

Sea Level Rise in San Juan County

Shoreforms, vulnerability, and adaptation

Lopez Island

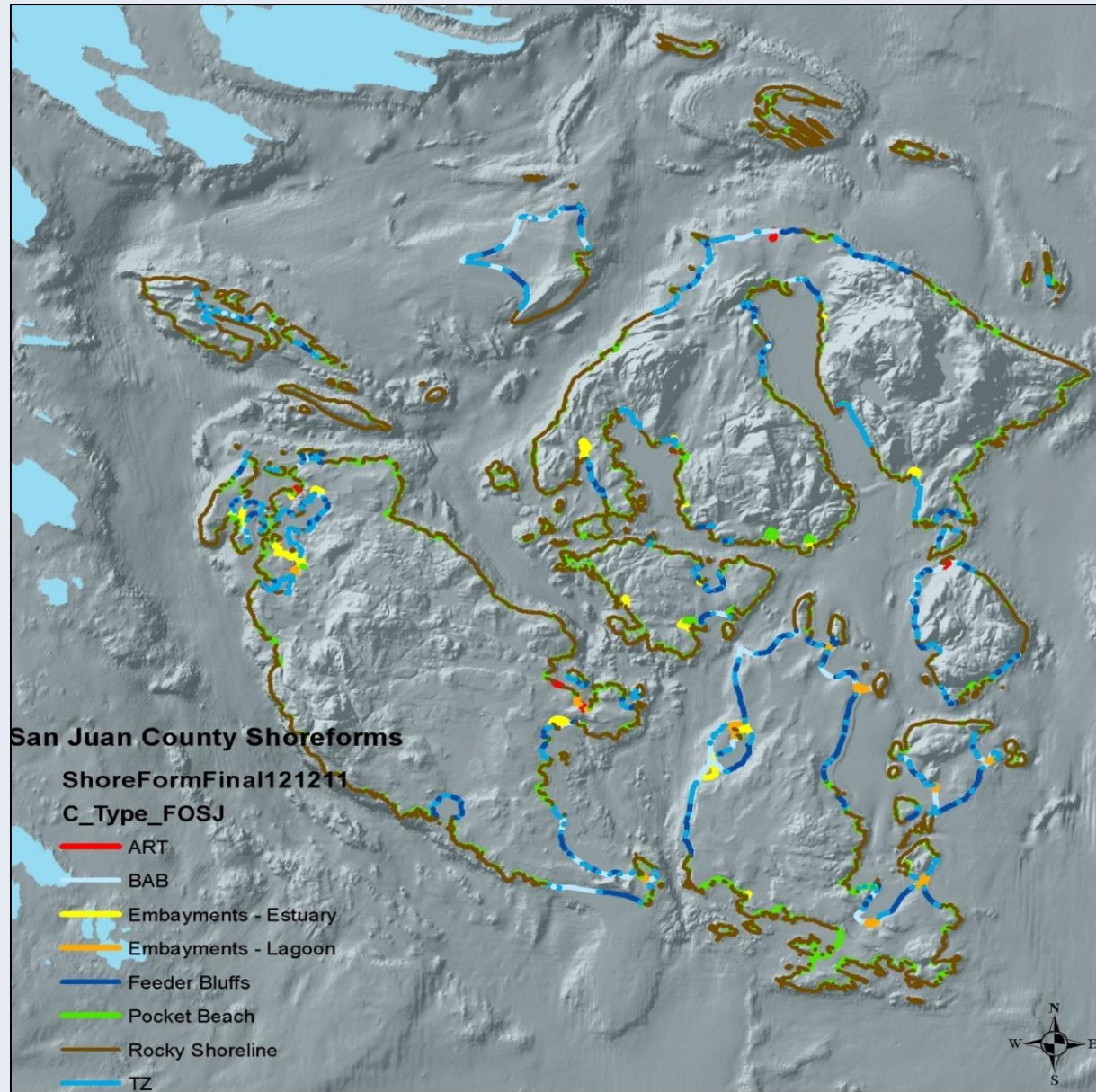
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Coastal Geologic Services, Inc



Objective: Make Informed Decisions

How will my
shoreline respond
to sea level rise?

SHORETYPE



Objective: Make Informed Decisions

How vulnerable is my property?

What type of hazard?

When will it be affected?

SJC VULNERABILITY ASSESSMENT



Objective: Make Informed Decisions

What can I do?

**What options are there for adaptation on my
type of shoreline?**

APPROPRIATE ADAPTATION



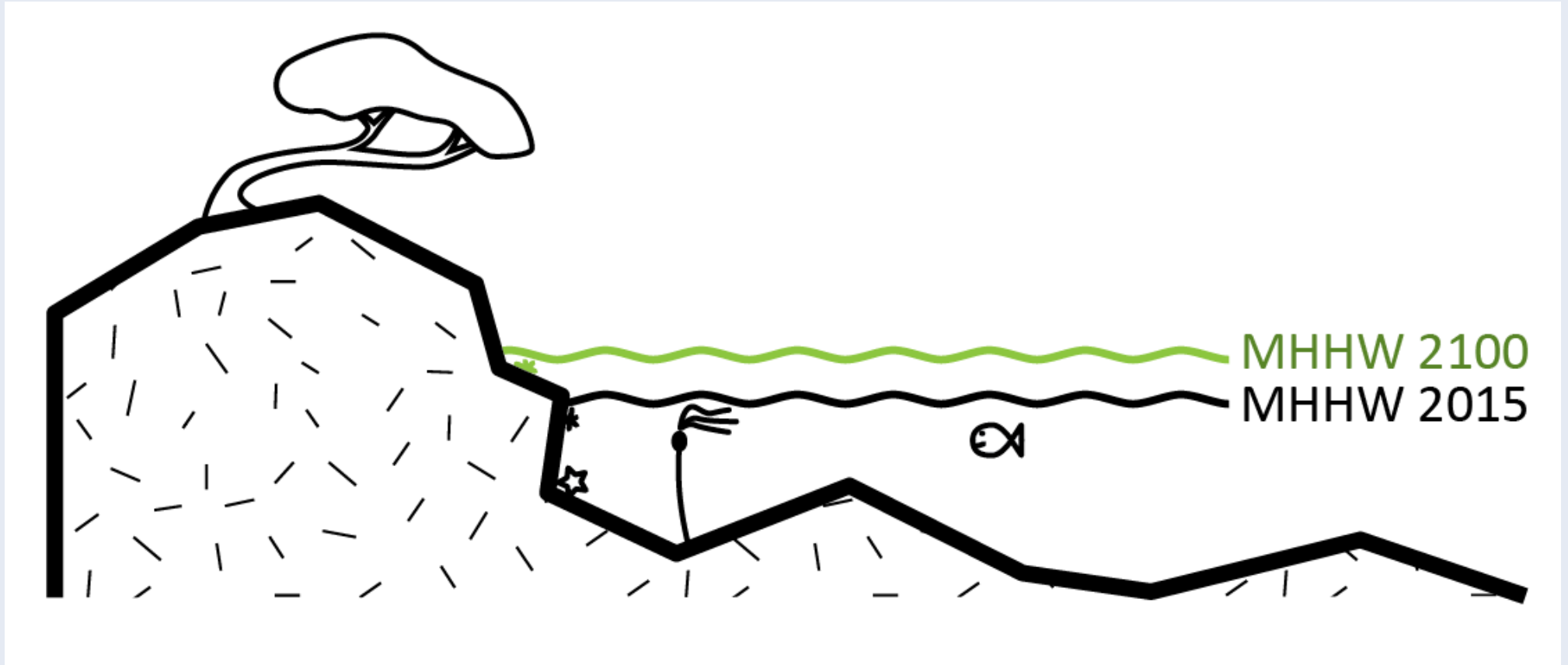
How will my shoreline respond to sea level rise?

Different shoreforms will respond differently

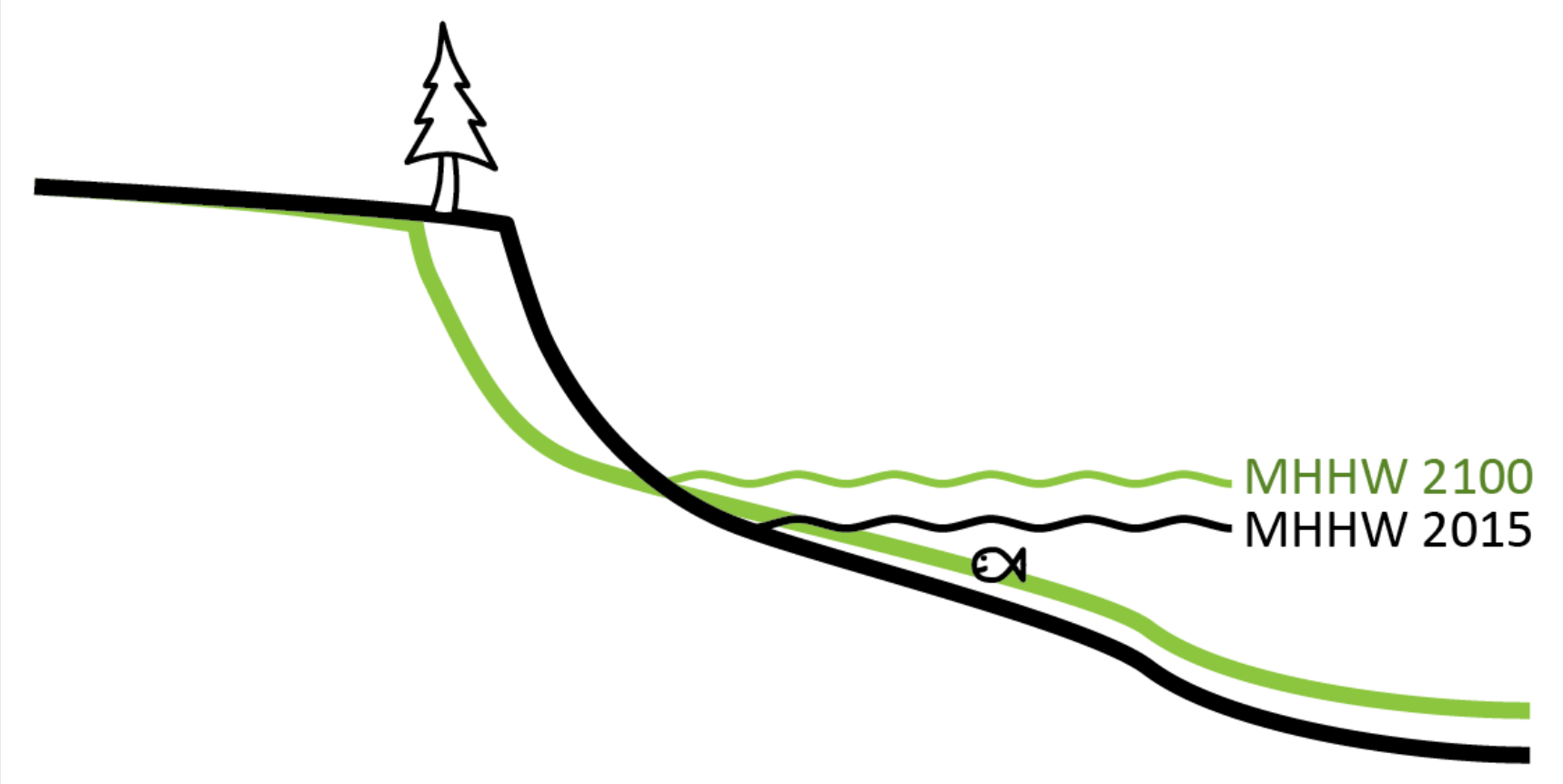
- Topography
 - Geology
- Sediment supply



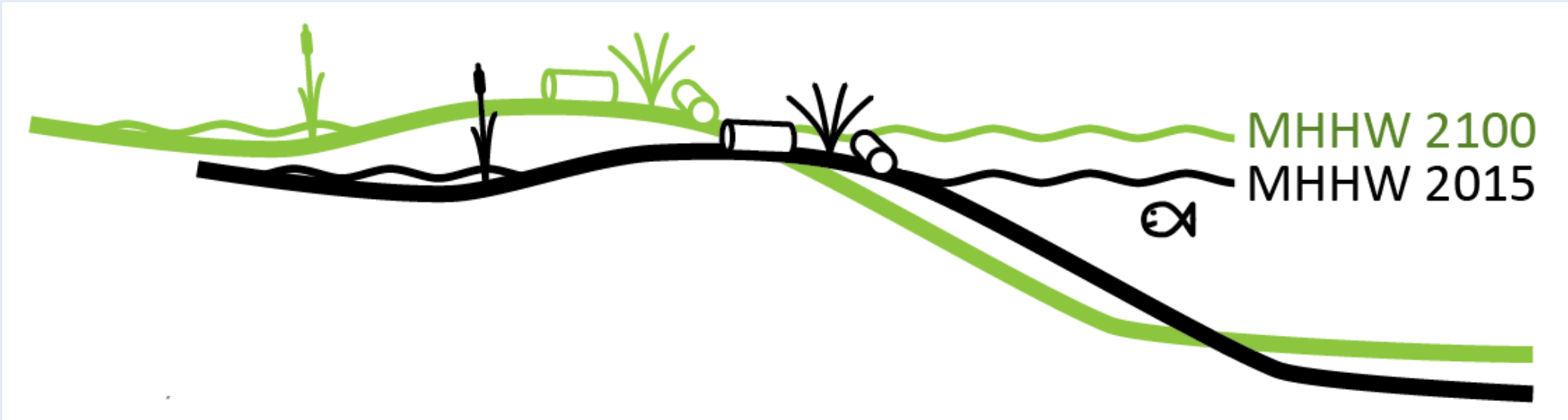
Rocky Shores and Sea Level Rise



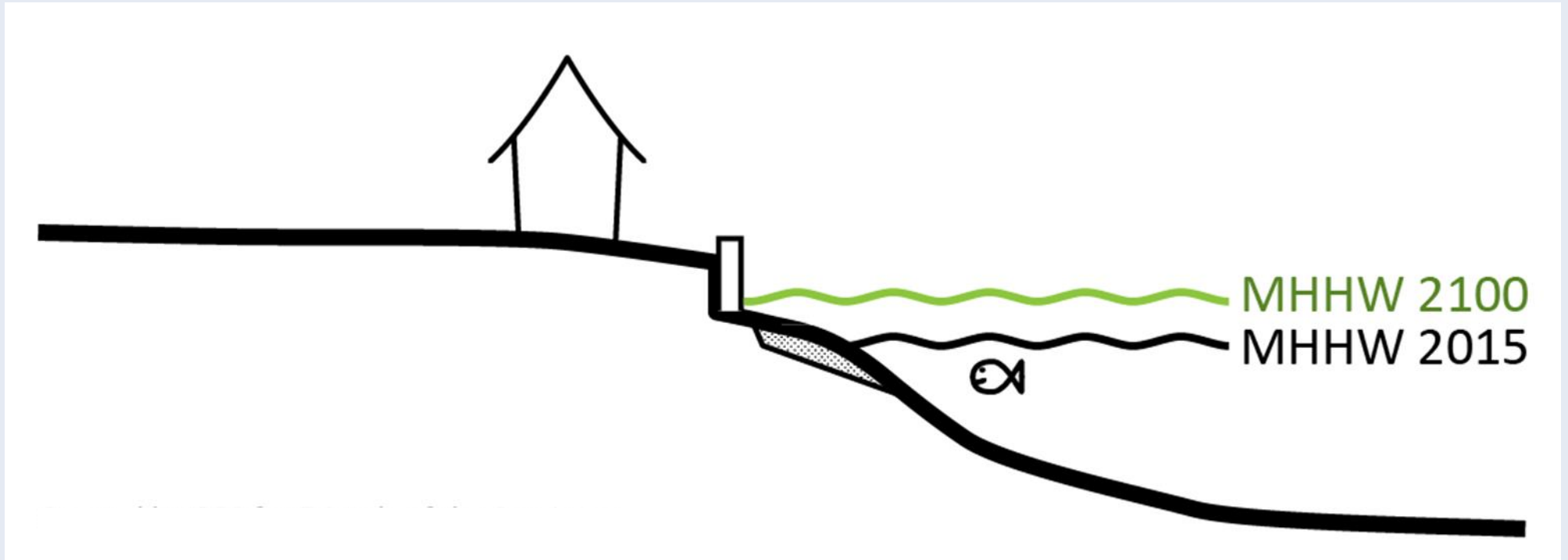
Bluffs and Sea Level Rise



Barrier Beaches and Sea Level Rise



Armored Beaches and Sea Level Rise



San Juan County Vulnerability Assessment

Objectives

How vulnerable is my property?

What type of hazard?

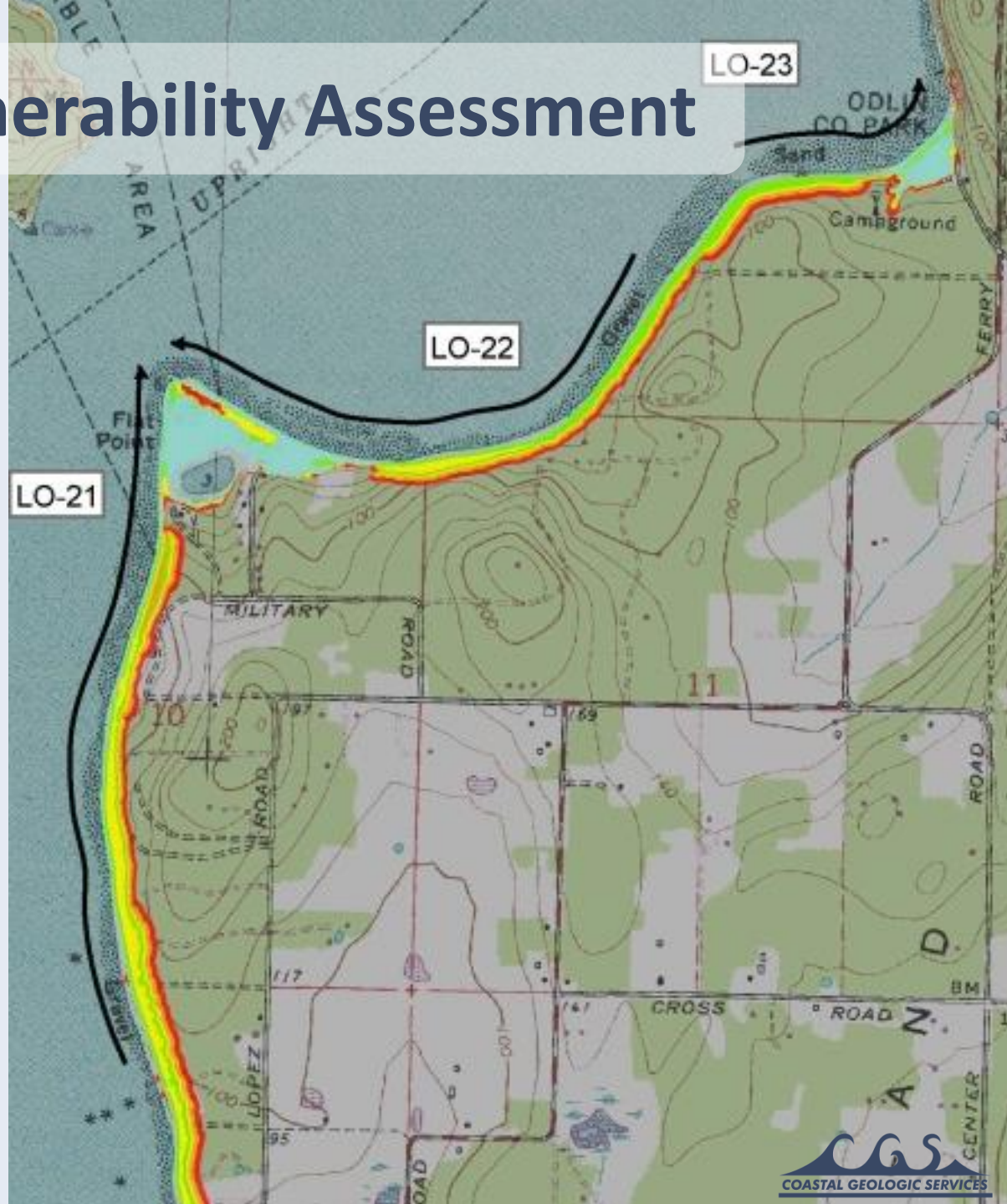
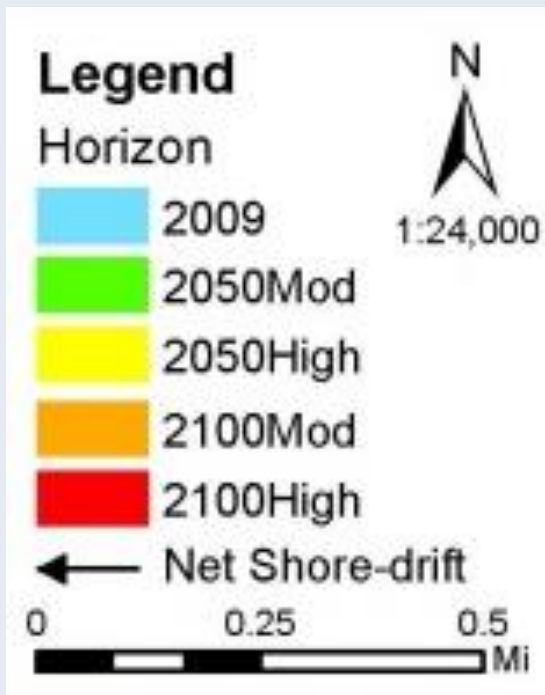
When will my property be affected?

GIS tool to visualize SLR implications in San Juan County

- Coastal bluff erosion and
- Coastal flooding (inundation)

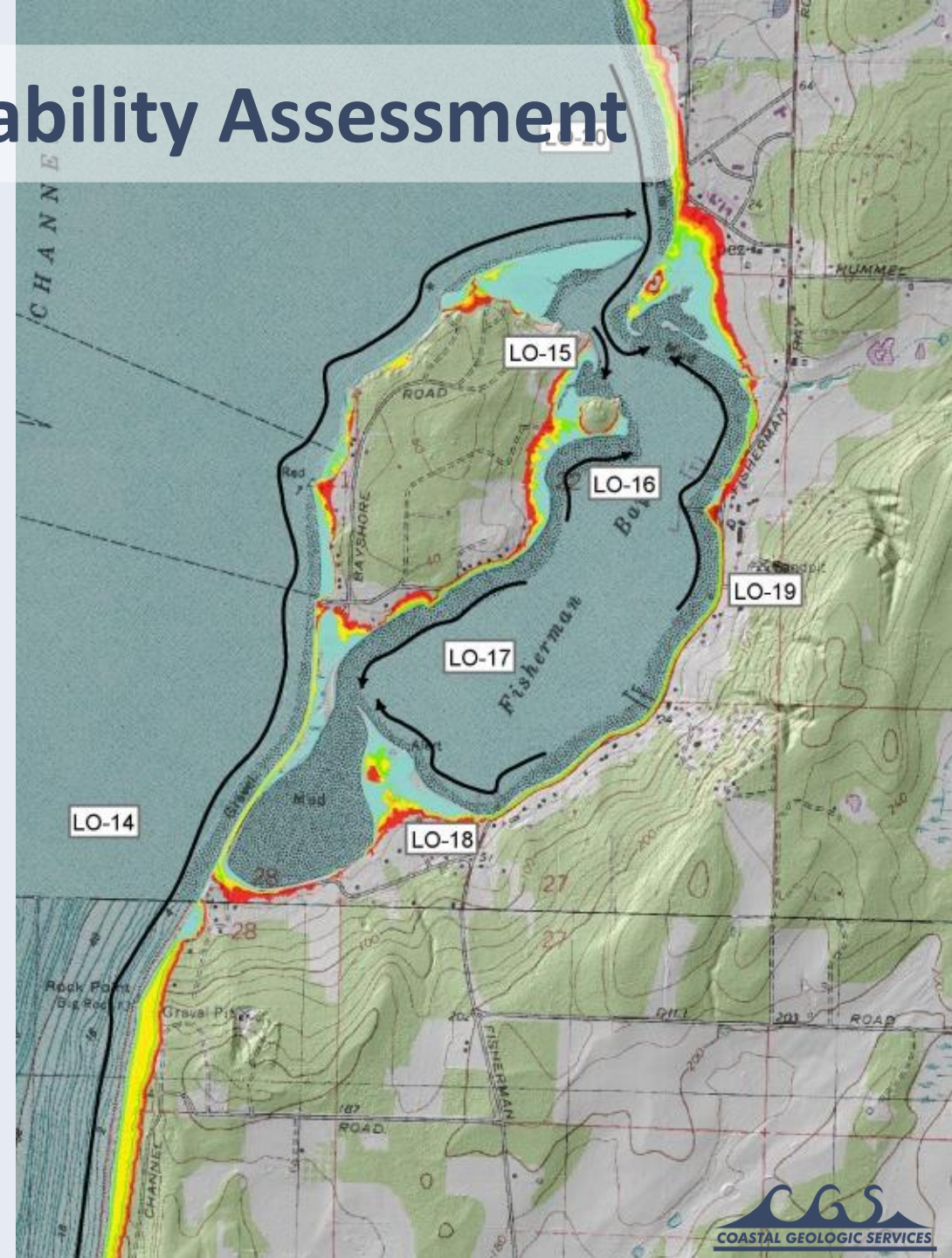
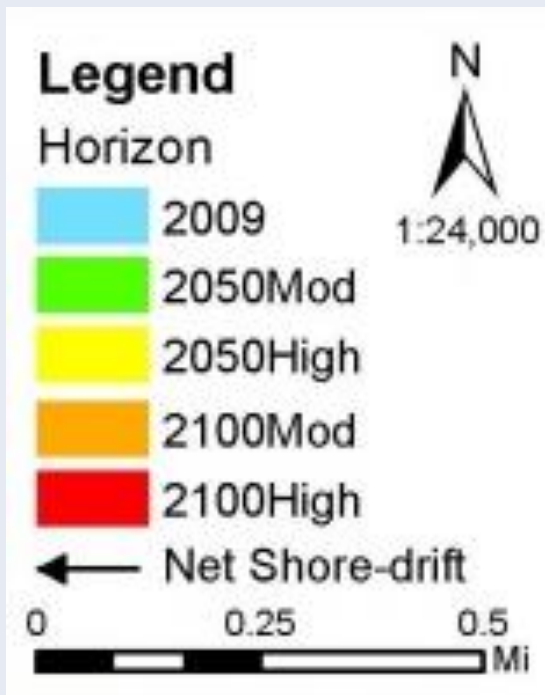
San Juan County Vulnerability Assessment

Lopez



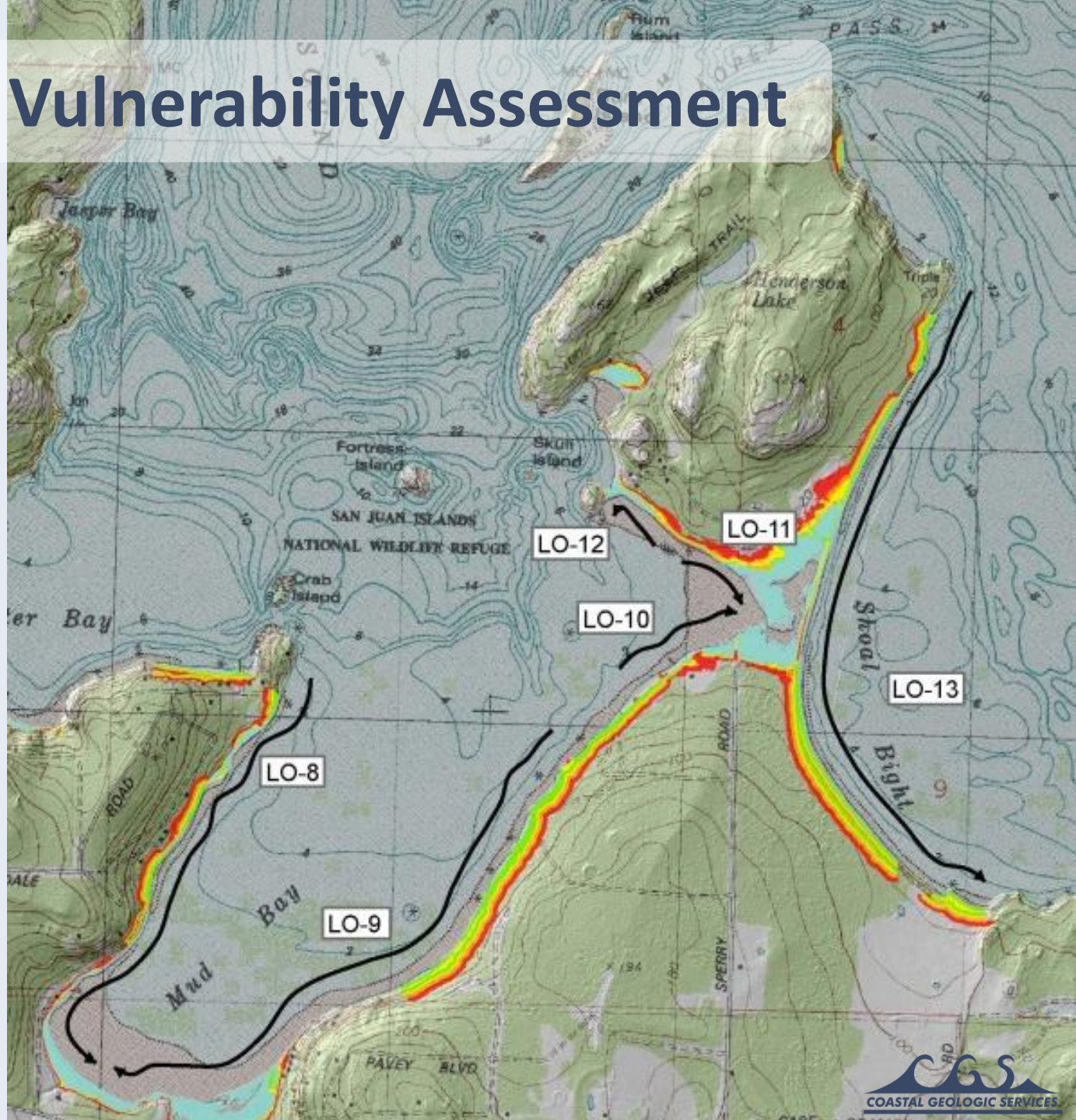
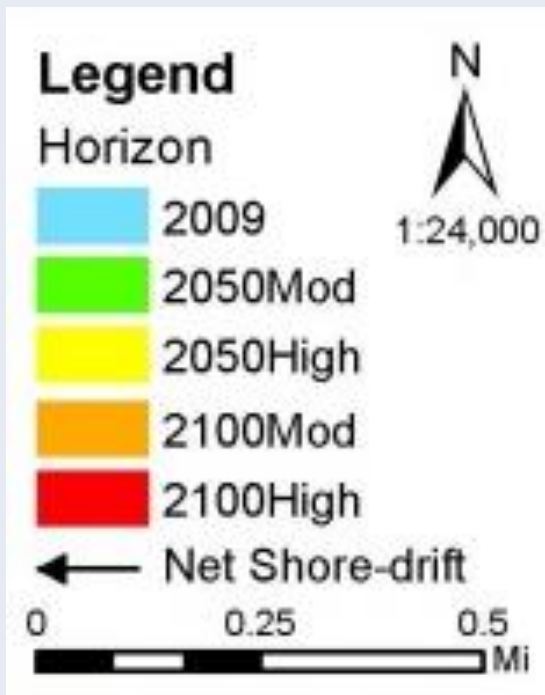
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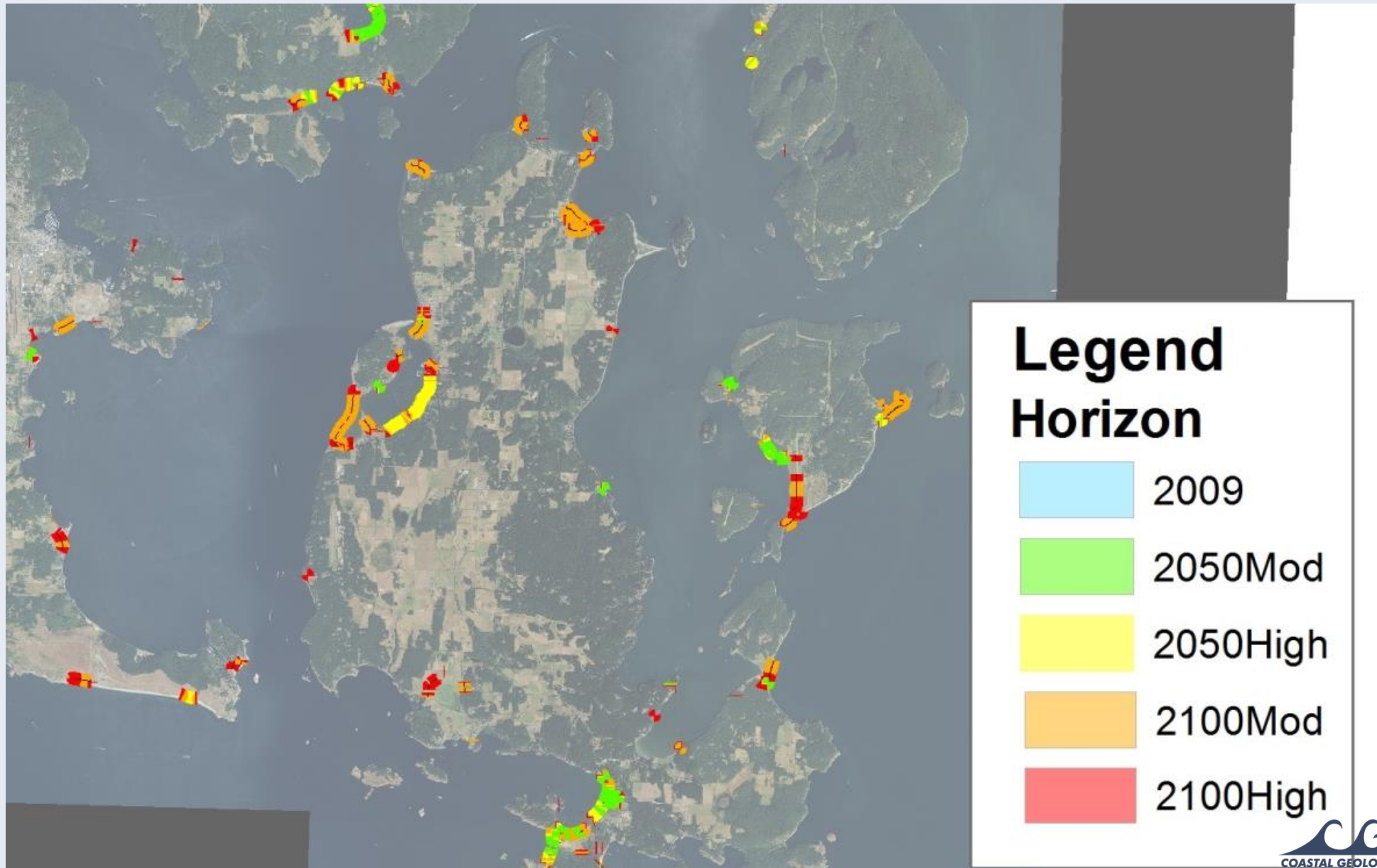
San Juan County Vulnerability Assessment

Lopez



San Juan County Vulnerability Assessment

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San Juan County Vulnerability Assessment

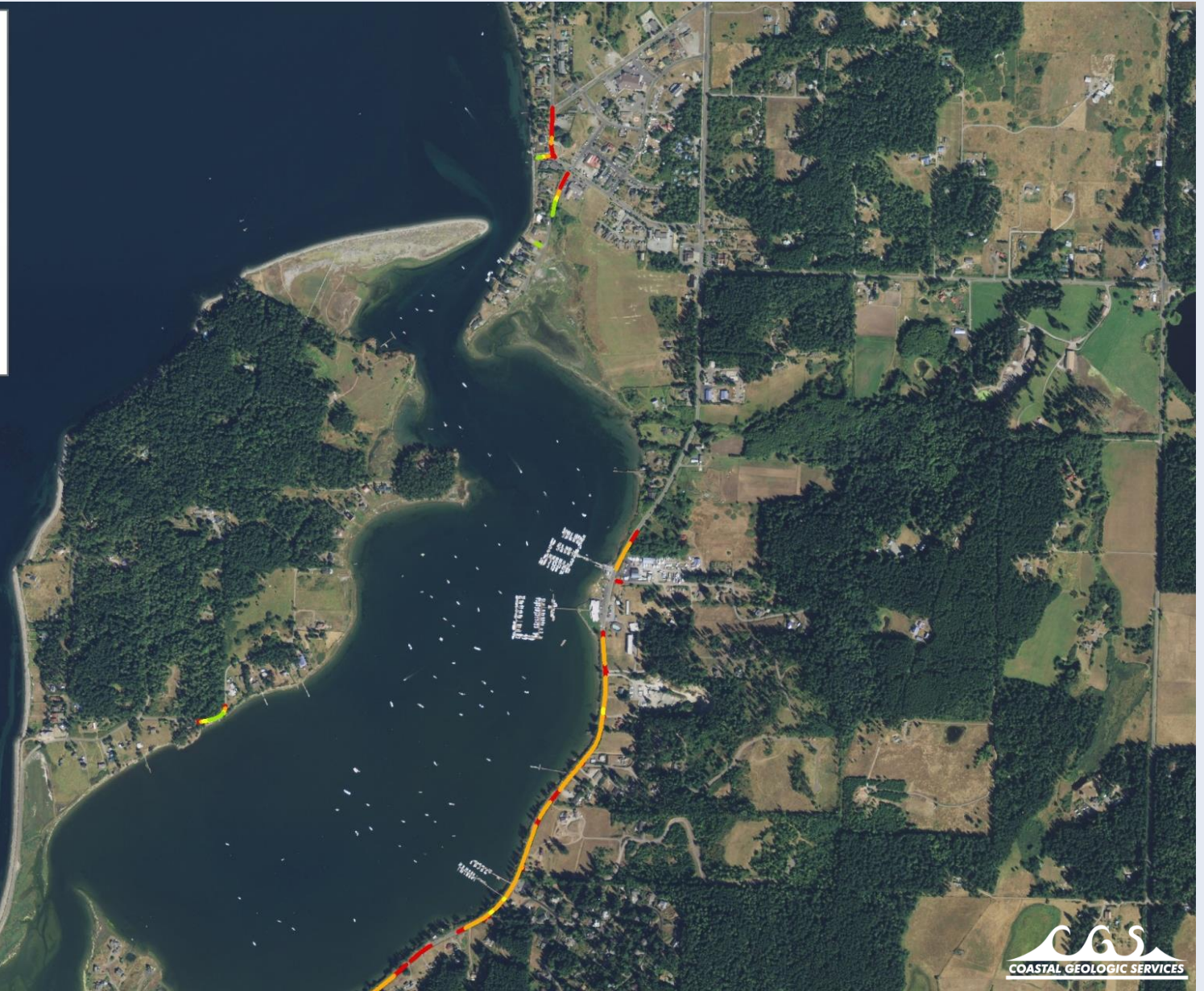
Lopez

Legend

Roads Vulnerable to Erosion

Scenario & Horizon

- 2050Mod
- 2050High
- 2100Mod
- 2100High



San Juan County Vulnerability Assessment

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Legend

Roads Vulnerable to Erosion

Scenario & Horizon

-  2050Mod
-  2050High
-  2100Mod
-  2100High



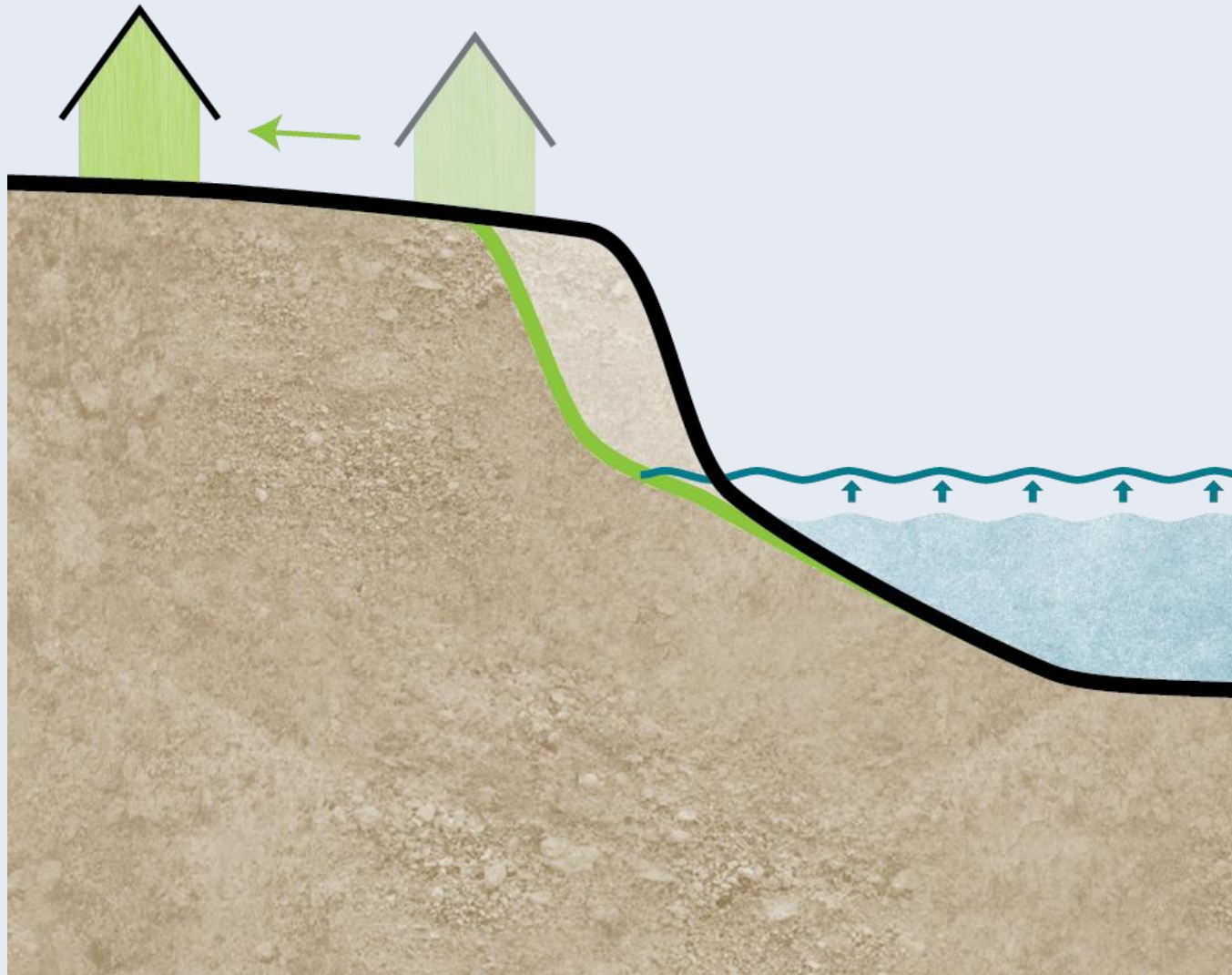
Appropriate Adaptation Choices

- Planning horizon
- Cost of infrastructure
- Maintenance
- Opportunities
 - Habitat conservation / restoration
 - Increased resilience



Appropriate Adaptation Choices

Relocate



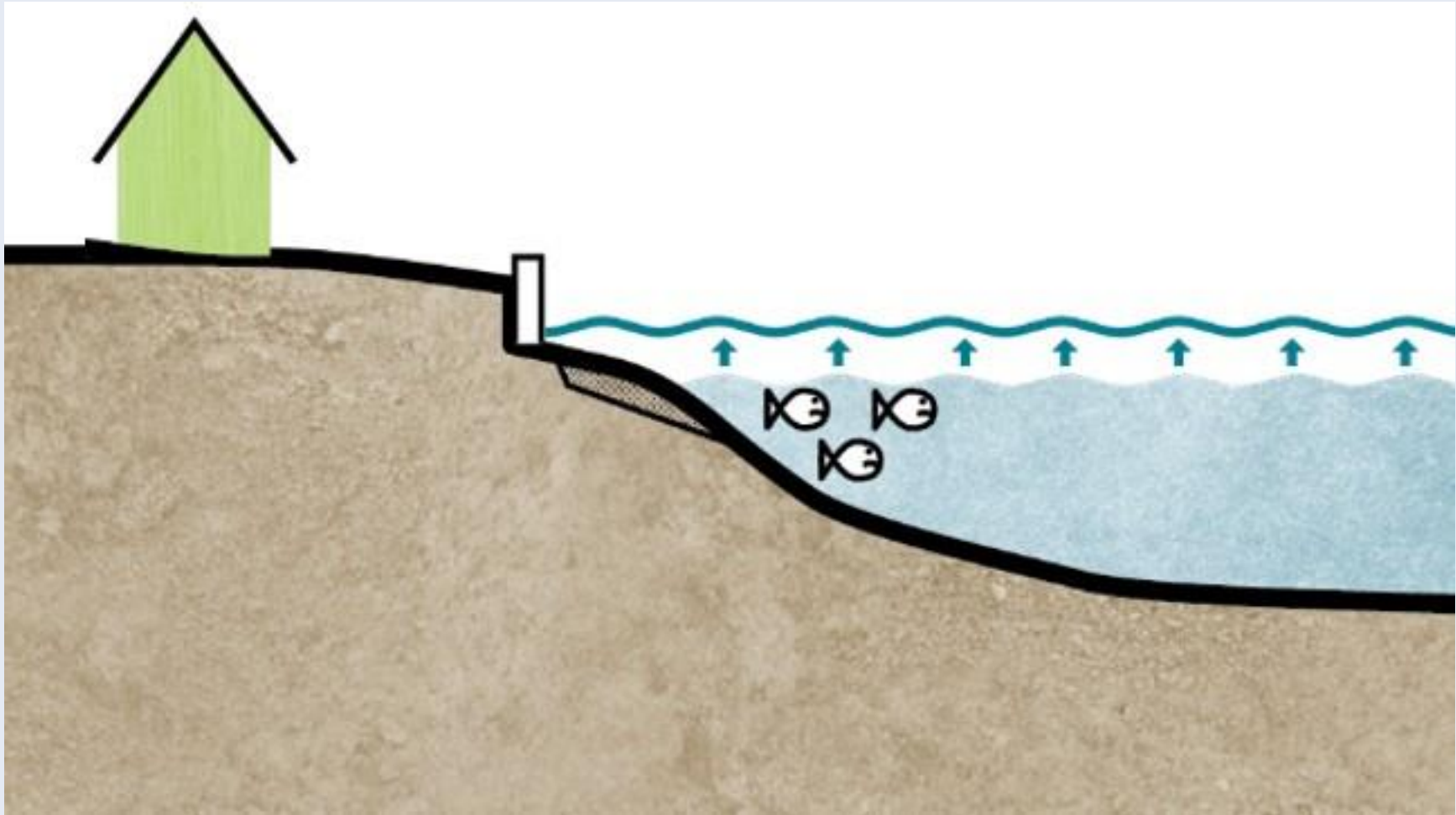
Appropriate Adaptation Choices

Elevate



Appropriate Adaptation Choices

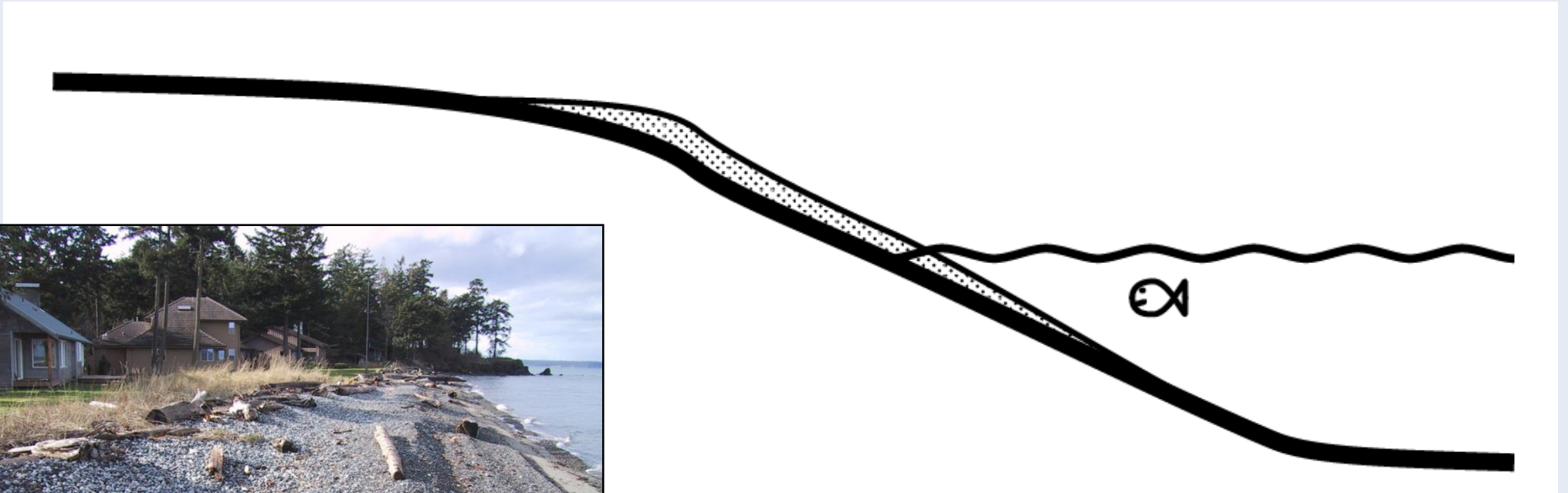
Fortify



Appropriate Adaptation Choices

Nourish

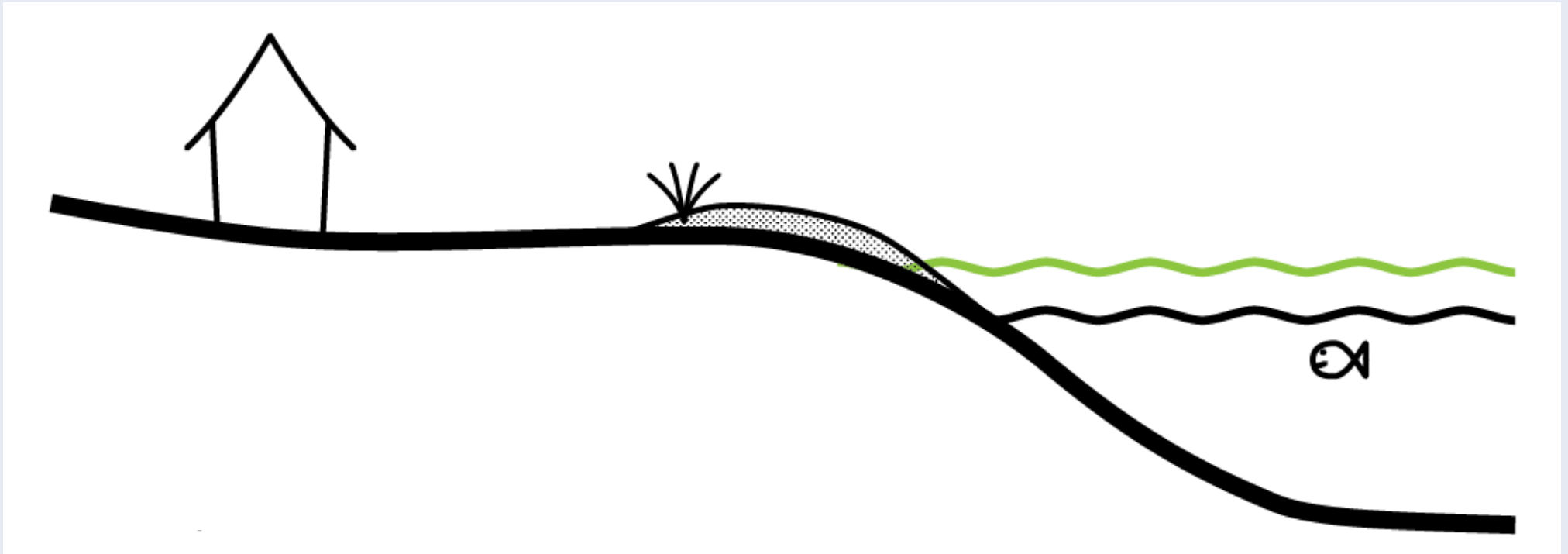
- Nourish entire beach profile



Appropriate Adaptation Choices

Nourish

- Nourish only the upper beach



Appropriate Adaptation Choices

Nourish

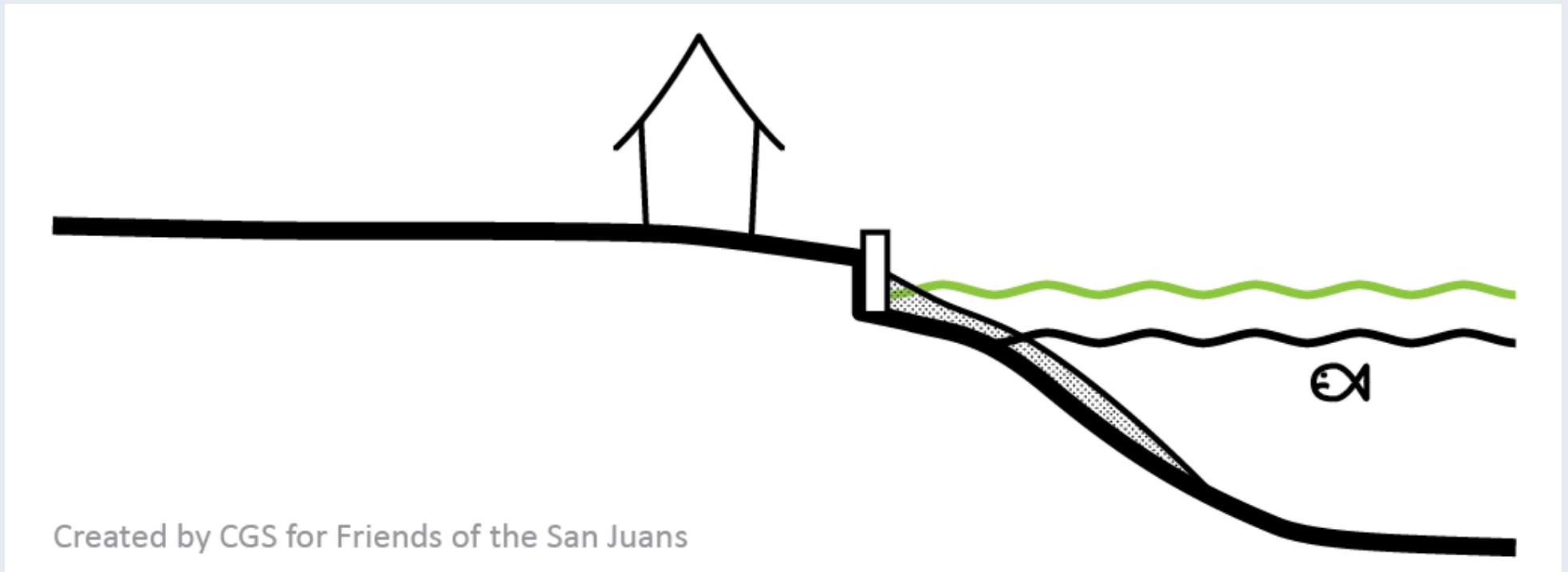



After

Appropriate Adaptation Choices

Nourish

- Mitigate for sediment loss





Want to learn more?
andrea "at" coastalgeo.com
www.sanjuans.org