

The Legal Implications of Sea Level Rise In Washington

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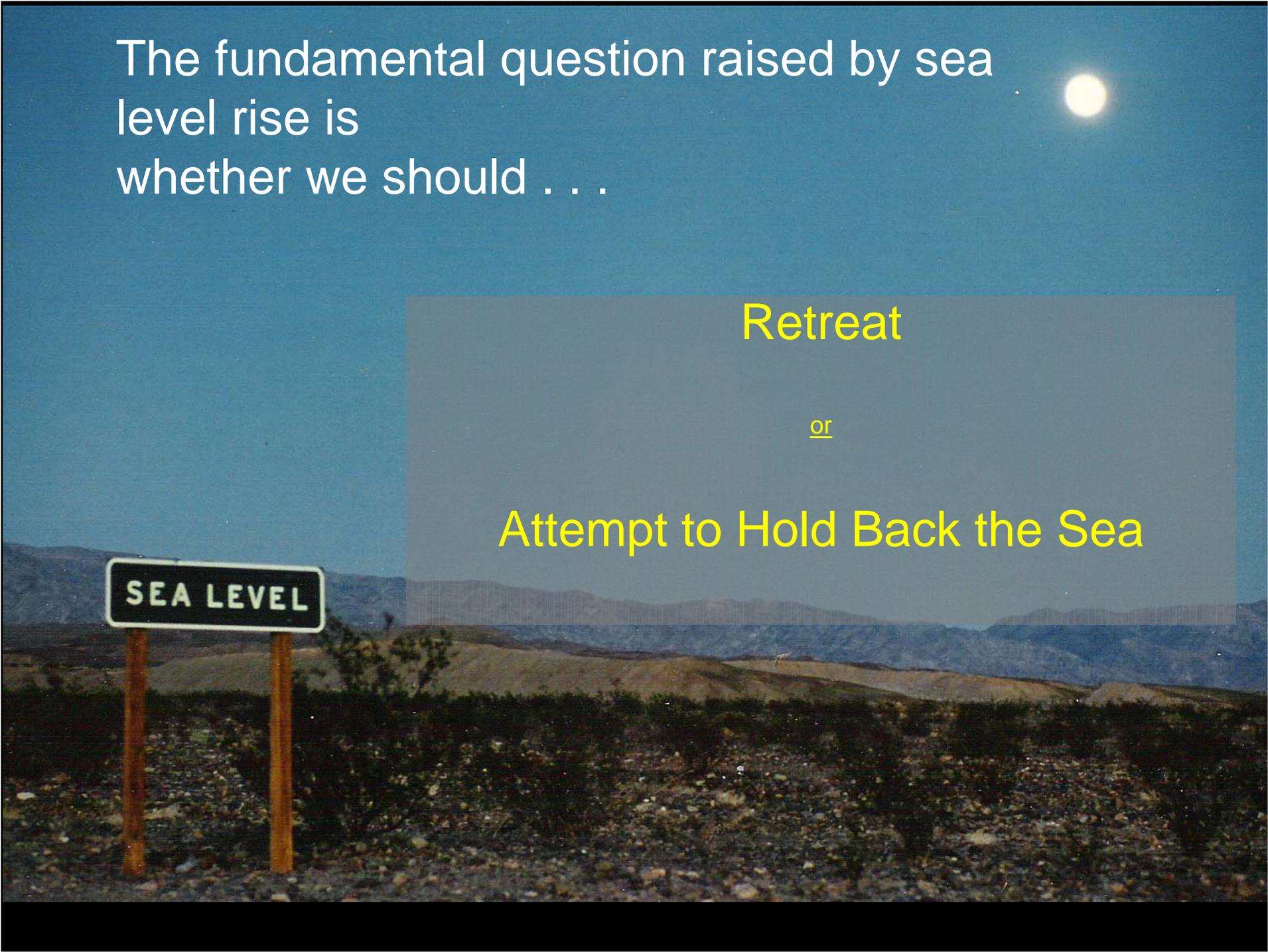
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The fundamental question raised by sea level rise is whether we should . . .

Retreat

or

Attempt to Hold Back the Sea



SEA LEVEL

Impacts of Rising Sea Levels

- Increased frequency of damaging storms and floods
- Gradual inundation of low-lying areas
- Increased erosion rates
- Loss or major shifts in nearshore habitat
- Escalating costs of maintaining and repairing infrastructure
- Effects on shellfish harvesting and agriculture in coastal areas
- Seawater intrusion into coastal aquifers



Houston



Whidbey Island

River Deltas

- Increased costs of repairing and maintaining dikes and levees
- Loss of nearshore habitat seaward of dikes
- Increased flooding, soil saturation, drainage problem
- Significant influence on long term decisions regarding agricultural use or ecological restoration
- Increased intrusion of saltwater into estuary

Low-lying river deltas are subject to extensive inundation. Extent will depend on degree of diking and commitment to maintaining protection as costs escalate.



Primarily residential development. Often hazardous due to erosion and landslides.



Coastal Bluffs

- Increased erosion rates & more landslides
- Escalating damage to seawalls, requiring progressively larger & more expensive protections over time
- Beach habitats squeezed out where shorelines armored
- Shift from forested bluffs to unstable bare slopes
- Changes in bluff erosion may impact beaches in elsewhere along shoreline

Spits and Barrier Beaches

Often protect valuable salt marshes and estuaries. Residential development is common, although many are parks and reserves.

- Increased frequency and severity of flooding & storm damage
- Rapid erosion and potential for breaching
- Failure of septic systems; threat to water supply and utilities
- Loss of beaches where shoreline is armored
- Loss of associated wetland and estuarine habitats



Bainbridge Island

Urban Waterfronts

Are largely modified by landfill and seawalls. Include extensive development over the water as well as marine facilities. Characterized by major investments in both public and private infrastructure.



- Increased risks to infrastructure, including:
 - Treatment Plants
 - Transportation Corridors
 - Commercial and Industrial Waterfronts
 - Parks
- Storm drainage systems will require expensive fixes
- Increasingly steep public costs to maintain, protect, and repair public facilities and property
- Redevelopment opportunities

Ports

- Increased maintenance and repair of port facilities
- Increasing storm damage to piers and seawalls
- Need to reconfigure or elevate freight handling yards
- Increased corrosion of tanks and pipes; increased leaching of contaminated soils
- Opportunity to adapt during major facility updates

Heavily engineered shorelines. Freight handling requires extensive rail yards near water level. Associated industrial areas may contain currently or historically contaminated sites.



Port of Seattle

Natural Areas

Including beaches, salt marshes, tide flats, stream mouth estuaries, and lagoons. These areas are increasingly targeted for restoration.

- Habitats will be eliminated if they are not allowed to migrate landward
- Tidal dynamics and sedimentation will likely change
- Viability of restoration efforts will change or become less certain



Jefferson County

Coastal Flooding

- Extreme high water levels will increase over time
- Flood events of any given magnitude will become more frequent
 - In the Puget Sound, the difference between 10 year & 100 year flood is approx. 1 foot.
- Longer flood durations
- Drainage of low-lying areas will become more difficult



Whidbey Island (4 February 2006)



Camano Island State Park (4 February 2006)

Storms

- Damaging storms will occur more frequently
- Damage will increase due to high water levels and increased wave action
- Severity of storms *may* increase – independently of sea level rise



Anacortes (4 February 2006)



Whidbey Island (4 February 2006)

The Shoreline Management Act

Policy

Jurisdiction

Administrative Approach = “Local Rule”

- Local Shoreline Master Programs
- State Guidelines established by Ecology

SMP Updates

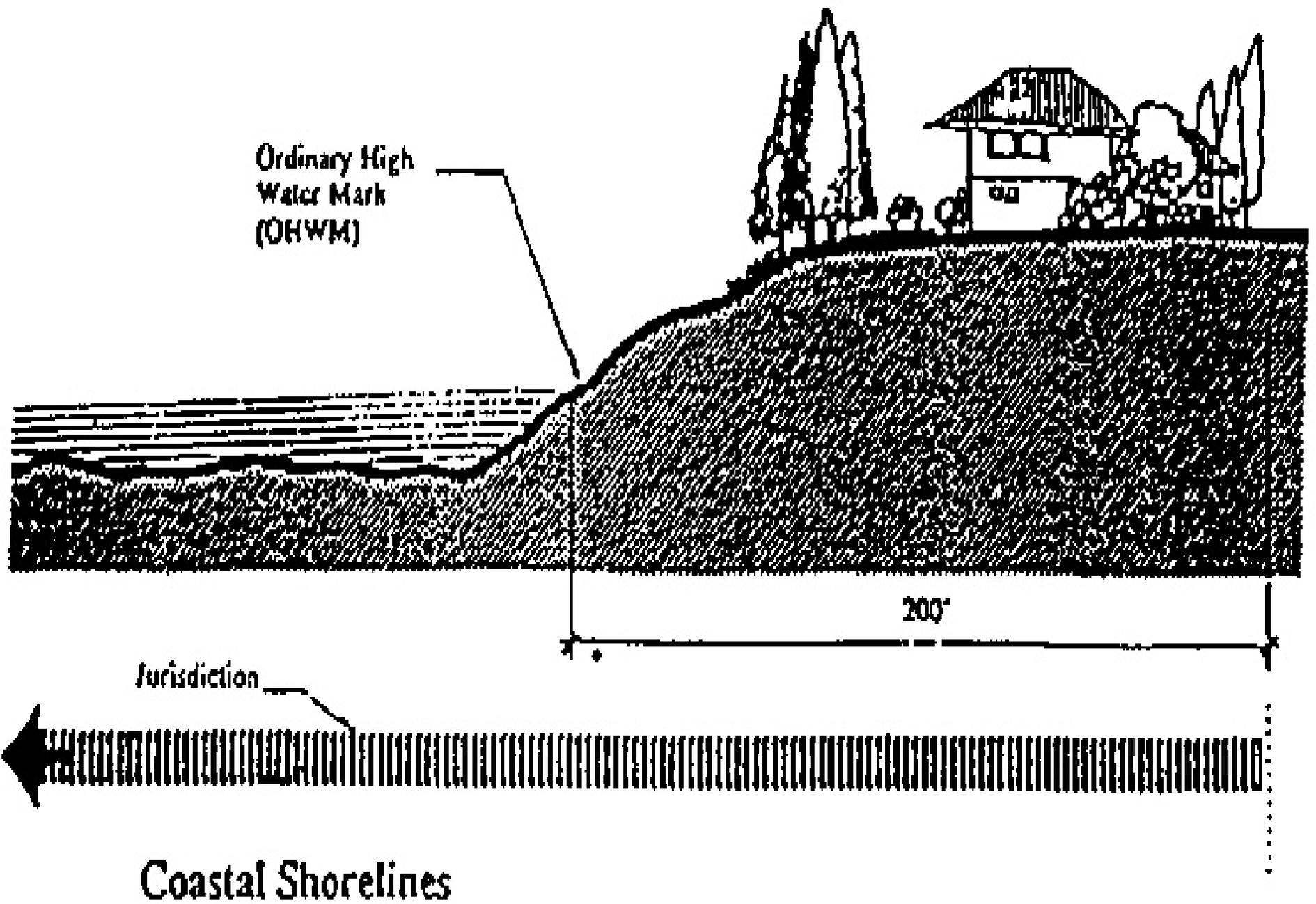
Environmental Designations

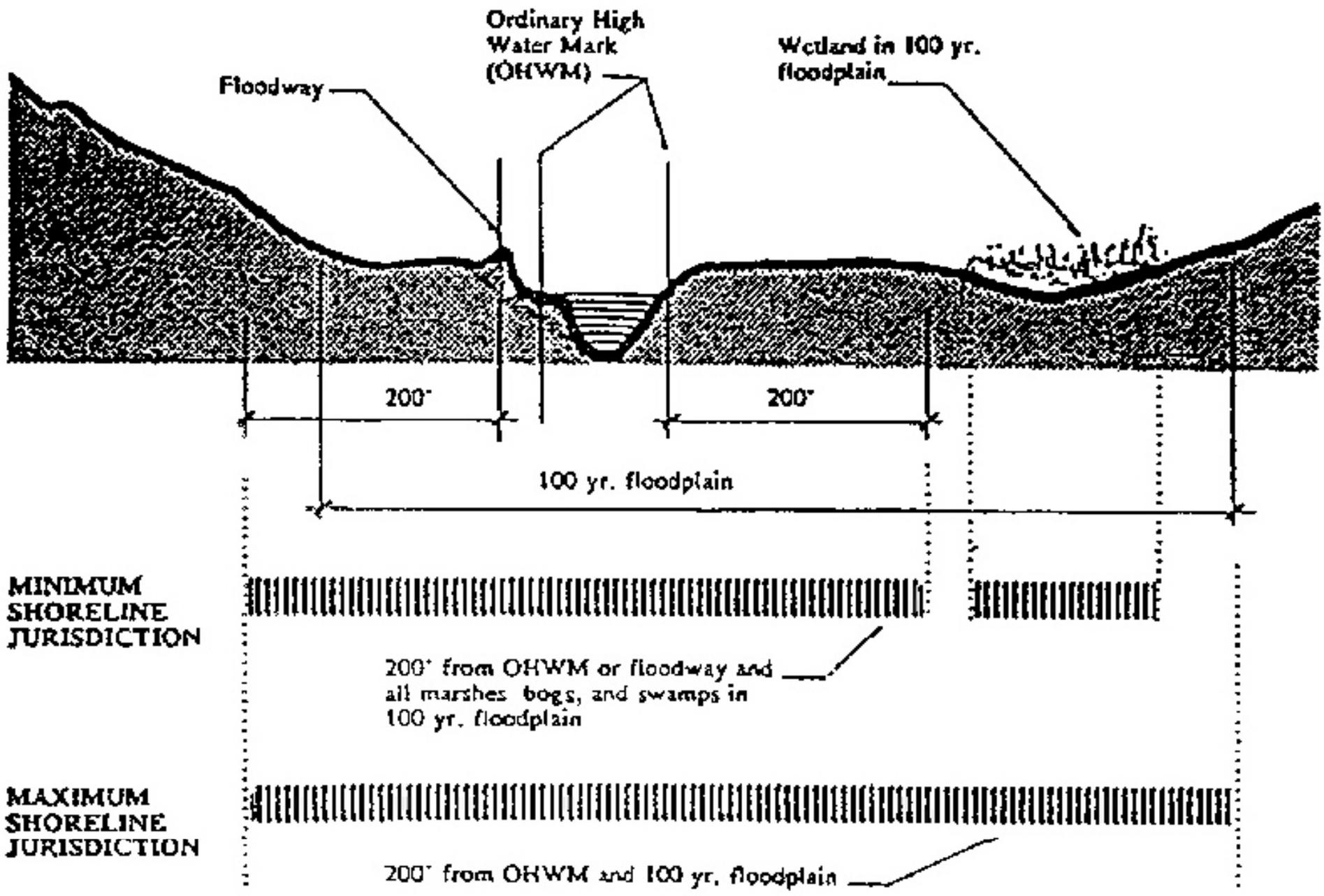
Consistency Requirement

Permit System

Exempted Activities

- Single-family residences
- Bulkheads to protect single-family residences





River Shorelines

SMA Consistency Requirement & Sea Level Rise

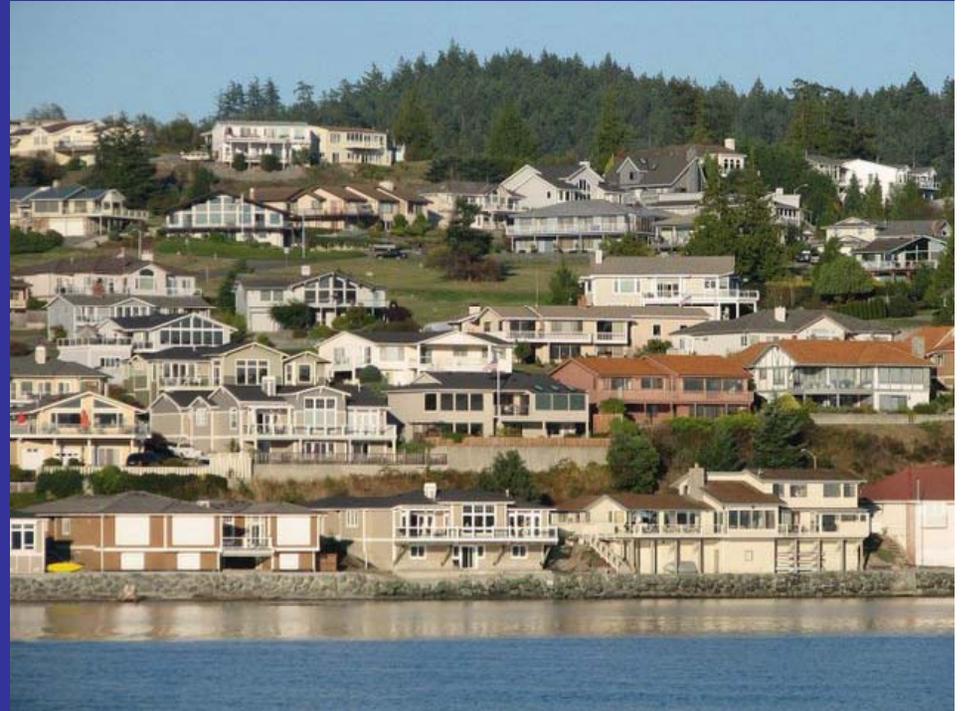
- Consistency Requirement (RCW 90.58.140(1)) is an important enforcement mechanism to protect shorelines.
- The Shoreline Master Program Guidelines, adopted in 2003, do not mention sea level rise. BUT they do require that local SMPs contain policies and regulations that “assure, at a minimum, no net loss of shoreline ecological functions necessary to sustain shoreline natural resources.” WAC 173-26-201(2)(c).

CONCERNS

- a proposed shoreline use that is inconsistent with the SMA and the local SMP cannot be denied based solely on concerns about possible adverse cumulative impact IF similar development occurs on adjacent and nearby properties.
- the Legislature may want to consider amending this to assure no net loss of shoreline ecological function necessary to sustain shoreline natural resources.

SMA Permit System & Sea Level Rise

- The permit system is one of the primary means of enforcing the SMA's consistency requirement.
- Despite the fact that the SMA requires all development to be consistent with the SMA and the local SMP, only “substantial development” is subject to the substantial development permit requirement.
- Exempted activities that might be more concerning in light of sea level rise:
 - Normal maintenance or repair for existing structures;
 - Owner occupied single-family residences and appurtenant structures;
 - Emergency construction to protect property from the elements;
 - Building bulkheads to protect single-family residences.



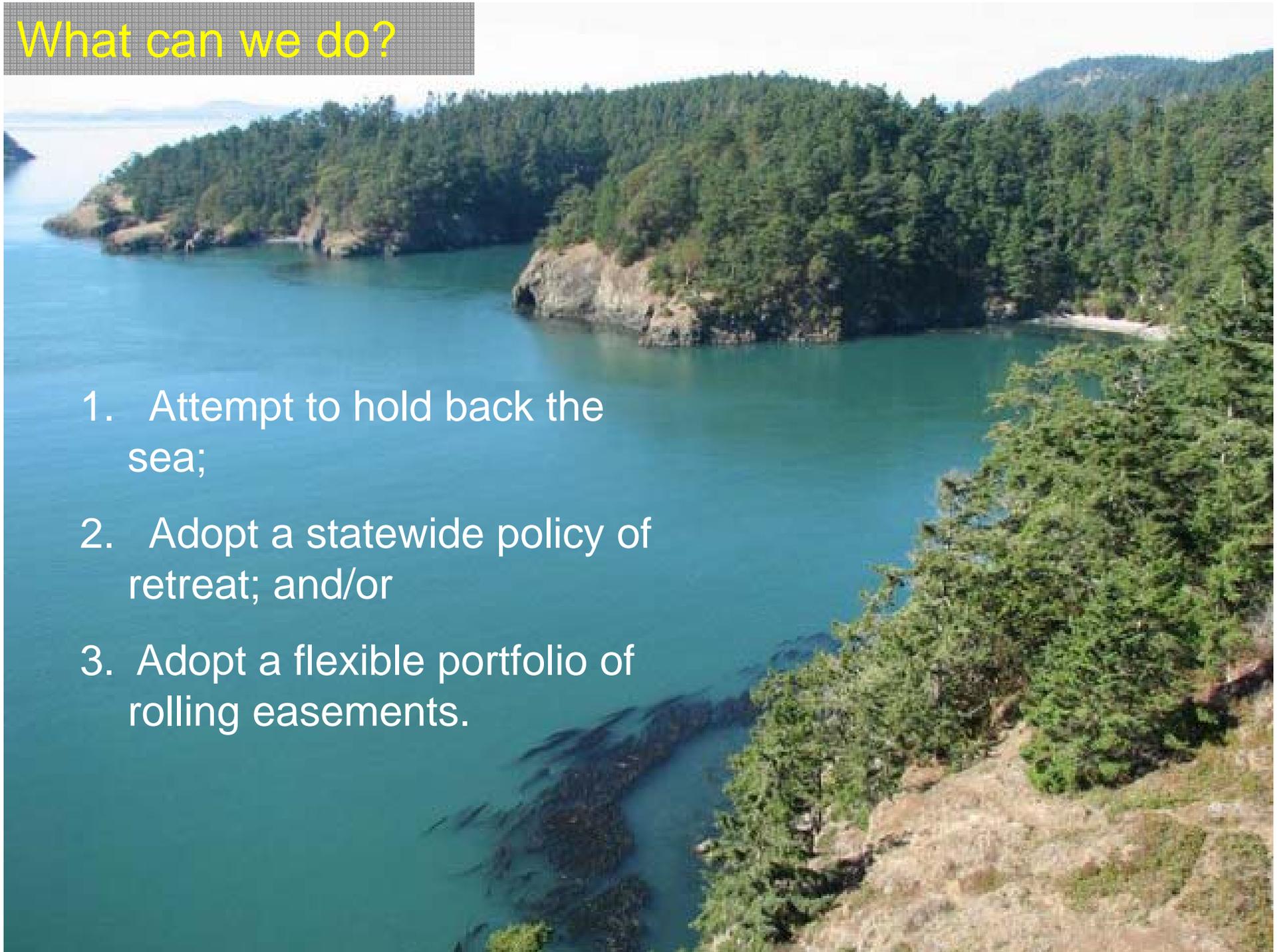
Recommendations for the SMA

- Update the State Guidelines to account for the anticipated threats associated with sea level rise.
- Consider whether local governments should identify specific erosion hazards, flood-prone areas, and other possible threats to shoreline function for each SMP environmental designation. Consider imposing additional protective measures for these vulnerable areas.
- Consider the cumulative impact of exempted uses (ie: the cumulative impact associated with the single family residences). Consider removing or modifying some of the exemptions in light of the risks posed by sea level rise.
- Provide local government with increased training and resources to help maximize their ability to monitor exempted activities for consistency.

Other suggestions?

What can we do?

1. Attempt to hold back the sea;
2. Adopt a statewide policy of retreat; and/or
3. Adopt a flexible portfolio of rolling easements.



Retreat Policies

- Condition the use of property in areas vulnerable to erosion & flooding.
- Prohibit new construction seaward of a setback line.
- Setbacks are usually based on erosion rates (but they can be based on other measures, including elevation or estimates of how the shore might change in the future).
- Retreat policies often restrict the use of shoreline armoring devices.
- These policies protect shoreline ecosystems and ensure that the public continues to have access to public trust lands.

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Rolling Easements

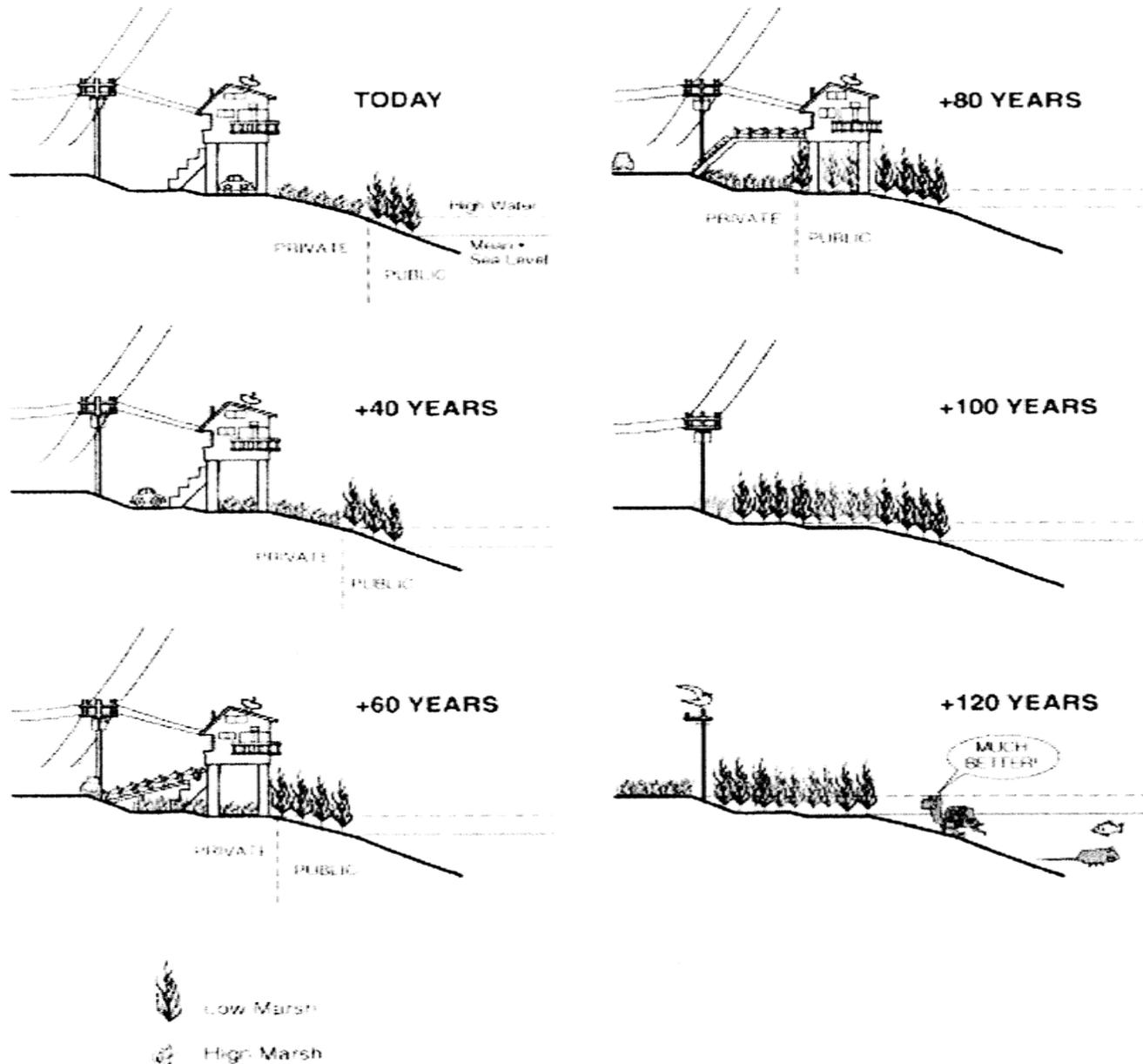
- Allow publicly owned tidelands to migrate inland as the sea rises (leaving private property to yield to the right of way of the migrating shoreline).
- Unlike setbacks, rolling easements allow construction near the shore (but no armoring).
- However, as soon as the private property is seaward of the high water mark, it becomes public.

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- Provides shoreline property owners with advanced notice -- allowing owners to develop realistic investment backed expectations regarding the long-term value of their property.
- Owners of vulnerable shoreline property may avoid major capital expenditures to expand, upgrade or repair their homes in the future.
- Advanced notice helps insulate rolling easement policies from takings challenges.

THE LANDWARD MIGRATION OF WETLANDS ONTO PROPERTY SUBJECT TO A ROLLING EASEMENT

Rolling Easement



Ways to Implement Rolling Easements

- Prohibit bulkheads or any other structures that interfere with naturally migrating shores; (simplest way)
- Pass a statute, or amend an existing statute, clarifying that all coastal land is subject to a rolling easement;
- Require deed disclosures specifying that the boundary between publicly owned tidelands and the privately owned dry land will migrate inland as the sea level rises--whether or not human activities artificially prevent the water from intruding;
- The State can arrange to purchase a property right in privately owned shoreline property--taking possession of the private property when the sea reaches a certain point.