The background of the slide features a close-up, slightly blurred image of a geoduck shell, showing its characteristic ridges and colors. A semi-transparent map of the Puget Sound region is overlaid on the shell, with a red dot indicating the study area in the central basin.

**Geoduck Distribution,
Abundance, and
Tissue Chemistry
Studies in the Puget
Sound Central Basin**

Kimberle Stark

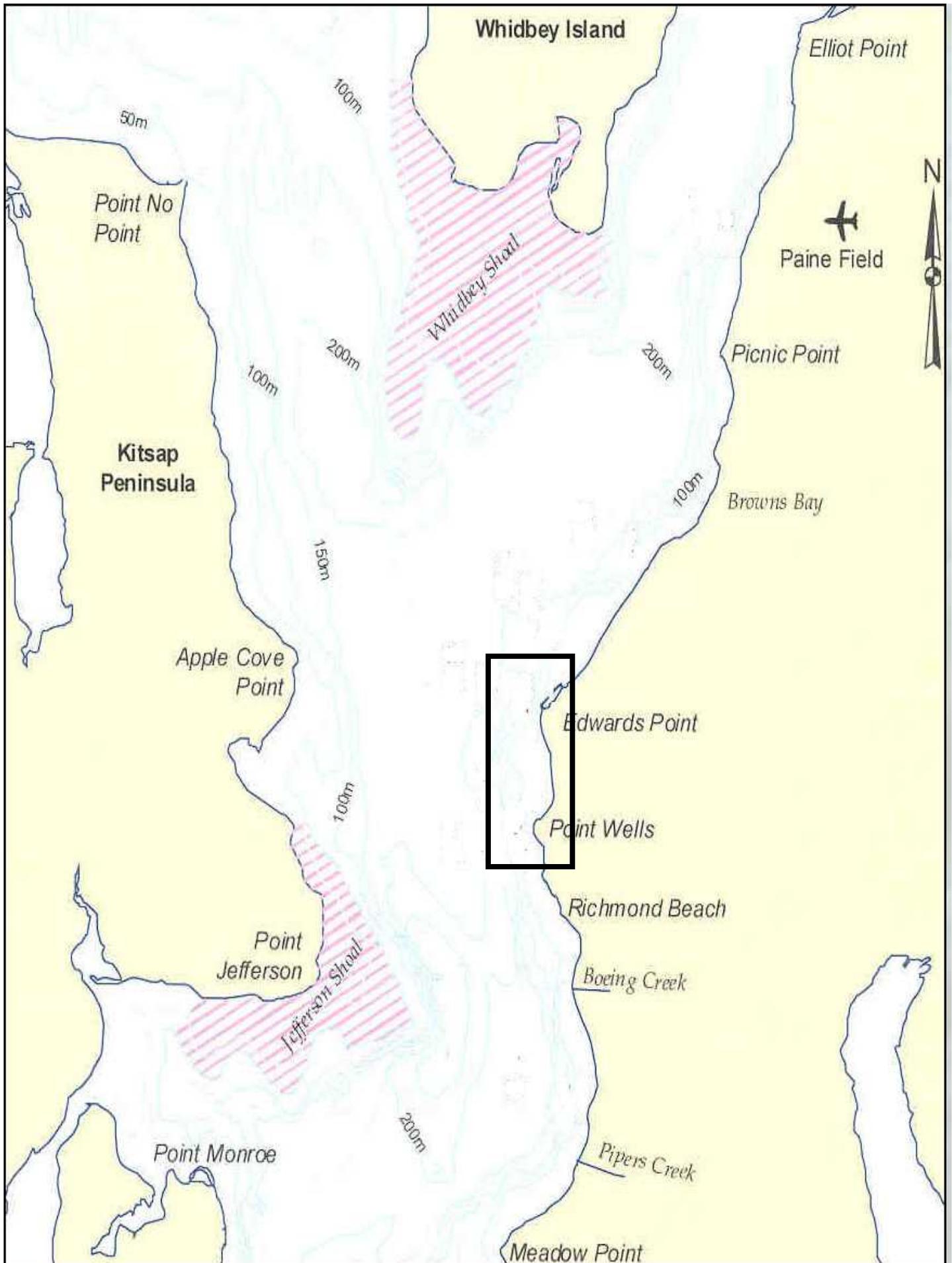
King County Dept. of Natural Resources

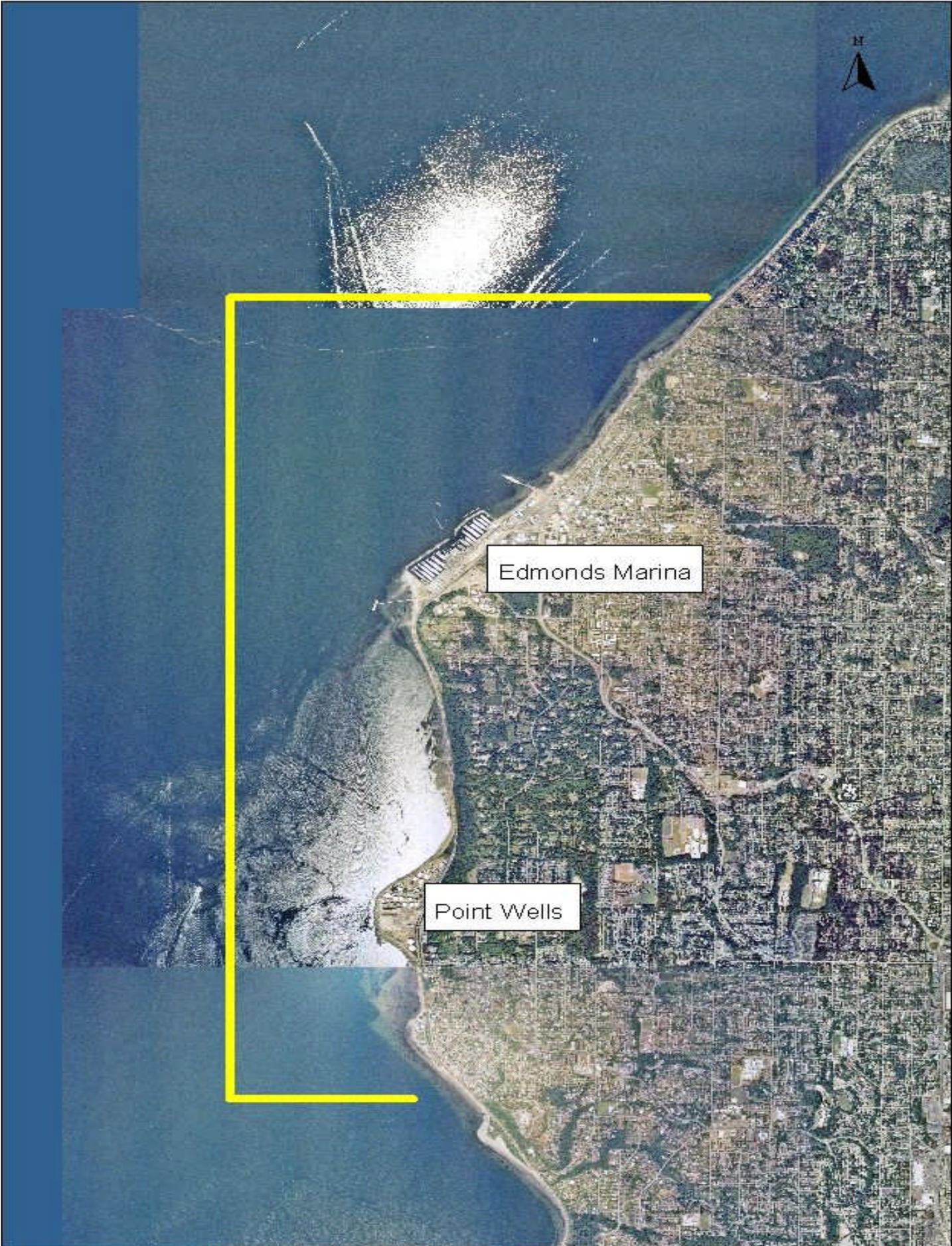
Seattle, WA

Geoduck Sampling for the MOSS Project

- **Distribution survey**
Abundance & biomass
- **Tissue chemistry**
Metals, organics,
bacteria
- **Age Analysis**







Edmonds Marina

Point Wells

Distribution & Abundance Survey

- WDFW guidelines
- April 8-May 10, 2002
- 11.3 Km (7 miles) shoreline surveyed -4 to -70 MLLW
- 5,989 m (19,650 ft grid lines)

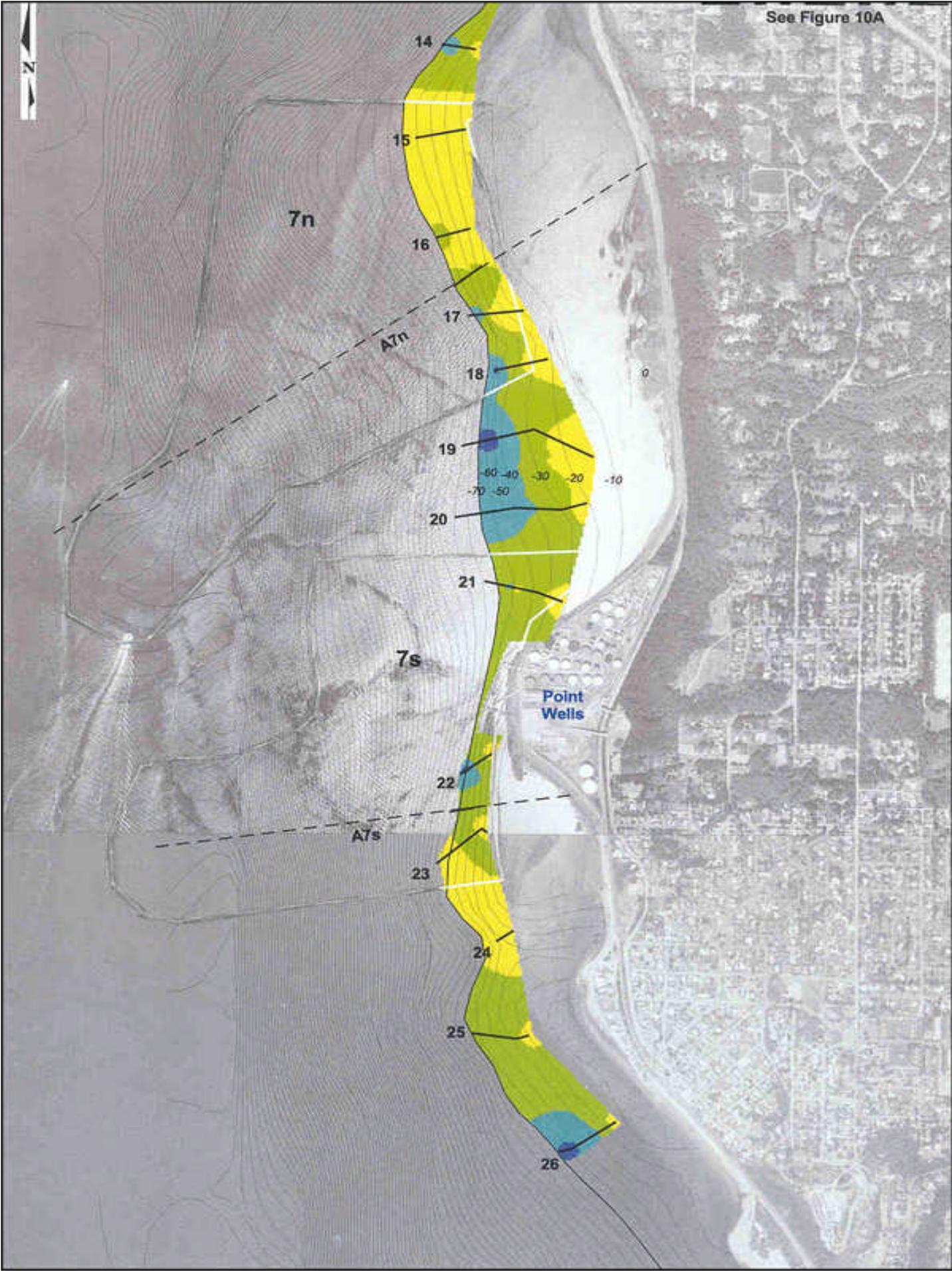


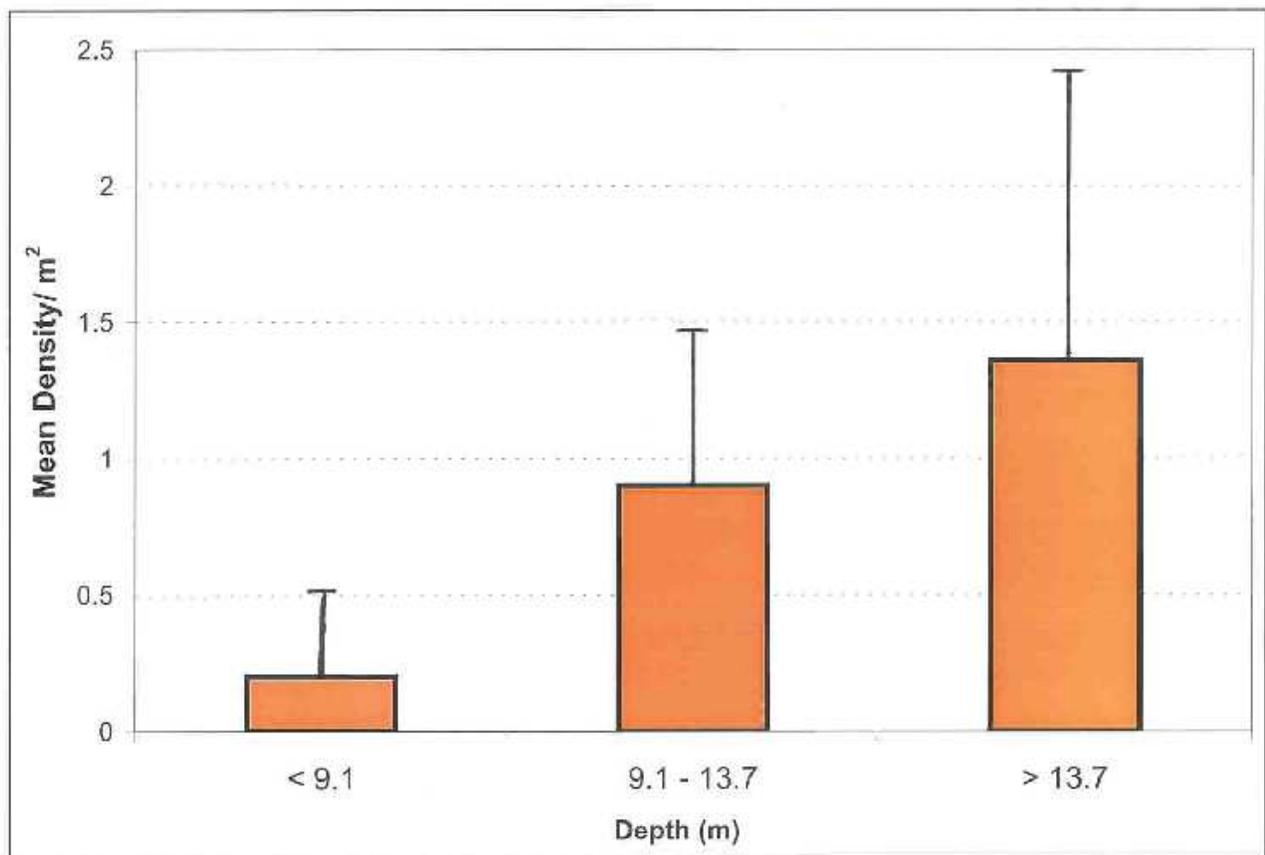
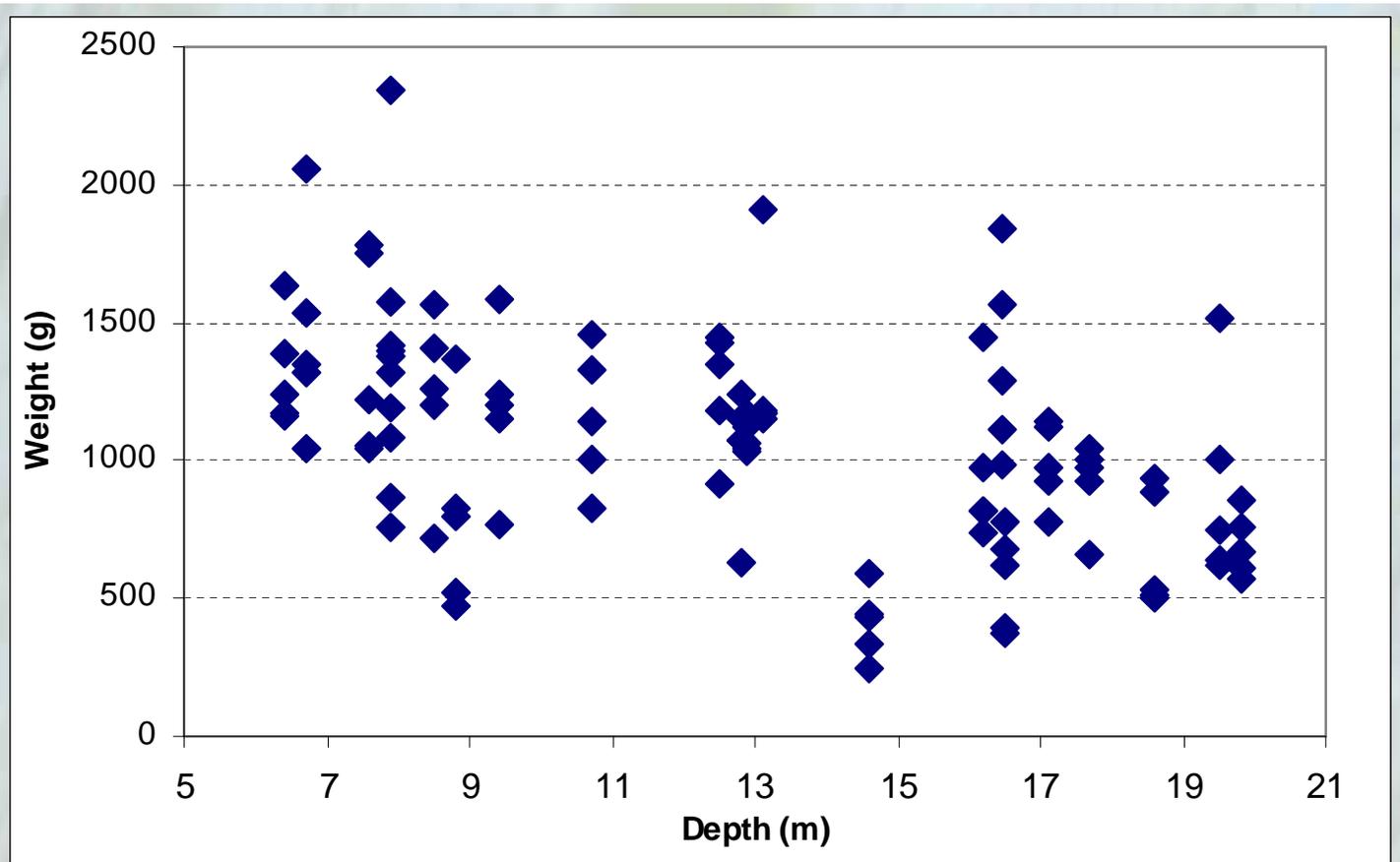


Results

- Avg. density 0.84 geoducks/m²
- Density increases with depth
- Biomass decreases with depth
- Avg. weight 1.1 kg (2.3 lbs) & varied
- Biomass for entire area was 8,920 kg/ha

See Figure 10A





Tissue Chemistry

- ✧ Physical parameters
(age and lipids)
- ✧ Bacteria
- ✧ Metals (14)
- ✧ Organics (BNAs,
chlorinated pesticides,
PCBs, organophosphorus
pesticides, butyltins)

Tissue Chemistry Samples

- 27 geoducks collected
- 3 transects--9 / transect
from 3 planned depths
(16-65 ft)
- 9 whole-body for bacteria
- 9 whole-body/ 9 edible
portion for other
parameters

Special Lab Considerations

- Bacteria--stainless steel blender w/ SS blades
- Glass blender w/titanium blades for metals & organics
- Ceramic knife for cutting
- Sand rinsed
- Chlorinated herbicide analysis didn't work--all attempts to remove interferences failed





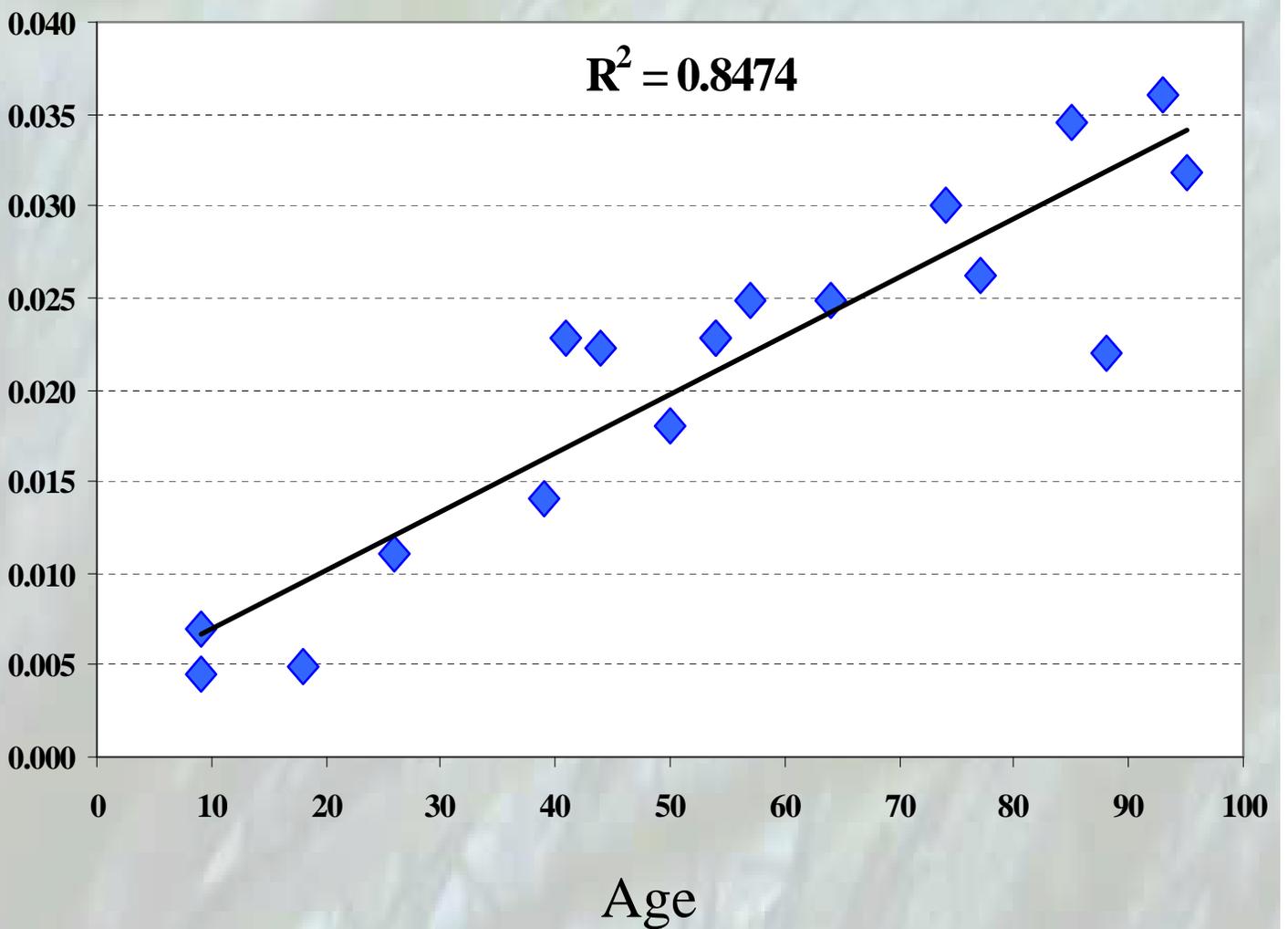
Physical Characteristic Results

- Ages: 9 to 95 yrs, mean of 50
- Weights: 0.55 to 1.95 kg, mean of 1.15 kg
- Lipids: 0.11 to 0.74 %, mean of 0.30 %
- No correlation between weight/age

Metals

- 11 metals detected
- no age correlation except for Hg
- Whole-body vs edible concentrations varied -- higher whole-body values for Sb, As, Cd, Cr, Pb, Ni, Ag
- Lead much, much, much higher in whole-body, exceeded LOC in all but 1 sample

Mercury vs Age



Unremarkable Organics

- 6 of 109 compounds detected
- Alpha-BHC detected in all, beta-BHC in 11 of 18. Lindane only in 2 of 18.
- No correlations with age or lipids
- Phthalates--detected in 16 of 18

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**King County Environmental Lab
Staff**