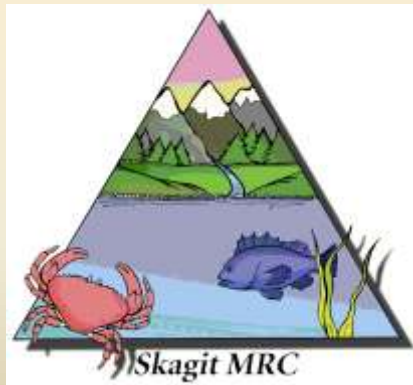


Restoration of Native Oysters, *Ostrea lurida*, in Fidalgo Bay, Washington

Paul Dinnel
Skagit MRC

Fidalgo Bay
Science Conference
February 2011



Or, volunteers having fun and doing really neat stuff...



Restoration partners

Skagit MRC

Puget Sound Restoration Fund

City of Anacortes

Taylor, Blau, Acme Oyster Farms

Samish & Swinomish Tribes

Tesoro & Shell Refineries

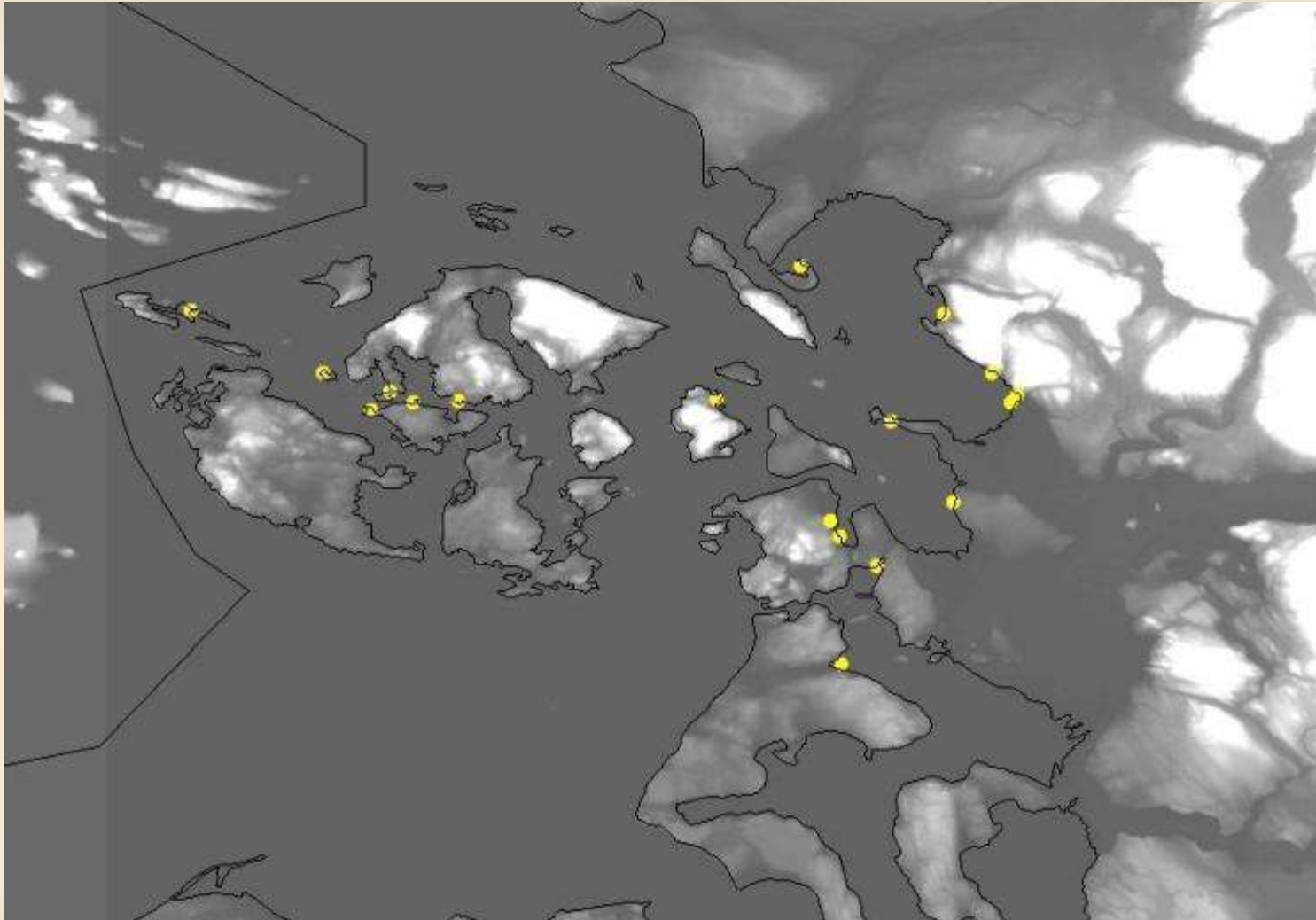
WDFW, WDNR & NOAA

Shannon Point Marine Center

Beach Watchers & Community Volunteers



Historical native oyster distribution in North Sound



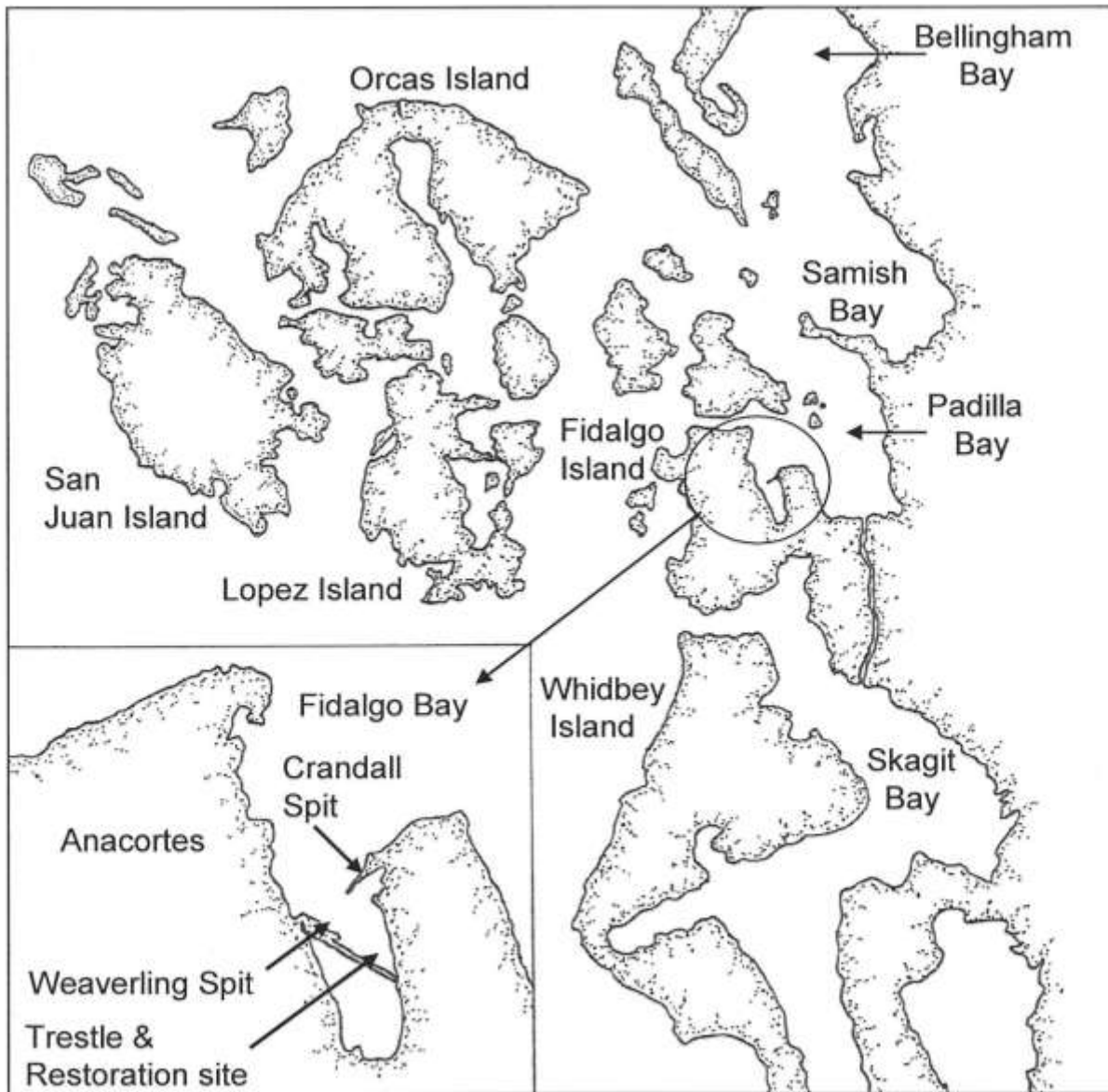
From Hatch et al. 2005

Restoration goal

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

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





Restoration sites

South Fidalgo Bay...



010525 131934



Restoration methods

Seed oysters supplied by Taylor Shellfish and Lummi Tribe hatcheries and planted by volunteers

2002

- Plantings in “favorable” habitats at trestle

2003-2004

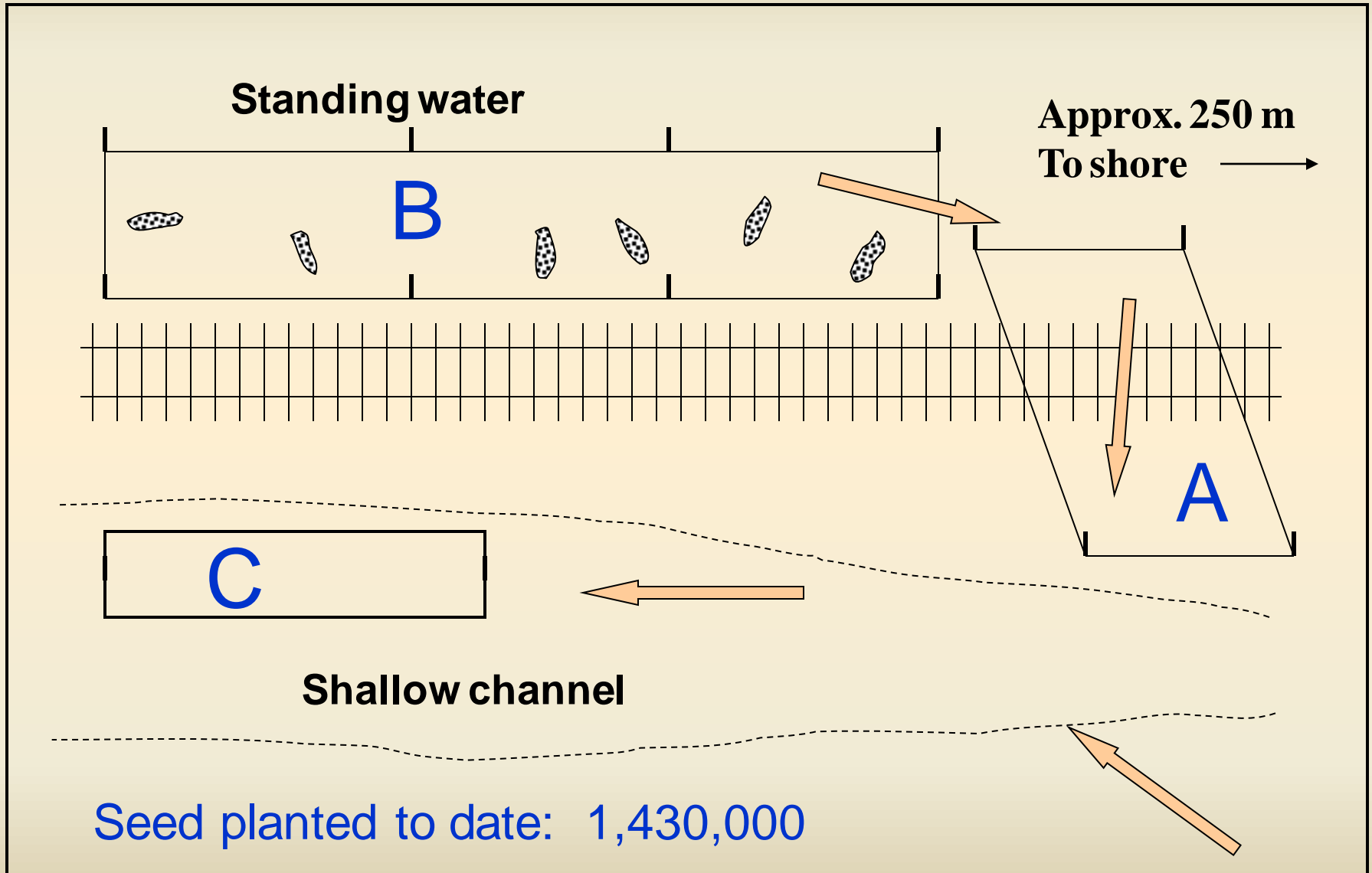
- Continued trestle plantings

2006

- Continued seed plantings at three sites



Trestle oyster bed



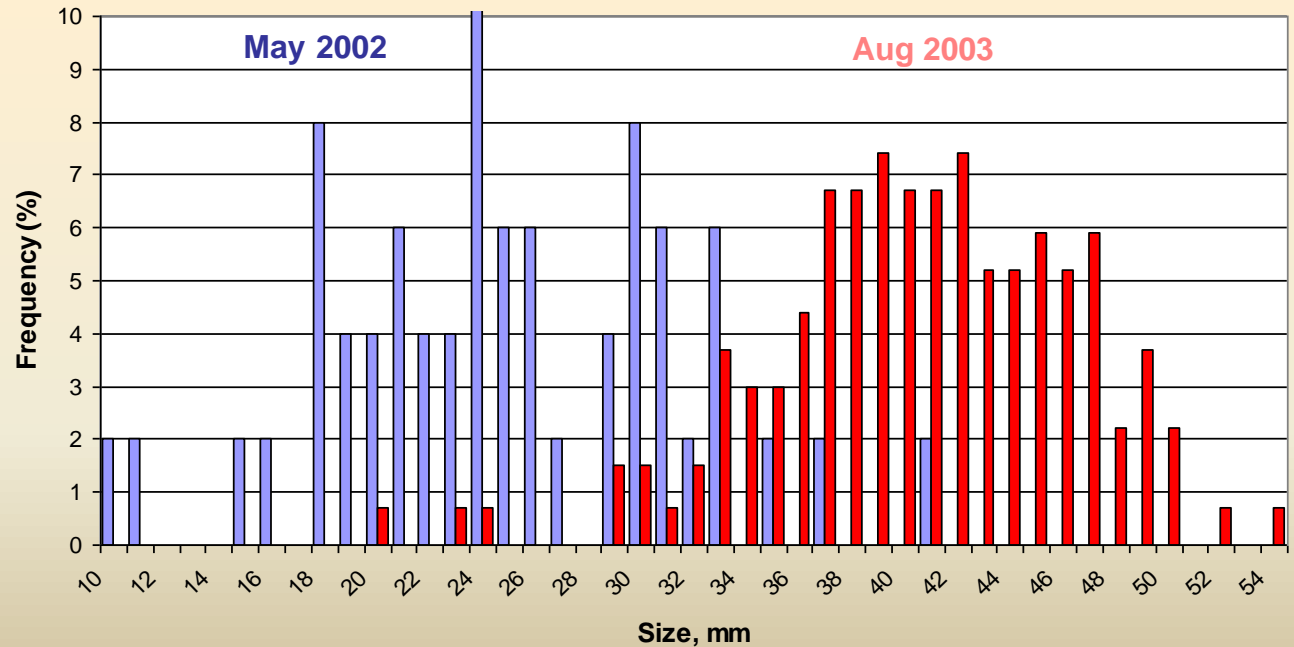
Results 2002-2003

15 month survival

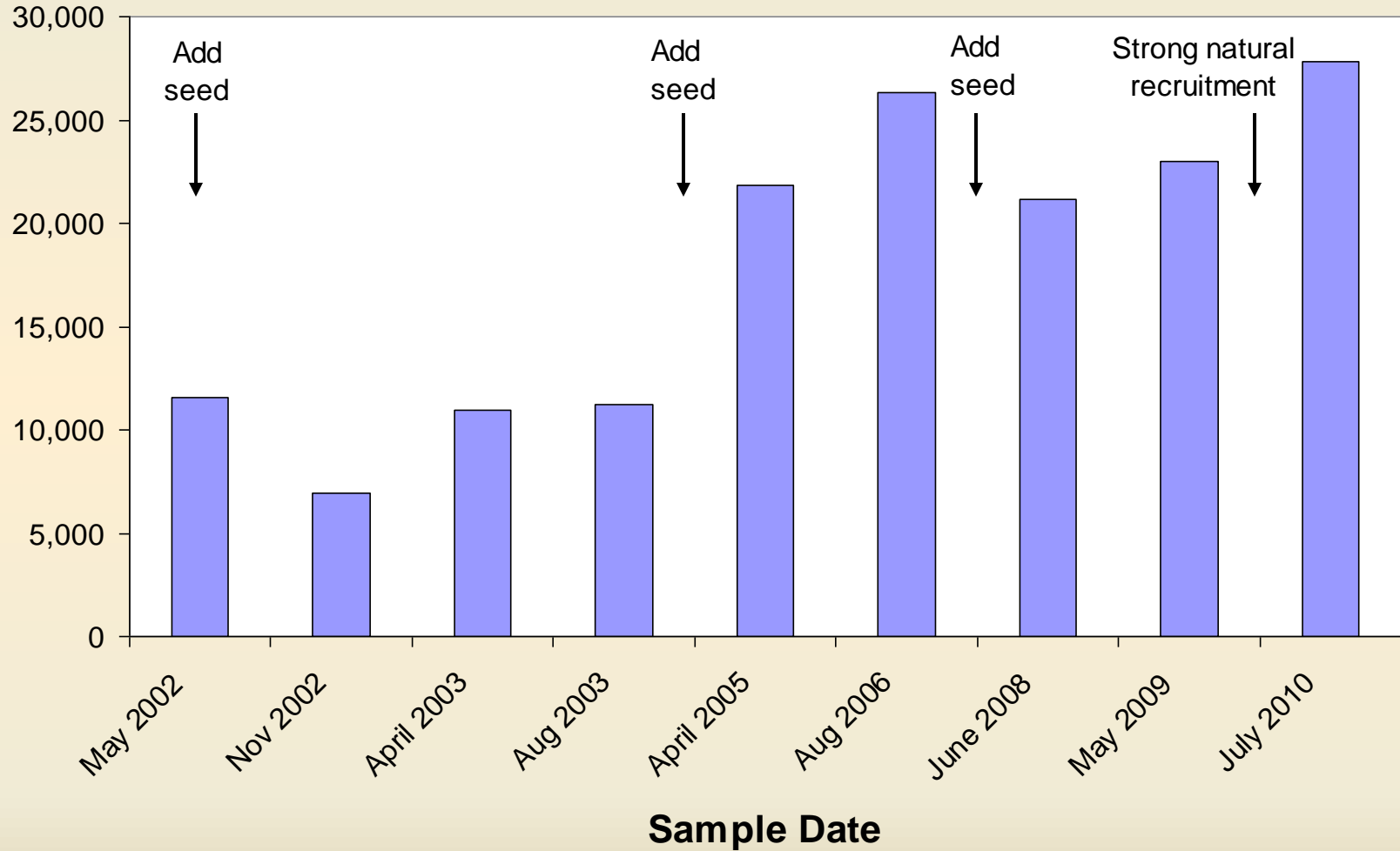
~95%



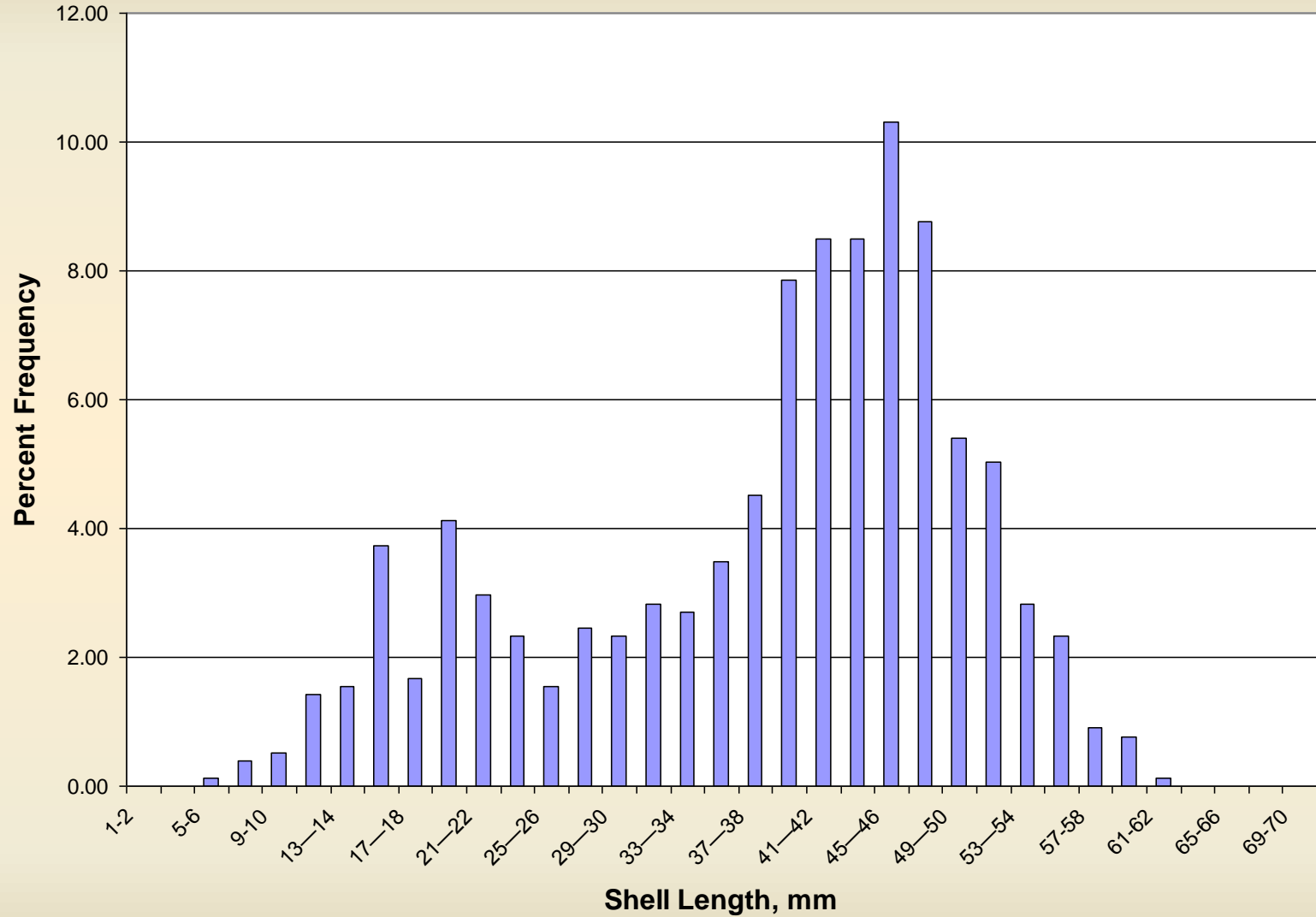
Growth:



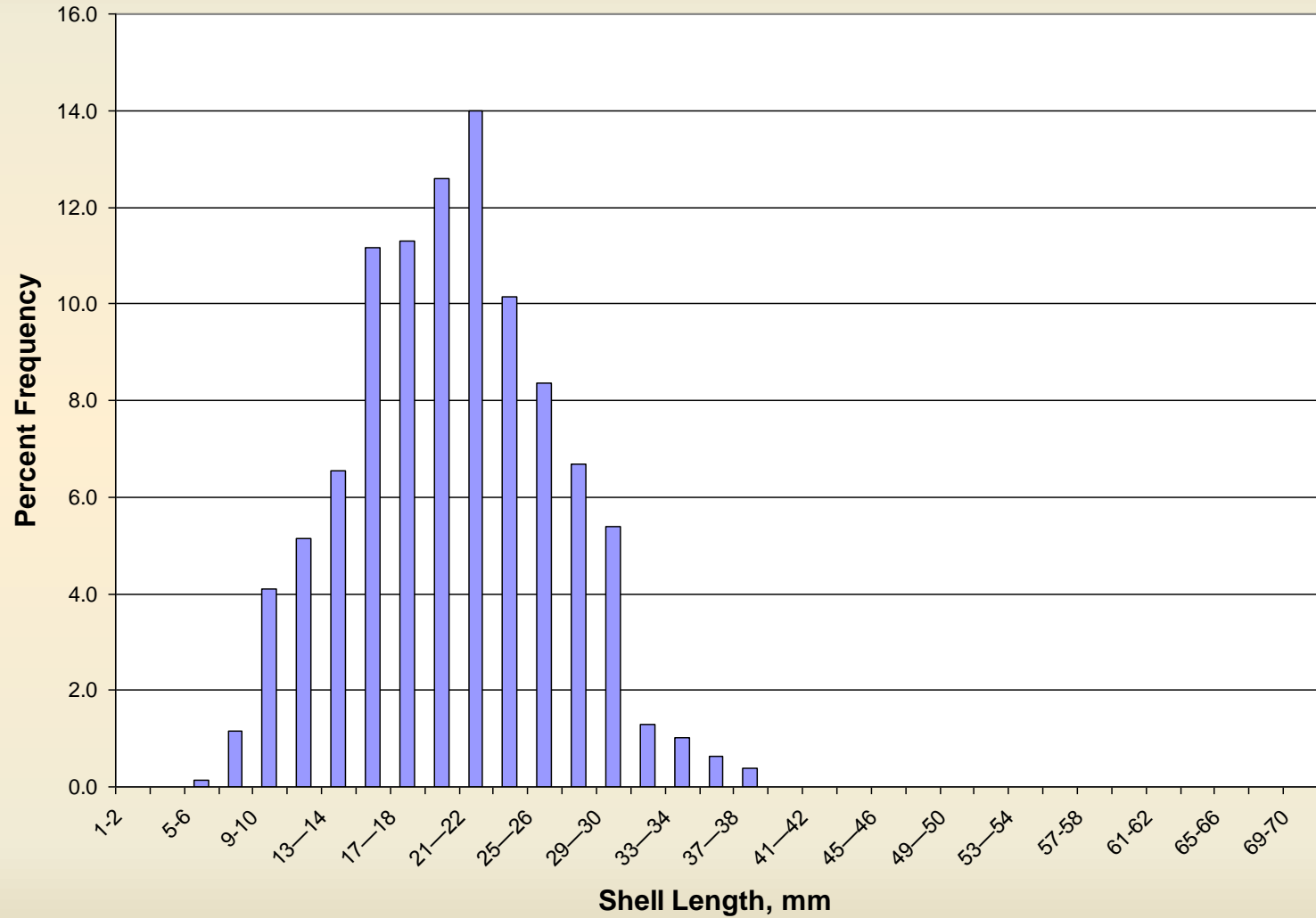
Number of native oysters in Plot B



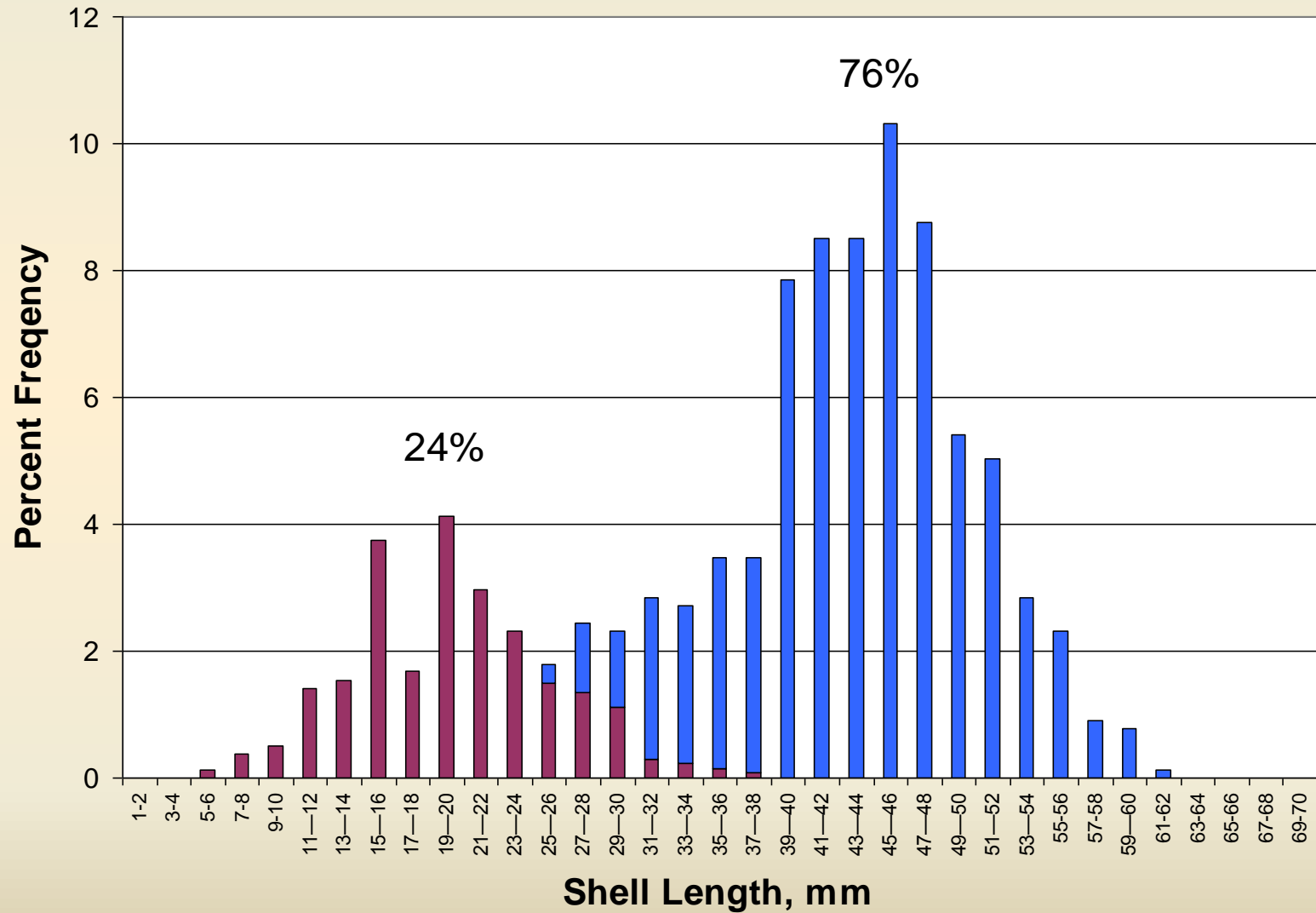
2010 Plot B size frequency



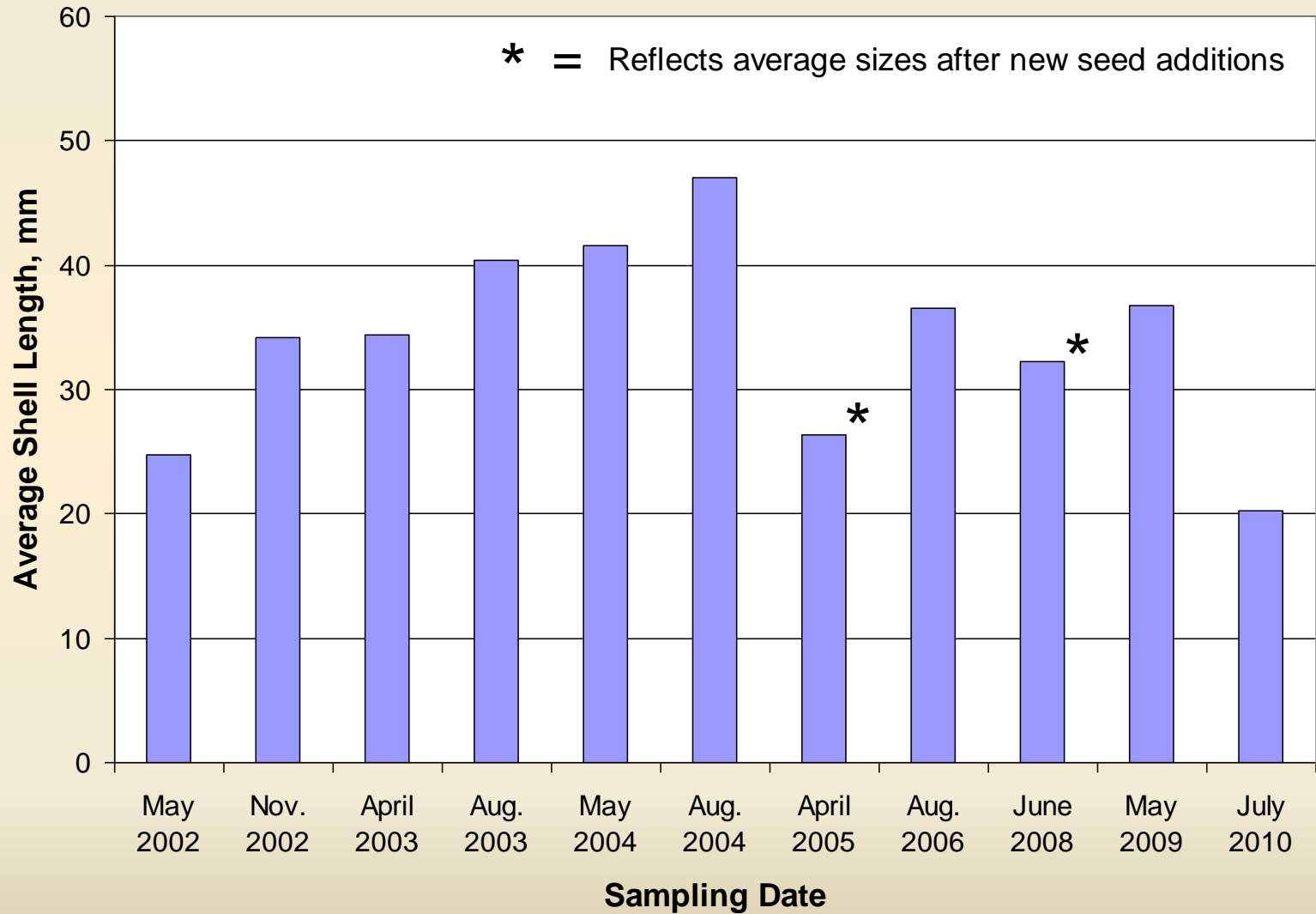
Size frequency in recruitment bags, Plot B



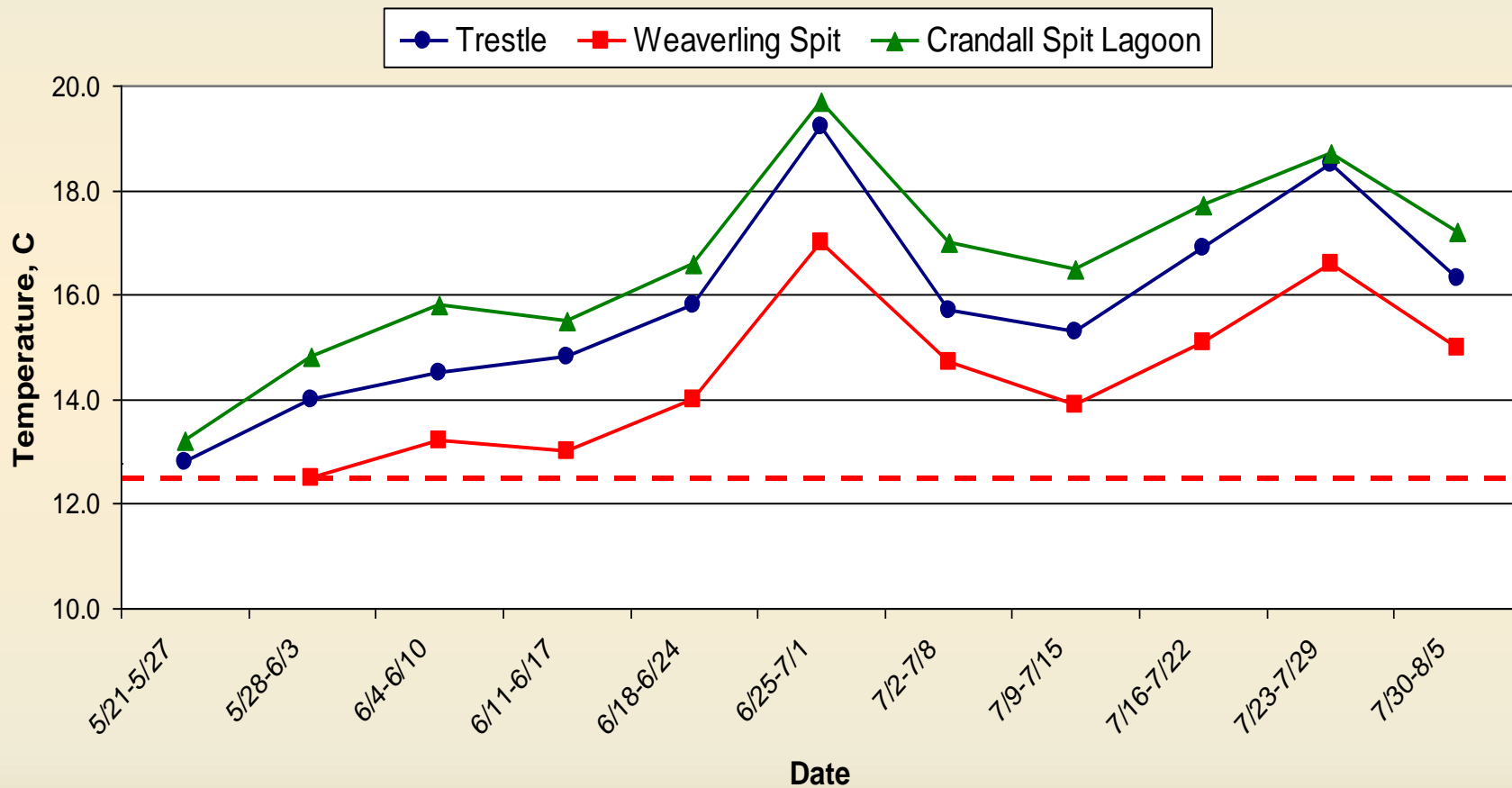
Percentages of new recruits vs. older oysters, Plot B, 2010



Average shell length by year, 2002 to 2010



Average Weekly Temperatures at Three Sites in Fidalgo Bay, 21 May to 5 August, 2006



Substrate enhancement







Shell recruitment bags



Shell source:
Blau Oyster, Samish Island



2004 - 2007





Locations of shell recruitment bags in 2007-2010

Volunteers
at work...

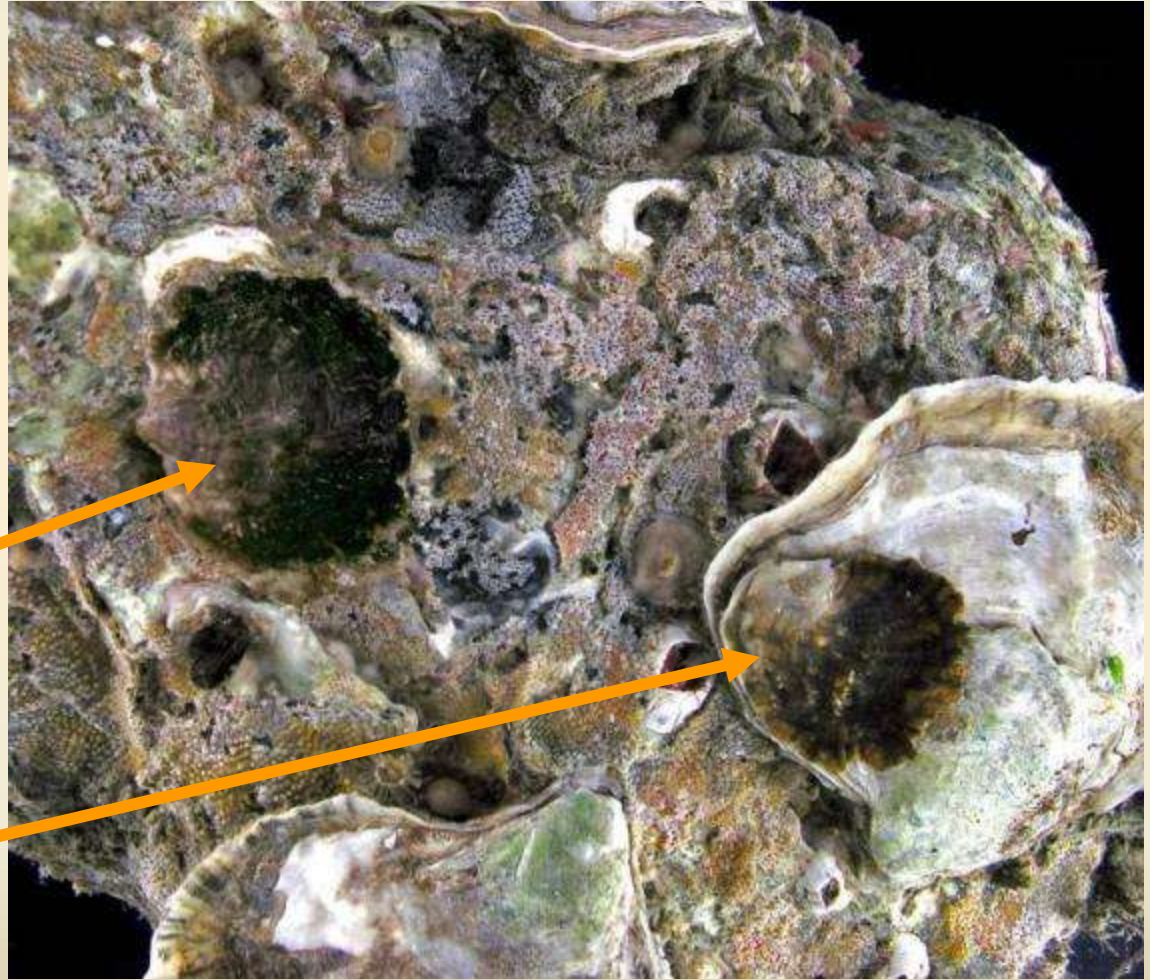


finding
new recruits



Signs of natural recruitment....

Juvenile
native
oysters



Abalone Jingle, *Pododesmus macroschisma*



Shell bag results

2004: None

2005: Moderate recruitment in bags and other areas

2006: None

2007: Minor recruitment in bags near trestle

2008: None

2009: None

2010: Heavy recruitment in bags and other areas



Recruits per 100 cultch shells in Shell Bags in 2010



Rock

and on
other substrates



Wood

Field Surveys



Crandall Spit





Betsy Peabody, Puget Sound Restoration Fund

North barge ruins





South barge
ruins &
rock pile



South Bay shell berm



Weaverling Spit seep



Numbers of native oyster recruits counted in summer 2008



Evidence for larval recruitment from the Trestle Site...

- ✓ Lack of previous native oysters in Fidalgo Bay
- ✓ North-South pattern of recruit abundance
- ✓ Similar Size Frequency distributions
- ✓ Lack of dead native oyster shells

The future....

- Add seed to north Fidalgo Bay
- Expand native oyster restoration to ten additional North Puget Sound sites by 2020
- Use the Fidalgo Bay oysters as broodstock
 - Spawn and raise seed in a hatchery
 - Catch naturally spawned seed in Fidalgo Bay

Questions?

