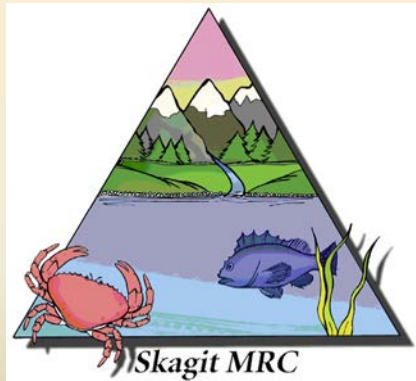
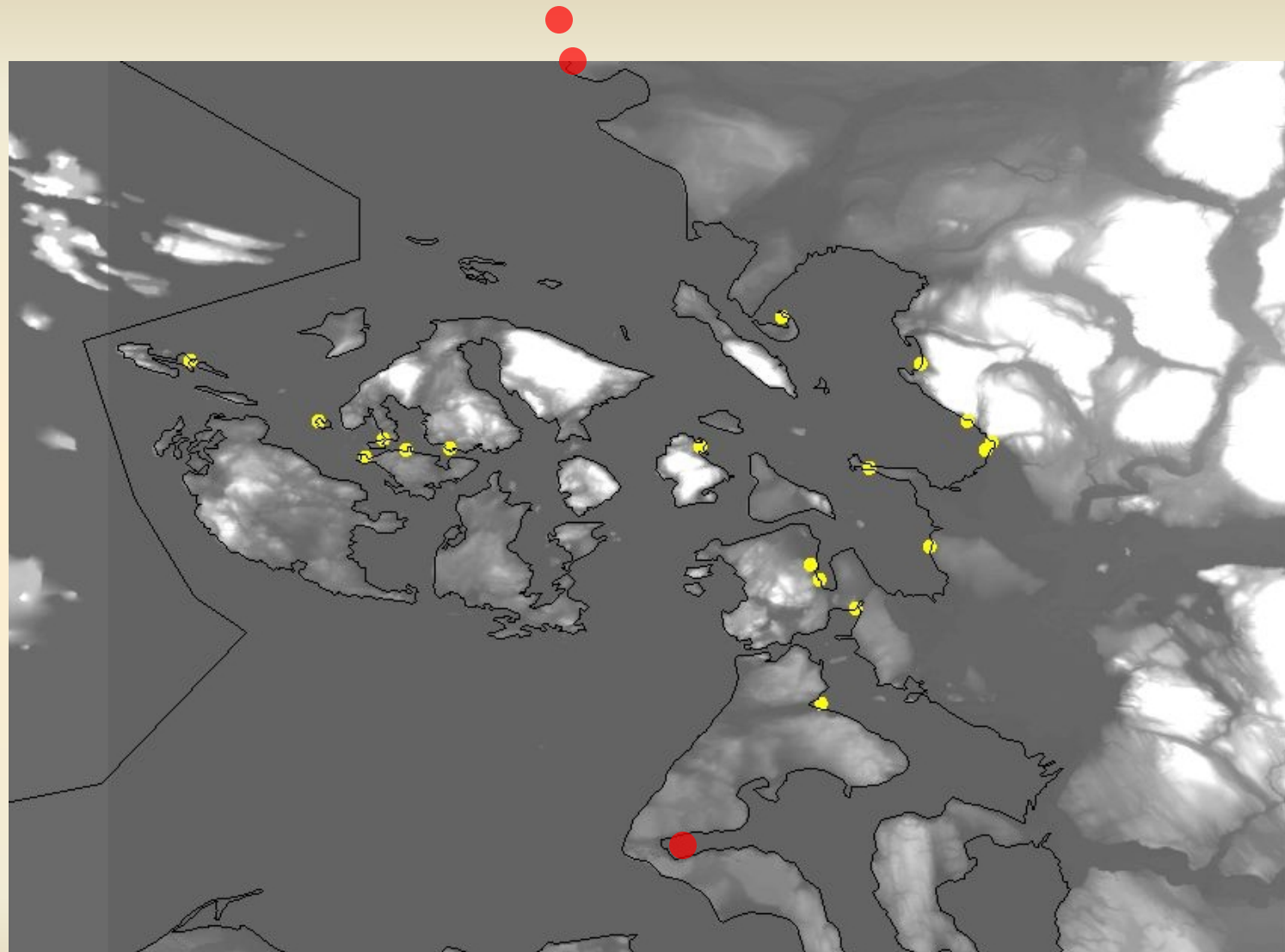


Fidalgo Bay Native Oyster Restoration Fourteen Years and Counting

Skagit County Marine
Resources Committee
November 2016



Historical Native Oyster Distribution in North Puget Sound



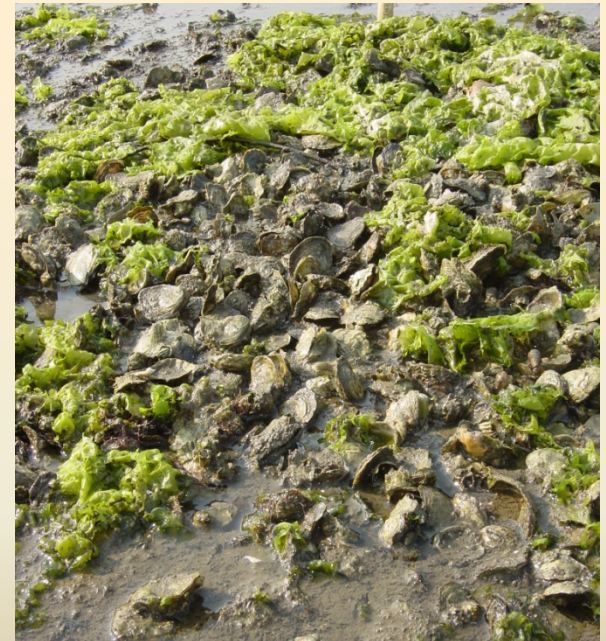
● From Hatch et al. 2005

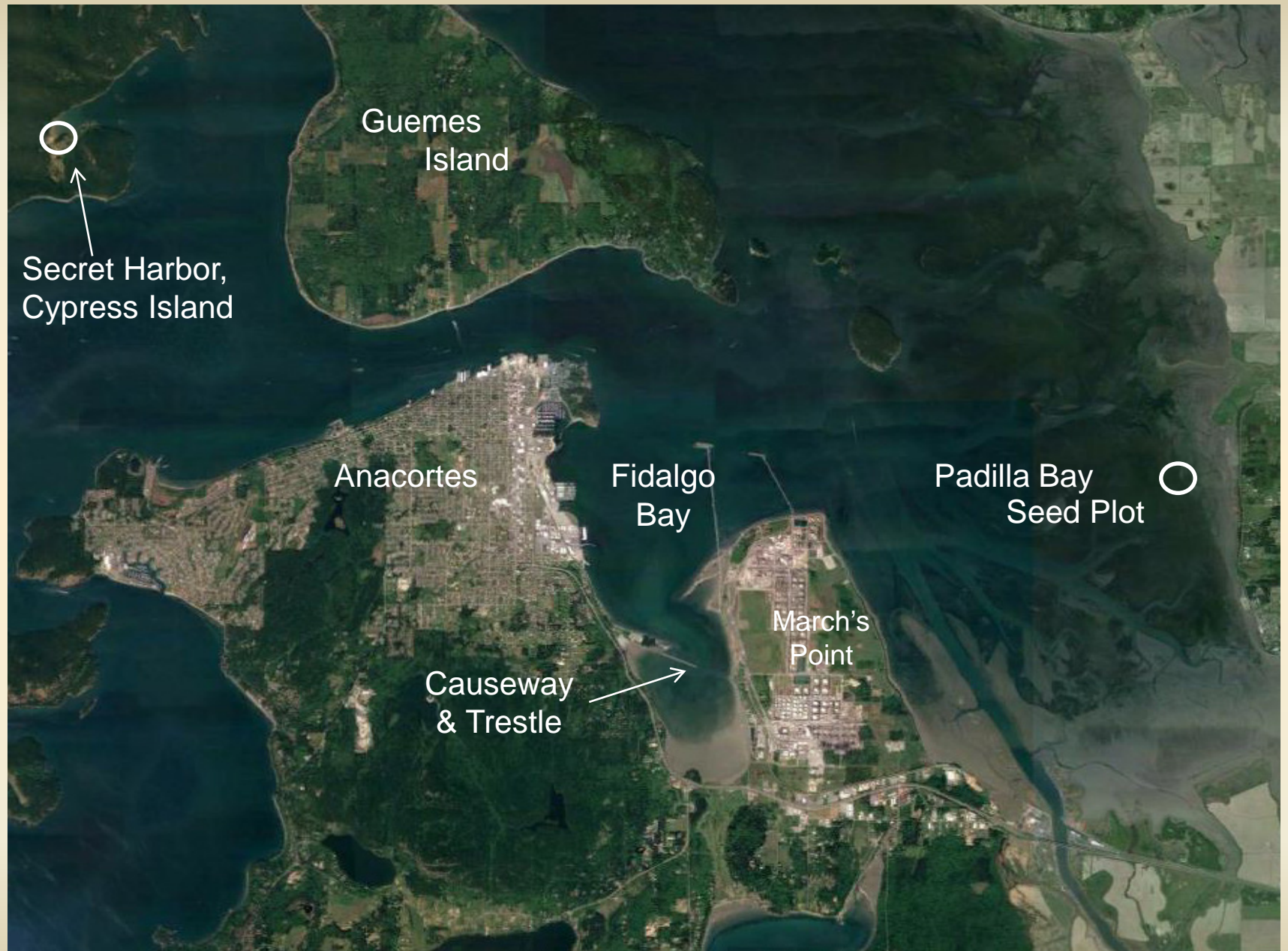
● Brady Blake, WDFW

Restoration Goal

Creation of a self-sustaining native oyster bed requires...

- Native oysters
- Proper habitat
- Bed structure
- Warm enough temperatures
- Spawning adults
- Larval settlement





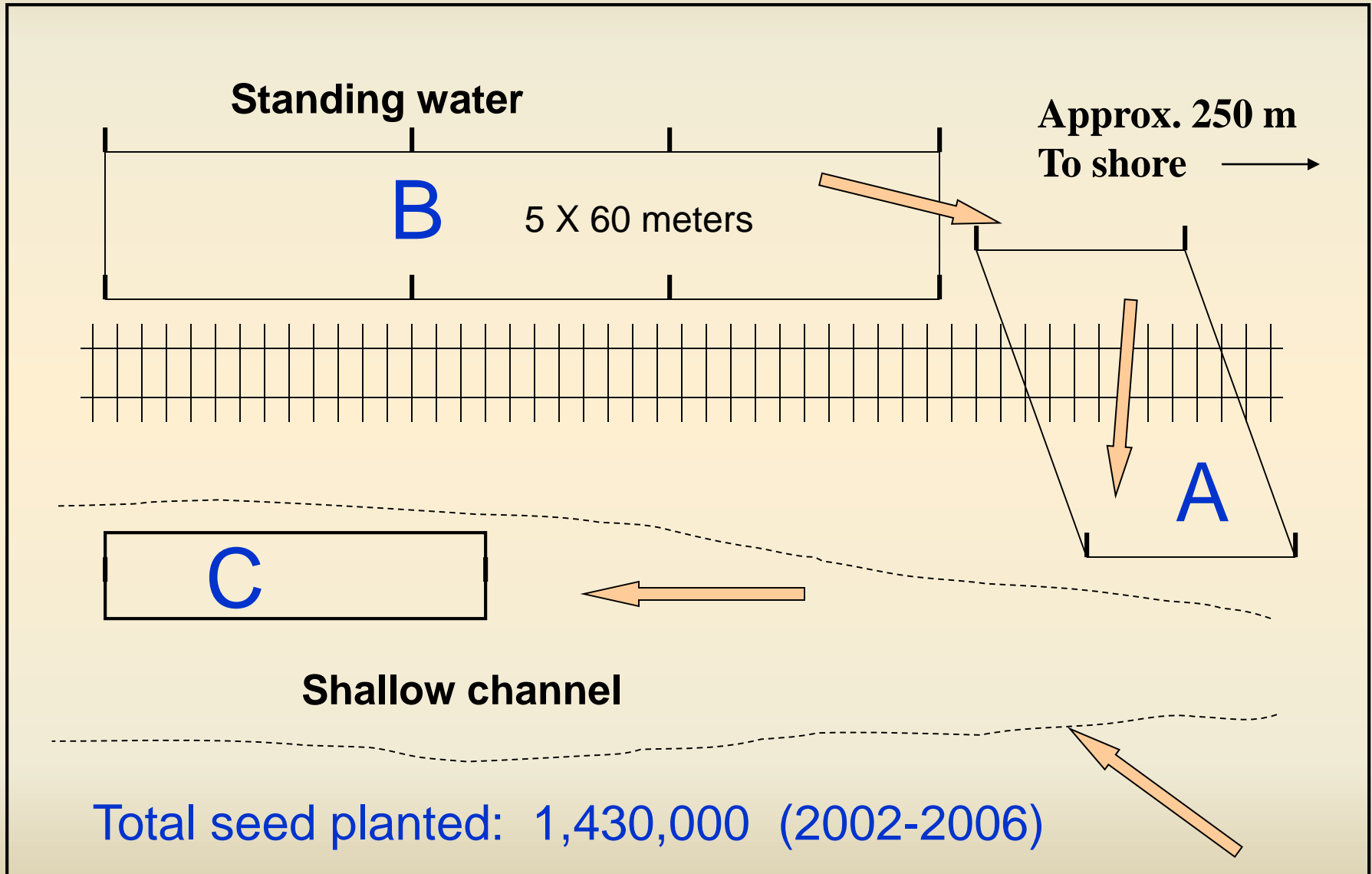
Seeding Site



Trestle

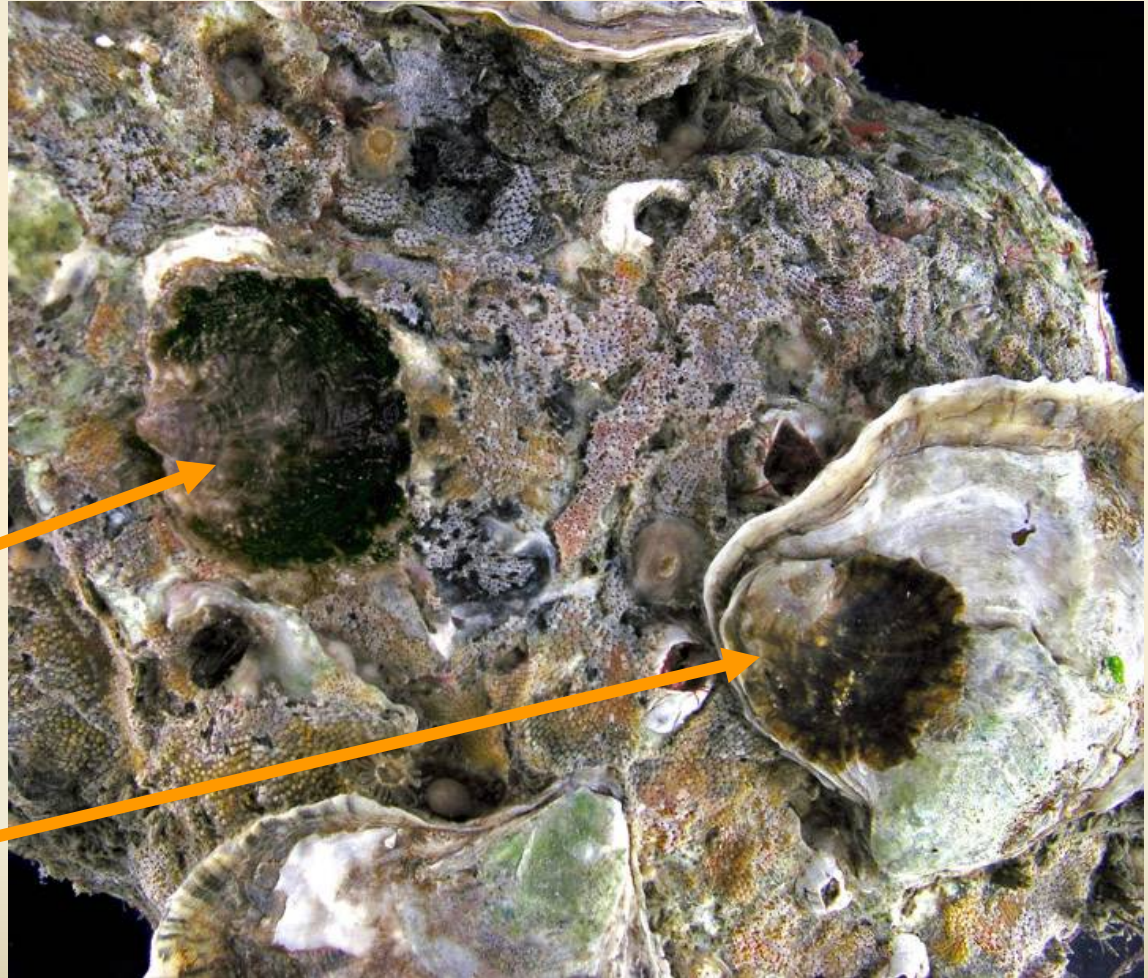


Trestle Seeding Site



Early signs of natural recruitment....

Juvenile
native
oysters







ood

Sampling Tools

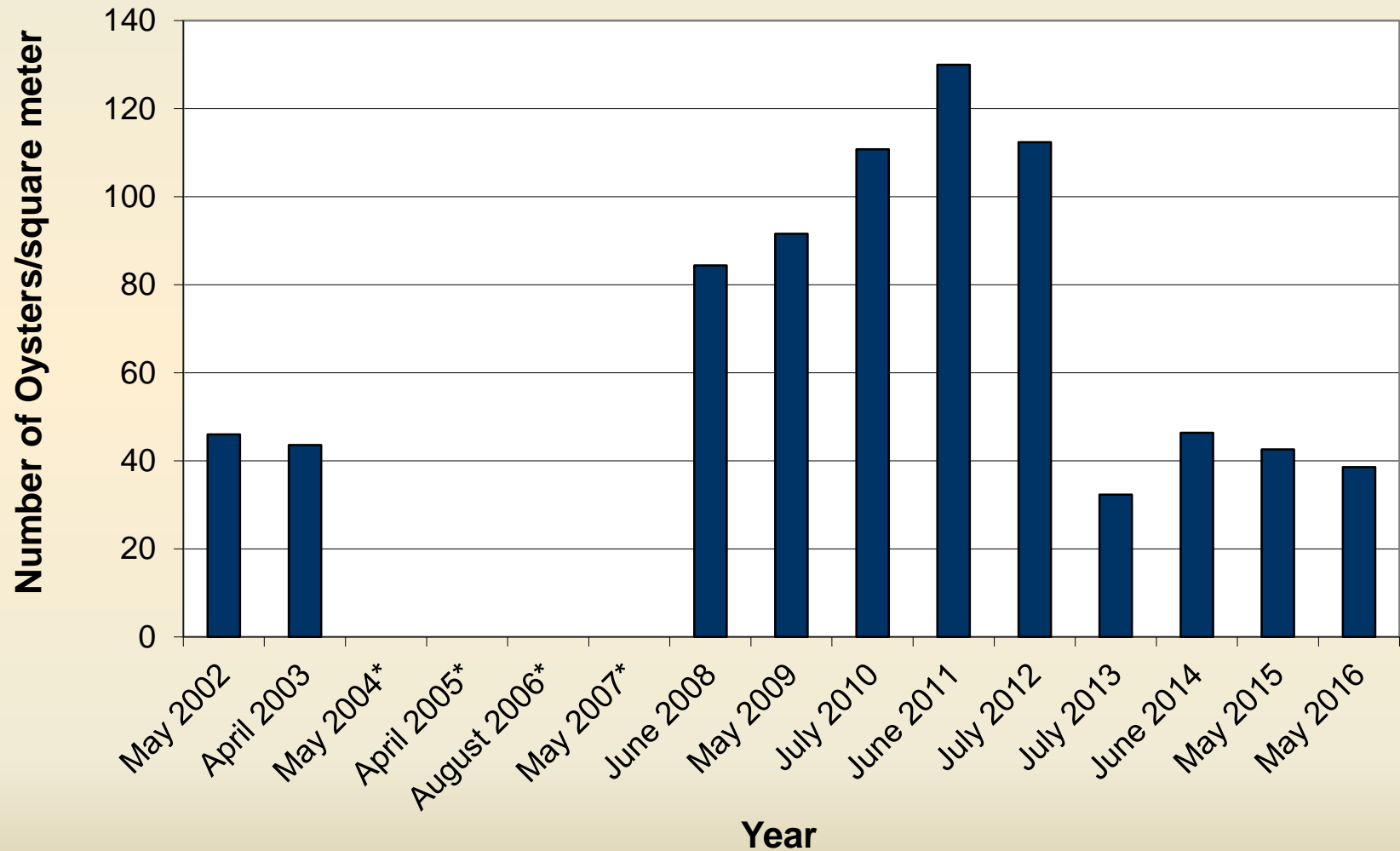


Quadrat Frames

And Volunteers

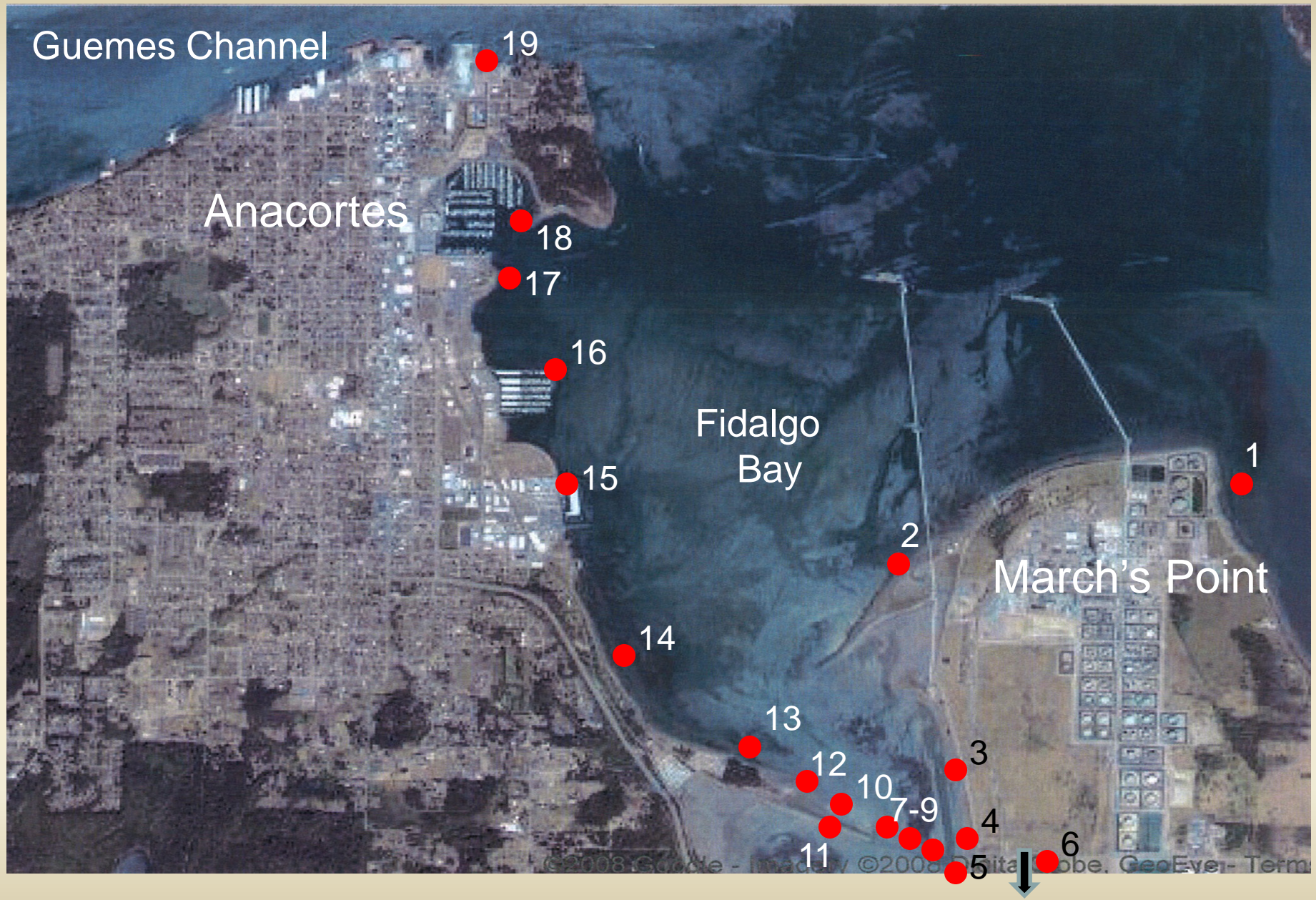


Trestle Plot B Native Oyster Densities

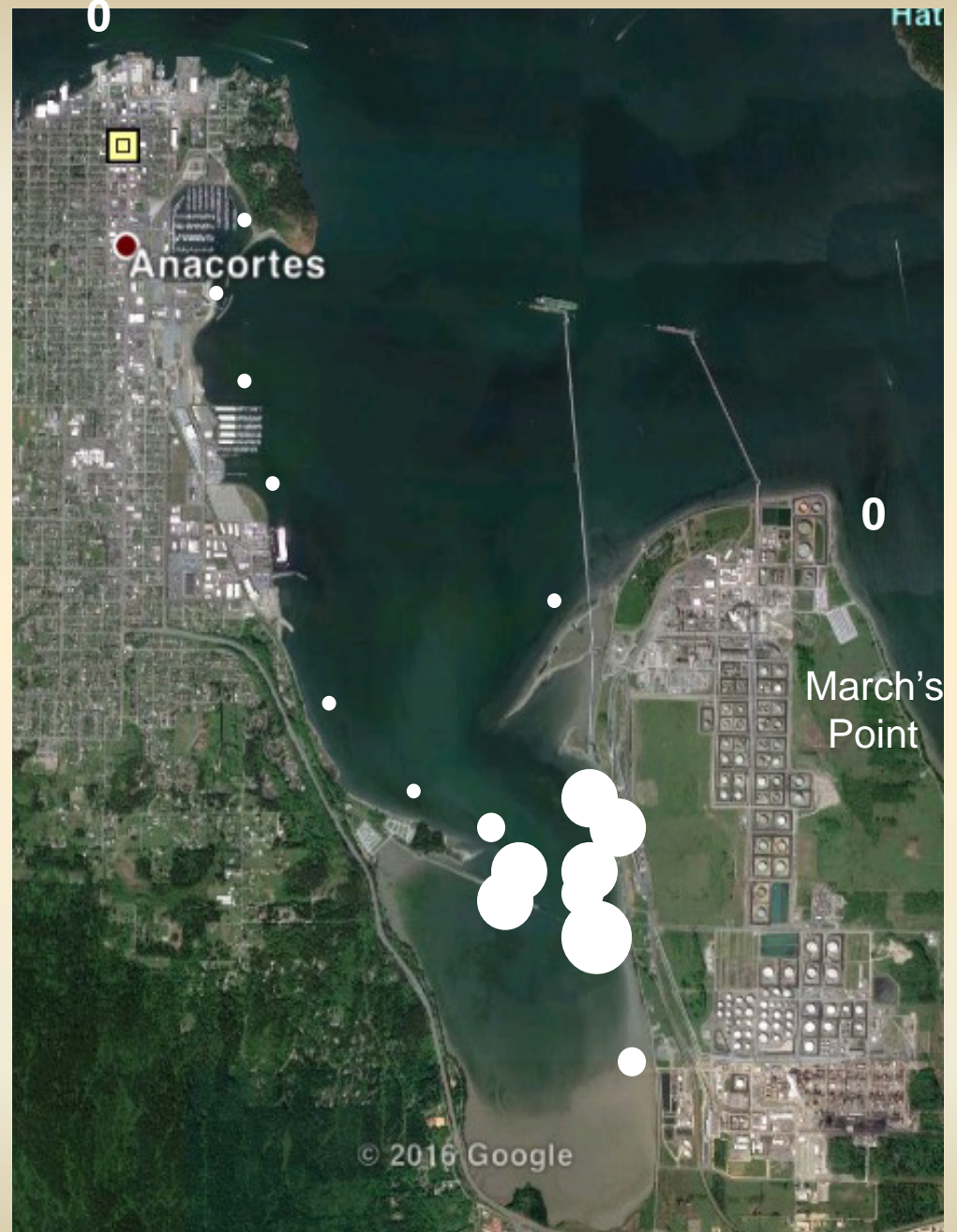


Shell bags & shell string samplers





Average Number of
oyster recruits in the
shell bags by location,
2004-2016



Natural Settlement in Cultch Bags by Year (oysters/100 shells)

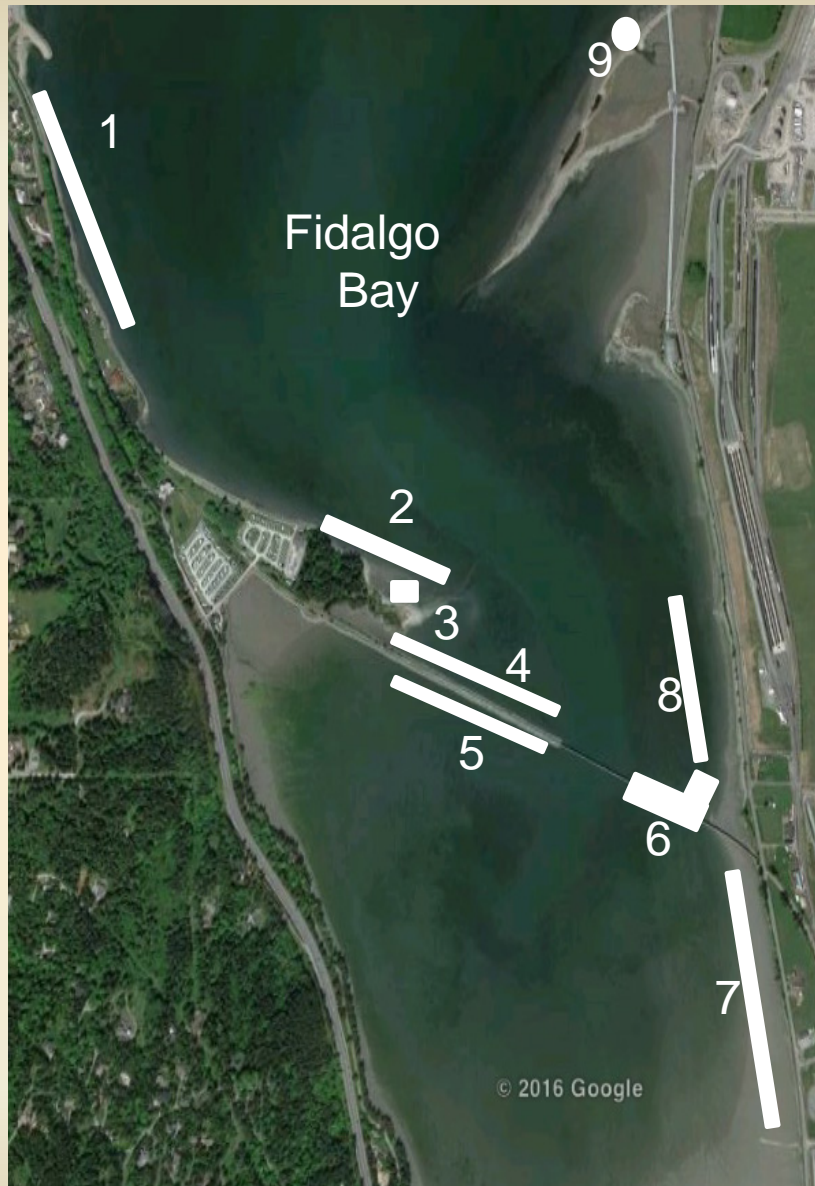
2004	24
2005	0
2006	18
2007	0
2008	0
2009	267
2010	2
2011	6
2012	18
2013	6
2014	93
2015	428
2016	93



Natural Settlement in Shell Bags

2004	Light
2005	None
2006	Light
2007	None
2008	None
2009	Heavy
2010	Very light
2011	Light
2012	Light
2013	Light
2014	Moderate
2015	Very heavy
2016	Moderate

“Wide Area” Sampling 2012 & 2013



Total number of samples:

1,736 over two years

Wide Area Survey Results



Native Oysters/m² in the “Wide Area” plots

Substrate Enhancement



Enhancement Shell Plots 2013



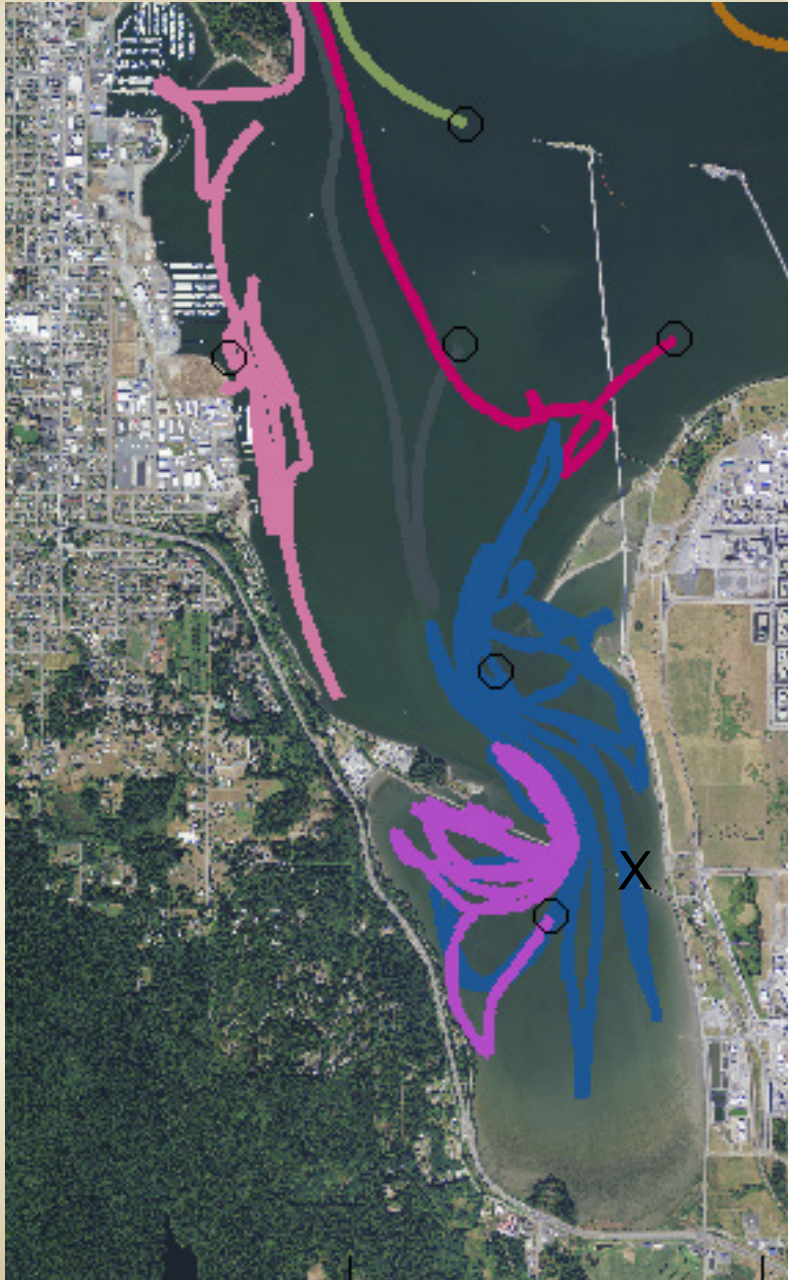
Graphic by Brian Allen, Puget Sound Restoration Fund



Estimated Number of Native Oyster in Fidalgo Bay

Year	Number of Oysters
2002	50,000
2003	45,000
2004	40,000
2005	90,000
2006	80,000
2007	100,000
2008	90,000
2009	80,000
2010	140,000
2011	140,000
2012	160,000
2013	240,000
2014	850,000
2015	2,600,000
2016	4,800,000

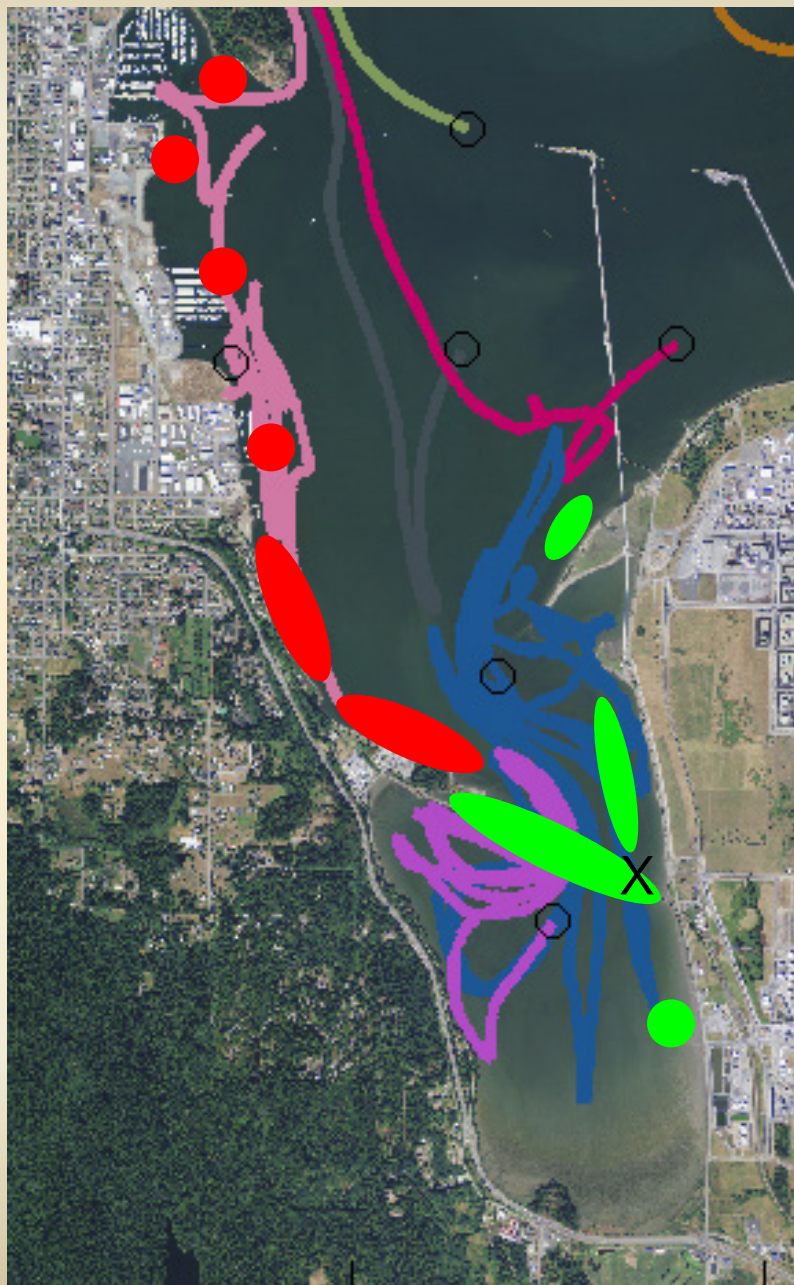




Simulated Current Drouge Results for Fidalgo Bay

Eric Grossman
USGS, Bellingham, WA

X = Oyster Seed Bed



 Recruits present

 Recruits absent

X = Oyster Seed Bed

Cap Sante Marina Seeding



Experimental Survival & Growth Seed Bags on Cypress Island



Habitats in Fidalgo Bay



South Bay Mud Flats



Specialized habitat



Metrics used in Fidalgo Bay

Oysters/cultch shell

- Survival on newly deployed cultch
- Settlement in recruitment monitoring bags or strings

Oysters/m² for density in beds

Shell length for growth

Restoration Partners

Skagit County Marine Resources Committee

Northwest Straits Commission & Foundation

Puget Sound Restoration Fund

City of Anacortes

Taylor, Blau, Acme Oyster Farms

Swinomish & Samish Tribes

Tesoro & Shell Refineries

WDFW, WDNR & NOAA

Shannon Point Marine Center

COSSE Pacific Partnership

WSU Beach Watchers, CVP & Community Volunteers



Questions?



Fantastic Volunteers



Oops...



Mud Biker