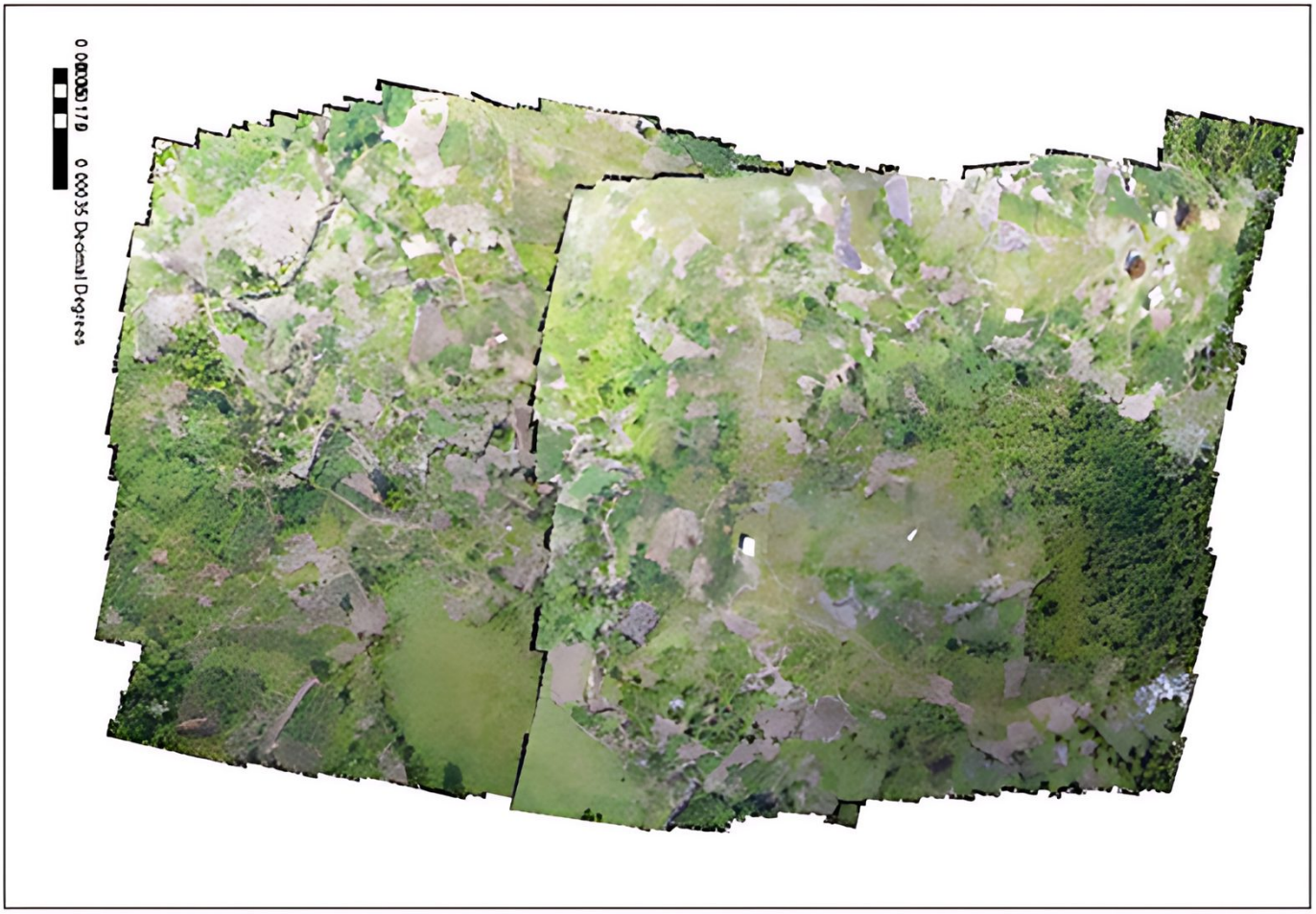








PACIFIC ISLANDS GIS & RS NEWSLETTER

Issue 2 - 2026 ISSN: 1562-4250

Pacific GIS and Remote Sensing Council

PACIFIC ISLANDS GIS&RS NEWSLETTER

Dear Reader,

The Pacific Islands GIS & RS Newsletter publishes articles related to Geographic Information System (GIS) and Remote Sensing (RS) applications in Pacific Island Countries. The newsletter also provides updates on applicable data and technology for the Pacific.

This newsletter has been published for more than 30 years as one of the very few publications that focuses on spatial data applications in Pacific Island Countries. This issue not only documents current developments it also reports on historical spatial applications of RS & GIS (see Articles 2 and 7). This is one reason to have a newsletter and not only social media. This focus will be continued in the next issue, which will report on additional comprehensive mangrove mapping activities in Fiji carried out as visual delineation at 1:10,000 scale level. This was before the semi-automatic approach, presented in Article 1.

With its own ISSN number, the newsletter provides a platform for regional GIS & RS users to publish and document ideas and developments in terms of data, software and methods for Pacific applications. The newsletter and all previous issues are available for download from the PGRSC website: **https://pgrsc.org/newsletter/**.

We certainly wish you an enjoyable read through these stories and invite you to submit your own articles and notable contributions relevant to GIS and Remote Sensing in the Pacific. The Newsletter Team can assist with editing articles and is dedicated to supporting Pacific Island users in sharing their work.

Cover Image: Orthogonal image of a very hilly part of Honiara created automatically from a drone photo mosaic. From left to right below: a) The GIS operating in the Fiji Forestry Department 1991, b) Fieldwork is an integrated part of forestry remote sensing; here, measurements of palm heights, c) Using a ZEISS Visopret the Forestry Department created digital terrain models for the logging session to indicate areas of more than 32-degree slope, where logging is banned.

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Mangrove Mapping in Fiji: A semi-automatic approach

Mangrove trees located in Lami, Suva. (© Shyam Lodhia)

Technical Architecture and Methodological Frameworks for Earth Observation-Based Mangrove Monitoring in Pacific Island Fisheries Ecosystems

By Elenoa Biukoto, Elenoa Cibiwasawasa, Fayth Tikotani, Jesse Anderson, Maivunijale Waqa, Nick Metherall, Shyam Lodhia, Sachindra Singh, Vasemaca Nakaurawa

Mangrove ecosystems provide services to Pacific Island Countries and Territories (PICTs), acting as nursery habitats for marine life, buffers against coastal erosion, and significant carbon sinks. Monitoring these intertidal environments using Earth Observation (EO) satellite data across small island states presents clear technical challenges—including heavy cloud cover, extreme tidal shifts, spatial fragmentation, and a lack of local ground-truth data.

This paper details the technical architecture and remote sensing methodologies developed by **Digital Earth Pacific (DE Pacific)**, an initiative led by the Pacific Community (SPC). We examine two main approaches for regional mangrove monitoring:

1. **The Global Mangrove Watch (GMW) Baseline Supervised Model (dep-mangroves)**, which uses random forest machine learning models calibrated from historical GMW v3 baselines to classify canopy density across Sentinel-2 and Landsat time series.
2. **The Automatic Mangrove Map and Index (AMMI) Framework (dep-mangroves-ammi)**, an index-driven workflow combining Near-Infrared (NIR) and Short-Wave Infrared (SWIR) spectral bands, water-masking operations, and Digital Elevation Model (DEM) height filtering.

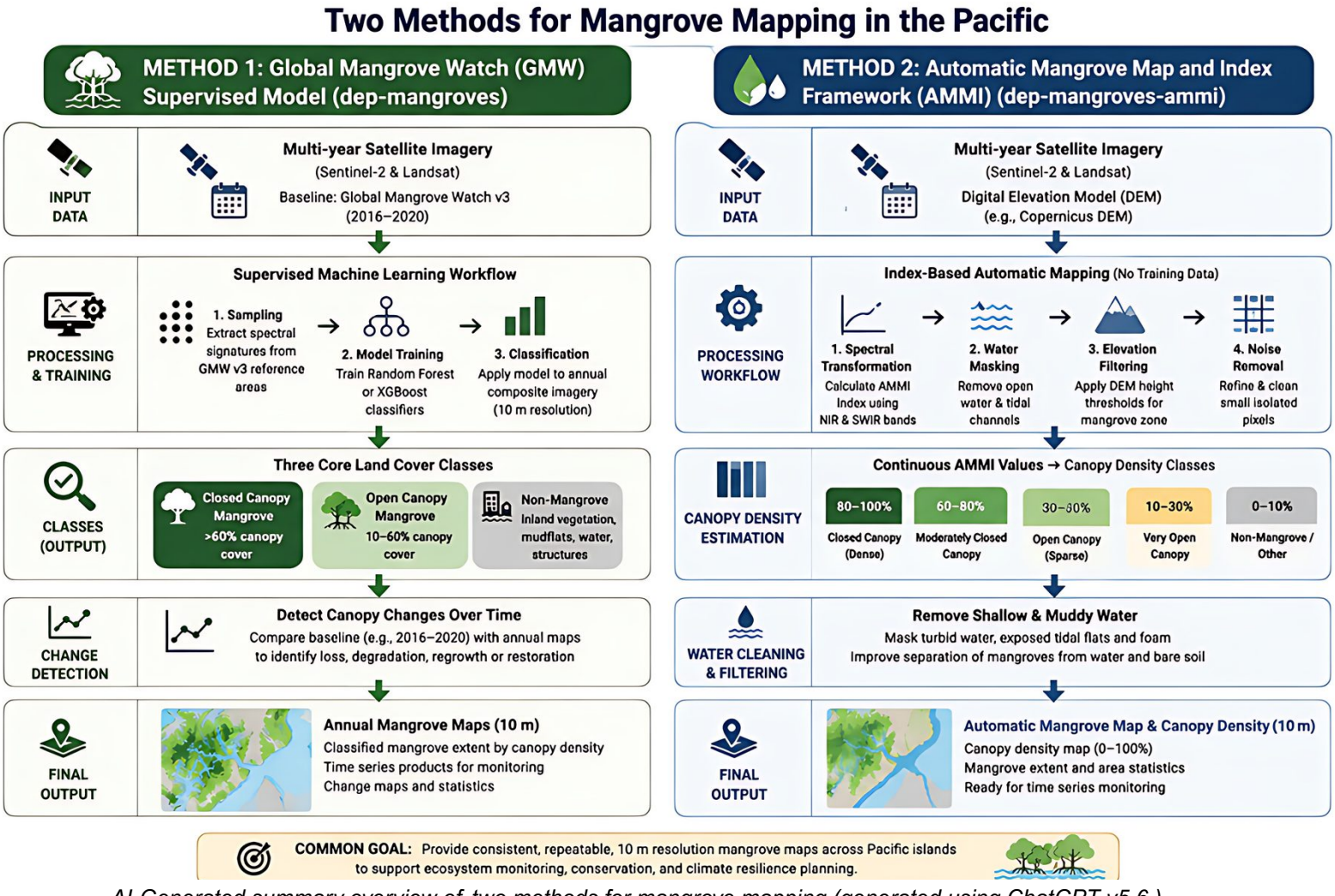
To support environmental management, **Digital Earth Pacific (DE Pacific)** provides standardized, cloud-native satellite data processing across thousands of Pacific islands within the SPC member country EEZ areas. Traditional manual mapping is a painstaking effort across the area of the Pacific Ocean. Because of this, DE Pacific builds on Open Data Cube (ODC) and Spatio Temporal Asset Catalog (STAC) standards to run automated, repeatable mangrove mapping at a 10-meter spatial resolution.

Platform Architecture & Data Pipeline

Both mapping methods rely on a shared cloud data source designed to process multi-year satellite imagery over large areas (as shown in the figure below), including regions across the International Date Line (180th Meridian).

STAC Queries & Handling the Anti-Meridian

The platform retrieves satellite scenes using pystac_client to query catalogues like the Microsoft Planetary Computer and Element 84. Because the Pacific region crosses the International Date Line (+180° / -180° longitude), standard bounding box searches may break or wrap around incorrectly. DE Pacific avoids this issue by using custom search_across_180() functions wrapped around odc-stac and Xarray, ensuring spatial queries work smoothly across split UTM zones (such as UTM 59S and UTM 60S).



AI-Generated summary overview of two methods for mangrove mapping (generated using ChatGPT v5.6.).

Method 1: Global Mangrove Watch (GMW) Supervised Model (dep-mangroves)

The first method (dep-mangroves) uses a supervised Machine Learning (ML) approach. It uses the Global Mangrove Watch Version 3 (GMW v3) dataset as a starting baseline to train models for local island geography.

Training and Classification Strategy
Global maps like GMW v3 show where mangroves exist overall, but they don't always capture small-scale canopy changes over time. The dep-mangroves workflow bridges this gap:

1. Sampling: Historical GMW v3 map boundaries serve as reference areas. The system extracts light reflectance values (spectral signatures) from these areas to train Random Forest or XGBoost classifiers.
2. Category Mapping: The model groups land cover into three core classes:
    a. Closed Canopy Mangrove: Dense, thick forest cover (>60% canopy cover).
    b. Open Canopy Mangrove: Lighter or sparse forest cover, fringe zones, or damaged areas (10–60% canopy cover).
    c. Non-Mangrove: Surrounding inland trees, mudflats, ocean water, and coastal structures.

Detecting Canopy Changes
By training the model on a baseline period (e.g., 2016–2020) and running it on new annual composite imagery, dep-mangroves tracks subtle canopy shifts over time:

$$\triangle C = C_{year_2} - C_{year_1}$$

This helps managers spot both clear loss (such as clearing for development) and gradual changes (such as damage from major storms or regrowth from restoration projects).

Method 2: Automatic Mangrove Map and Index Framework (dep-mangroves-ammi)

While the supervised method relies on training labels, the **Automatic Mangrove Map and Index (AMMI)** method (dep-mangroves-ammi) works automatically without training data. It uses band calculations, water filtering, and elevation limits to isolate mangrove pixels.

Spectral Transformations (AMMI Index)
The main driver of this approach is the AMMI, which is an index value that highlights how mangrove leaves reflect Near-Infrared (NIR) light and absorb Short-Wave Infrared (SWIR) light compared to surrounding soil and water:

$$AMMI = f\left(\rho_{NIR'}\rho_{SWIR'}\rho_{RedEdge'}\rho_{Green}\right)$$

By combining NIR leaf reflectance with SWIR moisture absorption, the index brightens mangrove trees while darkening regular land plants and muddy water.

Grouping Canopy Density Values
Instead of producing a simple yes/no mask, the algorithm splits continuous AMMI values into estimated canopy density percentages.

Water Cleaning and Filtering
Shallow, muddy water near the shore can sometimes look like mangroves on satellite images. To fix this, the pipeline calculates two common water indices—the Normalized Difference Water Index (NDWI) and the Modified NDWI (MNDWI):

$$NDWI = \frac{\rho_{Green} - \rho_{NIR}}{\rho_{Green} + \rho_{NIR}}$$

$$MNDWI = \frac{\rho_{Green} - \rho_{SWIR}}{\rho_{Green} + \rho_{SWIR}}$$

Where *(NDWI + MNDWI) < 0*, the area is tagged as open water. Spatial cleaning functions are then run to smooth out pixel noise along shoreline edges.

Elevation Limits (DEM Masking)
Dense inland rainforests high up on island hills can occasionally show similar light signatures to mangroves. The dep-mangroves-ammi pipeline uses 30m Digital Elevation Model (DEM) data to enforce a simple rule: mangroves only grow near ocean level.

$$ValidMangrove = Pixel_{AMMI}$$

Where Elevation ≤ 30m (or 50m for PNG).

Any pixel above this height threshold is filtered out, removing false positives on inland slopes. PNG was a special case where there were some mangroves at higher elevations, thus requiring a country-specific threshold.

Method Comparison

Both methods bring specific strengths to the Digital Earth Pacific platform:

Feature	**Method 1: dep-mangroves (Supervised Baseline)**	**Method 2: dep-mangroves-ammi (Index & Filters)**
Primary Mechanism	Machine learning (random forest)	Spectral band math and rules
Training Needs	Requires GMW Version 3 baseline reference maps	No training data needed
Computational Overhead	Moderate to High (feature extraction and machine learning steps)	Low to Moderate (direct array calculations)
Inland Elevation Handling	Learned through machine learning feature patterns	Uses explicit height rules (Z ≤ 30m)
Noise Cleaning	Managed by model decision boundaries	Uses 5 X 5 water filters and index masks
Main Output	Categorical extent and density classes (closed vs. open)	Stratified canopy density percentage map (% cover)

System Architecture and Cloud Deployment

The software powering both pipelines is built for cloud deployment on Amazon Web Services (AWS S3 storage in the us-west-2 region).

- Dask & xarray Processing: Heavy processing tasks are split into manageable 2048×2048 pixel chunks. This lets computations spread evenly across cloud servers.
- Standard Data Formats: Output files are saved as Cloud-Optimized GeoTIFFs (COGs) with STAC metadata, making them quick to display or query on web maps.
- Fisheries Platform Integration: Map layers feed directly into regional marine planning tools, helping officials compare mangrove health against local fish catch records and river runoff patterns.

Practical Value for Island Fisheries Management

By combining automated machine learning with direct index processing, Digital Earth Pacific provides practical tools for environmental governance:

1. Protecting Inshore Water Quality: Tracking mangrove extent helps map natural filtering zones that trap runoff from land, protecting nearby coral reefs and seagrass beds.
2. Storm Impact Assessments: After severe tropical storms, these automated workflows can generate damage maps within days to guide local recovery efforts.
3. Data for Coastal Planning: Open, repeatable satellite workflows give Pacific Island nations low-cost monitoring tools to back up marine protection policies and climate adaptation plans.

Conclusion

The methodologies implemented in dep-mangroves and dep-mangroves-ammi offer a clear, scalable approach to satellite monitoring across the Pacific. By pairing global machine learning baselines with automated index transformations, Digital Earth Pacific gives regional leaders reliable data to protect coastal ecosystems to local food security and fisheries.

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[2] dep-mangroves Repository: [github.com/digitalearthpacific/dep-mangroves] (https://github.com/digitalearthpacific/dep-mangroves)
[3] dep-mangroves-ammi Repository: [github.com/digitalearthpacific/dep-mangroves-ammi] (https://github.com/digitalearthpacific/dep-mangroves-ammi)
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Image Credit © Whites Aviation

First Map Production in Fiji Using Aerial Photographs from the New Zealand Air Force During and After WWII

by Robert Smith

Out of interest, I Googled the title of this article to see what showed up. My first hit came up with a paper that looked at historical maps to provide insight into a century and a half of habitat change in Fijian coasts (Lawson et al., 2021). The subject areas were Suva and Savusavu. In this paper, they refer to a cartographic map of Suva dated 1945, published at a scale of 1:12672. So where did the data come from to produce this map?

In the late 1930s, a group of like-minded people formed the Fiji Society of Science and Industry. On the evening of April 20th, 1938, the Chairman, Rev. W. R. Steadman, announced that His Excellency the Governor had consented to become patron of this Society. Members regularly presented papers on subjects related to their areas of expertise, and these were subsequently compiled and published under the authority of the Society's Council. These presentations were then collated and produced under the Authority of the Council of the Fiji Society. It is in this publication record that we find a particularly valuable account. On June 14, 1965, a gentleman by the name of E. Walker presented a paper to the Society on the application of air survey techniques and photography in Fiji. The paper was presented, in part, to justify the adoption of an air survey camera as a formal survey instrument for the Fiji Government Lands Department. In it, Walker provided a detailed history of photography used in surveys up to 1965 in Fiji. Notably, the first recorded use of photography for survey purposes was in 1911 during the primary triangulation of Viti Levu.

The first systematic aerial survey for mapping purposes in Fiji arose from a conversation in May 1944 between Governor Sir Philip Mitchell and members of the New Zealand Government. They commissioned New Zealand Aerial Mapping Limited to take aerial photographs of the Suva Peninsula. The survey scale used was one suitable to produce maps, at a scale of 16 chains to an inch. Ground control points — trig stations of known coordinates and elevation — were cleared and distinctively marked across the survey areas. The survey was subsequently extended to include Lautoka, Nausori, and a single flight line over the gold mining areas of Vatukoula and Navilawa (now the location of Lion One Metals) and Vuda.

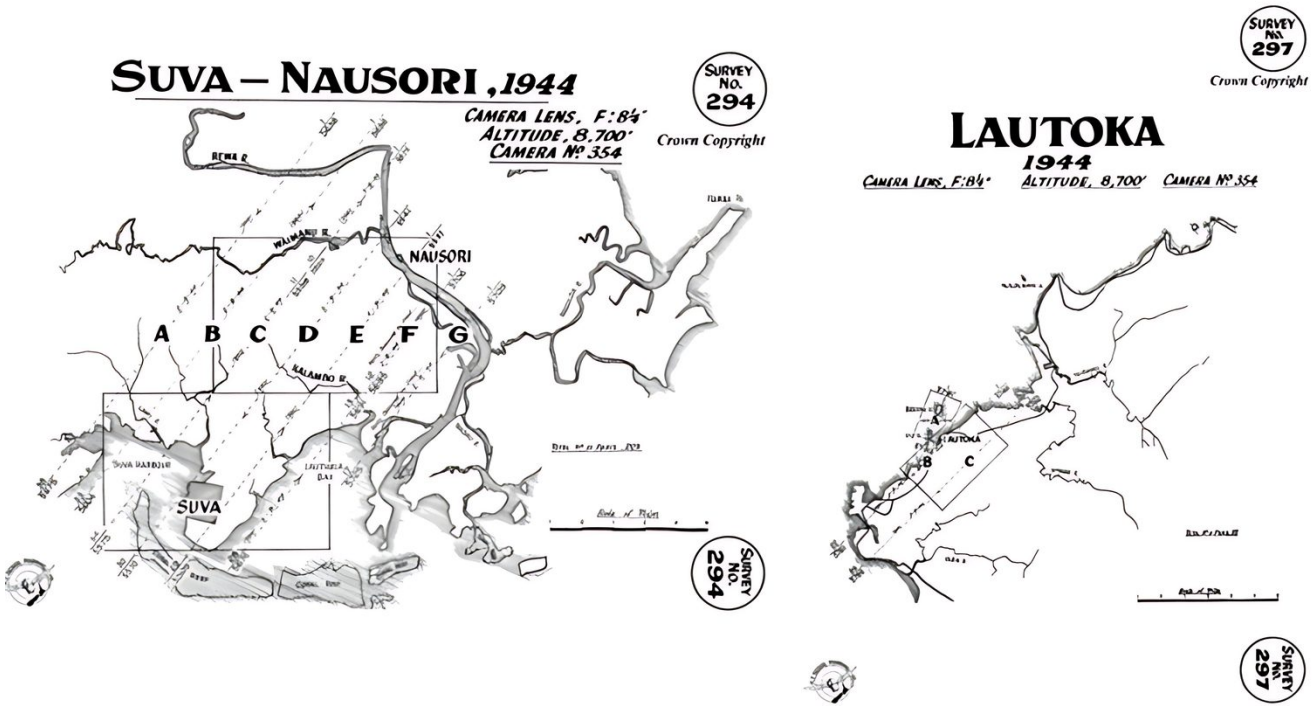


Figure 1. Track plot detail for the 1944 aerial photography for Suva, Lautoka, and Vuda.

The survey used an Eagle MK IX camera fitted with an 8.25-inch lens, flown at 8,700 feet to achieve the required mapping scale of 16 chains to the inch. Flying operations were conducted between July 23 and August 9, 1944, before the aircraft returned to New Zealand. Initially overlooked, the aerial coverage for Suva extended further west than the maps ultimately produced. This is geographically significant, as the aerial photography captured the geomorphology of the barrier and fringing reef of Suva as it existed *before* the earthquake of 1953, which generated a tsunami that had a significant impact on Suva and the surrounding environments. Figure 1 shows the track plots of the aerial surveys for Suva, Lautoka, and Vuda, illustrating the full extent of coverage. Maps of Suva and Nausori were produced from the aerial photography, providing topographic maps to be used as a baseline to track environmental and urban change over the past decades (Figure 2).

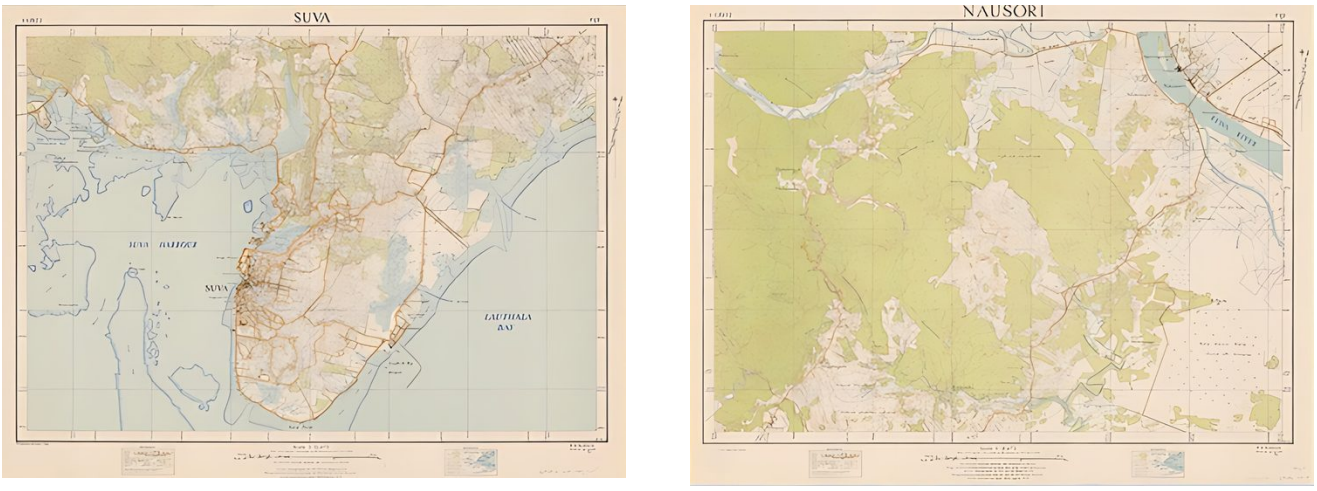


Figure 2. From the 1944 aerial photography, two maps were produced: one for Suva and one for Nausori.

Buried within the aerial photography from these surveys is a wealth of information, detailing historic geomorphology and perhaps insight on development challenges faced today. Several examples are presented below.

Land use: Figure 3 shows an area in Lami where there was highly productive agricultural land in 1944. However, the same area today is barren and largely unproductive. Why?

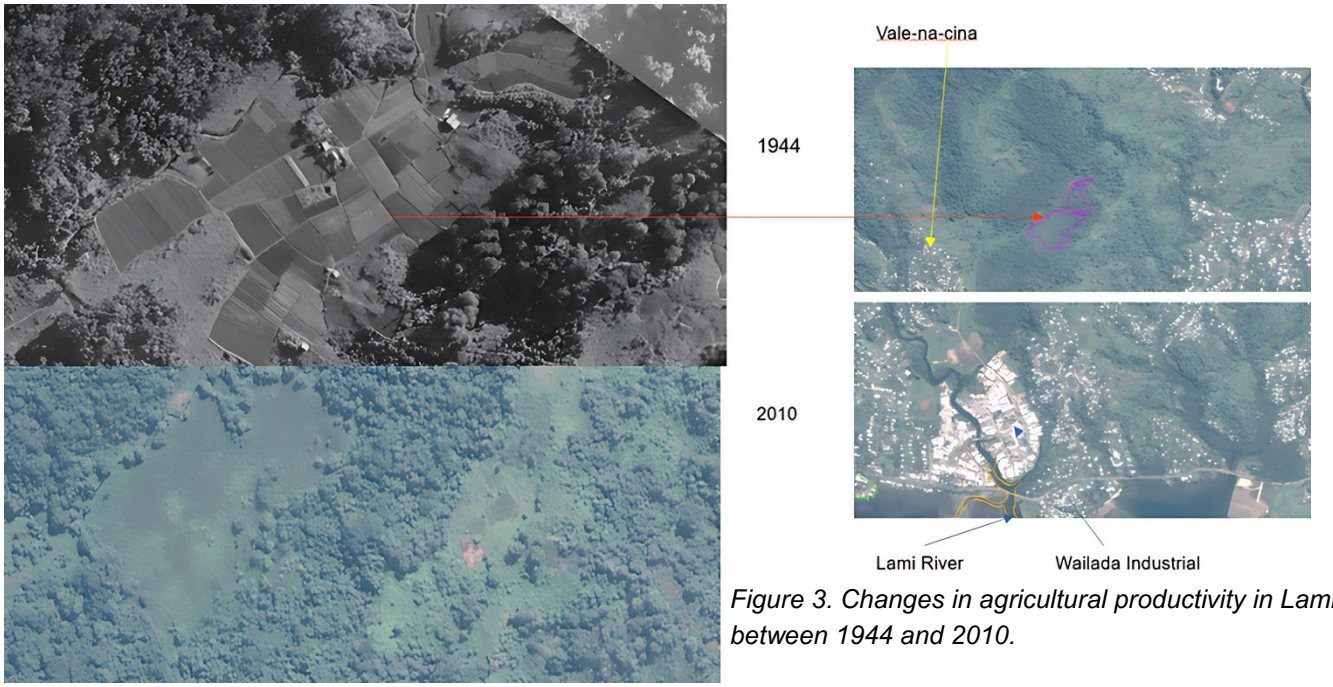


Figure 3. Changes in agricultural productivity in Lami between 1944 and 2010.

Mangrove habitats in the Suva Peninsula: Another important aspect from this aerial photography is the reclamation of mangroves. In Figure 4, a major catchment area for floodwaters flowing down from the Flagstaff ridge, through Nasese and Domain, was lined by mangroves. This area has since been reclaimed, removing important buffer zones and flood attenuation areas. The loss of this drainage corridor can be considered an environmental oversight with implications for flood management.

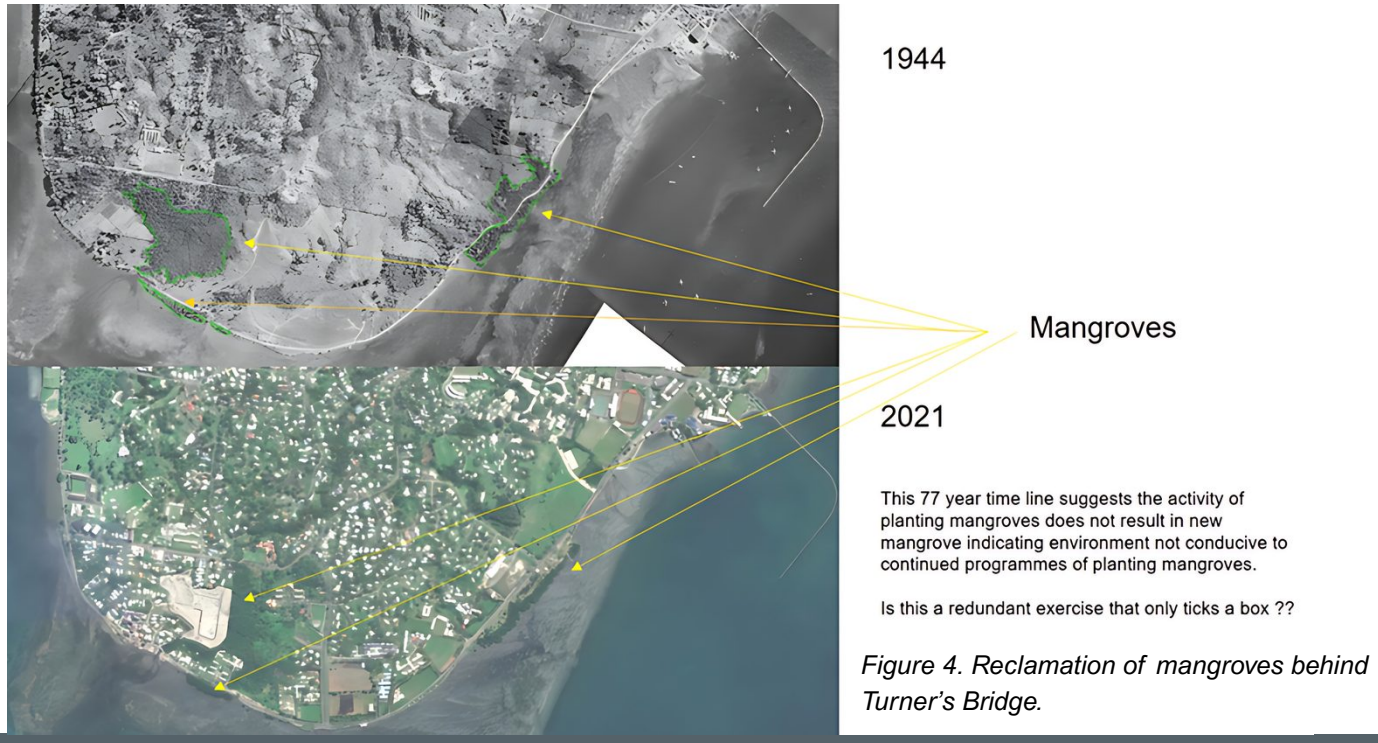


Figure 4. Reclamation of mangroves behind Turner's Bridge.

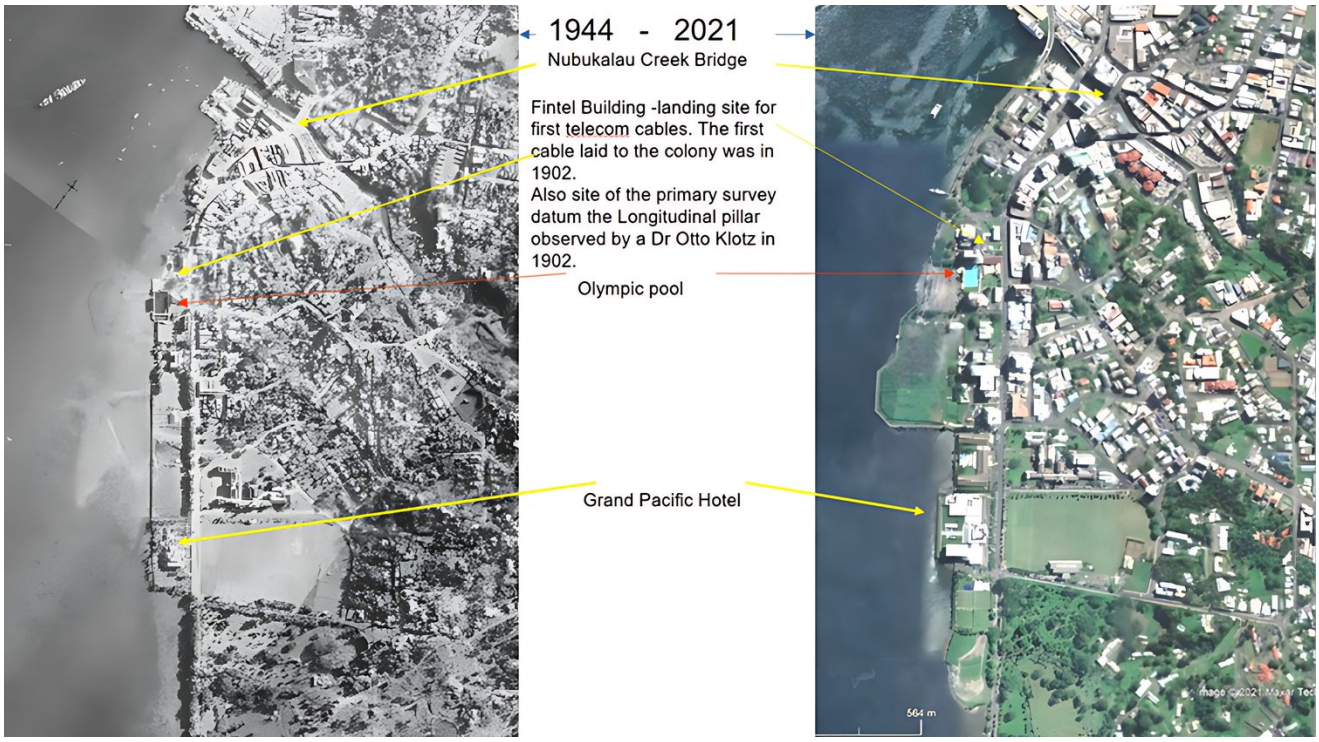


Figure 5. A comparison of notable points of interest in the Suva Harbour Foreshore.

Land reclamation in the Suva Harbour: One of the more visible changes in the imagery is the land reclamation along Suva Harbour. The extent of the modifications to the foreshore can be seen in Figure 5.

Geomorphological change in the Lami River Delta: A striking comparison of the Lami River delta in Figure 6 clearly shows there were originally two distributary channels at the river mouth. Such change in the morphology of the delta has geotechnical implications, given that today there is no evidence of a western channel. Planning for a coastal road without knowledge of the former western channel represents a potentially significant engineering risk.

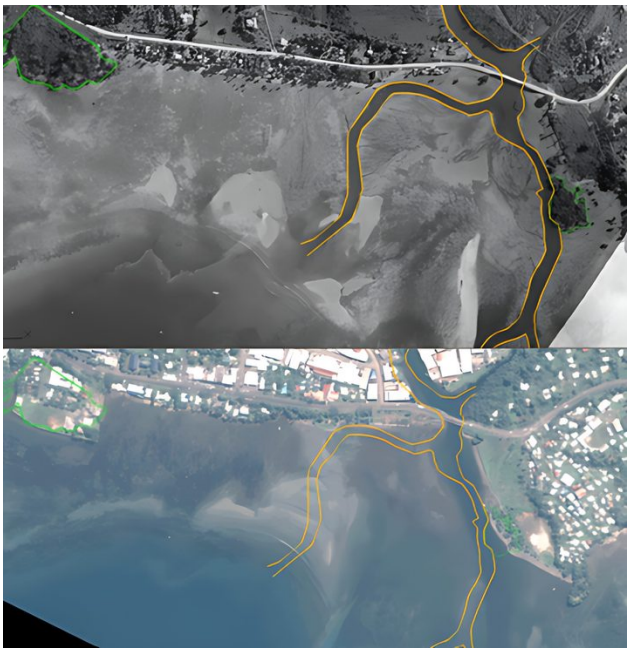


Figure 6. Change in the Lami River Delta.

Geohazards: In September of 1953, an earthquake generated a tsunami that flooded part of the Suva peninsula. The source of the tsunami was speculated to

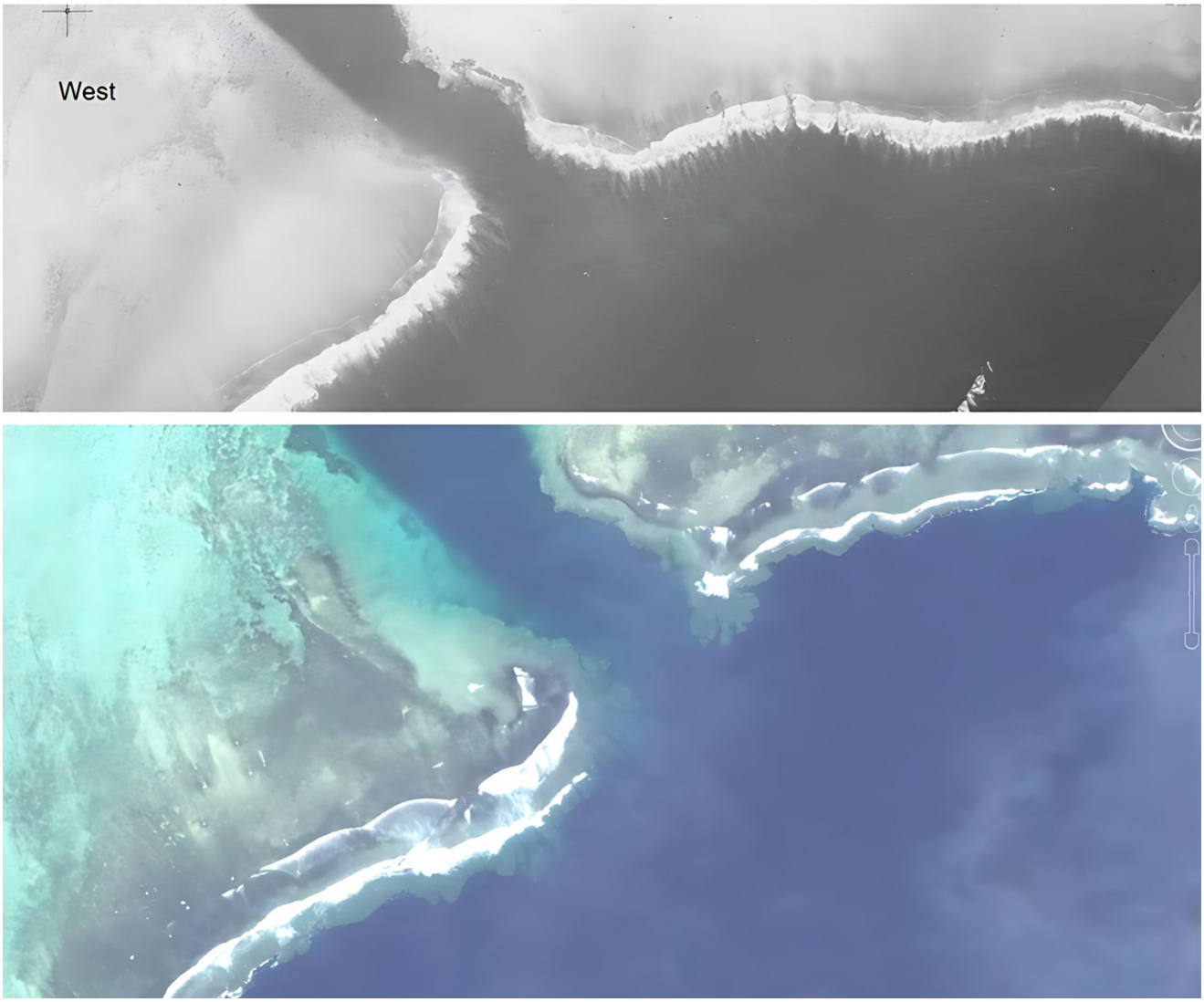


Figure 7. Changes in the geomorphology of Rat Tail Passage, where North is up, from 1944 to 2019.

have been generated by the collapse of the forereef slope at Rat Tail Passage. Apart from multibeam mapping of the forereef slope, the earliest photographic evidence used in published studies was in 1953 (Raihman, 2010). Awareness of this aerial photography would have confirmed the reef morphology.

Figure 7 compares the geomorphology of Rat Tail Passage between 1944 (black and white) and 2019 (colour image). In 1944, well-developed spur-and-groove morphology is clearly visible across the reef. By 2019, the changes are substantial: on the western side of the passage, a boulder field is present that did not exist in 1944. On the eastern side, evidence of significant forereef failure is apparent, along with subsidence on the inner channel flank.

Aggregate resources for infrastructure and cement: In 1944, two quarries existed in Lami (Figure 8): one extracting volcanic rock that was used to build the Laucala Bay breakwater, and one extracting limestone initially used for road construction and later as a major resource for cement production. However, the fate of the limestone quarries illustrates the consequences of poor development in urban and rural areas and subsequent land-use planning almost neutralized this valuable resource, but this is a story for another time.

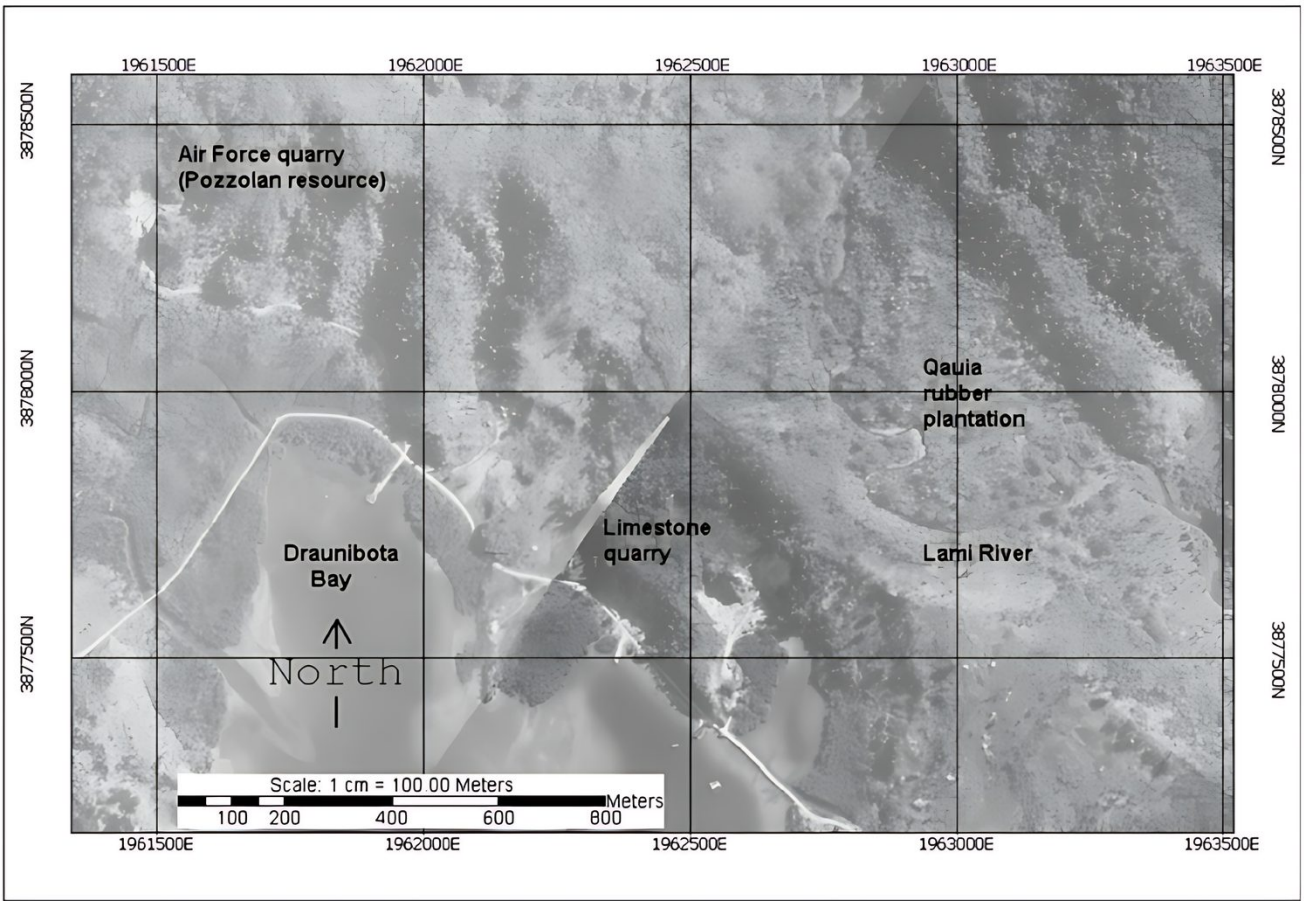


Figure 8. Known volcanic rock and limestone quarries have now been compromised by urban planning and unplanned settlements, lilke the Qauia settlement, which once was a rubber plantation.

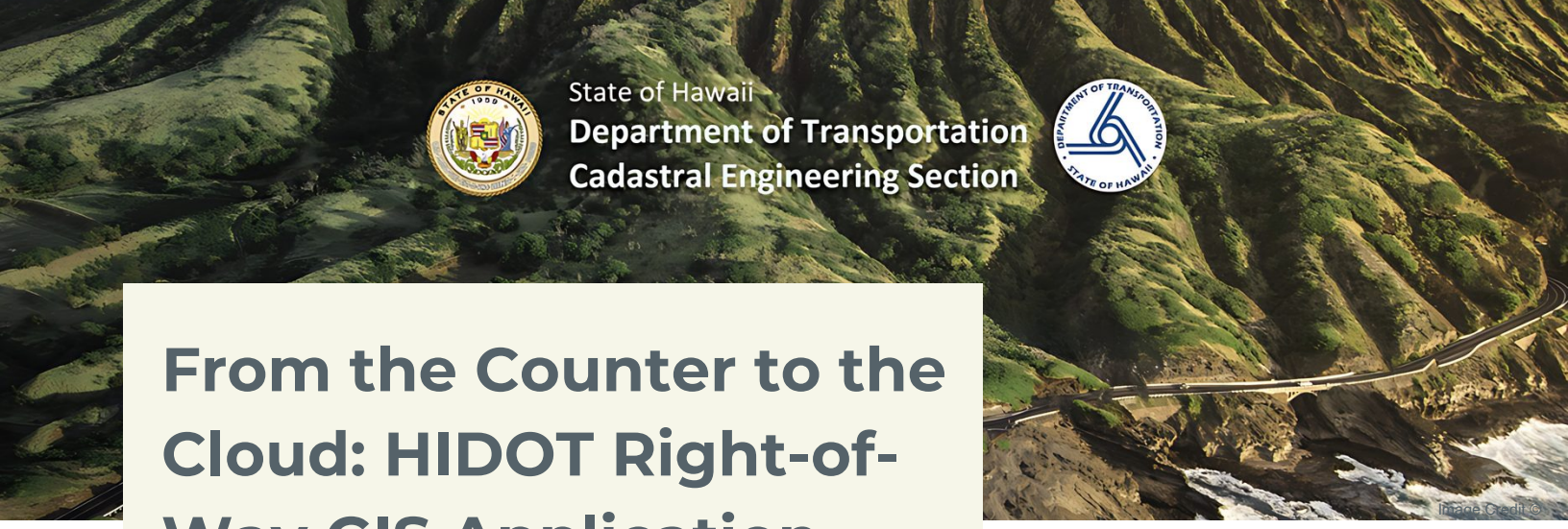
From these examples presented, we see how these 1944 aerial surveys provide historical imagery that can serve as an environmental baseline for understanding geomorphological change, land-use transformation, and geohazard risk across Fiji. That this dataset remained largely unknown underscores the importance of preserving, digitising, and making accessible historical surveys. In conclusion, without the foresight of the likes of organizations like the Fiji Society to publish and archive their presented works, the significance and value of this 1944 aerial photography may have been lost entirely.

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Walker E. 1965. The Application of Air Survey Techniques and Photography in Fiji. Published in The Fiji Society Transactions and Proceedings, Volume 10 for the years 1964 and 1965, issued February 1969.



From the Counter to the Cloud: HIDOT Right-of-Way GIS Application

by Chris Guerin (edited by Clare Mamura)

Submitted by the State of Hawai'i Department of Transportation (HIDOT) Cadastral Engineering Section

Like all meaningful tools, this tool grew out of necessity during the COVID-19 pandemic.

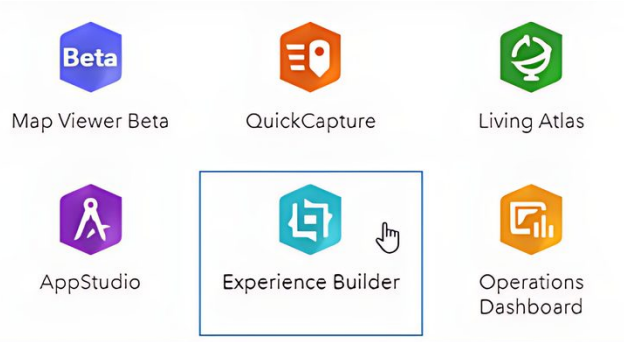
Our section is responsible for creating and updating the Right-of-Way (ROW) maps in our inventory and for supporting the research that consultants and the public rely on them for. When the pandemic arrived, our long-standing service model — the public coming to our office to pay for and collect a paper map — was no longer possible. We tried emailing maps instead, but many are large-format drawings whose file sizes were too big to send reliably. We needed a way to put our ROW maps in front of the public without anyone leaving home.

Building The App

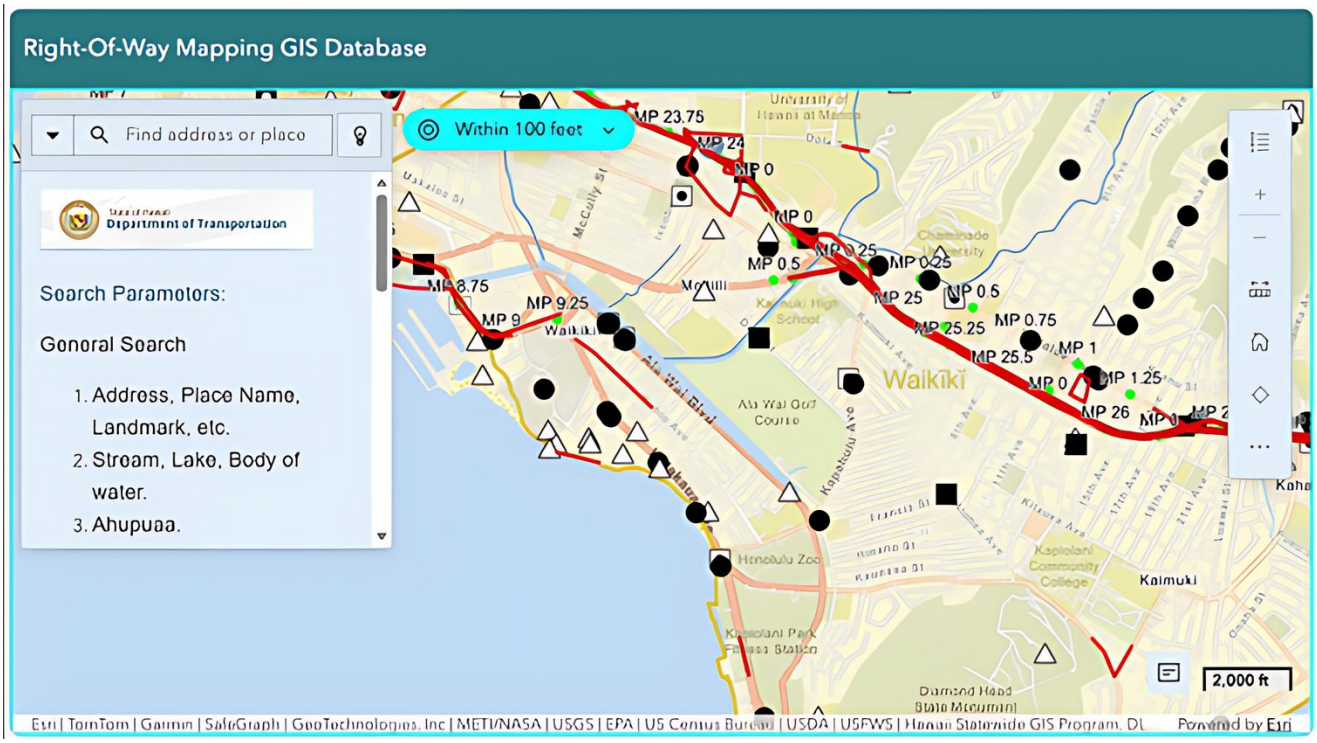
Working with Esri, we created a web GIS application that lets anyone browse and search our ROW maps online, at any hour. Since launch we have gone through several revisions, shaped by our team, our consultant, and feedback from the public. Among the features we added, we are especially glad to include National Geodetic Survey (NGS) data as a geodetic reference layer for surveyors and researchers.

Using The App

Search however suits your workflow: zoom to your area of interest, or search by street address, place name, landmark, stream, lake, Ahupua'a, Tax Map Key (TMK), Mile Post Marker (MP), etc. The key thing to remember is that a red line along a highway means we have a ROW map for that stretch. No red line means we do not have one there yet, and you will need to research that area the traditional way, parcel by parcel.



This web app was built using Experience Builder.



The Right-of-Way (ROW) GIS Mapping Database replaces a trip to a government counter with a publicly available browser application.

Try It

Application:
https://experience.arcgis.com/experience/a68e40f8c59c4da0902104765d330582

HDOT provides these maps "as is," without warranty as to accuracy or completeness; boundaries and mile markers are approximate, and the app should not be used to determine the actual State Right-of-Way. For a definitive description of real property, consult the deed record.

What began as a pandemic workaround is now a durable public service that replaces a trip to a government counter with a browser. For GIS colleagues across the Pacific working to open land and survey records to their communities, we hope it offers a useful, replicable example.

General Disclaimer:
The State of Hawaii Department of Transportation (HIDOT) makes these documents available on an "as is" basis. This application is being updated for digital accessibility and will continue to function while updates are in progress. See the full disclaimer: https://hidot.hawaii.gov/highways/gis-data-disclaimer/



Weighting Resilience to Climate and Human Pressure by Ecosystems: A New Caledonia Dashboard Project

by Samuel Vanmai

The New Caledonian government has published in February 2025 an open-access dashboard mapping the resilience of its ecosystems to climate and human pressures, at commune scale. This digital tool is part of the visible output of the territorial mission called “Ecosystem and Socio-economic Resilience Analysis and Mapping (ESRAM)” — carried out under component 2 of the regional PEBACC+ programme, led by the Secretariat of the Pacific Regional Environment Programme (SPREP) and co-financed by the Kiwa Initiative and the French Facility for Global Environment (FFEM). The analysis was delivered by a consortium of specialized engineering consultancies: SECAL as territorial development company, SEVE as environmental analyst and ACTIERRA as geomatic
expert working from France. The dashboard itself was produced by SECAL, SEVE and the Government of New Caledonia.

For a geospatial audience, the interest lies less in the maps than in how the scores behind them are built.

Three families, one common scale

Resilience is decomposed into three indicator families — exposure, sensitivity and adaptive capacity — each computed for every commune of the territory’s three provinces. Exposure is itself split into anthropogenic threats, invasive species and climate hazards, and covers indicators such as extreme rainfall and flood hazard, drought, coastal flooding and erosion, fire, mining pressure, and the abundance and refuge zones of deer, pigs and rabbits. Every indicator is normalised onto the same 1-to-4 scale, so heterogeneous sources — hazard models, land-cover layers, administrative registers — become comparable across the territory.



Per-commune scoring of an exposure indicator (extreme rainfall and flood hazard) on the common 1-to-4 scale.

Weighting calibrated by ecosystem type

This is the methodological core. A given pressure does not weigh the same on a dry sclerophyll forest, a freshwater system or a coral reef, so each indicator enters the score with a coefficient specific to the ecosystem being assessed. Four ecosystem classes are distinguished: forests, secondary terrestrial environments, freshwater, and marine and coastal. Mining pressure, for instance — a threat to 31% of New Caledonia's plant taxa — carries a weight of 2 for forests, freshwater and marine-coastal ecosystems, but 0 for secondary terrestrial environments, which are already anthropised. The same layer therefore produces four different contributions to four different resilience scores.

Indicator :	Relative importance of extractive and metallurgical activity by municipality			
Source :	Mines and Quarries Department, DIMENC			
Scores :	1	2	3	4
Thresholds :	At least two active mining and/or metallurgical sites	1 active mining and/or metallurgical site	0 mine or plant, authorized quarry volume > 100,000 m3	0 mine or plant, authorized quarry volume < 100,000 m3
Weighting coefficient per ecosystem for Exposure :	Forests	Secondary terrestrial	Freshwater	Marine and coastal
	2	0	2	2

Indicator sheet for mining pressure: source, scoring thresholds and the weighting coefficient applied to each of the four ecosystem types.

Thresholds documented and co-defined

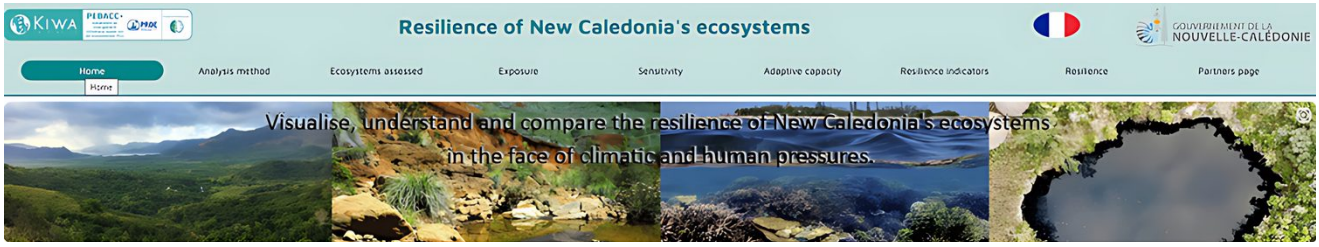
Each indicator has an explicit, published scoring rule. Mining pressure again: score 1 for a commune with at least two active mining or metallurgical sites, 2 for one active site, 3 for no site but authorised quarry volume above 100,000 m³, 4 below that. Source, thresholds and weights are exposed in the interface for every indicator, which makes the framework auditable rather than a black box.

Co-construction as a calibration step

Coefficients and thresholds were not set in a back office. Around 140 territorial stakeholders — government services, associations, chambers of commerce and socio-economic actors — were engaged through collective-intelligence workshops and questionnaires, and the agreed parameters were then applied consistently across the whole territory.

A decision-support tool, not an atlas

The result is a single documented score per commune and per ecosystem type. Decision-makers can compare communes on a common scale, drill down to see which pressures drive a low score, and prioritize conservation and ecosystem-based adaptation (EbA) where they deliver most. The dashboard is bilingual French–English and free to use, and both the full report and the metadata can be downloaded, so the indicator framework can be inspected, discussed and reused.



Transferable to other island territories

The principle — weighting a common set of hazard and pressure indicators by ecosystem type, with thresholds co-defined by managers and scientists — requires only comparable ecosystem layers and hazard data. It is portable to any Pacific territory facing the same need to rank intervention priorities on evidence rather than intuition. The project team (SECAL, SEVE, New Caledonian government) would welcome exchanges with other Pacific Island Countries and Territories interested in adapting the framework.

From diagnosis to decision

The added value of the exercise lies less in the map than in what stands behind it: a documented, contestable score for every commune and every ecosystem type, built from sources anyone can inspect. For managers, it turns a scattered body of data into an argument — where to act first, and why. The next step is to carry these scores into planning and financing: targeting ecosystem-based adaptation operations, supporting funding applications, and updating the indicators as new hazard and land-cover data become available. The framework is open by construction, and the team welcomes any territory willing to test, challenge or adapt it.

Dashboard:
https://experience.arcgis.com/experience/1d1d769781734dfb9fbb6a9771b99044





Image Credit © ActInSpace

ActInSpace 2026:

New Caledonia Joins the International Space-Innovation Movement

In 2026, New Caledonia took part for the first time in ActInSpace, an international hackathon dedicated to space technologies and their applications. This first local edition marks an important milestone for the Caledonian innovation ecosystem and opens up new perspectives around the use of space in the service of territories.

A Global Hackathon Built Around Space Technologies

Created in 2014 by the French National Centre for Space Studies (CNES) with the support of international partners, ActInSpace is a worldwide hackathon devoted to space technologies and their applications.

For its 6th edition, ActInSpace brought together nearly 1,700 participants across 53 cities and 23 countries, around 27 innovation challenges. Over 24 hours, students, entrepreneurs, engineers and innovation enthusiasts worked in teams to design new solutions based on technologies developed for space: Earth observation, satellite data, navigation systems, advanced materials, artificial intelligence and data processing.

The goal of ActInSpace is to bring innovative projects to life and to help turn ideas into concrete solutions, potentially leading all the way to the creation of entrepreneurial ventures. Beyond the competition, the event is a genuine space for experimentation, collaboration and networking among talents, institutional actors and the broader space ecosystem.

A First Edition in New Caledonia

For this 6th edition, New Caledonia joined this international movement for the first time, at the initiative of the Government of New Caledonia.

The local edition, ActInSpace New Caledonia, was held on 30 and 31 January 2026, bringing together around twenty participants from



Teams faced challenges inspired by space, mixing technologies, data, AI, and social issues.



Congratulations to the winning team for winning the first edition — Les Passeurs d'Images.

varied backgrounds: students, entrepreneurs, developers and innovation enthusiasts.

Over 24 hours, the teams worked on challenges inspired by real-world issues, mobilising space technologies to imagine new uses in fields such as Earth observation, environmental management, maritime monitoring and data exploitation.

This first edition had a twofold ambition: to showcase the opportunities offered by space technologies and to stimulate local innovation by drawing on these new tools.

Beyond the competition, ActInSpace New Caledonia created a space for encounters and collaboration, fostering exchanges between participants, mentors and members of the ecosystem.

The Winners of the First Caledonian Edition

At the close of the competition, five teams were rewarded for the quality and relevance of their projects:

1st prize — Les Passeurs d'Images
Laurent Bui, Julian Bourgine, Damien Buisson and Rémi Andreoli
Project: Smart Hub NC

2nd prize — Les Hackabros
Cyril Barbe, Thomas Avron, Andy M. and Arnaud Letouze

3rd prize — Bayntel
Jannaï Tokotoko, Ghislain Alosio and Grégory Poircuitte

4th prize — Cosmic Queens
Emy Jourdain, Sophie Jourdain and Frédéric Jourdain

5th prize — Naviguide for Berry Mappemonde
Clément Filisetti and Dileep Choudhary

The team Les Passeurs d'Images thus earned the opportunity to represent New Caledonia at the French national final of ActInSpace, held in Bordeaux on 1 and 2 April 2026.

Watch the recap video:
https://youtu.be/QVhboOaczLo

Smart Hub NC: Structuring a New Space-Data Economy

Through Smart Hub NC, the Passeurs d'Images team proposes to rethink the space-data economy by addressing challenges of accessibility, value creation and cost of data derived from space.

The project aims to create a structuring framework around space data in New

Caledonia, by facilitating access, supporting its exploitation and encouraging the emergence of new, high-value uses for the territory.

Smart Hub NC would notably aim to:

- identify the needs of local actors;
- structure use cases around space data;
- support the assembly of the financing required to develop projects;
- define quality and evaluation criteria for data and associated services;
- track the impacts generated by the uses developed;
- foster skills transfer and the growth of local expertise;
- prepare the development of opportunities at the regional scale;
- identify and highlight the economic benefits generated by the gradual structuring of the sector.

Through this holistic approach, Smart Hub NC seeks to give rise to a sustainable ecosystem around space data, capable of creating value for public, private and academic actors, while progressively contributing to the durability of its funding model.

The project fits fully within the spirit of ActInSpace: transforming technologies developed for space into concrete solutions serving territories, businesses and citizens.

From New Caledonia to the National Final in Bordeaux

Thanks to their victory, Les Passeurs d'Images continued their journey by representing New Caledonia at the French national final of ActInSpace, held in Bordeaux on 1 and 2 April 2026.

This qualification marks an important step for the territory. It demonstrates the ability of the Caledonian ecosystem to take part in flagship events in the field of space innovation and to engage with national and international dynamics.

Ultimately, the team did not manage to qualify for the next stage of the selection process. This outcome takes nothing away from the significance of the journey: for a first participation, reaching the national final is already a strong signal of the Caledonian ecosystem's potential.

The Results

As for the awards, the French national final was won by Satelleye, an all-female team from Toulouse, with a project that uses Earth-observation data to detect certain vessel behaviours — in particular hydrocarbon discharges at sea.



Day 1 of ActInSpace 2026 fully immersed teams from 59 countries with one shared enegery, and one common ambition: innovating together through space.



Some of the participants from multiple teams turned out for a first meeting of the minds—an opportunity for an initial meeting and inspiring exchanges.

At the international level, victory went to the Senegalese team INTERSTELLAR, rewarded for its project of a CubeSat constellation designed to speed up the transfer of space data to users on Earth.

An Immersion at the Heart of the French Space Ecosystem

Ahead of their participation in the national final, the members of the winning team, Les Passeurs d'Images, had the opportunity to discover the French space ecosystem through a three-day immersion programme in Toulouse.

The purpose of this immersion was to help them better understand the actors of the space sector, their activities, their areas of expertise and the opportunities this ecosystem offers.

Over these three days, participants met various institutional and industrial space actors, discovered major infrastructures and exchanged with experts on the sector's current issues.

Discovering the Cité de l'Espace

Participants deepened their knowledge of major space missions, the technologies developed and the many applications derived from space.

Immersion at the CNES Toulouse Space Centre (CST)

This day offered a look at several CNES activities
and infrastructures, in particular:

- the CESARS teams and facilities;
- a visit to CADMOS and exchanges with the Spaceship France teams;
- a discovery of the CNES Network Operations Centre;
- a presentation of the Lab'OT and the projects being developed;
- exchanges with the Connect by CNES team on the strategy implemented in favour of overseas territories.

Discovering the Private Space Ecosystem

Participants met Look Up Space, a company specialising in space surveillance and the tracking of objects in orbit, to discuss its activities, its challenges and the sector's outlook.

This immersion was a genuine experience of openness and networking, allowing team members to better grasp the dynamics of the French space sector and the opportunities offered by space technologies.

A Regional Momentum Around Space Technologies and Data

Beyond the competition, this participation in ActInSpace was a real experience of openness, training and networking for the participants.

Exchanges with the CNES teams, industrial actors and the various partners encountered helped participants better grasp the opportunities offered by space technologies and strengthened the ties between New Caledonia and the national space ecosystem.

This first participation marks an important step for the territory, allowing participants to discover new perspectives, engage with sector actors and better understand the possible uses of space technologies and data.

This effort fits into an already-active regional environment, in which several Pacific territories are developing their own space initiatives through projects, conferences, research programmes and awareness-raising activities.

In 2026, Australia and New Zealand also took part in ActInSpace by organising their own local editions and sending teams to the national final in Bordeaux.

These various initiatives illustrate the growing interest across the region in space technologies and data, as well as the opportunities for sharing experience and cooperation among Pacific actors.



The first preparatory workshop for ActInSpace 2026 in New Caledonia focused on ideation and the problem statement for the challenges.



Strengthening Disaster Preparedness Through GIS in Palau

by Darlynne L. Takawo and Rodney Yoshida

Under Grant Agreement No. GA25-602 between the Pacific Community (SPC) and the Government of the Republic of Palau, the Palau Automated Land and Resource Information System (PALARIS) carried out a structured Geographic Information System (GIS) capacity-building program for staff of the National Emergency Management Office (NEMO). The agreement, executed through the Office of the Vice President on April 24, 2025, provides USD 523,629 to support the Building Safety and Resilience in the Pacific project in Palau. Key result areas include integrated data and risk information, urban resilience, community-based risk reduction, and stakeholder engagement.



Drone footage captured was used in classroom training sessions.

GIS Training for NEMO Staff

PALARIS delivered GIS training to three NEMO staff members, with sessions held twice weekly — on Wednesdays and Fridays — at the NEMO office. Instructors Darlynne L. Takawo (GIS Analyst II) and Rodney Yoshida (GIS Analyst I) developed a course syllabus and followed it throughout the training period. When scheduling conflicts arose due to emergency obligations at either office, make-up sessions were arranged to ensure all training objectives were met. Attendance was documented through sign-in sheets at each session.

The curriculum was structured progressively, beginning with an introduction to ArcGIS Pro and the ArcGIS Online environment. Participants were provided with ArcGIS



Drone training in Ngchesar with Rodney Yoshida from PALARIS.

Online credentials and trained on interface navigation, tool identification, and practical software applications.

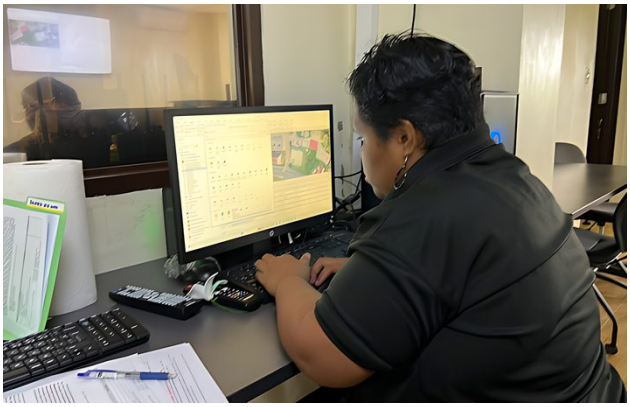
Hands-on field training was a core component of the program. Participants used handheld GPS units to collect spatial data on tsunami warning signs, hazard zones, safe areas, and radio station locations. Following fieldwork, trainees returned to the office to download GPS data, convert it to shapefile format, and manage spatial datasets within ArcGIS Pro.

Building on their collected datasets, participants developed individual GIS projects and Story Maps. Training also covered Survey123, enabling participants to design and deploy their own digital field data collection forms — a skill directly applicable to NEMO's data collection needs during disaster response operations.

The final module introduced participants to unmanned aerial systems (UAS/drones), covering basic flight procedures, aerial data collection techniques, and the integration of drone-generated data into GIS projects.

Equipment Procurement

Alongside the training program, the grant agreement supported the procurement of essential GIS and information technology equipment to bolster NEMO's operational capacity. Purchases included desktop computers, a server, external hard drives, four ArcGIS Pro licenses, and drones to support mapping, data management, and emergency management activities. This equipment ensures that NEMO staff can sustain and build upon the skills gained during the training program.



Practice exporting data using ArcGIS from GPS collection sites.

Program Completion and Final Presentations

The final training session was held on July 21, 2026, marking the successful completion of the GIS capacity-





Participants integrated new skills from field training on GPS collection and drone flying to project completion using GIS technologies in ArcGIS.

building program. As a culminating activity, participants were tasked with finalizing their GIS projects and Story Maps, integrating all skills and datasets developed during the course.

The completed projects and Story Maps are scheduled to be presented on August 7, 2026, to Mr. David Idip, Jr., Senior GIS Analyst at PALARIS, and Mr. Waymine Towai, Executive Director of NEMO. The presentations will give participants the opportunity to demonstrate proficiency across the full training scope — ArcGIS Pro, ArcGIS Online, GPS data collection, Survey123, Story Maps, and drone-based data integration — and to showcase the practical application of GIS technologies in disaster risk management and emergency preparedness in Palau.

Pacific Islands GIS & Remote Sensing User Conference — Fiji

Darlynne Takawo and Rodney Yoshida will represent PALARIS at the upcoming Pacific Islands GIS and Remote Sensing User Conference in Fiji.

The conference offers a valuable platform to engage with the latest developments in GIS and remote sensing technologies through presentations, technical sessions, and peer discussions with regional and international practitioners.

Participation will also create opportunities to connect with development partners, donors, technology providers, and industry experts — helping PALARIS identify innovative tools, software solutions, and best practices that can be adopted to strengthen its services and support NEMO's ongoing work. Both Takawo and Yoshida will contribute to conference activities and assist with logistics as needed, further strengthening PALARIS's role in the regional GIS community.

Knowledge and insights gained from the conference will be shared with colleagues upon return, ensuring that the benefits of participation extend across PALARIS and contribute to the organization's broader capacity-building goals.

Contributed by Darlynne L. Takawo, GIS Analyst II, and Rodney Yoshida, GIS Analyst I — Palau Automated Land and Resource Information System (PALARIS)



Memories of GIS and Remote Sensing Development in Pacific Island Countries: The '90s in Fiji

by Wolf Forstreuter

There are plenty of memories regarding the history of GIS and Remote Sensing (RS) development. They cannot be covered in a single article, and it is planned to continue the story in the next newsletter(s). Many decisions, applications, successes, and failures should be documented. A lot is documented through the many newsletters available on the PGRSC website; however, there is no single paper summarising the history. The following article reflects the author's personal memories and experiences in the '90s. However, there are many other important GIS and RS developments in which the author was not involved.

Fiji's National Forest Inventory

GTZ[1] asked for offers to conduct a national forest inventory in Fiji. A cooperation between GOPA[2] and SIGNUM[3], a small remote sensing company, won the tender for the two-year project. A convincing aspect of the proposal was that the consulting group promised to map the seven main islands completely, including, for example, gallery forests. The last forest inventory, conducted in the 1960s by the Land Resources Division of the British Ministry of Overseas Development, had concentrated only on the main forest areas of Viti Levu and Vanua Levu.

Satellite Image Data as a Key Element

The offer to conduct the forest inventory included forest mapping using digital satellite image data. The difficulty was that Pacific Island Countries were outside the footprint of any ground antenna for downloading satellite image data[4]. The key was that the satellite data company EOSAT[5] involved TDRS[6], a relay satellite that allowed data from Landsat IV to be transmitted to a ground station in the USA. By employing this method, Fiji became the first Pacific Island Country to be mapped using satellite image data.

1. German Technical Cooperation Agency (later renamed to Deutsche Gesellschaft für Internationale Zusammenarbeit, or GIZ)
2. Gesellschaft für Organisation, Planung und Ausbildung mbH (agency for organisation, planning, and education)
3. Gesellschaft für digitale Satellitenbildverarbeitung mbH (company for digital satellite image processing)
4. Part of PNG was covered by the Australian ground antenna, but all other islands were not covered
5. Earth Observation Satellite Company
6. Tracking and Data Relay Satellites



From left to right: Head of SOPAC IT, Les Allinson; Head of Management Services Division, Osea Tuinivanua; GTZ inventory project leader, Wolf Forstreuter.

Forest inventories normally carry out the mapping component first and then distribute the sample plots, where the forest measurements are conducted, using PPS (Probability Proportional to Size). It took two years to obtain cloud-free coverage of Fiji, although EOSAT sold quarter scenes. EOSAT was in very close contact with SIGNUM and repeatedly captured the data to demonstrate that even a remote country could be mapped using satellite image data.

A computer with the remote sensing software ERDAS was installed in the Inventory Section of the Fiji Forestry Department (Management Services Division). The team leader of the inventory team (the author) was a remote sensing specialist. Nevertheless, Fiji Forestry was not directly involved in the forest stratification using Landsat IV data. The distribution of the sample plots was performed randomly and then checked against the available topographic maps to distinguish between forest and non-forest areas.

The more than 540 forestry field plots were subsequently used as training areas to classify the satellite image data using the supervised maximum likelihood classification method. Another input to the digital classification was the first DTM (Digital Terrain Model) of Fiji, produced in Germany using the available topographic maps from the Directorate of Overseas Surveys in London.

Nevertheless, even with the incorporation of a DTM, the digital classification faced problems. The operators in Germany did not have the necessary local knowledge of Fiji, and the degree of atmospheric disturbance was unexpectedly high compared with the landscapes encountered in Europe. Fiji has considerable differences in air humidity from east to west and, even more significantly, between the windward and leeward sides of each mountain. Atmospheric correction software was not available at that time. Consequently, subsequent forest change-detection projects were carried out using visual interpretation, which could partly overcome the influence of atmospheric effects.

Forest Mapping: A National Issue

Originally, forest mapping using remote sensing and GIS was planned as work to be carried out in Germany, with only the final products being delivered to Fiji. However, the work required the involvement of several Fiji agencies outside the forestry sector. The NLTB[7] had to be involved to see in

which mataqalies[8] the sample plots are located as permissions are essential before entering a forest to carry out any forest measurements.

At that time NLTB was the only agency in Fiji operating a GIS. When visiting NLTB and loading the positions of the sample plots, the forestry team suddenly realised that some of the plots appeared to be on the other side of a river. Investigations showed that the NLTB data had been stored using Cartesian coordinates rather than geographic (spherical) coordinates. This had major consequences for NLTB. Forest mapping had become a national issue.

When conducting the inventory the maps followed the map-sheet coverage of the available topographic maps produced by the Directorate of Overseas Surveys using the Cassini-Soldner projection. The Forestry and Lands Departments asked the consulting group to transfer the map content to the new topographic map-sheet coverage based on the new Fiji Map Grid. This was performed by visual mosaicking. It was then discovered that the transformation parameters were missing. The transformation parameters were re-established by the surveyor Mike Poidevin, who was working in the Forestry Department, using the Forestry Department's differential GPS system to record the positions of the trigonometric points. Again, forest mapping had become a national issue[9].

The Fiji Lands Department produced the new topographic maps from aerial photographs using the available stereo plotters. However,this method was unable to map the reefs in the Bligh Water because of the lack of ground control points. The Landsat data, in contrast, were geometrically rectified using control points in western Viti Levu and the Yasawa Group[10]. The Fiji Lands Department subsequently mapped the reefs from aerial photographs but shifted their positions to fit the Landsat data.

The forest inventory did not focus on timber utilisation, as might have been expected by outsiders. Instead, the objective was to document the multiple benefits of forest cover, and the environmentalist Dick Watling was involved. The forest mapping therefore also produced forest function maps[11]. More than 10 GIS layers were involved in an overlay analysis showing (i) preserved forest, (ii) protected forest and (iii) multiple use forest. Several stakeholders outside forestry participated. Forest mapping had become a national GIS issue[12].



Forester Eroni Tupua working with a ZEISS Visopret to produce maps where areas over 32 Degrees slope are banned from logging.

7. Native Land Trust Board (today TLTB: iTaukei Land Trust Board)
8. Fijian clan or landowning unit
9. See: Mike Poidevin “The Geographic Calculator” GIS&RS Newsletter 1994 Issue 06
10. See: Ramesh Bhai: “Landsat Imagery Assists in Reef Mapping” GIS&RS Newsletter 1999 Issue 02
11. See: Rupeni Anise: “The New Forest Cover / Forest Function Map of Fiji” GIS&RS Newsletter 1995 Issue 04
12. See: Dick Watling “The Use of environmental Variables in Fiji’s FORGIS” GIS&RS Newsletter 1994 Issue 04

An Australian-financed project established photogrammetric analysis capabilities in the Management Services Division. A ZEISS Visopret allowed the production of maps at a scale of 1:10,000 showing forest roads, creeks, ridges, bridges, and log dumps. The maps also showed all areas with slopes above 32 degrees, which were excluded from logging operations. This work was carried out using existing aerial photographs, with forestry staff trained by Mike Poidevin as part of the project.

Push to Fiji National GIS and RS Development

GTZ decided to transform the inventory into a forest monitoring system. This decision subsequently resulted in the implementation of serious GIS and remote sensing facilities in the forestry department to analyse image data in Fiji and not in Germany. Funds for additional image data were provided, and SPOT data was purchased as Landsat V was not able to transfer data through a relay satellite. At the same time, GTZ pushed to spread the know-how transfer within Fiji.

The GIS and RS User Meetings

This was the start of the Fiji GIS and Remote Sensing User Meetings. By that time, there were already several GIS&RS units in government departments. The first meeting was conducted in the Management Services Division of the Forestry Department, and from there onwards, every month in a different department or other body such as SOPAC. These meetings brought the users together in a relaxed environment outside the official structure. This allowed unofficial help such as change of data, copy of software, and assistance with hardware.



GIS&RS User Meeting at SOPAC in the ‘90s.

New units were mostly established through outside funding and often came with new software, data, and methods, and people presented the new development. The meetings had for many years the same procedure where every GIS&RS unit explained the activities of the last weeks and the plan for the coming weeks. This allowed the coordination and multiple use of image data, maps, and other GIS layers. The listing of activities was followed by a few presentations. The documentation of activities was one reason for the GIS and Remote Sensing Newsletter. The presentations were the basis of the GIS and RS Conference. Another very useful products at that time were the spatial data catalogues. Most GIS&RS units listed their data, describing the format, origin, scale, etc. Big catalogues were contributed by Forestry, the Lands Department, the Mineral Resources Department, and SOPAC (South Pacific Applied Geoscience Commission). These catalogues were stored in the Fiji Lands Department avoiding outsiders from reestablishing spatial data. At every meeting, catalogue updates were explained.

The meetings were observed by the Lands Department which soon organised the Fiji GIS and Remote Sensing Council with official delegates from the different government departments. These meetings were always conducted one day after the GIS and Remote Sensing User Group met and discussed the reported news from the user group.

National GIS Units

During the first half of the 1990s, GIS units were established in most government departments, including Forestry, Lands Department, Mineral Resources Department, and Agriculture Department. The Lands established the Fiji Lands Information Support Centre (FLIS) under Neil Pullar financed by New Zealand Aid. At USP[13], Bruce Davis from Jackson State University created a GIS unit and in 1994, USP offered the first GIS courses. James Britton took over from Bruce Davis in 1998 and developed a close cooperation with SOPAC.

Through a project in the energy sector, SOPAC supported power utilities in Tonga, Fiji, and the Solomon Islands in establishing GIS capabilities. One advantage of GIS units within utility companies was that experienced staff tended to remain in their positions and could receive salary increases as their responsibilities grew. In contrast, experienced GIS specialists in government departments were often promoted to other positions and therefore did not remain in their GIS functions.

The GIS operators in Tonga, Solomon Islands and Fiji were active members of the GIS and Remote Sensing User Groups and played an important role in transferring and sharing GIS knowledge and skills. A similar situation applied to semi-government organisations, such as Fiji Pine.

The GIS and Remote Sensing Newsletter

As mentioned previously, the GIS and Remote Sensing Newsletter initially focused on the GIS and RS User Meetings in Fiji. However, already in the first issue, published in 1993, interesting articles were distributed.

Philipp Müller, who was Director of SOPAC at the time, saw the newsletter and recognised that it was something that other Pacific Island Countries should also have access to. He supported the newsletter by allowing his publisher,



Head of the USP GIS&RS Unit James Britton

Lala Bukarau, to assist with the editing work and by providing funds to distribute the printed versions to many Pacific Island Countries. A network of newsletter distributors was established, and the newsletter became an important means of bringing GIS and Remote Sensing knowledge to the Pacific region. Articles written by GIS and RS users also established additional GIS units.

The GIS and Remote Sensing User Conference

The presentations of the applied GIS and RS tools became increasingly interesting, and James Britton, head of the USP GIS unit, proposed combining the presentations from the monthly meetings into a one-day conference. He was supported in this initiative by the Fiji Lands Department. The first conference in 1998 was called Year-end User Conference[14] and ran for two days. By 2000, the name had changed to the GIS&RS User Conference, and the event had expanded to three days. In 2004, the conference was renamed the Pacific Islands GIS&RS User Conference.

13. University of the South Pacific
14. See: James Britton: “Year-end User Conference” GIS&RS Newsletter 1999, Issue 01

In 2002, the European Union financed a project, “Reducing the Vulnerability for the Pacific ACP States”, which established GIS and RS units in 16 Pacific Island Countries. GIS and RS users from these countries began reporting on their activities and experiences. By then, the conference had developed into an international event, with the GIS and RS Unit of SOPAC becoming the main organiser.

First Push for Pacific GIS and RS Development

It was mentioned above that SOPAC’s Director Philipp Müller made the GIS and RS Newsletter into a regional newsletter. He had the vision that GIS, and especially remote sensing, is absolutely required in the Pacific and supported all movements in this direction. For example, he financed Wolf Forstreuter to come to SOPAC’s Annual Sessions to explain spaceborne remote sensing through presentations. Wolf was on standby to quickly explain background when the discussion touched the topic of remote sensing.

Internet and the Email Distribution List GIS-PacNet

Already before the millennium, SOPAC provided GIS training as several-day courses in the Pacific Island Countries. Continuous support was difficult. Franck Martin was based in the SOPAC IT Section from 1993 onwards. He helped Les Allinson, the head of the IT Section, to implement MapInfo as GIS software in Pacific Island Countries. SOPAC was supporting the internet installation in Fiji and the SOPAC member countries[15].

It was therefore a logical step to establish a MapInfo support email distribution list for Pacific Island Countries. This became the starting point for GIS-PacNet in 1996. GIS-PacNet replaced the monthly regional GIS&RS meetings through the satellite PEACESAT. Very few Pacific GIS users actually asked for MapInfo solutions through GIS-PacNet. Instead, the list developed into a general GIS and RS support instrument, used mainly for announcements and, less frequently, for discussions about GIS and RS issues.

Nevertheless, this email distribution list played an important part in the GIS and RS development in the Pacific and helped to connect GIS and RS users across the region.

MapInfo as Pacific main GIS Software

When Philipp Müller[16] became Director of SOPAC, Les Allinson also moved with him from FFA[17] in the Solomon Islands to Fiji to lead SOPAC's new IT Department. Before that, computer-related issues had been handled by the electronic workshop.

At FFA, Les had started developing his own GIS software linked to the emerging Vessel Monitoring System. When he discovered MapInfo, which was easy to handle, programmable, and easy to copy, he stopped developing his own GIS and adopted MapInfo instead. Franck Martin spent his alternative service at SOPAC instead of serving in the French Army. He took over the further development of MapInfo by writing customised applications.



SOPAC’s Director Philipp Müller, an early GIS&RS and newsletter supporter

15. See: Les Allinson: “The Internet in Fiji” GIS&RS Newsletter 1995, Issue 01
16. Philipp Müller was Samoan insisted on the two points on top of the ‘u’. However, his family background was not German, his family originally came from Switzerland.
17. Forum Fishery Agency in Honiara, Solomon Islands

In a meeting of the IT sections[18] of all regional organisations such as SOPAC, SPC[19], SPREP[20], USP, FFA, Forum Secretariat, and others, it was agreed to promote GIS and remote sensing applications throughout the Pacific. To avoid excessive diversification and to concentrate technical support, ERDAS was selected as the remote-sensing software and MapInfo as the GIS software for Pacific Island Countries.

Support was provided through training and the email distribution list. Donors generally consulted SOPAC's IT Unit before equipping projects with software. Only USP did not follow the agreement, which slightly slowed the development of GIS software in the region.

Les Allinson provided other GIS support for the Pacific Island Countries. Whenever a new version of MapInfo was being prepared, he downloaded an unlimited test version and distributed it to GIS and RS units. MapInfo dealer Kevin McConnor was unhappy that, as the official MapInfo distributor, he received the new versions later than SOPAC. On the other hand, Les insisted that new projects purchase an official licence.

The last visit of MapInfo representatives to the conference was in 2005. Company support subsequently declined and MapInfo was gradually replaced by QGIS.

Looking Back: The Politics

Digital remote sensing developed rapidly during the 1990s. However, it also created difficulties in gaining acceptance. Work traditionally carried out by photogrammetric specialists at the Lands Department, who had just completed the topographic mapping of Fiji, was now being performed digitally by a few specialists in the Forestry Department.

The Lands Department wanted to reactivate their stereoplotter and make use of the skills of its staff. It therefore launched a tender for a traditional aerial photographic survey of Fiji using photographic film. However, companies had difficulties applying for the tender because photographic film was hardly available anywhere in the world. The aerial survey was never carried out. Eventually, the Lands Department paid for access to very-high-resolution satellite imagery that had already been purchased by SPC.

The monthly GIS & RS meetings and eventually the Conference, initiated new ideas. The relaxed and informal format of these meetings was essential to their success. However, the meetings operated outside the formal government structure and depended on people's free time.

This also led to the Pacific GIS and Remote Sensing User Conference being organised by a “Conference Committee” that was independent of any particular organisation. The Pacific GIS and Remote Sensing Council (PGRSC) should have been established out of the Conference Committee about ten years earlier, rather than eventually being established under pressure in 2017.

The surveyors established the Pacific Geospatial and Surveying Council (PGSC) before the PGRSC was launched. Unlike the PGRSC, the PGSC was integrated into the government and SPC structures. The PGSC also tried to cover GIS and remote sensing, which created some friction and duplication of roles. This could have been avoided if the PGRSC had been formally established at a much earlier stage.

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18. GIS&RS was established in the IT sections
19. South Pacific Community (name changed later)
20. Secretariat of the Pacific Regional Environment Programme

PACIFIC ISLANDS GIS&RS CONTACT

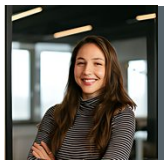
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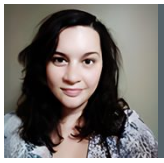
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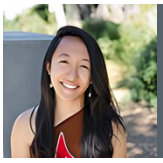
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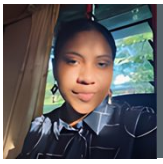
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