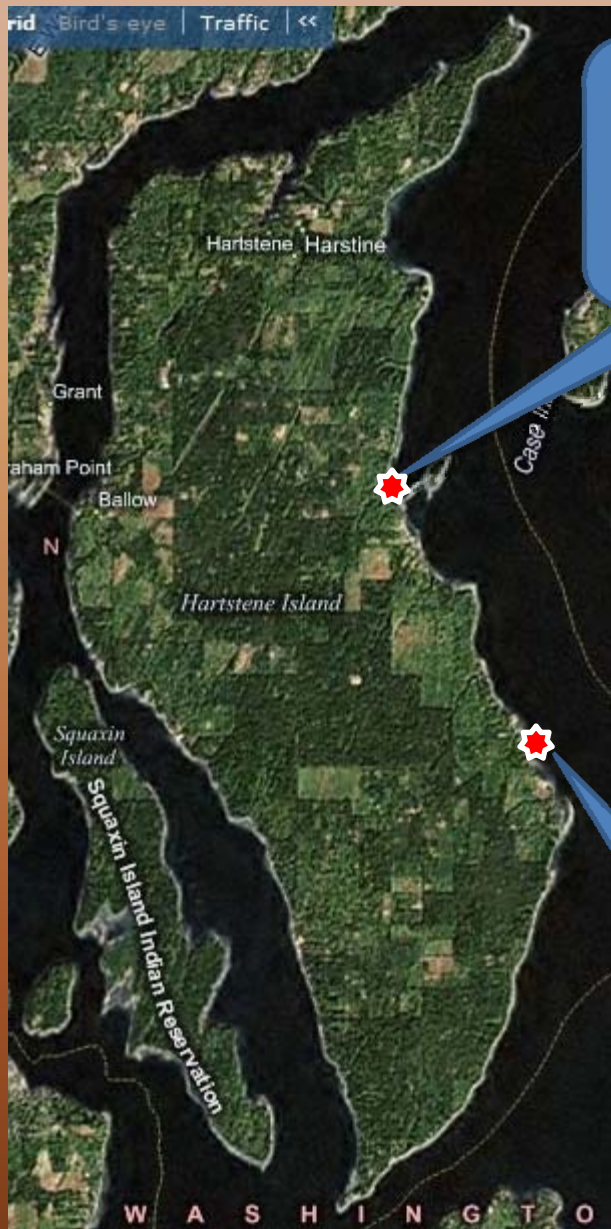


## **DNR Inter-Tidal Geoduck Aquaculture Citizen Concerns**

- ◆ There are not enough public beaches now – we should not be restricting the use of what is left! They belong to everyone and everyone should have unrestricted access.
- ◆ With adequate permitting, private beaches are where private industry should focus their “for profit” activities.

### **South Sound – 90% private, 10% public**

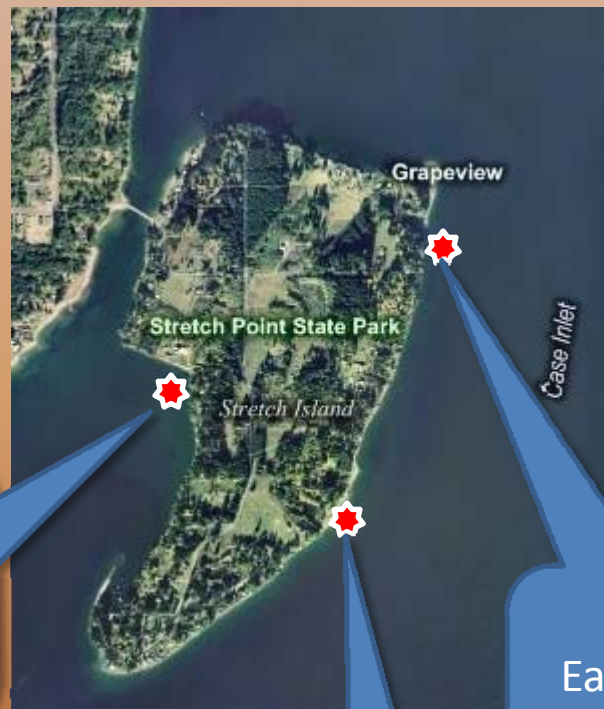
- ◆ The DNR is not paying proper attention to the known environmental concerns.
- ◆ The DNR is putting too high a priority on revenue generation.



DNR 24  
2 acres

West Stretch  
1 acres

Fudge South  
3 acres



East Stretch  
2 acres

East Stretch 2  
2.5 acres

# Fudge South

Lease Area #6—Fudge South  
is approximately a 3-acre part of  
Parcel numbers: 2306757 &  
2520990  
*See following hand-drawn copy  
from Aquatic Plate*

Approximately 3 Acres

- Red outline: New Sites
- Black circle: Sand Lance pt
- Yellow circle: Surf Smelt pt
- Light blue line: Sand lance in
- Yellow line: Surf smelt in
- Blue hatched area: Herring holding
- Red hatched area: Herring Spawning

Extreme care was used during map compilation to ensure accuracy. However, due to the need to rely on outside sources for information and changes in ownership, the Department of Natural Resources cannot accept responsibility for errors or omissions of data. Therefore, no warranties accompany these data.

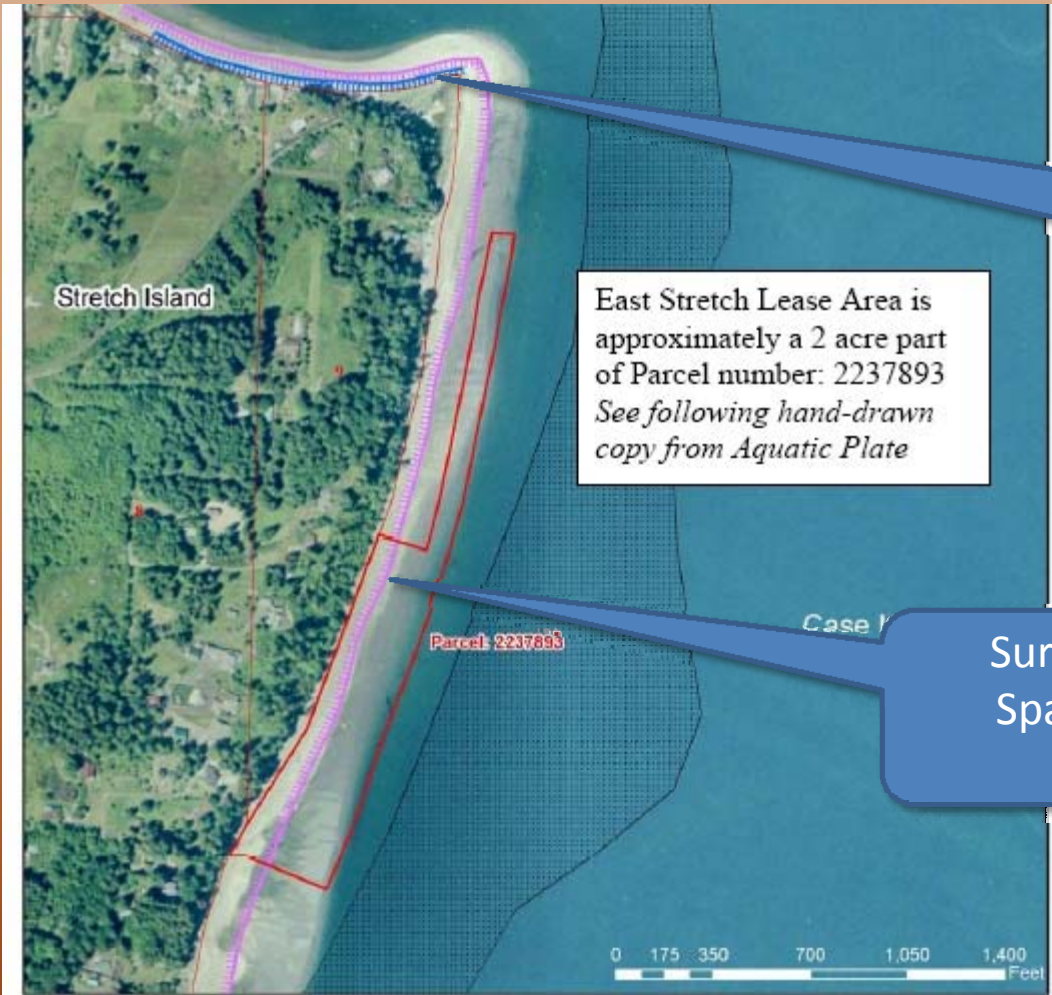


Sand Lance Spawning Area





DNR Beach 24  
Forage Fishes ???



East Stretch Lease Area is approximately a 2 acre part of Parcel number: 2237893  
*See following hand-drawn copy from Aquatic Plate*

Sand Lance Spawning

Surf Smelt Spawning

Map Legend		EEL GRASS	Spawners
	Aquatic Parcels		Herring Spawning
	Geoduck Bed		Rock Sole Spawning
			Smelt Spawning
			Sandlance Spawning



**East Stretch Island**  
**Parcel #2237893**  
 S9-T21N-R1W

WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**  
 Deep Subseafloor - Conservation of Public Lands

East Stretch 2

Lease Area #5—East Stretch #2  
is approximately a 2.5-acre part  
of Parcel number: 2237893  
*See following hand-drawn copy  
from Aquatic Plate*

Approximately 2.5 Acres

Surf Smelt  
Spawning

T21R01W

- New Sites
- Sand Lance pt
- Surf Smelt pt
- Sand lance ln
- Surf smelt ln
- Herring holding
- Herring Spawning

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54, -122 49 275 DDM SPNAD83 South FIPS 4602

# West Stetch

2239549

2220990

Approximately 1 Acre

Lease Area #8—West Stetch  
is approximately a 1-acre part of  
Parcel numbers: 2239589 &  
2239349  
*See following hand-drawn copy  
from Aquatic Plate*

47 19.232, -122 49.849 DDM SPNAD83 South FIPS 4602

T21R01W

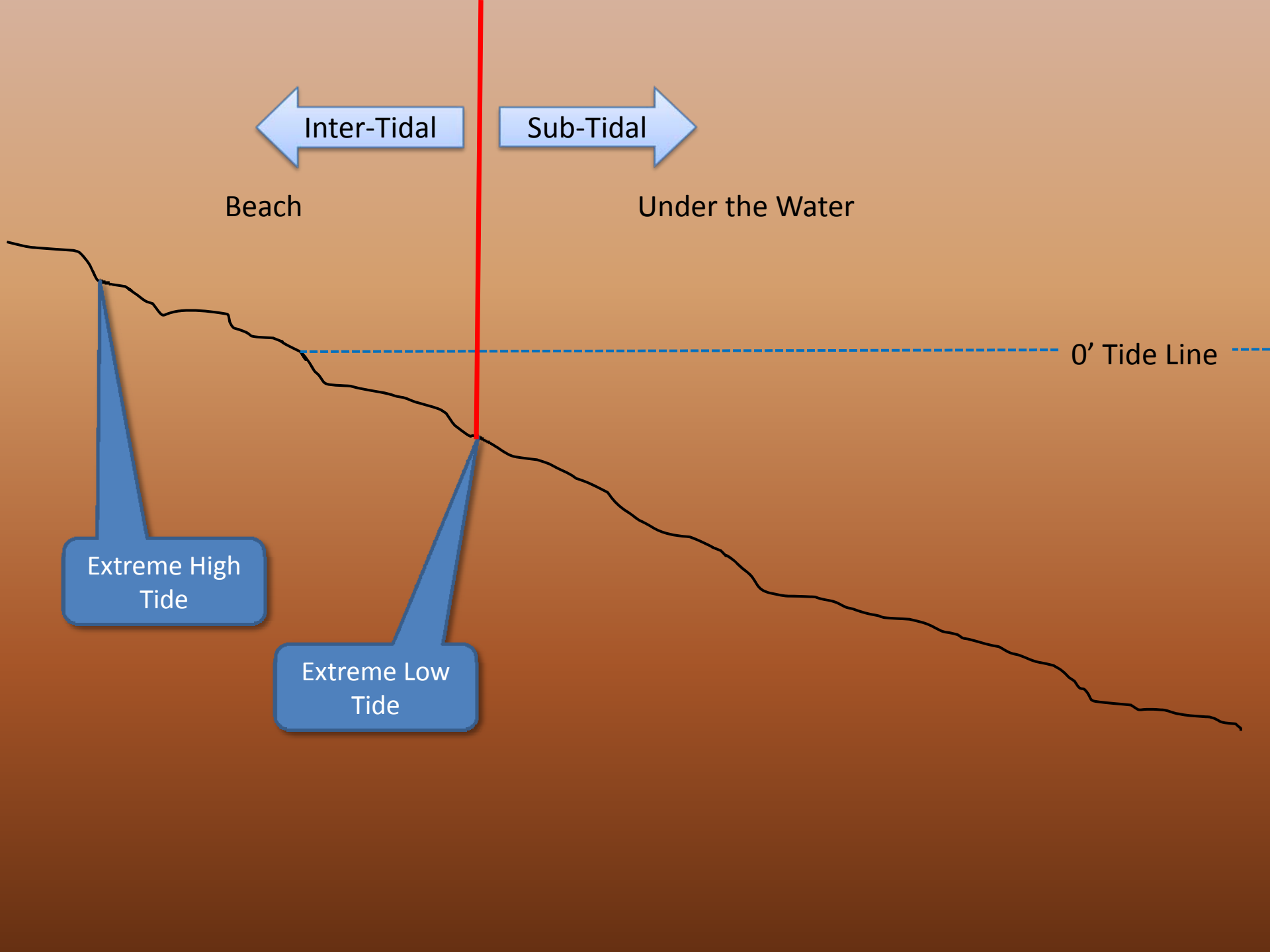


- New Sites
- Sand Lance pt
- Surf Smelt pt
- Sand lance ln
- Surf smelt ln
- Herring holding
- Herring Spawning

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Surf Smelt Spawning



Inter-Tidal

Sub-Tidal

Beach

Under the Water

0' Tide Line

Extreme High Tide

Extreme Low Tide



Sub-Tidal

## DNR Sub-Tidal (Under Water) Wild Geoduck Harvest

“Harvest takes place in a clearly defined area—deeper than minus 18 feet but shallower than minus 70 feet.”

0' Tide Line

Not OK

OK

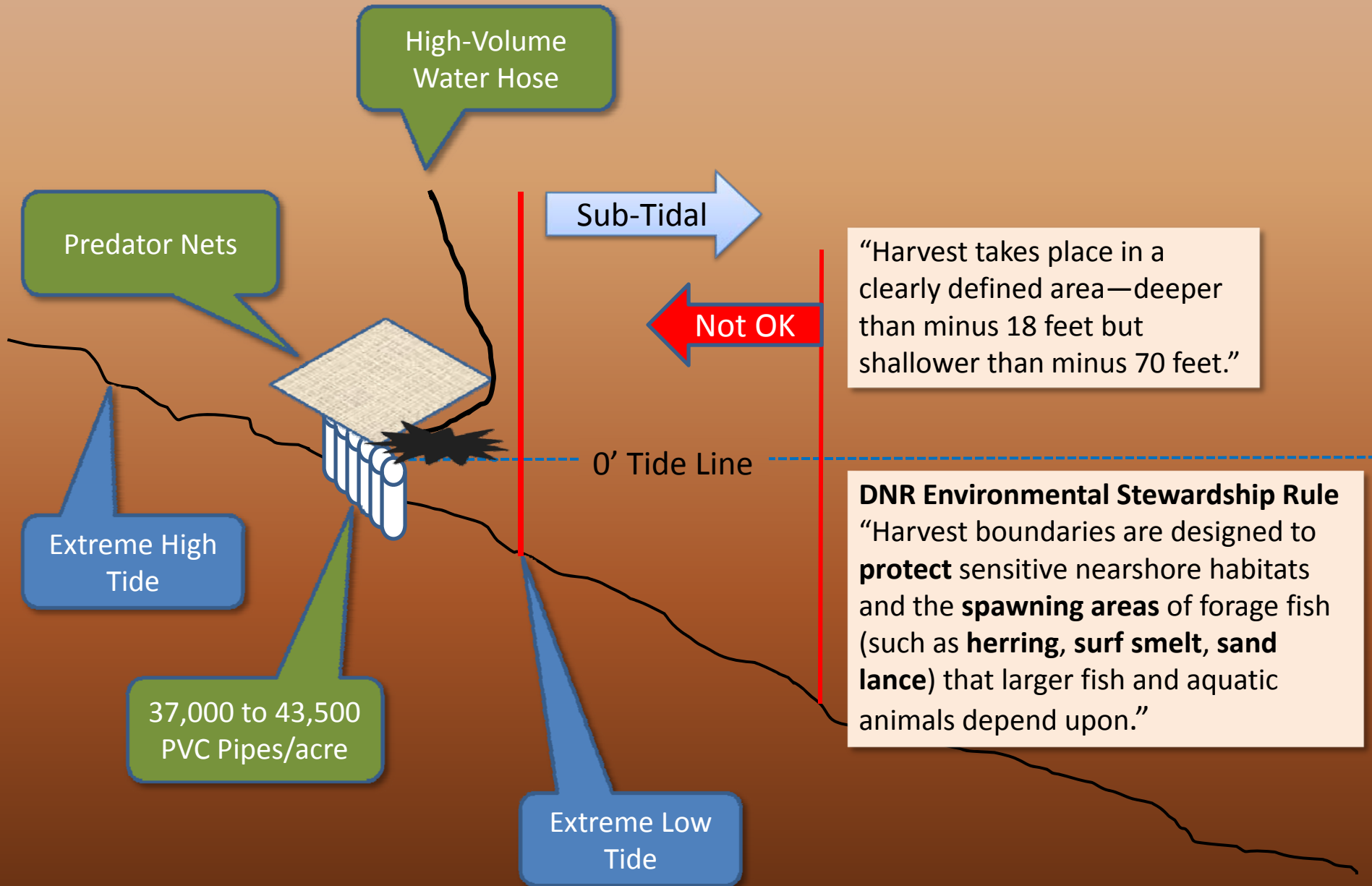
-18 feet

### DNR Environmental Stewardship Rule

“Harvest boundaries are designed to **protect** sensitive near shore habitats and the **spawning areas** of forage fish (such as **herring, surf smelt, sand lance**) that larger fish and aquatic animals depend upon. “

*Not drawn to scale*

# DNR Inter-Tidal (Beach) Geoduck Aquaculture



High-Volume Water Hose

Predator Nets

Sub-Tidal

Not OK

"Harvest takes place in a clearly defined area—deeper than minus 18 feet but shallower than minus 70 feet."

0' Tide Line

Extreme High Tide

37,000 to 43,500 PVC Pipes/acre

**DNR Environmental Stewardship Rule**  
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Extreme Low Tide

## DNR Inter-Tidal (Beach) Geoduck Aquaculture

Predator  
Netting

PVC Tubes



## DNR Inter-Tidal (Beach) Geoduck Aquaculture



Harvesting using high-volume water hoses



## DNR Inter-Tidal (Beach) Geoduck Aquaculture



# DNR Inter-Tidal (Beach) Geoduck Aquaculture

Surf Smelt Spawning  
+7 to EHT\*

Sand Lance Spawning  
+5 to EHT\*

\*Marine Forage Fishes in Puget Sound, 2007, Dan Penttila

Sub-Tidal

Not OK

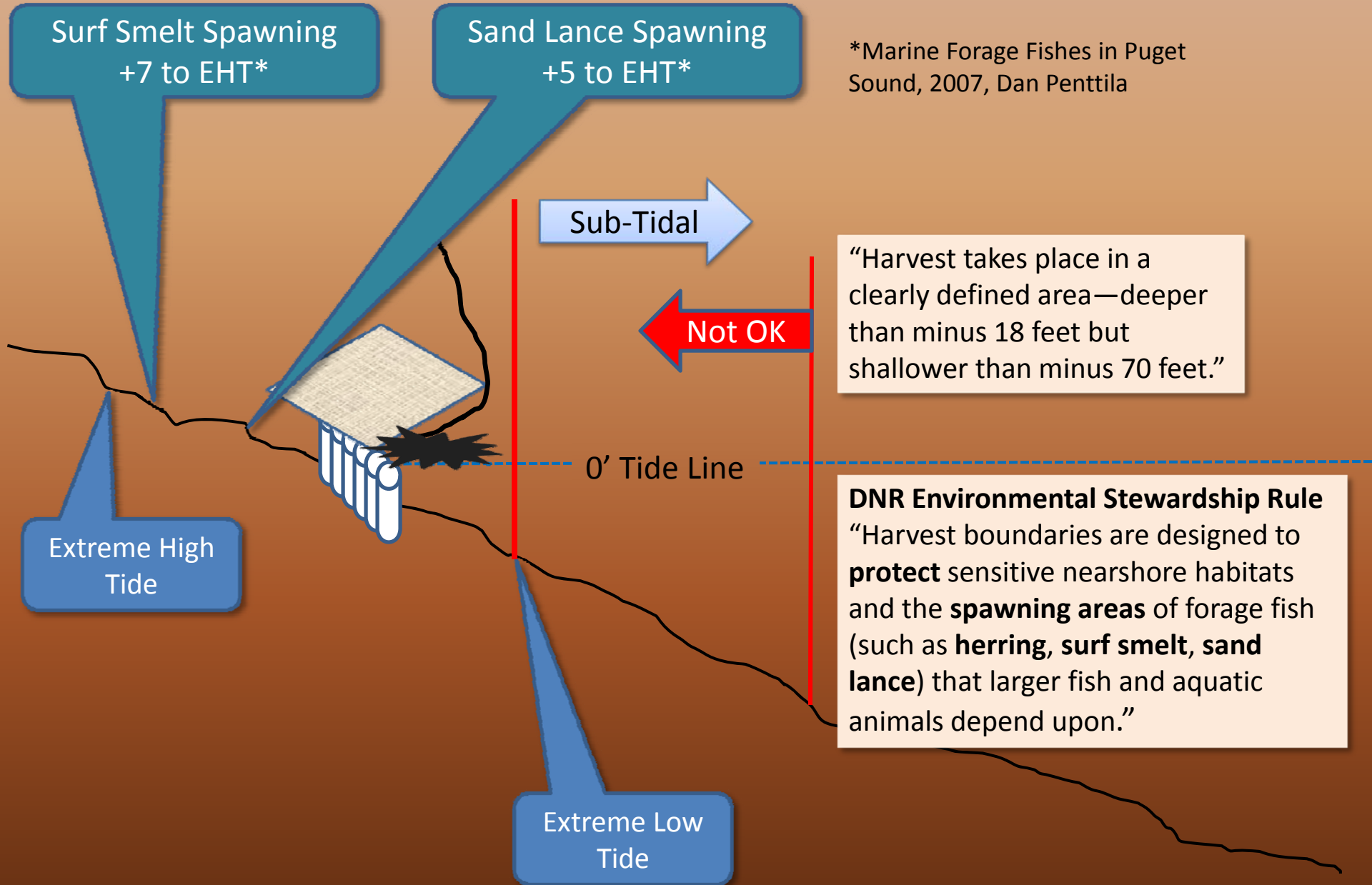
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Extreme High Tide

0' Tide Line

**DNR Environmental Stewardship Rule**  
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Extreme Low Tide



← Inter-Tidal

Sub-Tidal →

**DNR Sub-Tidal Environmental Stewardship Rule**  
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Beach



**DNR Inter-Tidal  
(Beach)  
Environmental Stewardship  
Rule**  
  
???



## DNR Sub-tidal Geoduck Aquaculture “On the Beach”

“Our scientists have looked at the forage fish issue and determined that there would be minimal interaction between the geoduck aquaculture methods and forage fish (sand lance and surf smelt).

*Francea McNair, Aquatic Lands Steward, 11 Aug 2006*

“What we are looking for is documentation from **your scientists** regarding this determination. In other words, we want to know specifically who made this determination at DNR.”

*Kathryn Townsend, 15 Aug 2006*

“... geoduck aquaculture and forage fish activity would have minimal interaction due to the physical separation of their habitats.”

*Francea McNair, Aquatic Lands Steward, 23 Aug 2006*



**DNR Sub-tidal Geoduck Aquaculture  
“On the Beach”**

“Two of the Department's aquatic scientists reviewed the WDFW website information ... We **do not** have specific scientific studies that address the **interaction of geoduck aquaculture methods and forage fish.**”

*Peggy Murphy, DNR Asset Management & Protection Division, 10 April 2008*

# DNR Inter-Tidal (Beach) Geoduck Aquaculture

Surf Smelt Spawning  
+7 to EHT\*

Sand Lance Spawning  
+5 to EHT\*

\*Marine Forage Fishes in Puget Sound, 2007, Dan Penttila

Not OK

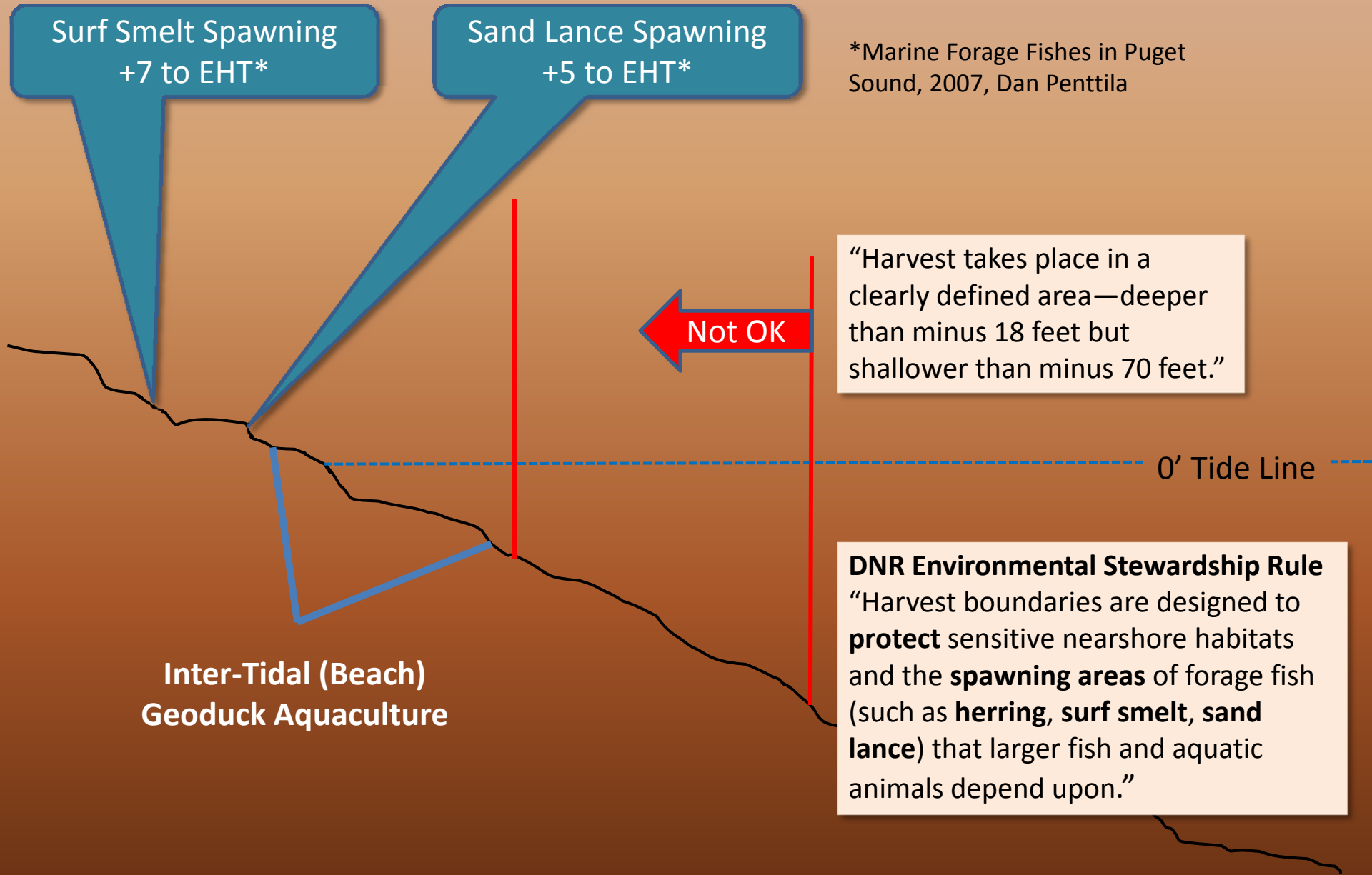
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0' Tide Line

Inter-Tidal (Beach)  
Geoduck Aquaculture

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