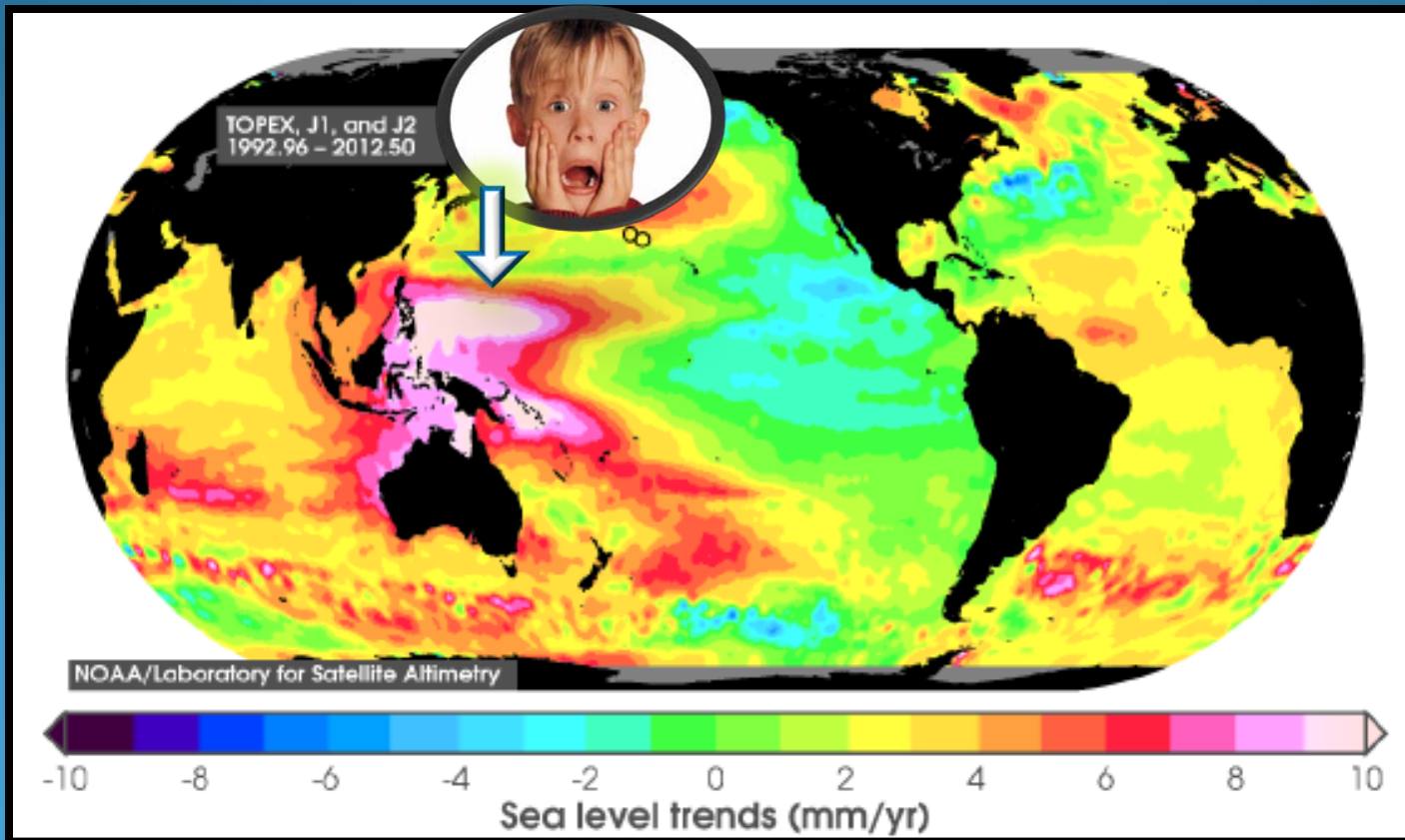


Watershed Working Group Meeting

May 22nd, 2013

Some notes and updates from the CNMI Climate Change Working Group

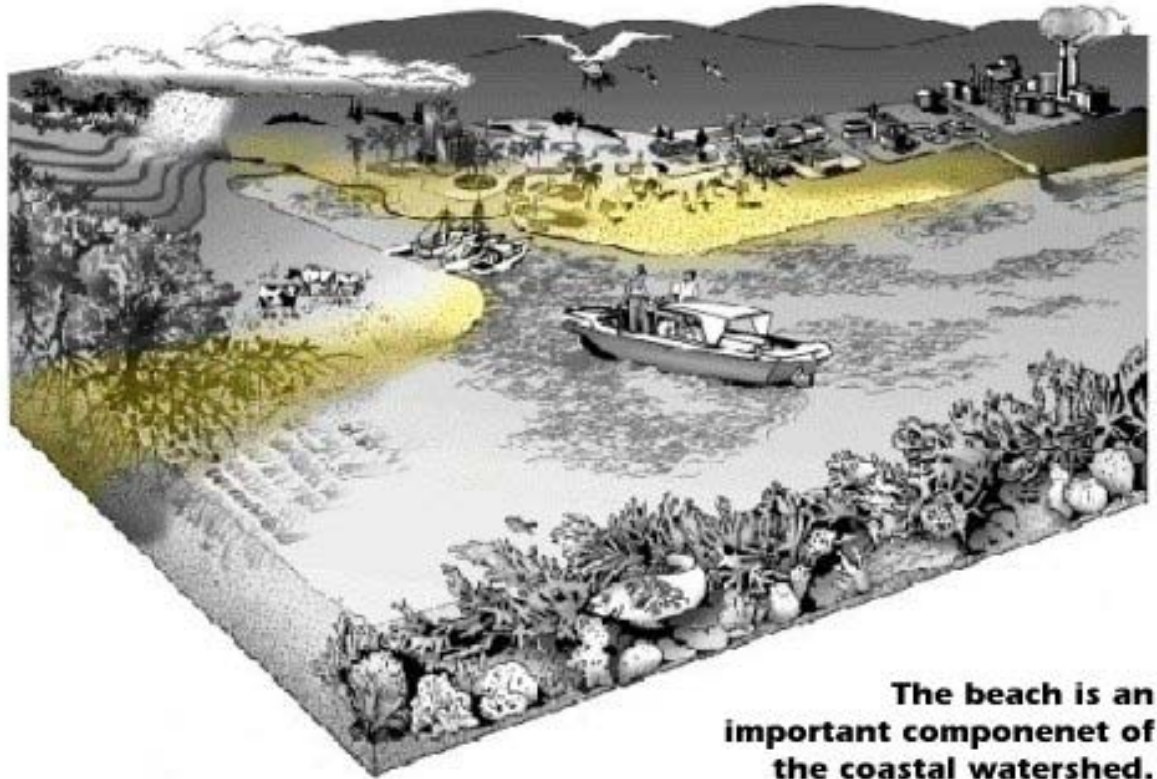


Climate Change and the Coast

- **Physical Processes**
 - Misbehaving Beaches
 - Sea Level Rise
 - Working Group Mapping
 - Bringing it all together...
- **Social Vulnerability**
 - What do we know?
 - What do we need to know?
 - Help?
- **Extremely fun upcoming events!**

Misbehaving Beaches

- What does this mean for vegetation and wetlands?
- What does this mean for Surface run-off, drainage points, and catchment?
- What are the impacts to terrestrial and aquatic Habitats?

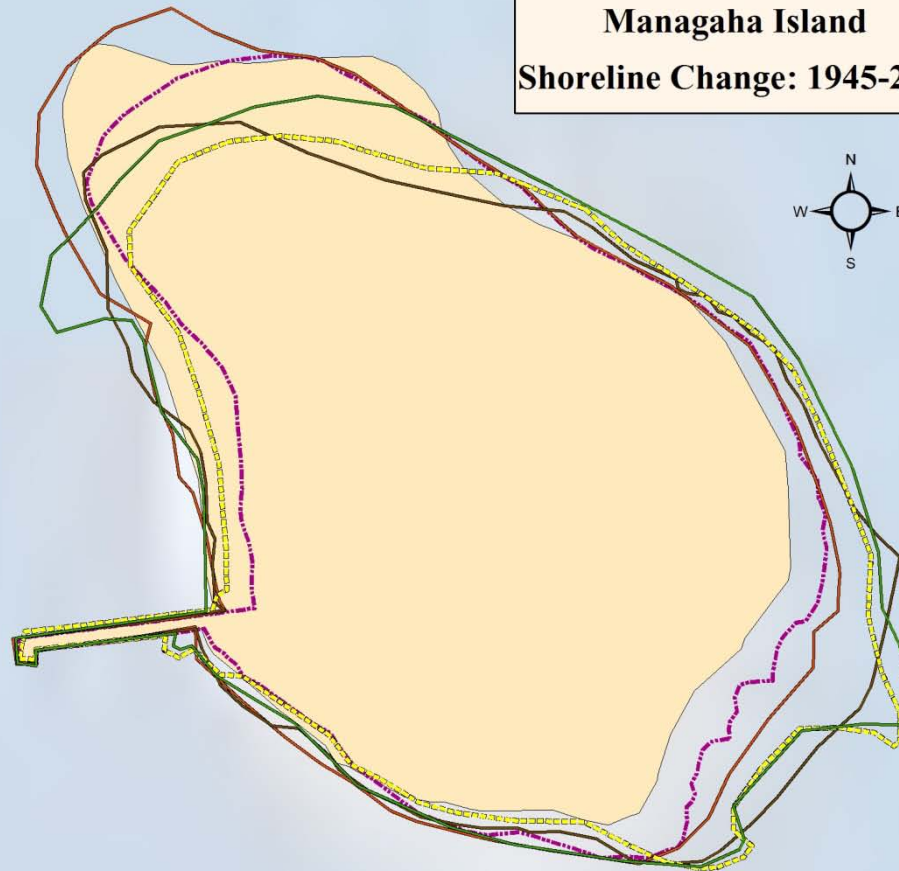
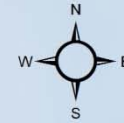


The beach is an important component of the coastal watershed.

(The EPA says so)

Managaha Island

Shoreline Change: 1945-2012



Managaha Shoreline

Year

1945

1987

1996

1999

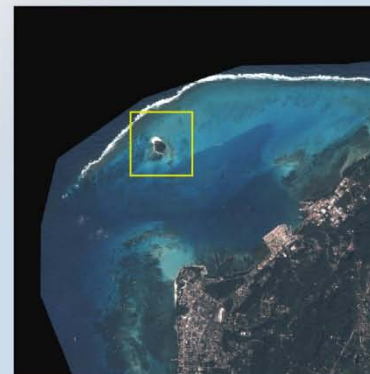
2004

Managaha Outline - 9.28.2012

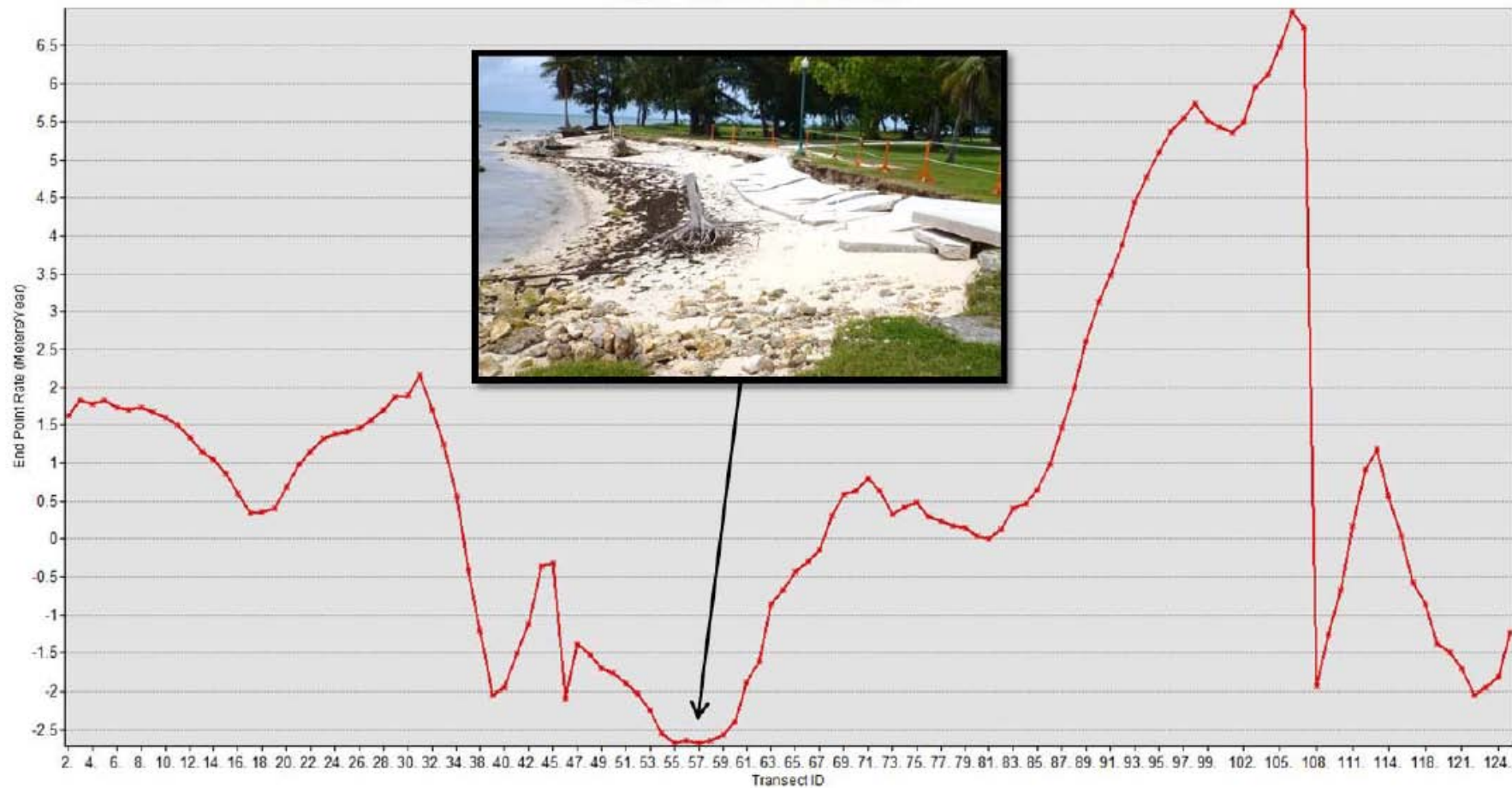
Scale

1:1,950

0 25 50 100
Meters



End Point Rate of Erosion/Accretion



Rising Tides

Wetland & Terrestrial Habitat Migration (based on saturation and assumptions of salinity change)

Marsh Impacts/Migration ?

4 ft SLR

Advanced Options ▶

Legend

- High Intensity Developed
- Medium Intensity Developed
- Low Intensity Developed
- Developed Open Space
- Upland
- Freshwater Forested Wetland
- Freshwater Shrub Wetland
- Freshwater Emergent Wetland
- Brackish/Transitional Marsh
- Saltwater Marsh
- Unconsolidated Shore
- Water

[Detailed Class Descriptions \(PDF\)](#)

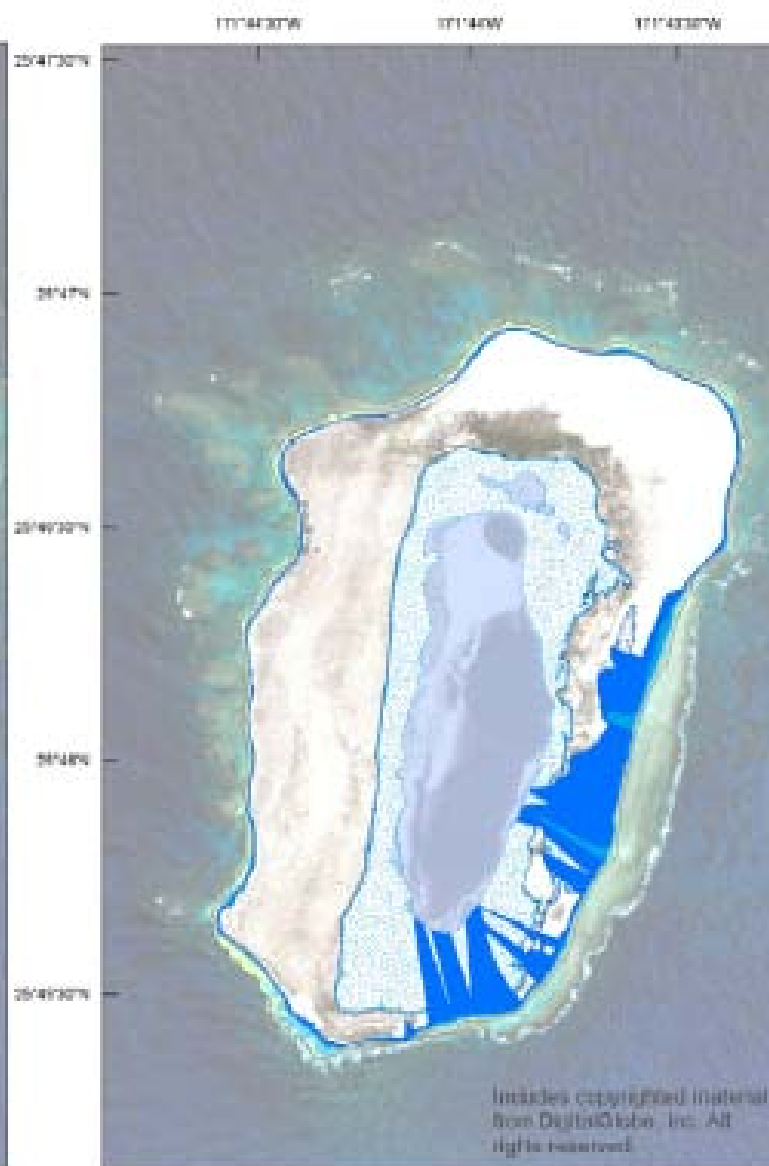
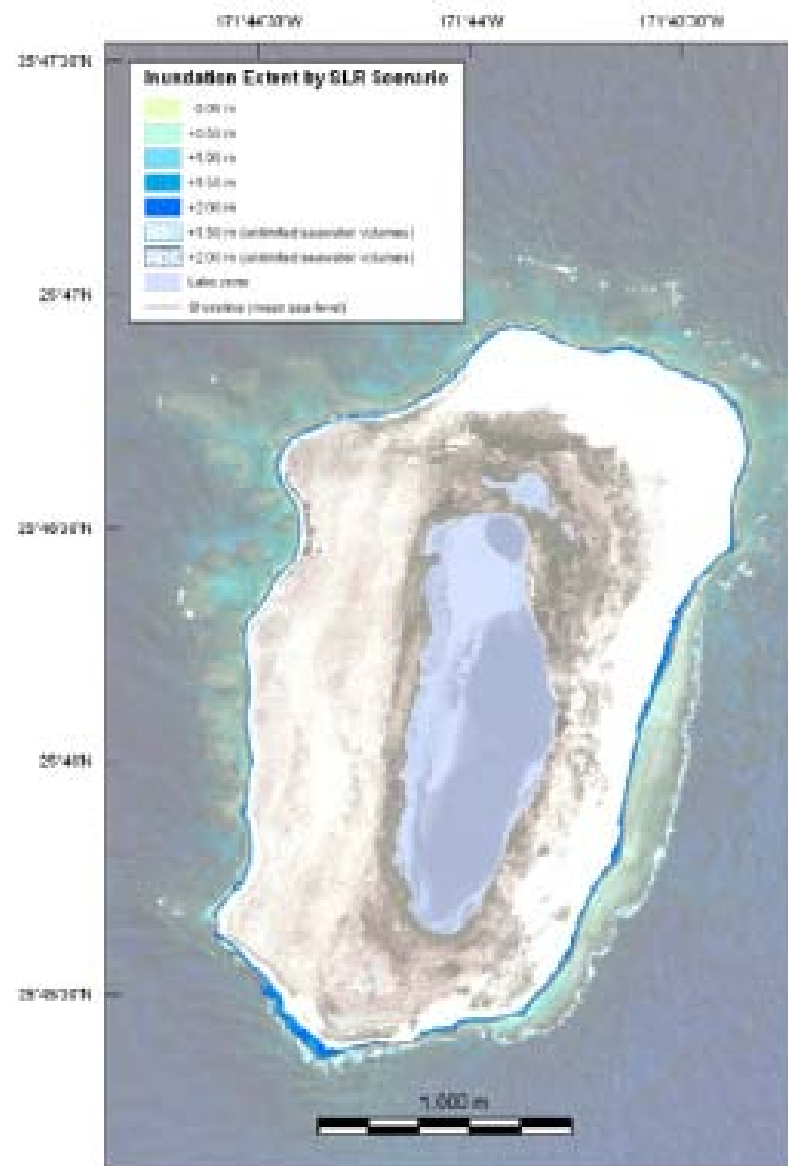
- Area Not Mapped

Overview

Understanding the Map

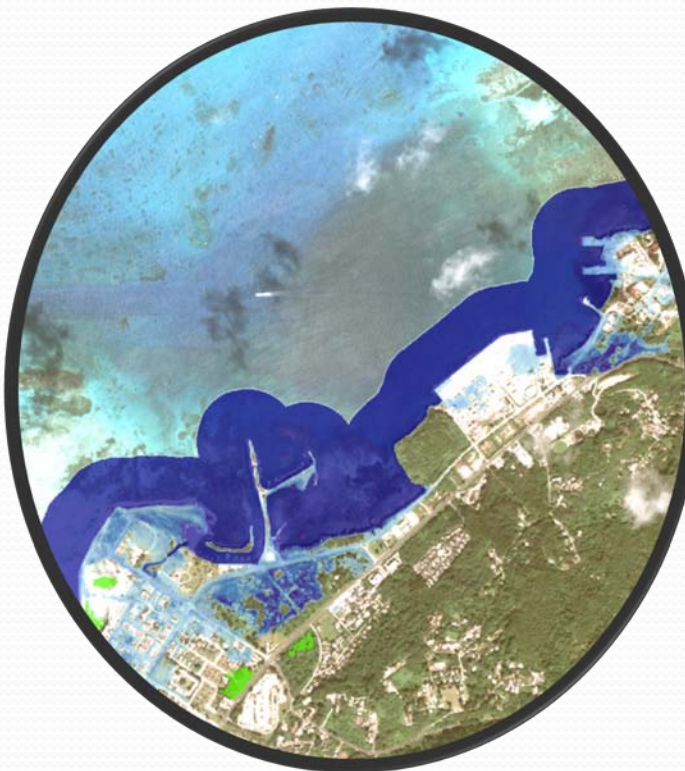
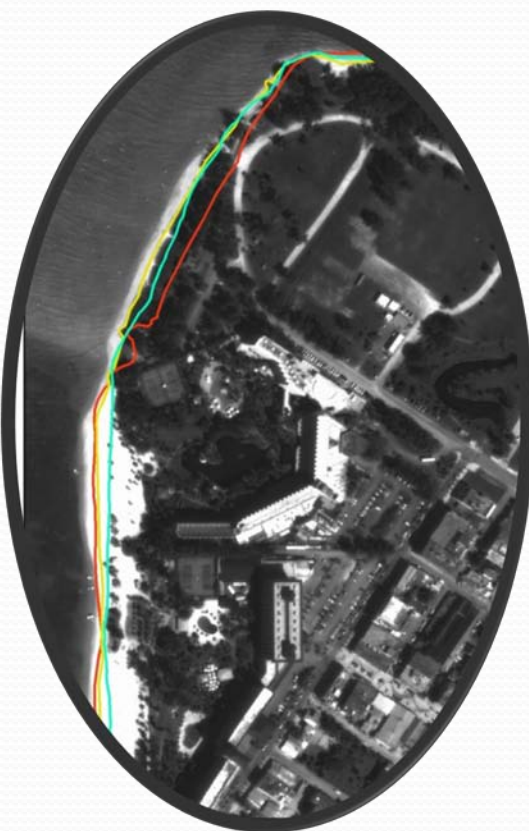
Additional Information





Bringing it all together...

(Sea Level Rise bathtub model) +
(Shoreline Change Assessments) +
(CCWG Participatory Mapping Results) =
“Vulnerability Assessment Filter”



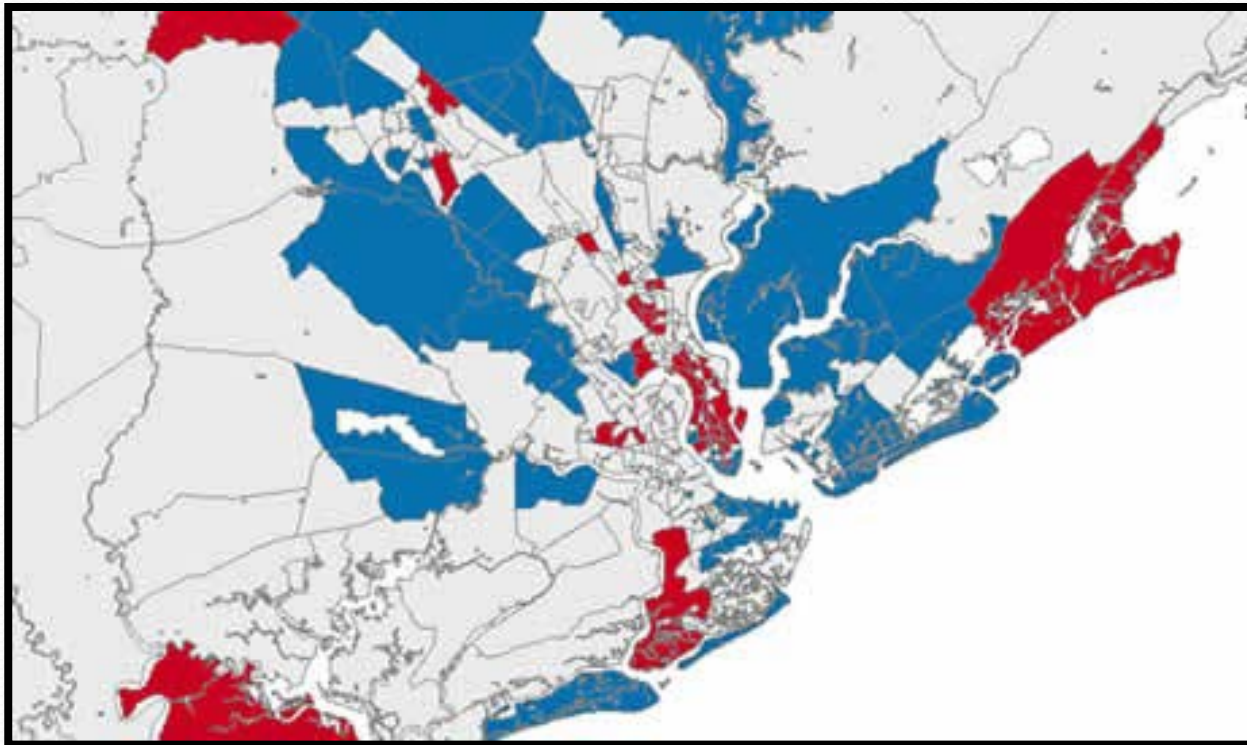
So we can identify vulnerable infrastructure and resources...

What about the people?



Social Vulnerability & Adaptation

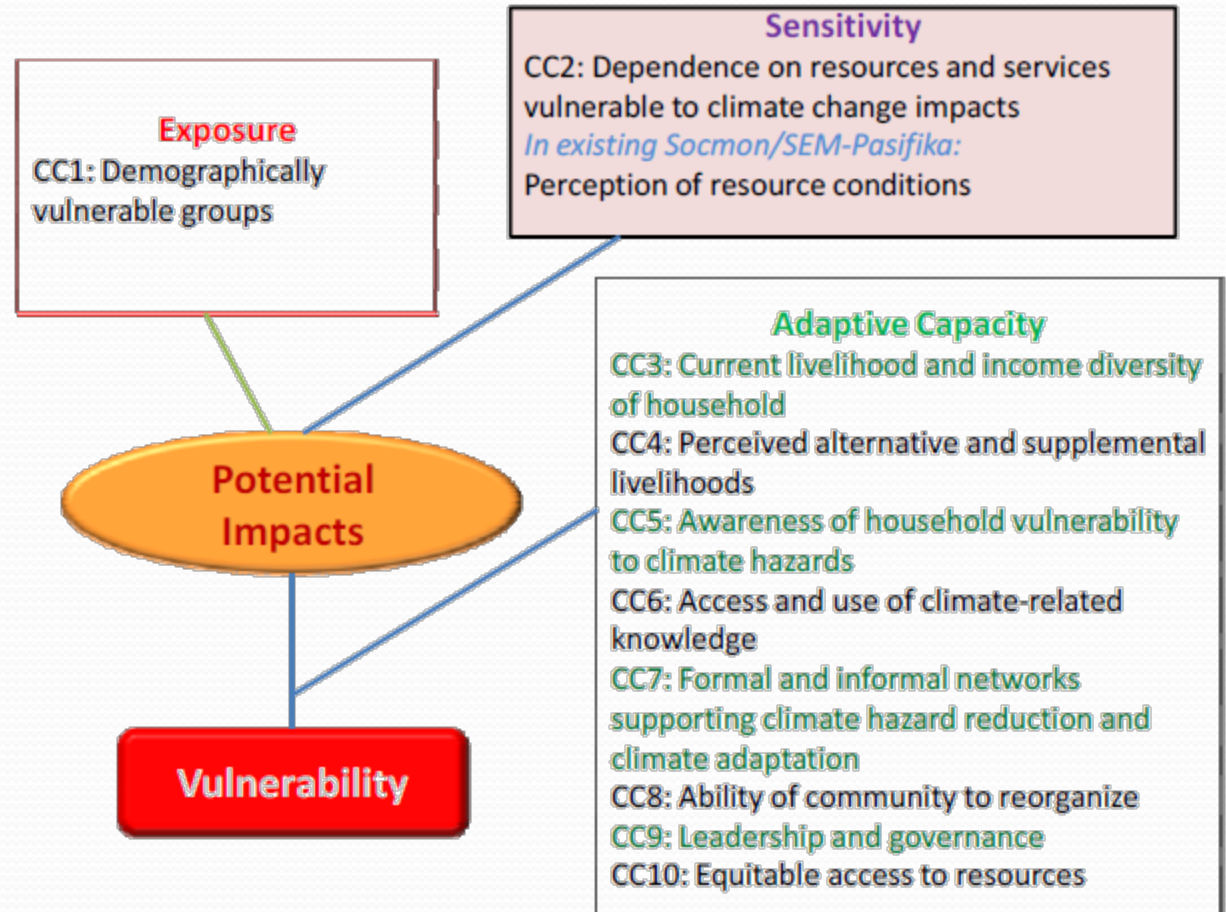
**Is the Census enough?
Accuracy?
Nuance?**



Social Vulnerability & Adaptation

What should we be asking?

- Who is vulnerable?
- Who is directly exposed to climate phenomena?
- Who is indirectly impacted by climate phenomena?
- What villages? What communities? Which demographics?



Social Vulnerability & Adaptation

Who/How should we be asking?

- **Secondary sources:** These include scientific reports on climate change, impacts, and threats to local resources such as coral reefs, beaches and coasts, crops, and forests.
- **Community mapping:** Community members are invited to create maps that show (1) the types and location of natural resources that they depend upon, (2) community infrastructure and services, (3) areas where key social and economic activities take place, and (4) areas impacted or threatened by climate hazards (see Rambaldi 2010).
- **Physical and biological assessments and monitoring:** This data can provide an understanding of physical resources, current biological conditions, and changes. It can also help identify climate-related problems and threats to physical areas, species, and ecosystems.
- **Seasonal calendar:** Community members or representatives of occupational groups are invited to review annual seasons and climate events (e.g. rainy/dry season) and associated use of natural resources and social activities (e.g. traditional ceremonies or local customs). This can provide an understanding of potential social and natural impacts from changes in seasonal events, and how to prepare to deal with them.
- Having identified the resources and services that are vulnerable to climate hazards, ask **key informants** to identify the major activities conducted by households in the area (i.e., fisheries, tourism, aquaculture, etc.). Then ask them to estimate the percentage of each good and service produced that is used for personal consumption or income generation. Ask key informants also about the importance of ecosystems that may provide physical protection to the community (e.g., reefs and mangroves).

Upcoming Climate Change Working Group Meeting

Thursday, June 13th
9:00 – 12:00 (*and Lunch!*)
PIC

Mapping (again)

Please Come!

- **Narrative concerning past events (typhoons, droughts, floods and consequent impacts)**
- **Human uses and adaptations (responses to past events or seasonal variations)**
- **Geo-reference existing plans and policies (infrastructure, development, resource management, etc...)**

Thanks!

Questions? *Concerns?*



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