

**Oceans & Maritime Program** 

Geoscience, Energy and Maritime Division



Geoscience, Energy and Maritime Division (GEM) Pacific Community(SPC) SWPHC 20 Hydrographic related activities in 2022

Oceans and Maritime Program

Salesh Kumar, Hydrographic and Aids to Navigation Officer <u>saleshk@spc.int</u>



#### SPC's 27 Member Countries and Territories



Pacific Community Communauté du Pacifique

#### Home | The Pacific Community (spc.int)

https://youtu.be/berQErg1h3A







#### **SPC Maritime Integrated Programme**

Community-centred approach to safety-for-all at sea





## Pacific Safety of Navigation project



Result 1 "Governance": PICTs governance systems to deliver effective and efficient Aids to Navigation services are strengthened both nationally and regionally.

Result 2"Capacity building": PICTs capacity to provide effective and efficient Aids to Navigation services in line with international maritime instruments is strengthened.

Result 3 "Infrastructure": PICTs Aids to Navigation infrastructures and services are adequate to cater for the volume of traffic and the degree of risk identified.





## **Pacific Safety of Navigation**



Pacific Community Communauté du Pacifique

#### **Result 1: Governance**

Samoa, Vanuatu (AtoN regulations and policy)

#### **Result 2:Capacity building**

- IALA AtoN level 1manager course
- MSI awareness workshops in country and online
- AtoN maintenance workshops

#### **Result 3:Infrastructure**

- Solomon Islands
- Vanuatu
- Kiribati





## IALA level 1 manager course 2022





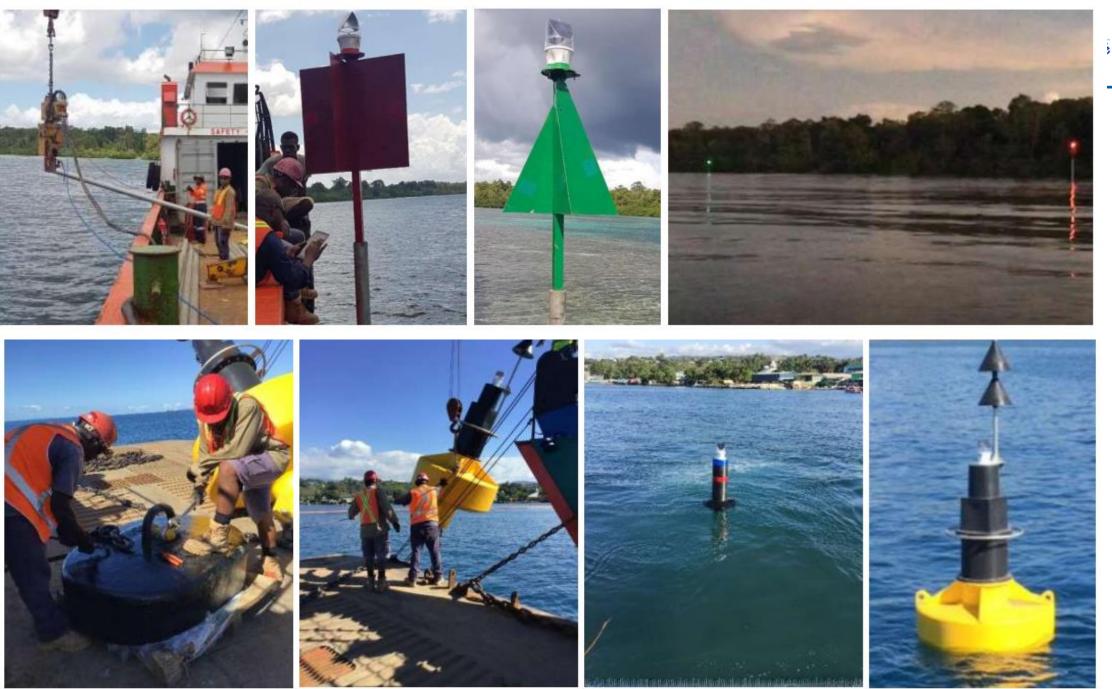


## **Capacity building**

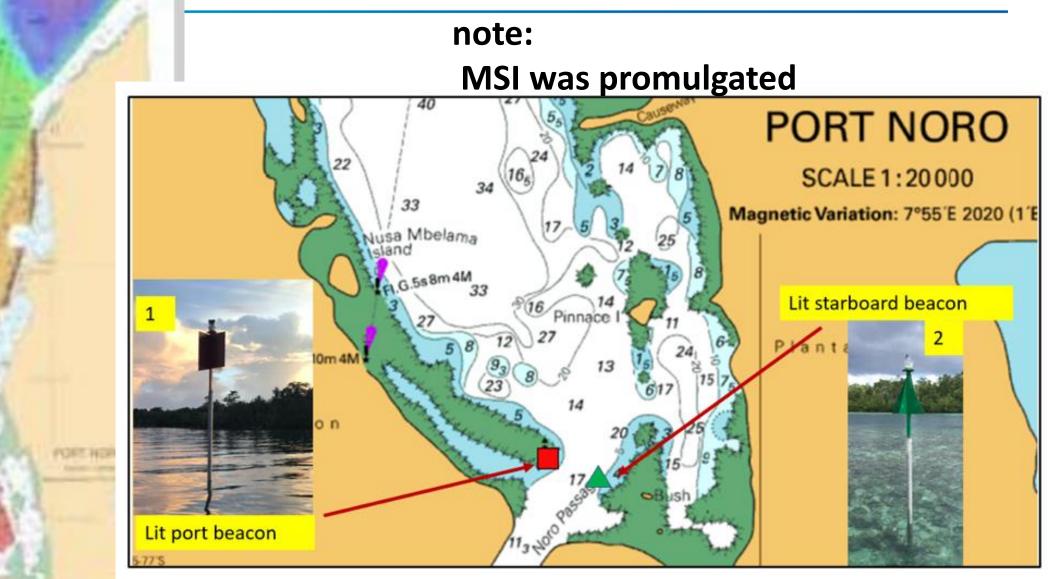




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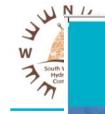




## Infrastructure, Solomon Islands







#### SAFE AND SUSTAINABLE MARITIME TRANSPORT

Pacific Community Communauté du Pacifique acific ommunity ommunauté v Pacifique



spent on hydrography returns 91 VATU

The cost benefit of complying with international maritime regulations saves money, reduces risk and increases economic opportunities for Pacific countries.

Strengthening navigation services saves money and reduces risk to communities.

SCAN ME





10 Marine risk assessments in the Pacific found the investment of:

€5.9 MILLION

IN SAFETY AND MARITIME GOVERNANCE, SAVES

## €390 MILLION

IN MARITIME INCIDENTS. Investment in meeting international regulations for shipping routes improves safety and increases economic benefits.







Multibeam image of SS President Caolidge an American luxury ocean liner that served as a troopship from December 1941 until October 1942, when she was sunk by mines in Espiritu, Sante in Vanuatu. She is now oppular tourist attraction and dive site.



Transitioning away from fossil fuel in maritime transport saves money and protects our environment.

In Vanuatu, the Tiwi Trader Solar-PV system reduced operating costs at anchor by 32% per year and reduced emissions by 226 tonnes.

This saved the operator:

4.7 MILLION

€38 THOUSAND

SCAN ME







# SPC Geodetic Unit

#### Andrick Lal, Marika Kalouniviti, Rusiate Turuva, Veenil Rattan















Australian Government







Bureau of Meteorology

Geoscience Australia



### Pacific Sea Level & Geodetic Monitoring Stations

Australian Government Bureau of Meteorology Australian Government

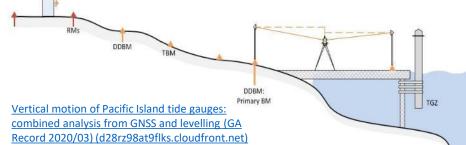
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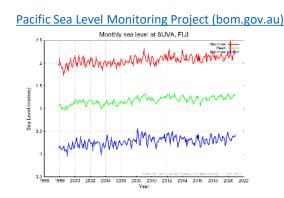
**Tide Gauge Station** 

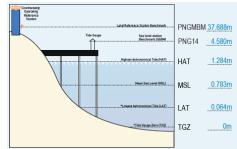
**GNSS COR Station** 

Positioning GNSS Network Map









https://ecat.ga.gov.au/geonetwork/srv/eng/ catalog.search#/metadata/146976

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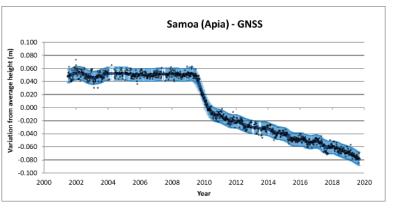
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<u>GNSS Network Portal (ga.gov.au)</u>

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## LiDAR Projects – Tonga and Vanuatu

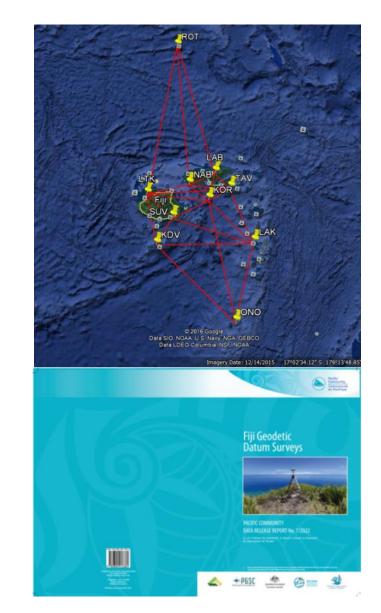
- Geodetic Surveys
  - Tonga ('Eua, Niuatoputapu and Vava'u)
  - Vanuatu (Efate, Malekula and Tanna)
- Geodetic Data Processing & Analysis
- Vertical Reference Frame
- Ground Truthing for LiDAR Surveys (Topo)





## **Plenary Session June 2022**

- Mid term Review of PGSC Strategy (2017 2027)
- Pacific Geospatial Women Network
- PGSC Working Groups (Positioning/Geospatial Policy& Data management/Capacity Building)
- **o PGSC Support and the Partnership Desk**
- UN-GGIM Integrated Geospatial Information Framework Country Action Plan
  - Fiji and Tonga
- Memberships; New Caledonia and French Polynesia



# Pacific Geospatial and Surveying Council Communications & Community



Pacific Geospatial and Surveying Council @ Public group - 1.3K members

#### https://www.facebook.com/groups/3998884766792177/

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Meizyanne Hicks shared a post. November 16 at 931 PM - @ Promoting World GIS Day and the Geospatial field on Fiji TV this morning



Ministry of Lands and Mineral Resources November 9 at 8:15 AM - @

Leading up to the 2022 GIS Day on 16th November, the Geospatial Information Management team attended the breakfast show that aired live this morning. The theme ... See more

Celine Becker, Jeff Aquilina and 42 others		2 Shares	
🖒 Like	Comment	A Share	



Home > Updates from SPC > Web Stories

Mapping our Pacific Geospatial Future

Suva 21 June 2022 💟 💼 😭



Imagine a world without maps. It's hard to do. Humans are born map-makers, instinctively looking for landmarks, making sense of patterns, and forming connections when we venture beyond our known environment.

For this reason, geospatial science may be one of the most important fields of study you have ever heard of. Geospatial information is location information. At its simplest, this can be topographical information found on a map. But you can also add in layers of location-tagged data, to show changes or trends, for example, in land use, population density, vaccine distribution, or coral reef health over time.

"If you look at Fijl's national development plan, there are so many areas where geospatial information comes in. There are calls for hazard maps, for strengthening land administration," says HS Meizyanne Hicks, Fijl's Director, Geospatial and vice-chair of the Pacific Geospatial and Surveying Council."In this way, the Integrated Geospatial Information Framework (IGIF) supports the implementation of Fijl's national development plan."

What is the IGIF?



# **Collaboration Efforts**











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**Australian Government Department of Foreign Affairs and Trade** 



Climate and Oceans Support Program in the Pacific



Australian Government



**Australian Government** 

**Geoscience** Australia







Land Information

Survey and Spatial New Zealand

**New Zealand** 

Toitū te whenua





NOAA





United Kingdom Hydrographic Office



# Climate and Oceans Support Program in the Pacific

Home Products & Services Traditional Knowledge Contact Us

## Email: <a href="mailto:zulfikarb@spc.int">zulfikarb@spc.int</a>

Bureau of Meteorology

The Australian Government is supporting Pacific Island countries to adapt to and mitigate the impacts of climate variability. A major part of Australia's assistance is the Climate and Oceans Support Program in the Pacific (COSPPac).

# WOMEN OCEAN

# COSPPac 2023 Tide Calendar 2023 Tide Calendar

• Cover Photo Theme

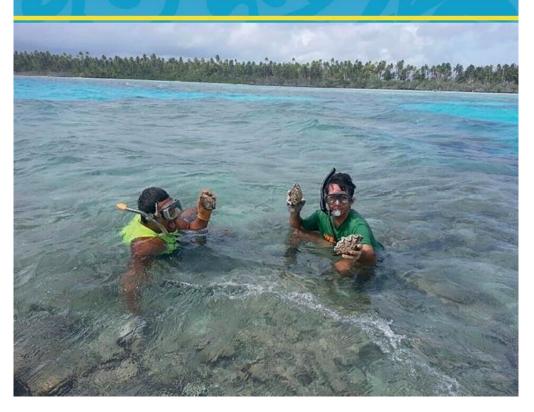
Moving foreword each year the calendar will be based on a theme

- Fact Sheet Women in Ocean
- Fact Sheet Pacific Tides App

#### Cook Islands - Penrhyn 2023 Tide Predictions Calendar

Climate and Oceans Support Program in the Pacific

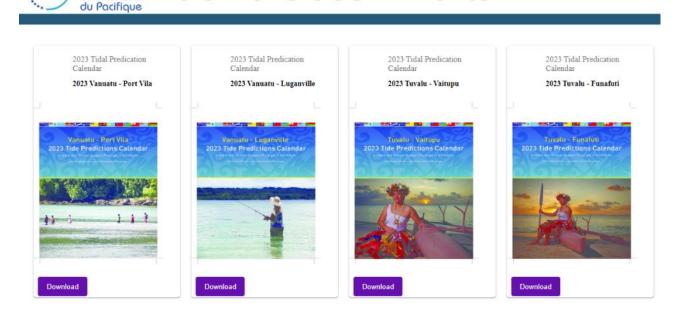
A Pacific Islands Program supported by the Australian Government



#### 2023 Tide Calendar

- Calendar for 25 locations
- New Location added: Penrhyn Cook Islands
- Digital copies available through the Pacific Ocean Portal

Community Pacific Ocean Portal





#### What is the Pacific Tides App?

A simple way to access reliable tide and mean phase forecasts for Pacific Island countries from your mobile phone.



#### How do I download the App on my mobile device?

The app is free to download for iPhone or Android devices. Simply, search "Pacific Tides" in the Apple App Store or Gongle Play Store.

#### What information is on the Pacific Tides App?

The same tide and moon phase predictions in the annual calendars developed under the Climate and Oceans Support Program for the Pacific (COSPPac) are now available in your pocket on the App.

#### Do I need internet to access the App?

Initially you will need an internet connection (wifi or cellular data) to download the predictions for any station. Once downloaded, you can seamlessly view forecasts offline

#### How many (days/months/years) of data can we find on the App?

The opp holds an unlimited amount of data. The Oridview feature allows the user to view all predicted data stored ar their device for a given station. Users can download more data using the Downloader.

#### Who can use this App?

The app is designed for coastal communities in the Pacific lincluding fishing groups, tourism providers, the shipping and maritime sector, divers, surfers and other ocean going people in mind.



#### More Information

understand and apply climate, ocean, and sea level information to strengthen climate and disaster resilience. welcome your feedback, bug reports, and suggestions! Please contact us: cosppacespc.int

#### **Pacific Tides App** Updated with 2023 tides and moon phases



#### In-Country maintenance of tide gauges

- The six monthly infrastructure maintenance visit by local NMS teams are now followed by a video call with the NMS, BoM and SPC technical staff.
- Action items are listed and guidance to conduct further refurbishment work locally is provided to NMS technician.
- From the success of the Sea Level network, we are now developing a six monthly infrastructure maintenance schedule for the local LSD staff of the GNSS network. This will also be followed by a video call with the LSD, GA and SPC Geodetic staff.





#### Climate Change in the Pacific 2022:

Historical and Recent Variability, Extremes and Change



Launched recently and includes analysis of datasets from the tide gauges looking at historical trends.

# Online via https://bit.ly/3JpcIWI

## Regional Tides Training 6<sup>th</sup> to 10<sup>th</sup> March 2023, Nadi, Fiji

#### **Training Objectives**

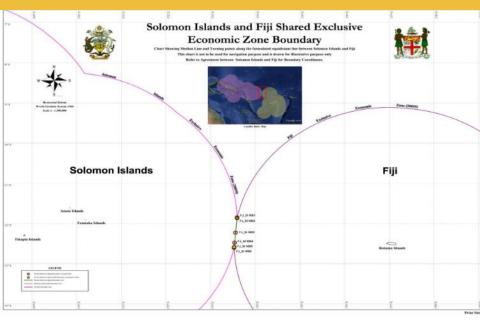
- Increase participant's awareness and understanding of the fundamentals of tides, how tides are generated, instrumentation to record tides, data analysis and interpretation
- Increase participant's awareness on Geodesy and how to establish survey control and calibrate newly installed tide gauges
- Develop skills of participants in installing temporary tide gauges and use survey equipment
- Strengthen understanding of sea level its historical trends and future projections and impact of climate change.
- Develop skills of participants in acquiring baseline datasets required for undertaking post disaster assessments
- Strengthen participants understanding on establishing and validating local datum, controls, and levels to support baseline acquisition survey (bathymetry and topography survey such as LiDAR surveys) and support increased risk knowledge.
- Increase participants awareness on the use of sea level datasets for coastal infrastructure development

#### **Maritime boundaries work: Technical Progress**





#### Solomon Islands and Fiji (Jul 2022)







*Fiji and Solomon Islands Sign Maritime Boundary Agreement* 



The Pacific Maritime Boundaries Programme supports Pacific Island Countries and Territories to secure the rights and responsibilities over their ocean space, in accordance with the UN Convention of the Sea (UNCLOS).

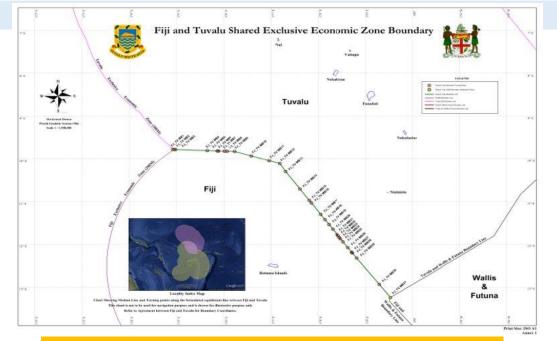
Source: the Pacific Community Tuesday, 12 July 2022 09:51 AM



The Governments of Fiji and the Solomon Islands have signed an agreement on their shared maritime boundary, marking the first boundary treaty to be signed in the Pacific region in 6 years.

## **Technical Progress**





#### Tuvalu and Fiji (Jul 2022)

#### with <u>Tuvalu</u>

Agreement between the Government of Fiji and the Government of Tuvalu concerning their maritime boundaries, 17 October 2014 (entry into force: 17 October 2014; registration #: I-56867; registration date: 1 August 2021; link to UNTS)

Exchange of notes constituting an agreement between the Government of Fiji and the Government of Tuvalu amending Article 1 of the Agreement between the Government of Fiji and the Government of Tuvalu concerning their maritime boundaries, 4 April 2019 and 26 October 2020 (entry into force: 26 October 2020; registration #: A-56867; registration date: 1 August 2021; link to UNTS)

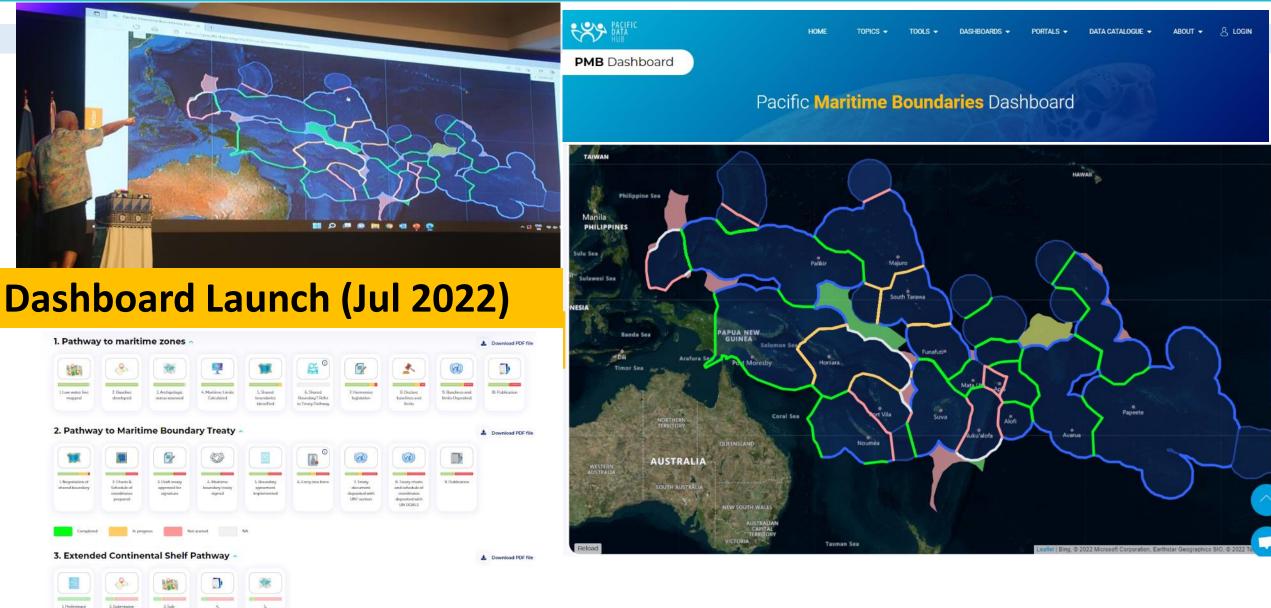


## ECS: South Fiji Basin Handover (Jul 2022)

## **Data and Information Management**

lodged with





# **Capacity Building & National Workshops**



#### **GEOCAP and ECS Training**







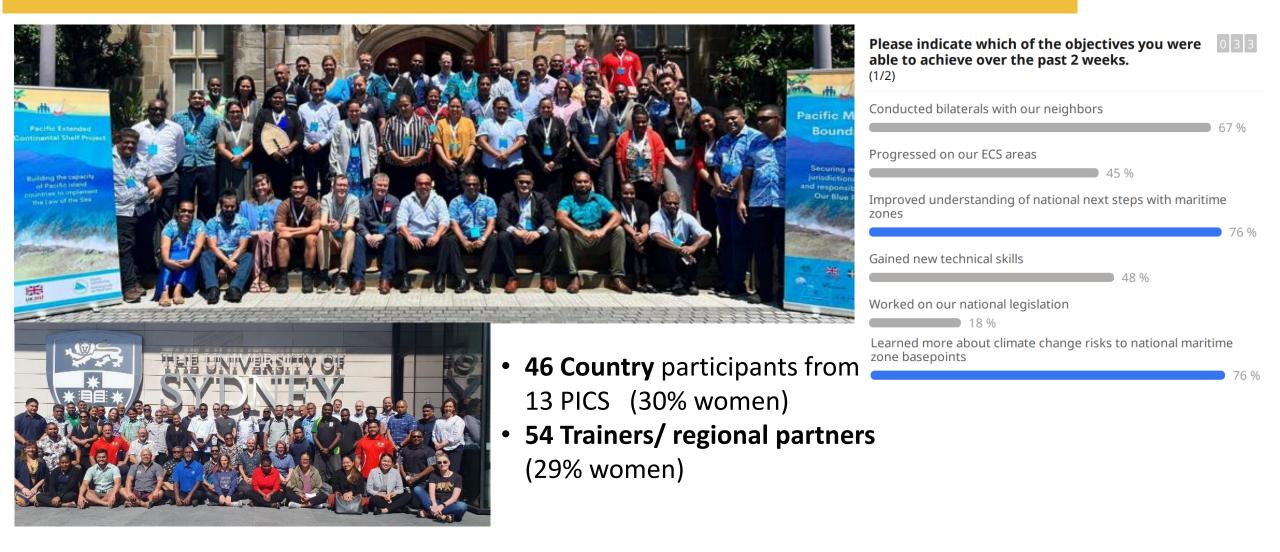


## Solomons (Sept 2022)

# **Capacity Building & National Workshops**



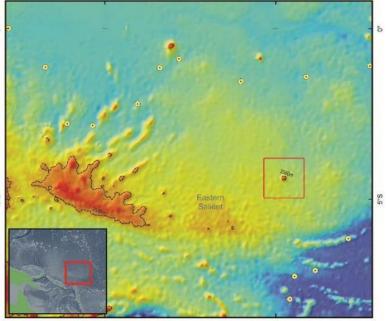
#### 21<sup>st</sup> Maritime Boundaries Session & RBBP Experts Meeting (Dec 2022)

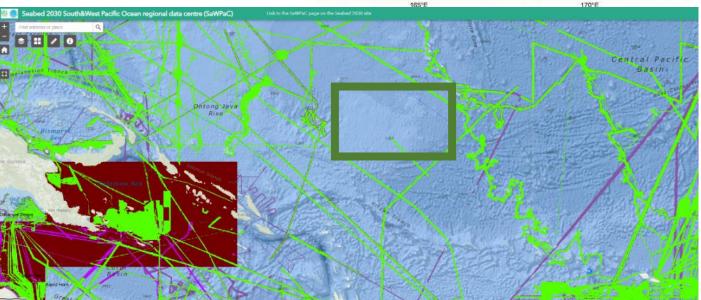


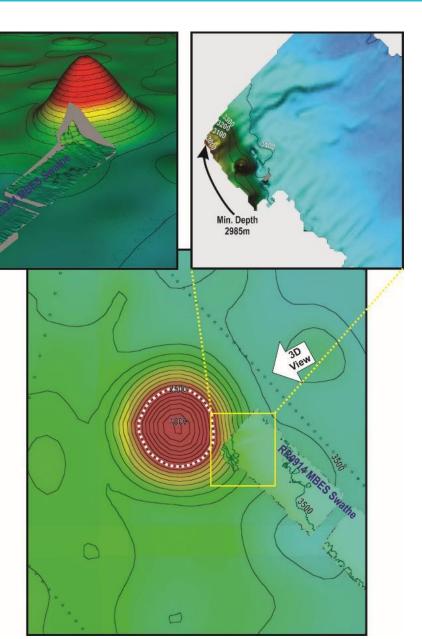
# Bathymetry, seismic data needs



- Ontong Java Plateau
- 2500 m isobath data acquisition



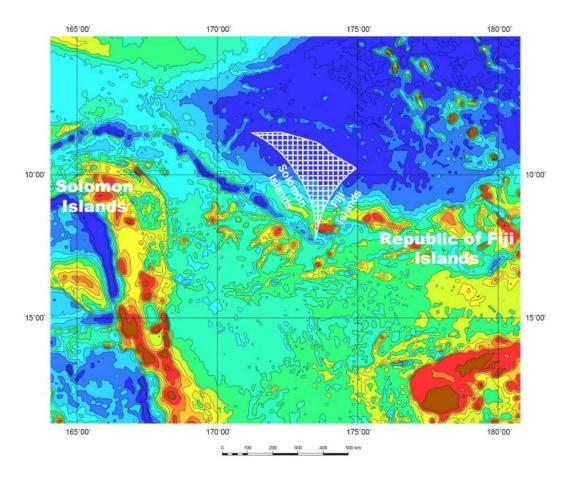


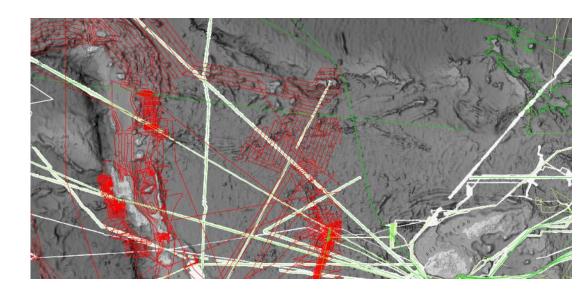


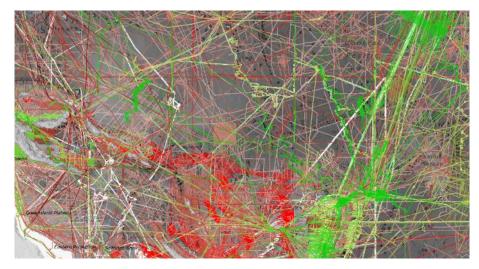
## Bathymetry, seismic data needs...cont



#### Charlotte Bank – Ellice Rise



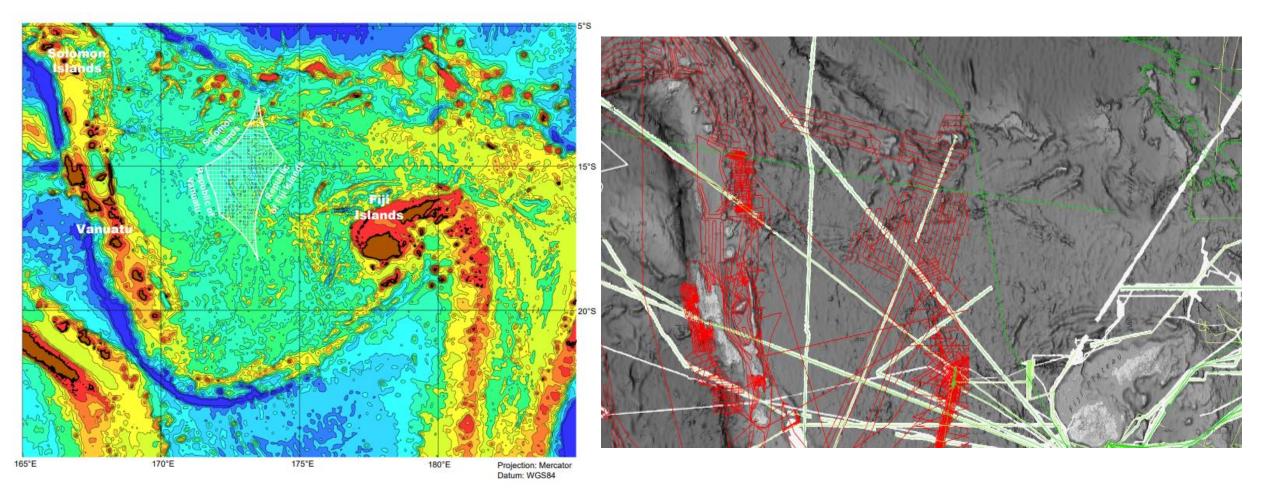




## Bathymetry, seismic data needs...cont



#### North Fiji Basin



## **New Projects**

#### New

Integrated Ocean Management Programme

- UN Ocean Decade endorsed programme
- EU seed-funding
- 1.5 million EUR
- 3 years



## Palau Marine Spatial Planning Project

- US Dept of State
- 5.8 million USD
- 3 years











Pacific Community Communauté du Pacifique

#### Pacific Data Hub (PDH) | The Pacific Community (spc.int)

#### Pacific Data Hub (PDH)





# Opportunities ahead



Pacific Community Communauté du Pacifique



The Science We Need For The Ocean We Want

2021 United Nations Decade of Ocean Science for Sustainable Development



A global framework to support efforts to reverse the cycle of decline in Ocean health & create improved conditions for sustainable development



'PCCOS provides a platform for coordination and integration of ocean science, knowledge and information in the Pacific and for partnerships with international and regional stakeholders

PCCOS aims to help Pacific Island governments and communities **easily access the ocean science and expertise they need** to make informed decisions and to protect and sustainably manage ocean resources.





Pacific Communitu Communauté du Pacifiaue

#### **Opportunities ahead ...**





FAMELOWS.



#### SPC/PCCOS Research Vessel Project



The Fisheries, Aquaculture and Marine Ecosystems (FAME) Division of SPC are investigating the potential to design and construct a specific research platform for the Pacific region to support:

> The development of regional scientific advice

 To reinforce the region's capabilities to manage its natural resources

 Potential for vessel usage sharing by regional scientific organisations

- A pre-assessment study in 2017
- A thorough feasibility study in 2020
- **Project endorsement during Heads of** Fisheries (HoF-13) meeting in 2021
- Unanimous regional support confirmed during HoF-14 in 2022
- **Recruitment (RFP currently in progress)** of a naval architect to realize a functionality study (Apr-Jun 2023) and write technical ToRs to be included in a call-for-tenders directed to suitable shipyards
- Finance consultation in September 2023
- Shipyard selection in December 2023
- Start vessel construction in 2024







**Note** SPC activities under the Oceans and Maritime Programme and its role and continued involvement in the Maritime Sector

**Acknowledge** the importance of a safe, green, accessible, and efficient maritime sector under the 2050 Strategy for the Blue Pacific Continent

**Agree** for a consistent and coordinated approach of safety of navigation in the Pacific between countries and interested partners and to engage with IMO through Pacific position papers and formal requests for support



# Thank You



