Sea Level Rise in San Juan County
Shoreforms, vulnerability, and adaptation

San Juan Island

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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

MHHW 2100
MHHW 2015
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

San Juan

Legend

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Color</th>
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<tbody>
<tr>
<td>2009</td>
<td>Light Blue</td>
</tr>
<tr>
<td>2050Mod</td>
<td>Green</td>
</tr>
<tr>
<td>2050High</td>
<td>Yellow</td>
</tr>
<tr>
<td>2100Mod</td>
<td>Orange</td>
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<tr>
<td>2100High</td>
<td>Red</td>
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Net Shore-drift

<table>
<thead>
<tr>
<th>Distance</th>
</tr>
</thead>
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<tr>
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</tr>
<tr>
<td>0.25</td>
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<tr>
<td>0.5</td>
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</table>

Mi
San Juan County Vulnerability Assessment

San Juan

Legend
Horizon
- 2009
- 2050Mod
- 2050High
- 2100Mod
- 2100High

Net Shore-drift

0 0.25 0.5 Mi

1:24,000
San Juan County Vulnerability Assessment

San Juan
San Juan County Vulnerability Assessment

San Juan
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 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

Created by CGS for Friends of the San Juans
Want to learn more?

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www.sanjuans.org