Research Checklists & Photos Get Involved M

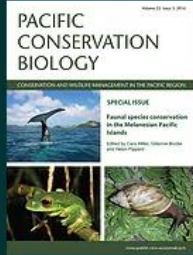


Solomon Islands

Checklist and Status Overview in press in *Pacific Conservation Biology*

Research student: Ms Sarah Hylton (University of South Carolina and James Cook University)

In-country partners and contributors
Simon Albert (University of Queensland); Simon Foale (James Cook University); Richard Hamilton (The Nature Conservancy); Reuben Sulu (WorldFish); Rosalie Masu (Ministry of Fisheries and Marine Resources); Agnetha Vavekaramui (Ministry of Environment, Climate Change, Disaster Management & Meteorology); Lisa Choquette (Solomon Dive Adventures); Grant Kelly (Uepi Island Resort); Corey Power (Wilderness Lodge); Malcolm Francis (New Zealand National Institute of Water and Atmospheric Research), and Clinton Duffy (New Zealand Department of Conservation)



ABSTRACT of paper in press in *Pacific Conservation Biology*

Sharks and rays are facing increasing anthropogenic pressure globally, including in the Pacific. However, data on their status and biodiversity is lacking for many Pacific Large Ocean Island States. This study aimed to construct a species checklist for the sharks and rays occurring in the Solomon Islands, review the human interactions with these species, and present a

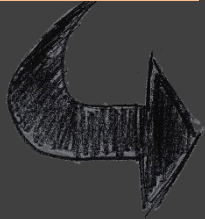
Explicit about uncertainty

Confidence about species occurrence clearly identified

Confidence category	Description
Unlikely	Records limited to a single source; AND occurrence is outside the species' expected range, OR habitat tolerances and contradicts biogeographic patterns; AND/OR species easily misidentified; OR absent from other records and observations where it would otherwise be expected.
Plausible	Records limited to a single general reference; OR occurrence is within range and environmental envelope; however species is easily confused with other similar species.
Likely	Records from one or two sources; species is widely distributed throughout the region AND occurrence is within range and environmental envelope; AND species easily identifiable.
Confirmed	Occurrence reported in two or more published sources; OR reported from museum record/curated scientific database/checklist/taxonomic collection with expert verification; OR photographic record; AND occurrence is within expected range and environmental envelope; AND species easily identifiable OR identification verified by expert.
Provisionally confirmed (pending taxonomic clarification)	Species occurrence provisionally confirmed, however taxonomic issues mean that the species needs further attention to resolve potential taxonomic issues to identify species, separate cryptic species or remove invalid species.

Multiple step process

Requests?



Student & country selection

In-country partners

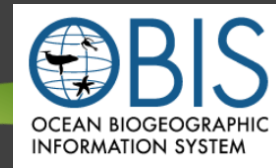
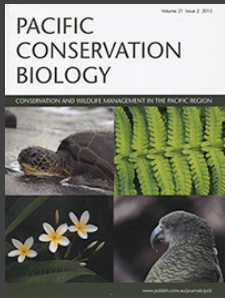
Compile checklist & Status Overview

Taxonomy and museum review

In-country review

Peer review

Publication



Open access

SSIP website

Information Curation

In-country partners

Policy Brief

Dissemination



Progress to date . . .

Completed and published

- Great Barrier Reef
- Solomon Islands
- Palau (in press)

Compilation of existing resources

- Philippines
- Papua New Guinea
- Thailand

In preparation for submission

- Vanuatu (David Welch, Johanna Johnson)
- French Polynesia (Eric Clua, Johann Mourier)
- New Caledonia (Laurent Vigliola, Bernard Seret, Laurent Wantiez)

Drafts completed

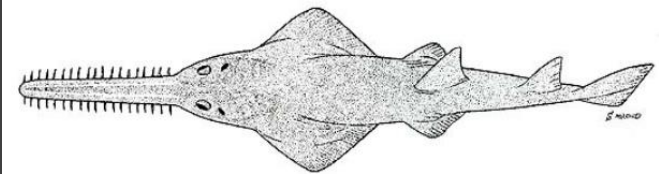
- Fiji
- Kiribati
- FSM
- Niue
- Tonga
- Tuvalu
- Mozambique

Profile - Solomon Islands

- 50 shark and ray species
 - (43 confirmed, 7 provisionally confirmed)
 - 32 sharks, 18 rays, 0 chimaeras?
- *Most data are not published*
- 20 listed as vulnerable (IUCN Red List)
 - 10 CITES; 10 CMS
- Eastward range extension of dwarf sawfish (*P. clavata*)
- Range of values
 - Religious beliefs promote conservation
 - Traditional values
 - Changing values
- Important to fisheries, but different roles
- COMPLEX – cannot generalize uses, values and dependencies
- STARTING POINT – numbers will change



Fig. 2. Photograph of a dwarf sawfish rostrum supplied by an informant from the Solomon Islands. The rostrum was obtained in the Russel Islands in the central Solomon Islands during the 1960s.



(after Last and Stevens, 1994)

Profile - Solomon Islands



Profile - Solomon Islands



Solomon Islands

Checklist and Status Overview completed and published October 2017

(New paper published 2019 - see below)

Solomon Islands - Country Statistics

- Land area*: 27,986 squared km
- Population* (2017): 647,581
- Population Growth* (2017): 1.9%
- Visitors** (2015): 21,623
- Marine area (EEZ)****: 1,596,464 squared km
- Population density*** (2016): 21 persons/squared km land area
- Urban population* (2017): 23.2%
- GDP*** (2016): USD \$ 1.202 billion

* CIA World Factbook
** Solomon Islands Bureau of Statistics
*** World Bank
**** Sea Around Us

Research student: Ms [Sarah Hylton](#)
(University of South Carolina and James Cook University)

In-country partners and contributors

Simon Albert (University of Queensland); Simon Foale (James Cook University); Richard Hamilton (The Nature Conservancy); Reuben Sulu (WorldFish); Rosalie Masu (Ministry of Fisheries and Marine Resources); Agnetha Vavekaramui (Ministry of Environment, Climate Change, Disaster Management & Meteorology), Lisa Choquette (Solomon Dive Adventures); Grant Kelly (Uepi Island Resort); Corey Howell (Wilderness Lodge); Malcolm Francis (New Zealand National Institute of Water and Atmospheric Research), and Clinton Duffy (New Zealand Department of Conservation)

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Download the Checklist [MS Excell]
Note: the checklist can also be downloaded as Supplementary Material 1 from published paper



Download the published paper(2017) (links to the PACIFIC CONSERVATION BIOLOGY website)

OPEN ACCESS - free to download and distribute



Download the article about the Solomon Islands project in Issue 155 of the SPC

A checklist and status overview of Solomon Islands

Andrew Chin¹, Rosalie Masu² and Agnetha Vave-Karamui³

The Pacific holds a rich diversity of sharks and rays and these are large-scale commercial tuna fisheries, shark catch and by-catch are some coastal small-scale fishing communities, sharks may be taken (e.g. Vieira et al. 2017). However, sharks are also important as tourism can have real and significant economic and community benefits, sharks and rays have important cultural and spiritual

In spite of these different values, scientific understanding of the Pacific's sharks and rays is still very limited. Most research has been done on the species taken in larger quantities in commercial fisheries, but there are many other important and significant species and discoveries. Some of the most commonly encountered species have recently been found to be species complexes – a group of species that may look alike but have completely different biology (Last et al. 2016). In other cases, species are being 'rediscovered' by scientists who have taken the time to engage local people who know their waters the best and know where these 'hidden'

CSIRO PUBLISHING

Pacific Conservation Biology, 2020, 26, 100–101
<https://doi.org/10.1071/PCB19088>

Field Note

Verified records of Kuhl's devil ray (*Mobula kuhlii*) in the Solomon Islands from citizen scientists

A. Chin¹, A.C. Rigby², A. Short and W. T. White³

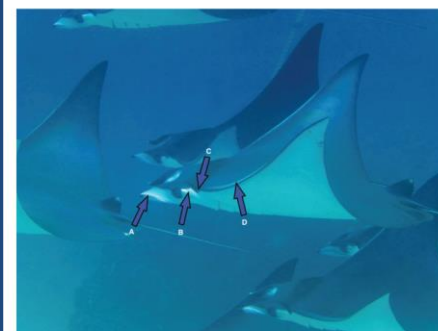


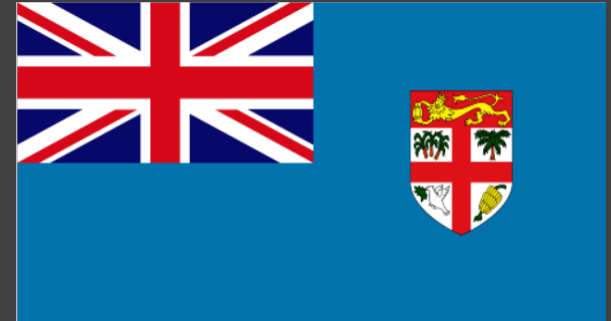
Fig. 1. *Mobula kuhlii* photographed by SCUBA diver Andrew Short at Mangilango Island, Solomon Islands, on 27 September 2017. Arrows indicate field characters used to identify the species.

Citizen Science can provide valuable information about the occurrence and distribution of species, especially in little-studied locations. In the Solomon Islands, sharks and rays play a variety of roles in culture, fisheries and livelihoods (Hylton et al. 2017). However, scientific information about sharks and

rays in the Solomon Islands is very limited. The Shark Search Indo-Pacific project (www.sharksearch-indopacific.org) invites SCUBA divers to submit photographs of sharks and rays to help verify species' occurrence and distribution records. In 2017, a checklist and status overview was published for the Solomon

Fiji and French Polynesia

- **Fiji** – Yanni Smith
 - 76 species
 - 61 sharks, 15 rays, 0 chimaeras?
 - **STILL UNDERGOING VALIDATION**
 - Varying cultural values and practices
 - Meat not used locally but taken in SSF
 - Poorly documented
- **French Polynesia** – Lisa Stevenson
 - 47 species
 - 38 sharks, 9 rays, 0 chimaeras?
 - Multiple values
 - FP shark sanctuary



What have we learnt?

Biological and ecology

- 50+ species for most countries
- Main groups - reef and coastal, pelagic, deepwater
- Communities reflect biogeography and oceanography
- Numerous **high risk species** (IUCN, CITES, CMS)
 - hammerhead sharks
 - sawfishes,
 - mobulid rays,
 - Wedgefishes
 - Oceanic whitetip shark, silky shark
 - Thresher sharks



What have we learnt?

Human dimensions

- Diverse values – social, cultural, economic, livelihood values (.e.g. PNG – tied to sea cucumber trade)
- Values are **changing** – changing kustom and lore, cultural authority
- Technology and trade are **changing** – impact of high value export markets (fins, swim bladder)
- More than shark fins – shark meat, shark products (e.g. leather)
- Tourism (conservation potential???)

What have we learnt?

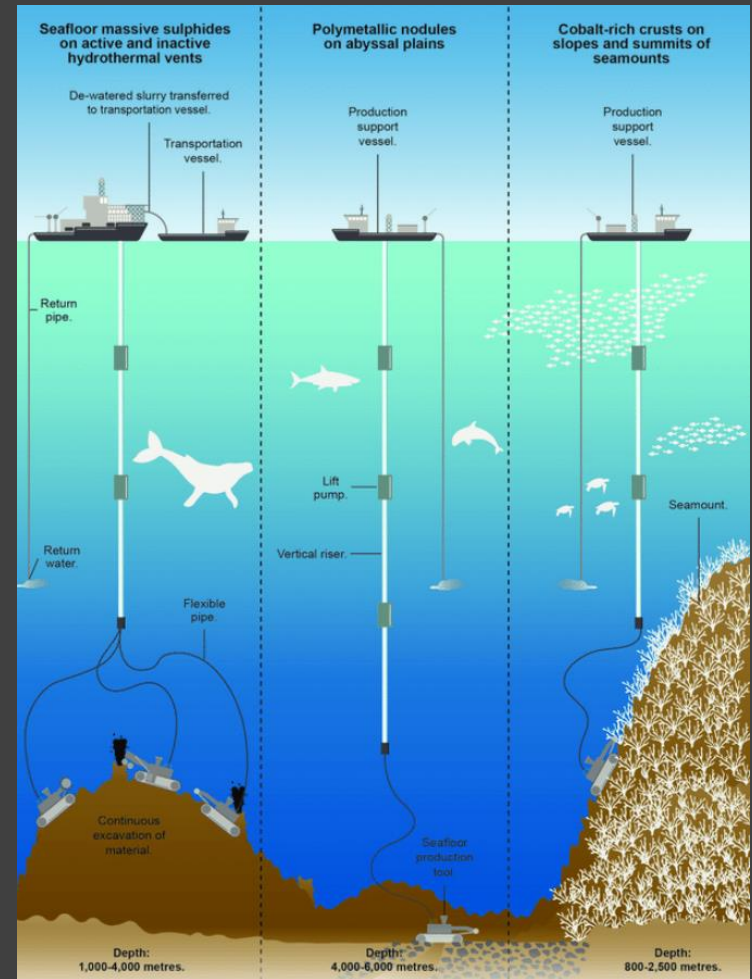
Pressures

- Coastal small-scale fisheries
- Large scale fisheries
 - pelagic spp, coastal encroachment, compliance and enforcement?
- Discarded bycatch, retained bycatch, targeting – very complicated
- Changing geo-political and macro effects on conservation
 - Evolving fisheries (e.g. blue boats)
 - Disputed territory
 - Economic disruption
 - COVID-19 pandemic
 - Climate change
- CAPACITY and PRIORITY



Emerging and growing pressures

- Changing markets and macro-economics driving fishing and management
- Move into deep-sea fishing
- Deep sea mining
 - May affect more than just deep sea sharks and rays
- Rapid pace of evolving pressures
- CAPACITY and PRIORITY



Tourism – not the magic bullet

- Tourism has conservation potential but NOT everywhere
- Effectiveness largely unstudied
- Only works in specific situations (geography, development, economics, social factors)
- Can have negative social, economic, and ecological effects (e.g. whale sharks at Oslob, Philippines)



Aliya Siddiqi

B.Sc. Ohio State University (Columbus, OH USA)
Masters Student, James Cook University

Aliya was born and raised in the landlocked Midwest of the USA but spent her undergraduate studies exploring the relationship between humans and wildlife with experiences in both South Africa and North Queensland. After spending a year volunteering with marine conservation NGOs and communities in the Philippines and Indonesia, she is now completing her master's degree in marine biology at James Cook University.

Favourite papers?



What about shark parks

Do shark parks work???

- It depends
- Helpful but not enough by themselves
- Colonial conservation agendas and social justice

ARTICLE

doi:10.1038/nature21708

Capacity shortfalls hinder the performance of marine protected areas globally

David A. Gill^{1,2†}, Michael B. Mascia³, Gabby N. Ahmadi⁴, Louise Glew⁴, Sarah E. Lester⁵, Megan Barnes^{6,7}, Ian Craigie⁸, Emily S. Darling⁹, Christopher M. Free¹⁰, Jonas Geldmann^{11,12}, Susie Holst¹³, Olaf P. Jensen¹⁰, Alan T. White¹⁴, Xavier Basurto¹⁵, Lauren Coad^{16,17}, Ruth D. Gates¹⁸, Greg Guannel¹⁹, Peter J. Mumby²⁰, Hannah Thomas²¹, Sarah Whitmee²², Stephen Woodley²³ & Helen E. Fox^{4,24}



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Ocean & Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman



Opinion paper

The rise of large-scale marine protected areas: Conservation or geopolitics?



Pierre Leenhardt*, Bertrand Cazalet, Bernard Salvat, Joachim Claudet, François Feral

USR 3278 CNRS EPHE CRIOBE, Laboratoire d'Excellence CORAIL, University of Perpignan, 66860 Perpignan Cedex, France

Global Environmental Change 47 (2017) 174–189

Contents lists available at ScienceDirect



ELSEVIER

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

Global evaluation of shark sanctuaries

Christine A. Ward-Paige^{a,b,*}, Boris Worm^a

^a Department of Biology, Dalhousie University, 1355 Oxford Street, Halifax, NS, B3H 4R2, Canada

^b eOceans, Dartmouth, NS, B2Y 1T7, Canada



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Contents lists available at SciVerse ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman



Review

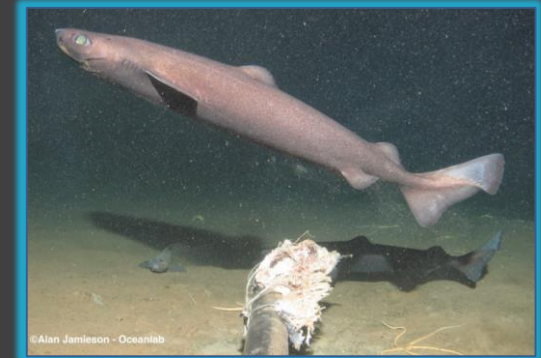
Missing marine protected area (MPA) targets: How the push for quantity over quality undermines sustainability and social justice

Elizabeth M. De Santo*

Marine Affairs Program, Dalhousie University, Faculty of Management, PO Box 15000, 6100 University Avenue, Suite 5068, Halifax, Nova Scotia B3H 4R2, Canada

The big knowledge gaps

- Deep sea sharks
 - Diversity and distribution
 - Risks (deep sea fishing, mining)
- Small scale fisheries
 - Roles, importance, livelihoods, drivers of fishing
 - Should we do anything? Yes (e.g. PNG sawfishes and river sharks – Michael Grant) – but not everywhere situation
- Human dimensions
 - E.g. Solomon Islands – some fishers going to fish silky sharks at offshore FADS
- Management effectiveness
 - Compliance and enforcement with WCPFC
 - National measures and MEAs (CITES, CMS, NPOAs)



Where to now?

- Large scale fisheries
 - Bycatch monitoring –
 - electronic monitoring
 - Integrated bycatch mitigation programs
 - Post release survival
 - Are oceanic whitetip and silky shark numbers recovering?
 - Compliance and enforcement
- Targeted interventions - small scale fisheries - pelagic, coastal encroachment, compliance and enforcement?
- Capacity building and resourcing
- Education and awareness within the conservation sector
- The SPREP shark plan, country NPOAs

www.fishandfisheries.com/seminars

2021

SEMINAR - Wednesday, 5 May @ 11:00am AEST
- Dr Eric Gilman (The Safina Centre)

A special two-part seminar discussing fisheries bycatch management and electronic monitoring systems



Transitioning from Piecemeal to Integrated Fisheries Bycatch Management

Eric Gilman, Milani Chaloupka, Laurent Dagorn, Martin Hall, Alistair Hobday, Michael Musyl, Tony Pitcher, Francois Poisson, Victor Restrepo, Petri Suuronen

Bycatch in fisheries can have profound effects on the abundance of species with relatively low resilience to increased mortality, can alter the evolutionary characteristics and concomitant fitness of affected populations through heritable trait-based selective removals, and can alter ecosystem state and services through food web trophic links. We challenge current piecemeal bycatch management paradigms, which reduce the mortality of one taxon of conservation concern at the unintended expense of others. Bycatch mitigation measures may also reduce intraspecific genetic diversity. We drew examples of broadly prescribed 'best practice'

Next steps for SSIP

- Complete existing country projects
- Publish the data
- Outreach and education
- Manage expectations – it's not going to happen soon; 2022 target will not be met
- Seek out opportunities to collaborate on targeted projects



Starting points for future work

- Explore interest and aspirations with in-country partners
 - Assist or support existing efforts?
 - Stimulate new planning and projects
- Phase II – integrative research
 - Project bookshelf
 - Multidisciplinary teams
 - Human centred design



[Dr Simon Foale](#) is an anthropologist based at James Cook University in Australia. Simon grew up in the Solomon Islands, and his research focuses on cultural anthropology in Melanesia. This work seeks to understand how local people use their marine resources and relate to their environment, and explores local environmental knowledge, customary marine tenure, and [coastal fishery management](#). Simon's work on local language names and ethno-biology helps connect traditional knowledge of sharks and rays to the Indo-Pacific Checklist Project.



Simon Foale
Anthropologist
James Cook University

FISH AND PEOPLE
GET HOOKED ON FISHERIES EDUCATION

OUR PARTNERS

Shark Search Indo-Pacific is working with some of the best expertise in the world. These are individuals or organisations who support and may help to implement Shark Search Indo-Pacific's long term mission. Each partner provides specialized expertise and also provides advice and guidance to the Project Team about how to proceed. As the Shark Search programme develops in-country projects, Programms will identify the project teams that are brought together for these specific projects.



Vanessa Jaiteh

Small scale fisheries, social science, management

Based in Palau



CRIOBE

CRIOBE

French research agency facilitating SSIP projects

French Polynesia



Robert Styles

Behavioural Psychology

Australian National University



David Welch

Fisheries science and management; climate change

C2O Consulting



Simon Foale

Anthropology, small scale fisheries

James Cook University



Cassie Rigby

Fisheries science, management, and policy, deep sea sharks

Based in the Solomon Islands



Troy Mallie

Data systems, mobile data solutions, cultural data

Environmental Systems Solutions



Sharon Appleyard

Genetics

CSIRO National Research Collections

Human-centred design

- Phase III – IMPLEMENTATION
 - Resourcing!!!
 - Multidisciplinary teams
 - Human centred design
 - Iterative review and improvement

Our values

- Do the job we agreed to do
- Positive legacy
- Reciprocity and meaningful engagement
- Supporting and enabling



Working together: our
approach and values for
working in the Indo-Pacific



Our mission: To document, promote and enhance the social, cultural, economic, biological, and ecological values of sharks and rays for Indo-Pacific communities, both now and for future generations.

Shark Search Indo-Pacific (SSIP) aims to deliver useful research, management and sustainability outcomes for Indo-Pacific peoples. To make this happen, SSIP works with in-country partners, and is beginning to build long-term relationships based on trust, mutual respect and reciprocity. Using our experience of working in the Pacific and with Indigenous peoples, the SSIP team has agreed on a set of approaches and core values that we will apply when working in the region.

Our approach

SSIP is collaborative and inclusive. Our projects are grounded in partnerships between scientists, in-country experts, the communities they work with, and citizen scientists - the divers and fishers who photograph sharks and rays from across the Indo-Pacific.

The species checklists and status overviews are the initial science outputs, but the process of working with in-country partners builds social capital between partners, and forms a 'community of practice' for sharks and rays in that location. This community of practice can then take the lead in developing and implementing future on-ground projects.

The SSIP team also recognises that *scientists don't know everything*. Thus, we will seek out and listen to local advice, and we will treat local and indigenous knowledge and knowledge holders with respect.



SSIP WILL WORK WITH LOCAL PARTNERS AND COMMUNITIES IN WAYS THAT ARE EQUITABLE, HONEST AND RESPECTFUL. THIS IS ESSENTIAL TO BUILDING THE TRUST AND MUTUAL RESPECT NEEDED TO WORK TOGETHER ON LONG-TERM PROJECTS THAT DELIVER REAL OUTCOMES

Human-centred design

- Process mindsets and tools
- There is no identified solution to 'test'! Ambiguity -> innovation:, process and iteration -> **people based solutions**

INSPIRATION

I have a design challenge.

How do I get started?

How do I conduct an interview?

How do I stay human-centered?

IDEATION

I have an opportunity for design.

How do I interpret what I've learned?

How do I turn my insights into

tangible ideas?

How do I make a prototype?

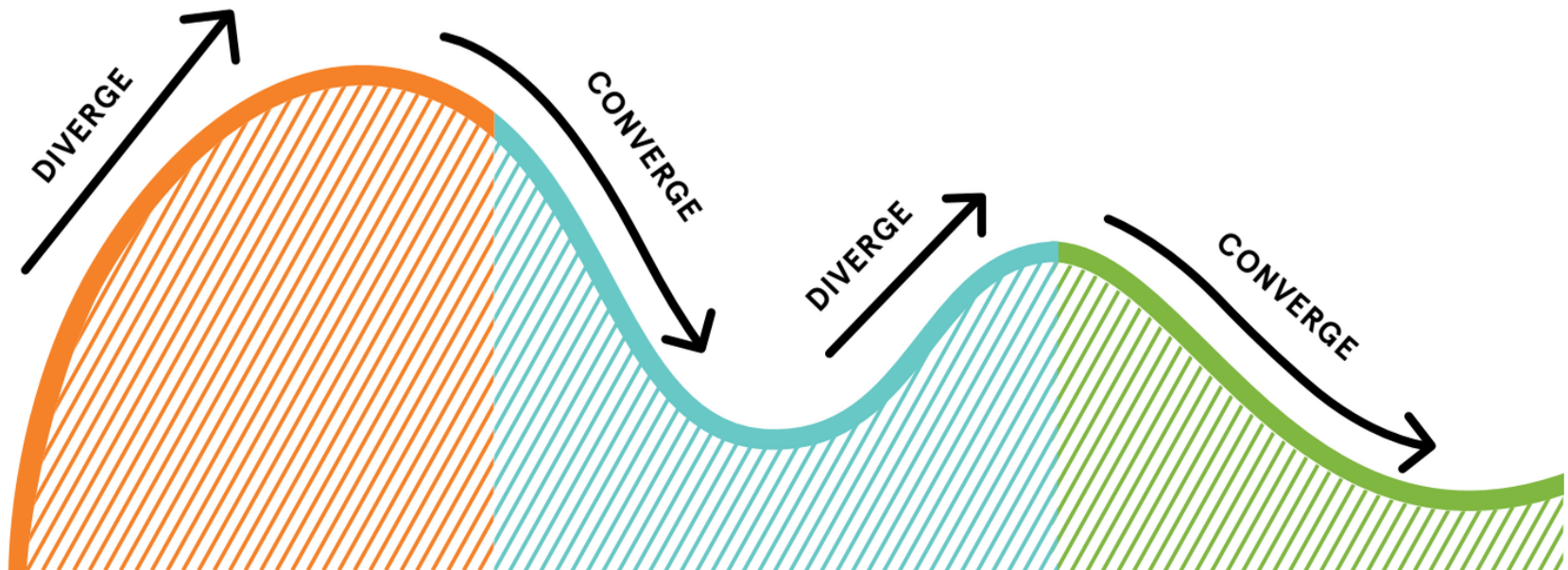
IMPLEMENTATION

I have an innovative solution.

How do I make my concept real?

How do I assess if it's working?

How do I plan for sustainability?



Multi-disciplinary approaches



Questions . . .

andrew.chin@jcu.edu.au

www.sharksearch-indopacific.org

www.fishandfisheries.com.au

@spinnershark7  



 F&F
Lab

 SHARK SEARCH
INDO-PACIFIC