

Pacific Island Blue Carbon Knowledge Exchange Network

GF  Global Forest
Observations Initiative

Plenary
9-11 May 2023



Richard A. MacKenzie

Blue Carbon Climate Fellow
Richard.mackenzie@usda.gov





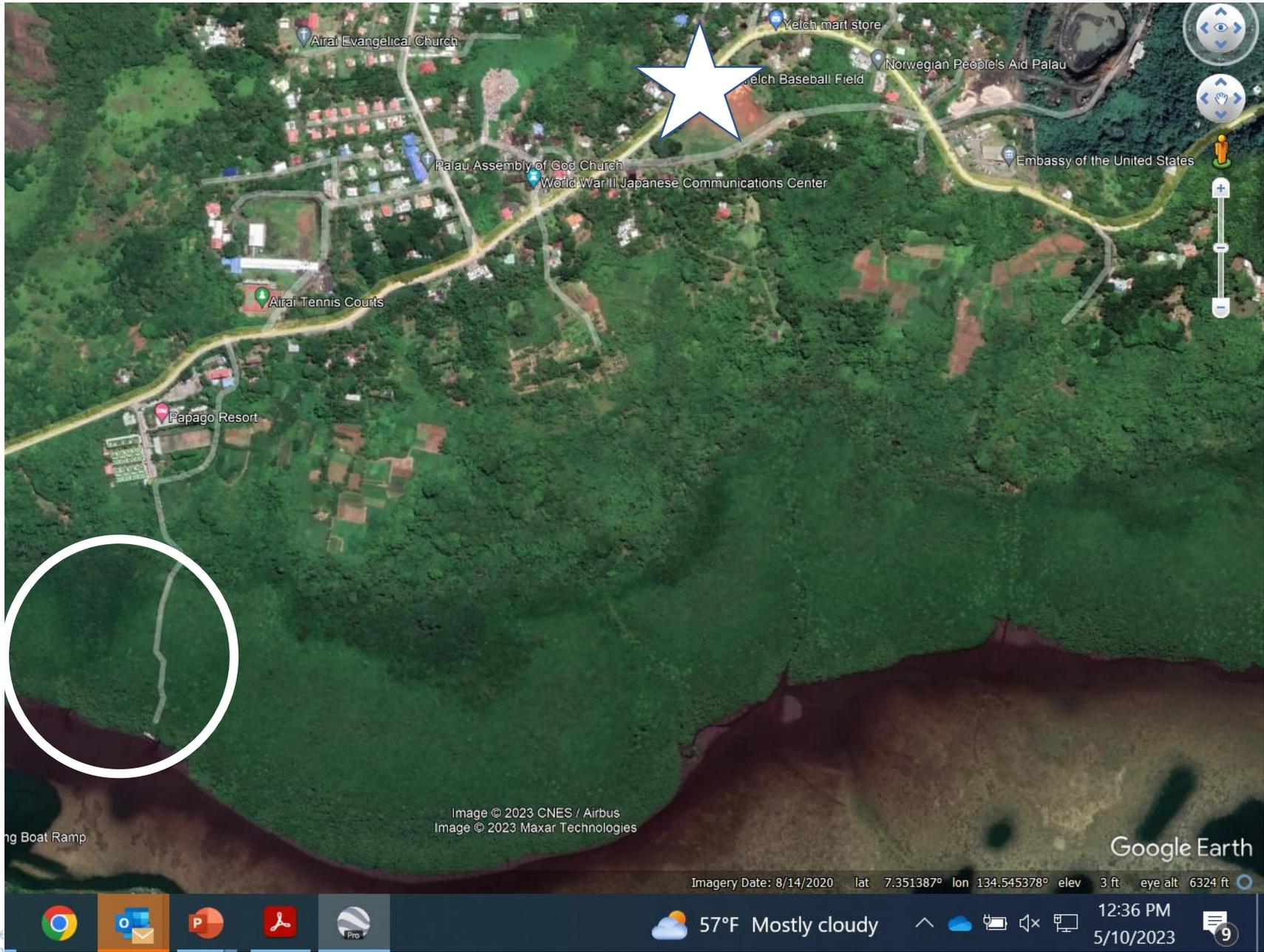
Image Landsat / Copernicus
Image IBCAO
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

Imagery Date: 12/14/2015 Lat: -22.8721208 Lon: 104.7558218 eye alt: 8102.10 mi

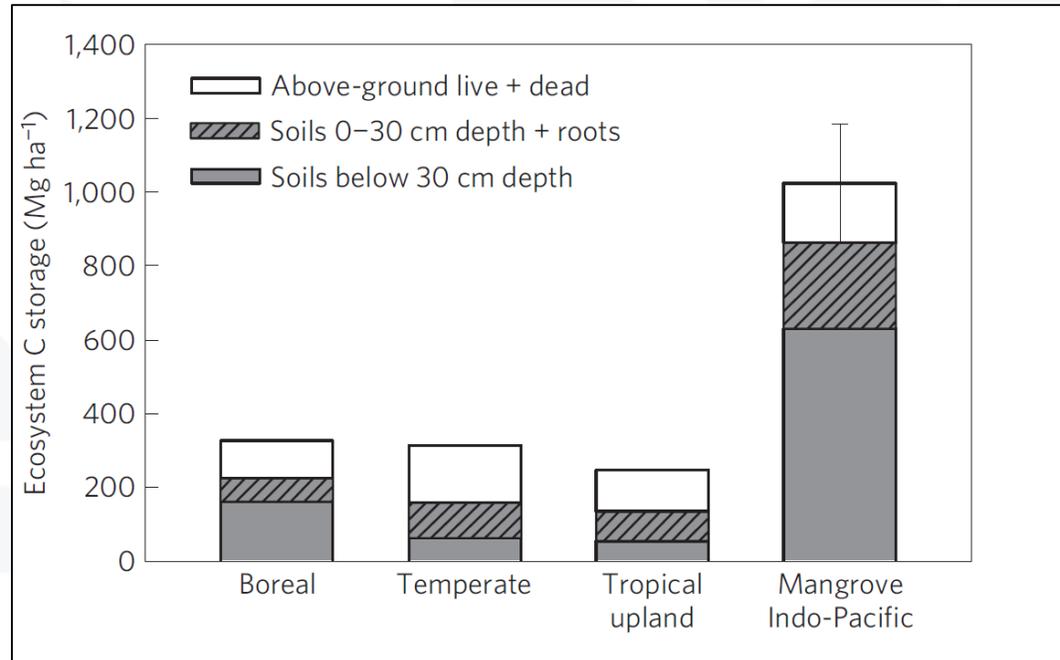
Obser





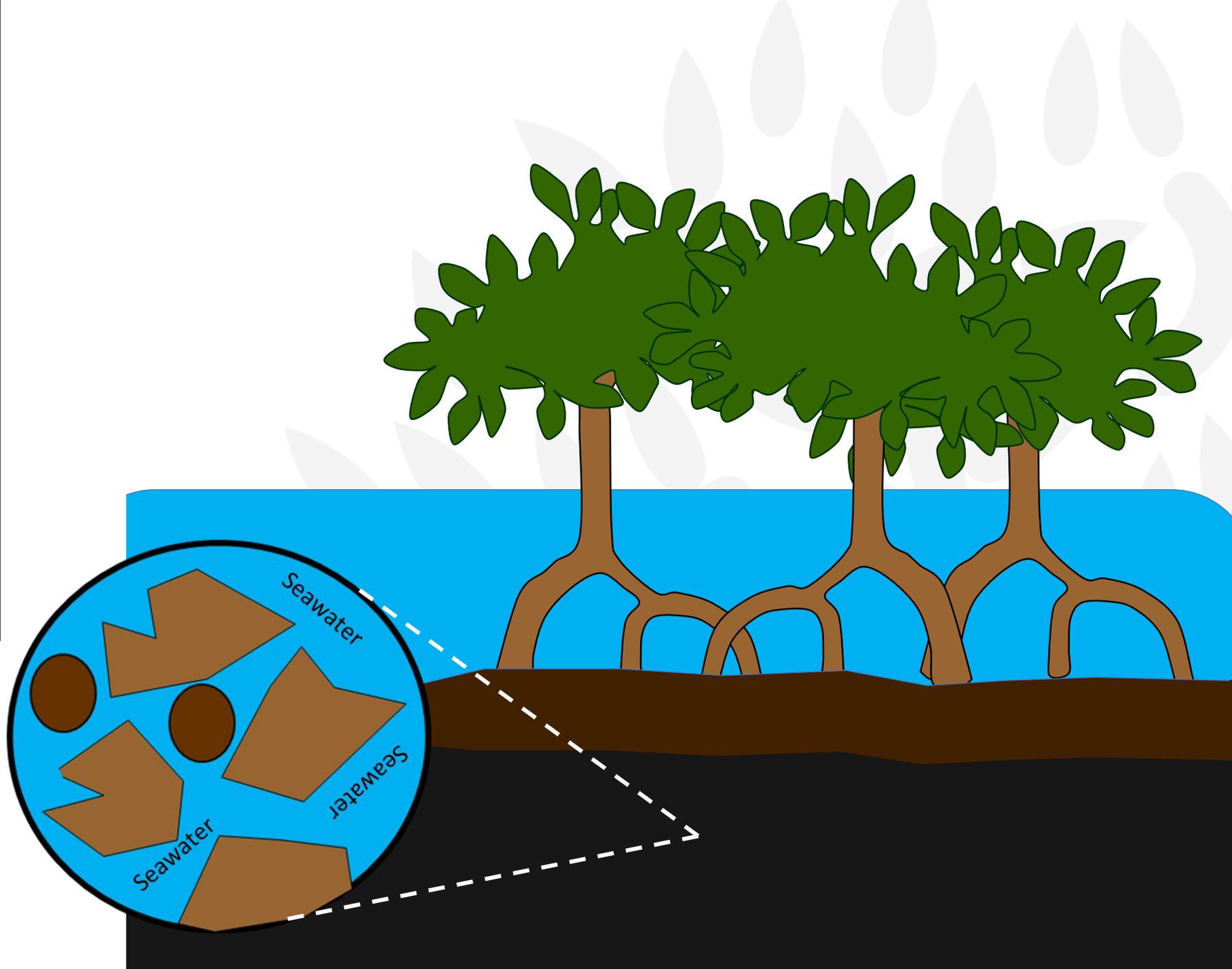
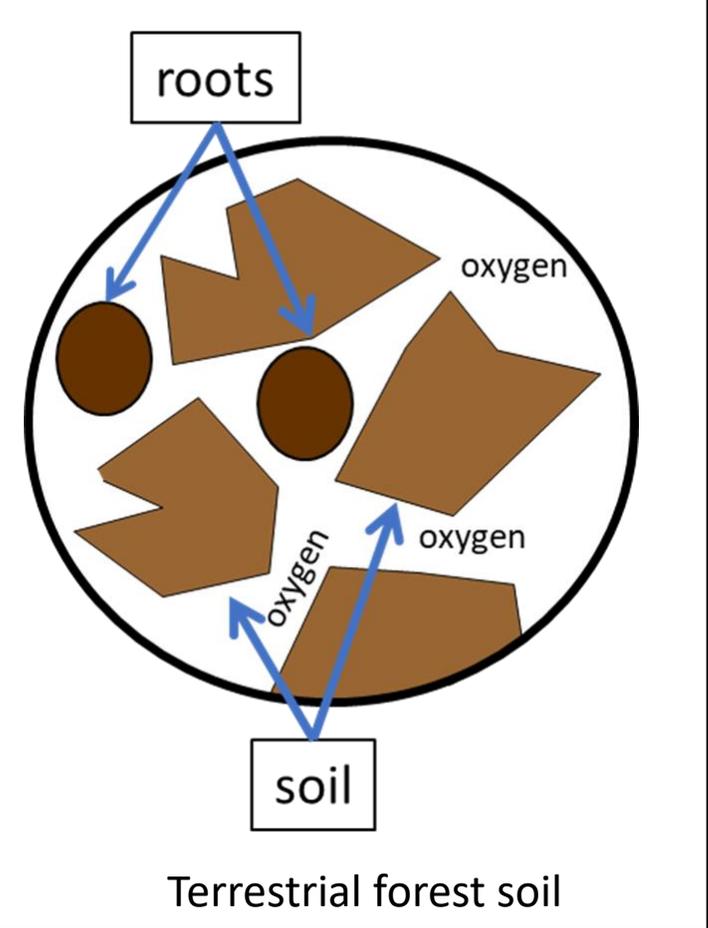
Mangroves among the most carbon-rich forests in the tropics

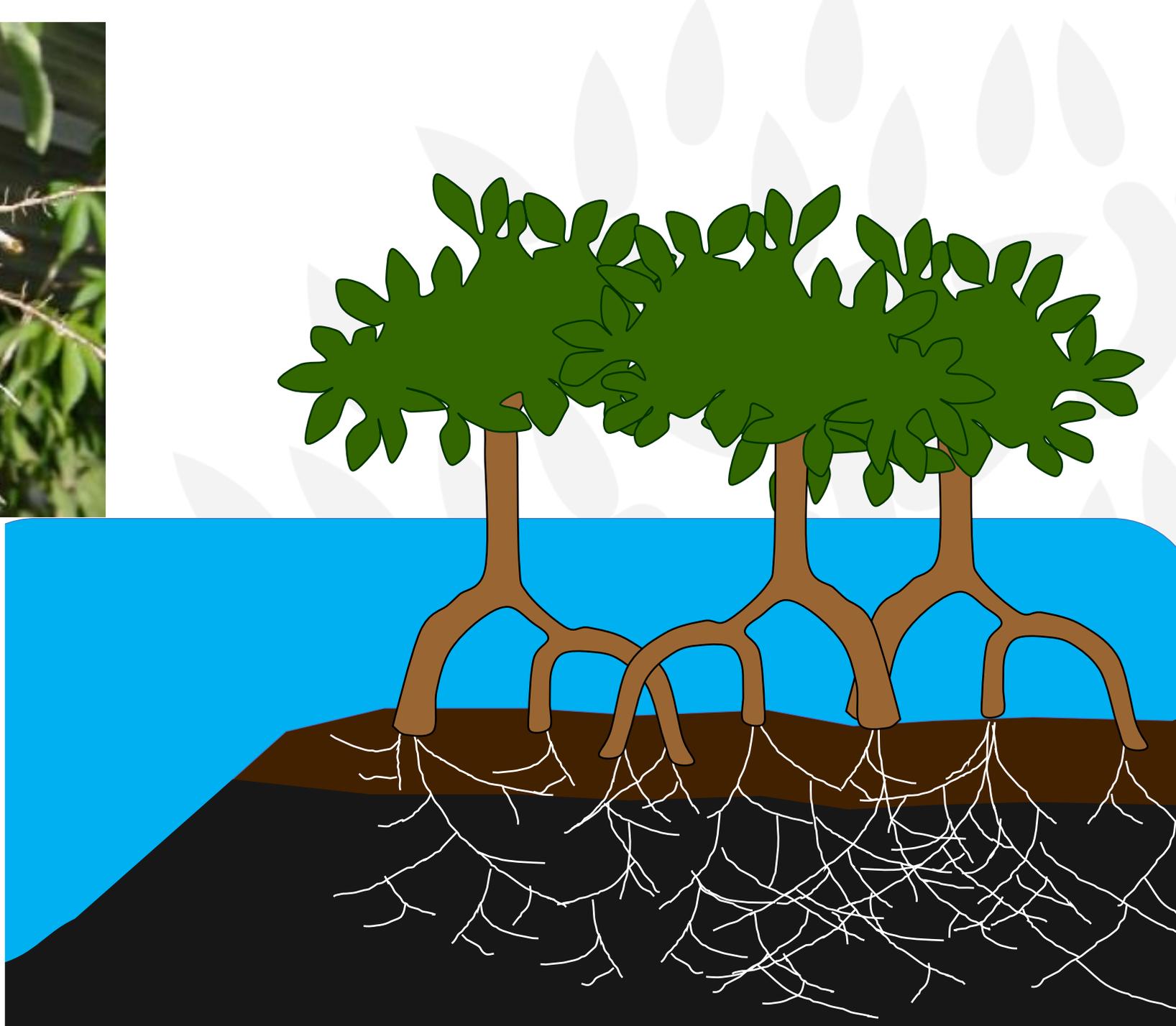
Daniel C. Donato^{1*}, J. Boone Kauffman², Daniel Murdiyoso³, Sofyan Kurnianto³, Melanie Stidham⁴ and Markku Kanninen⁵



- Blue Carbon Ecosystems store 3–5x more carbon than any other tropical or temperate ecosystem
- Why???



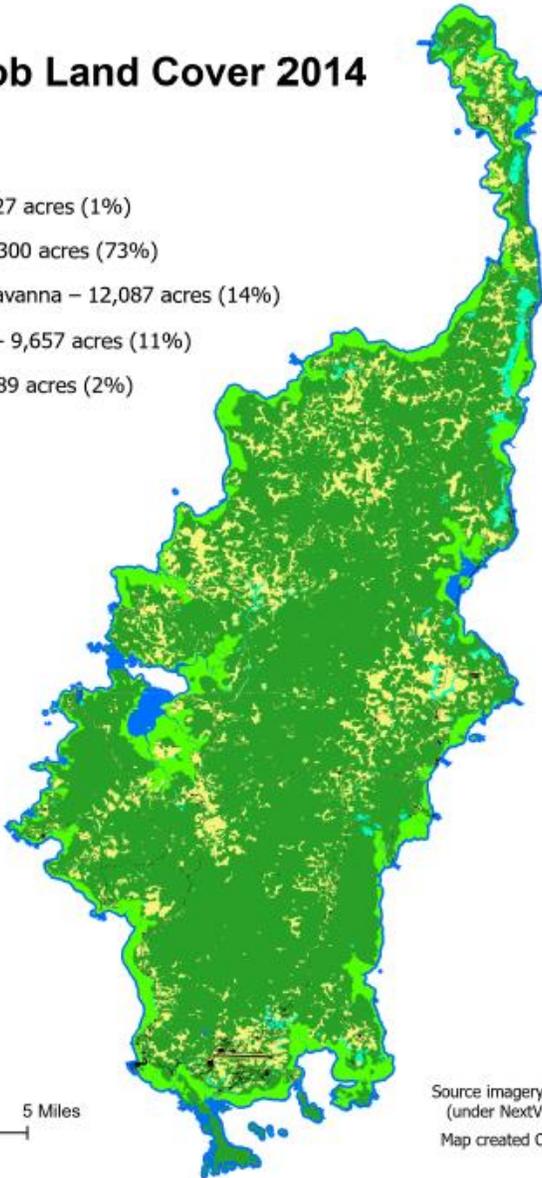




Babeldaob Land Cover 2014

Land cover

- Built-up – 927 acres (1%)
- Forest – 66,300 acres (73%)
- Grassland/savanna – 12,087 acres (14%)
- Mangroves – 9,657 acres (11%)
- Marsh – 1,589 acres (2%)
- Water



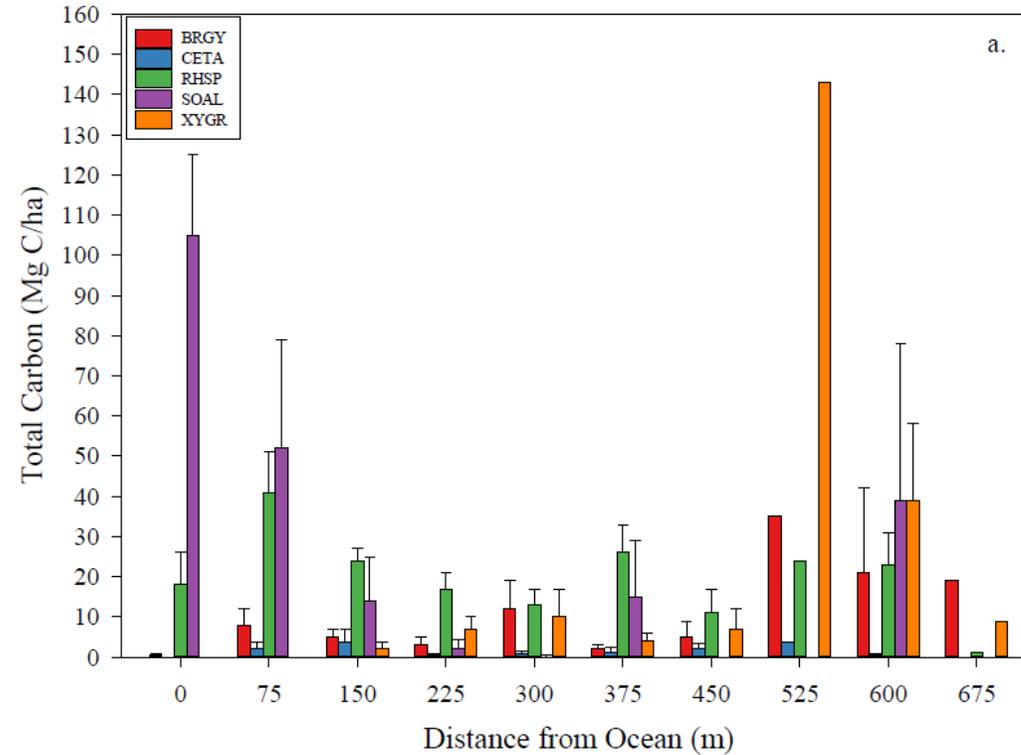
0 2.5 5 Miles

Source imagery: DigitalGlobe
(under NextView license)
Map created October 2020

Figure 3. Land cover on Babeldaob in 2014.

GIS data available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd835201.zip

Figure 8: Mangrove tree total live carbon by species grouped into major (a) and minor (b) classes. Republic of Palau 2010 – 2013. Error bars are standard errors (SE).



MacKenzie et al. in review



Why? Coordinate assessment efforts and allows groups and individuals to pool resources and information for a more strategic and synergistic approach to assessing blue carbon ecosystems.

What would it be? A consortium of NGOs, government organizations and individuals interested in conducting blue carbon assessments in the Pacific region.

What would it cost? \$500K/year?



BLUE CARBON
KNOWLEDGE EXCHANGE
NETWORK

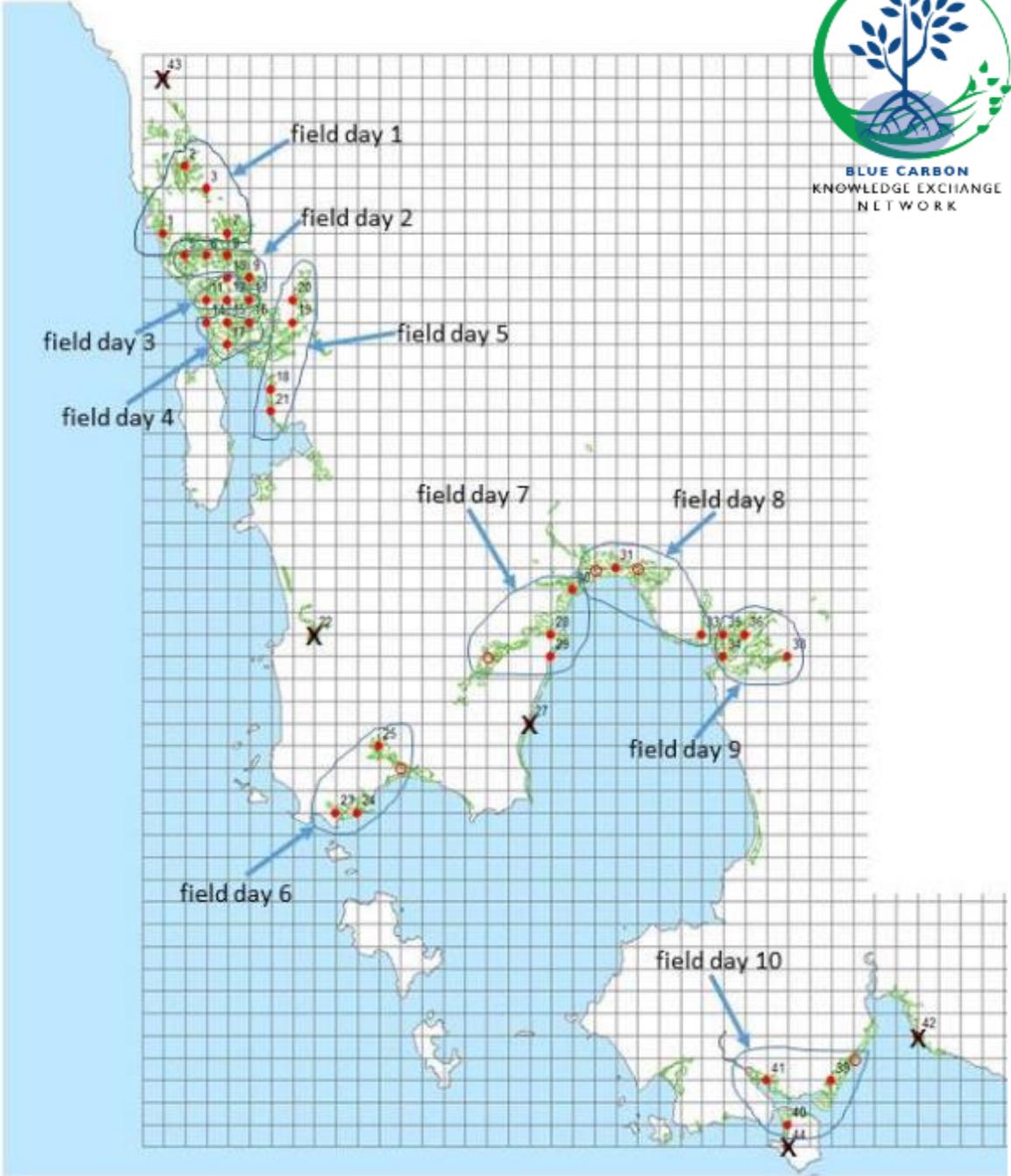


The network enables partners to:

1) Work together to conduct wall-to-wall assessments of blue carbon ecosystems in Pacific Island Countries.



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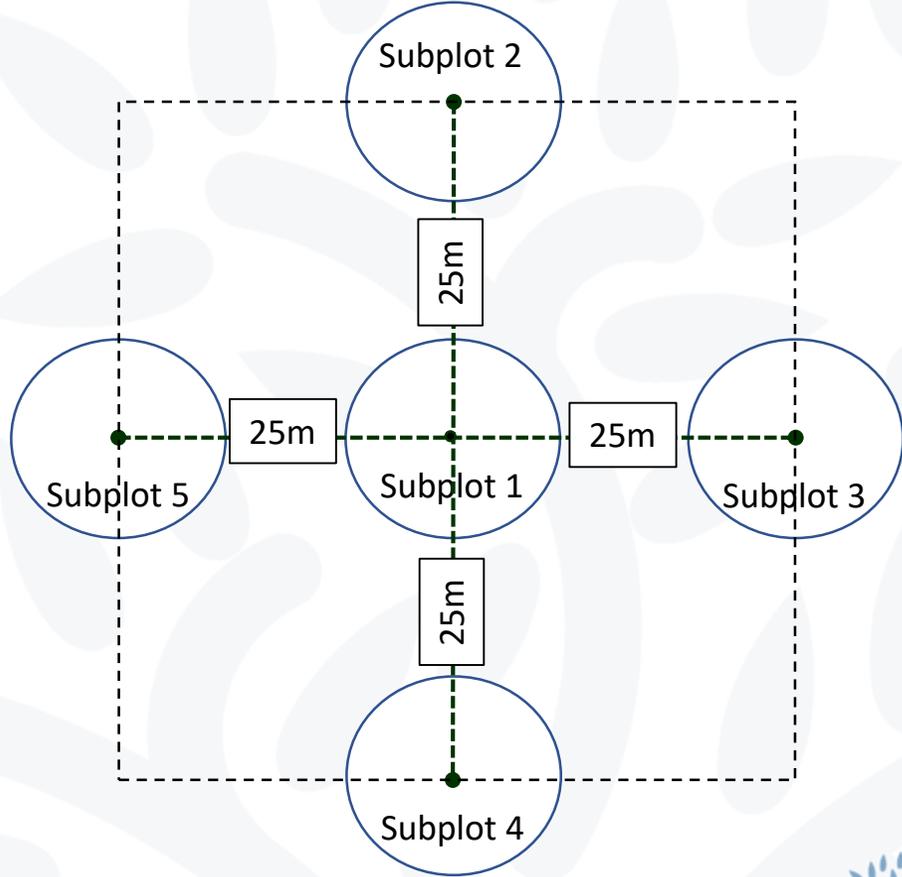
- 1) Work together to conduct wall-to-wall assessments of blue carbon ecosystems in Pacific Island Countries.
- 2) Quantify carbon stocks and response to sea-level rise using a standardized protocol:



SWAMP

Sustainable Wetlands Adaptation and Mitigation Program





Plot layout



The network enables partners to:

- 1) Work together to conduct wall-to-wall assessments of blue carbon ecosystems in Pacific Island Countries.
- 2) Quantify carbon stocks and response to sea-level rise using a standardized protocol:
- 3) **Share information by creating a platform for the region that shows the area of blue carbon ecosystems, the location of blue carbon study plots, and the results those plots (C stocks, stem density, species diversity).**



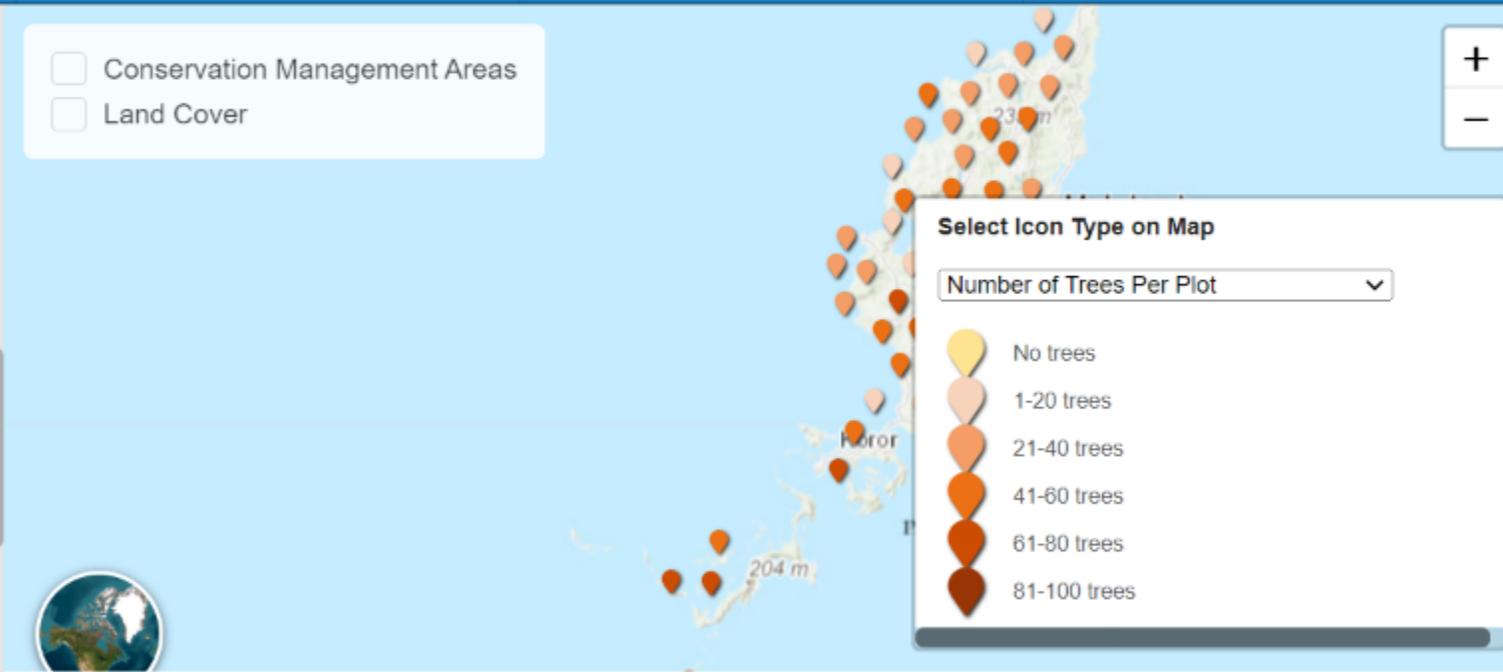


Republic of Palau Guam Commonwealth of Northern Mariana Islands Federated States of Micronesia Republic of Marshall Islands

- ▶ Number of Sapling Species Per Plot
- ▶ Number of Tree Species Per Plot
- ▼ Number of Total Species

0-4 species	5
4-8 species	4
8-12 species	11
12-16 species	9
16-20 species	11
20-24 species	11
24-28 species	5

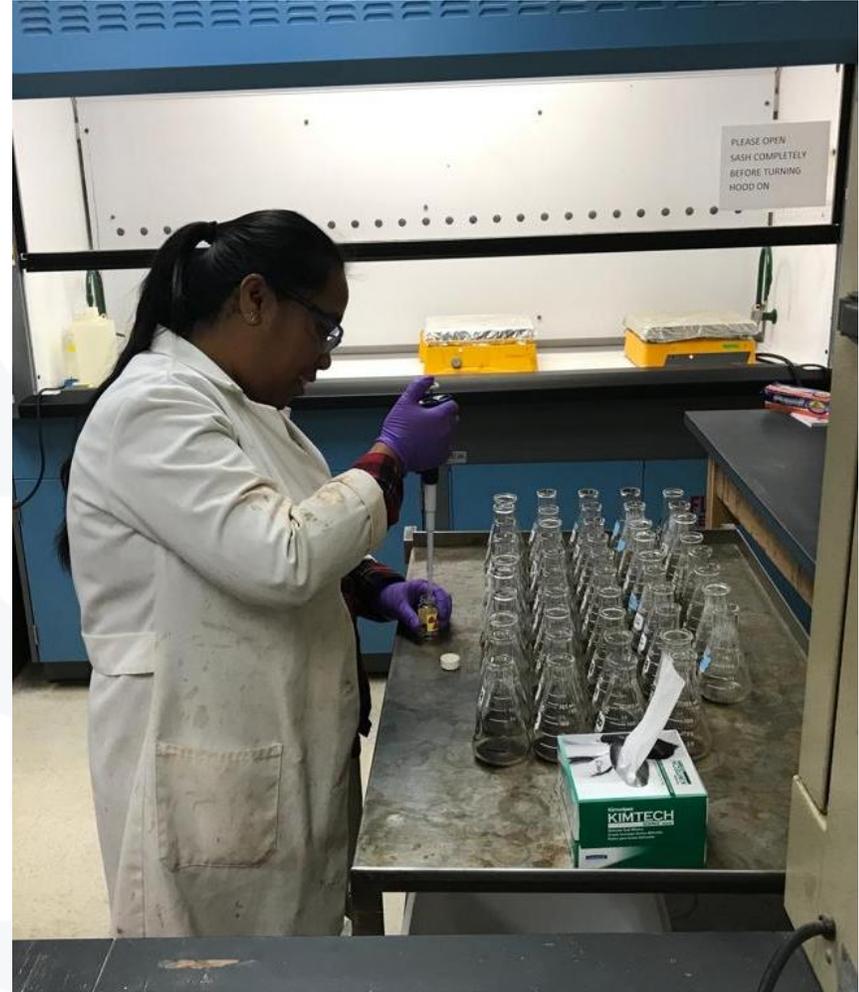
- Conservation Management Areas
- Land Cover



Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

The network enables partners to:

- 1) Work together to conduct wall-to-wall assessments of blue carbon ecosystems in Pacific Island Countries.
- 2) Quantify carbon stocks and response to sea-level rise using a standardized protocol:
- 3) Share information by creating a platform for the region that shows the area of blue carbon ecosystems, the location of blue carbon study plots, and the results those plots (C stocks, stem density, species diversity).
- 4) Create a Blue Carbon hub where samples can be sent to be processed for carbon.





Rich MacKenzie
richard.mackenzie@usda.gov

