Apr 4th, 1:45 PM - 2:00 PM

Boundary Bay ambient monitoring program

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Boundary Bay Ambient Monitoring Program

PROGRAM ASSESSMENT

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ENVIRONMENTAL TECHNICIAN

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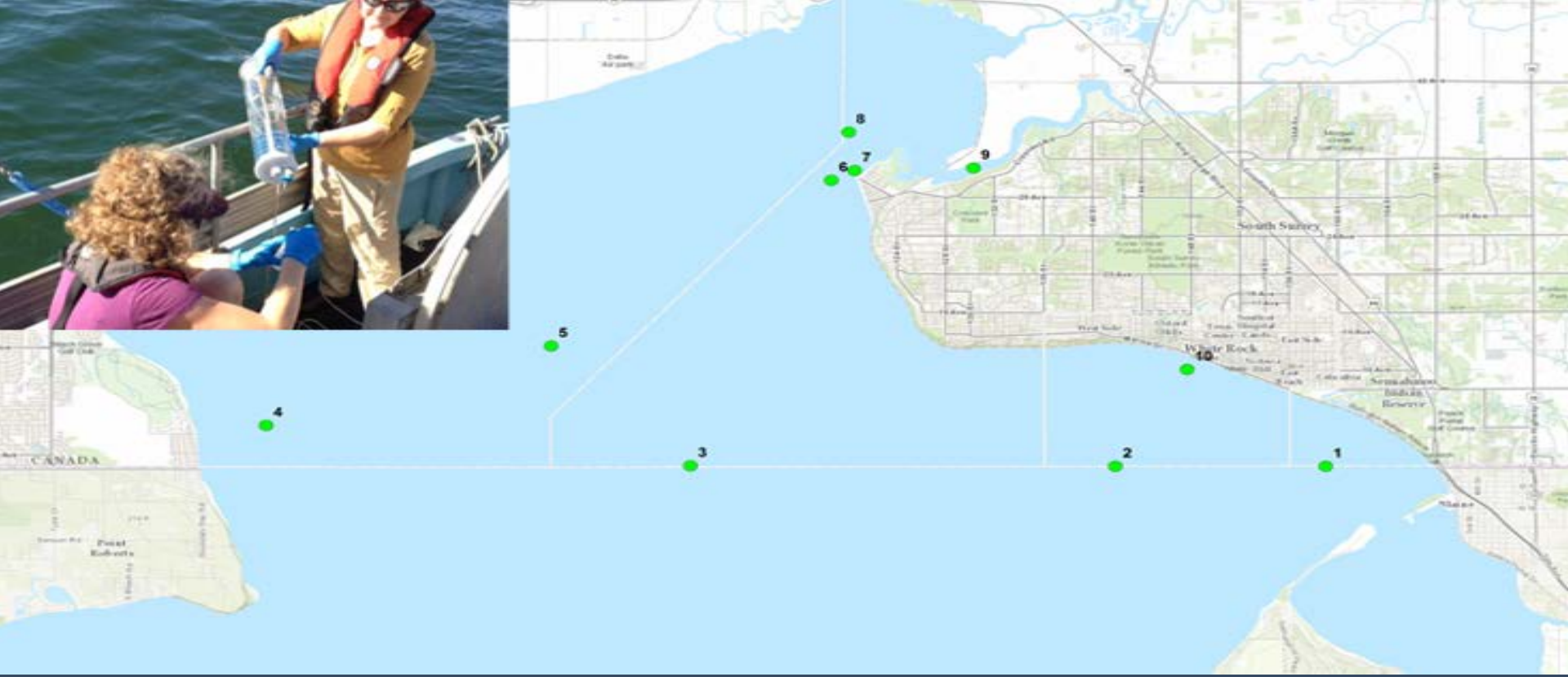
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Program Definition

- Why Boundary Bay?
- Partnership Approach
- Monitored Media
- Monitoring Frequency

Program Assessment

- Summarize the results of the water, sediment and biota studies
- Critically review the program
- Provide recommendations for future monitoring



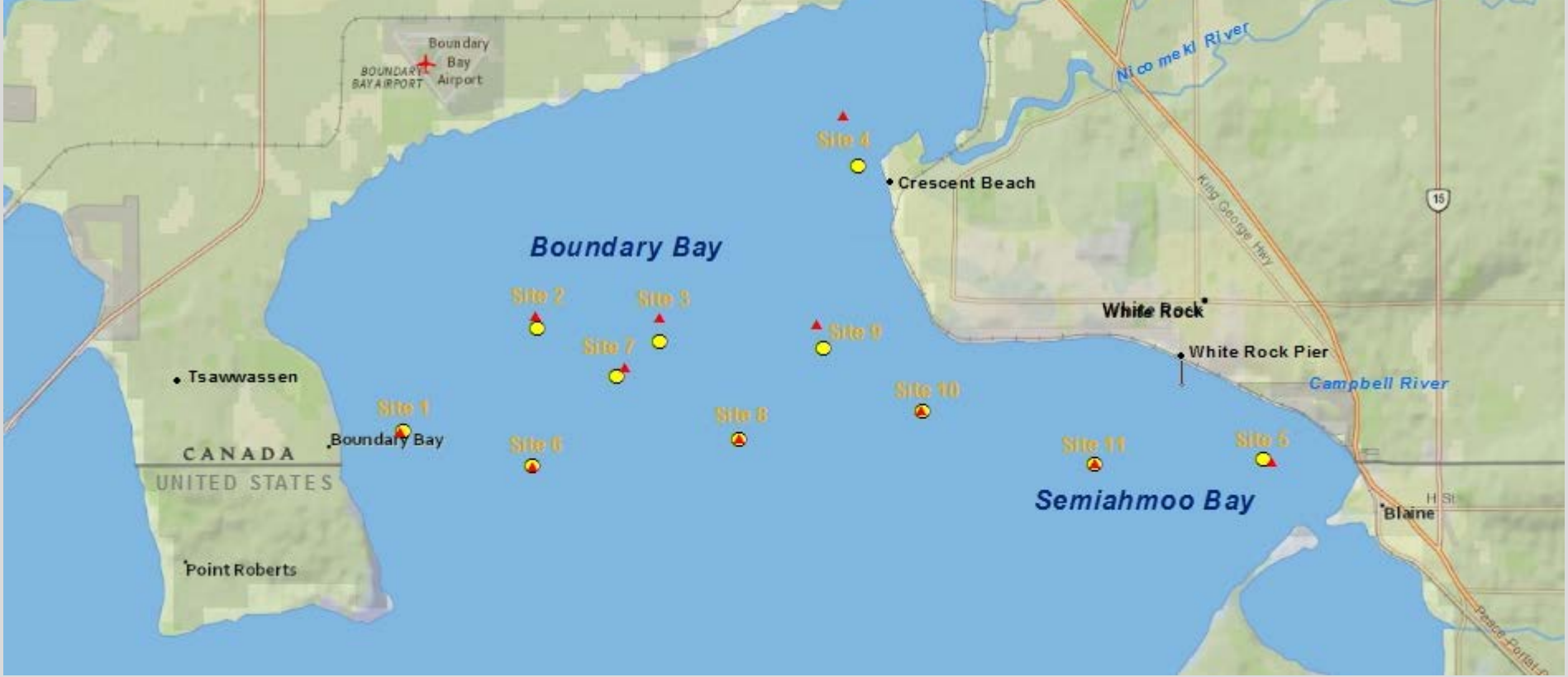
Marine Water Monitoring Stations

Key Findings – Marine Water Quality

- Majority of results met the Boundary Bay Water Quality Objectives and BC Water Quality Guidelines
- Dissolved oxygen has been low from most sites but this is consistent with marine coastal waters
- Some fecal coliform levels exceedances at 2 sites
- Limited organics analysis but all results have been lower than the analytical detection limits and guidelines

Key Findings – Marine Water Quality

- Water is well mixed with no significant difference observed at the 2 depths, between-site or temporally
- When clustered, mean concentrations for some parameters were higher in samples from nearfield sites than farfield
- Results from wet season sampling were higher than dry period sampling for all sites



Sediment and Biota Monitoring Stations

Key Findings - Sediment Monitoring

- Most measured substances with met objectives or guidelines
- The concentrations of metals and organics are highly dependent upon sediment particle size
- Only one site with fine sediment (>94% silt plus clay)

Key Findings – Biota

- Caged mussels had 82% survival rate
- Tissue concentrations for containments met guidelines
- At near field sites, contaminant concentrations were higher in caged mussel tissues and lipid content lower
- Macro benthos showed high degree of variation but likely due to natural variability

Recommendations

- Dry season water sampling can be eliminated and sampling sites reduced
- Sediment component is the least valuable and should be re-evaluated in the context of the bay's geomorphology and physical oceanography
- Caged mussel study should be repeated at 5 year intervals and data interpreted on an ecotoxicological concentration response perspective and compared with the US Mussel Watch database
- Benthic community characterization should be re-intertpreted against data from similar areas in the Salish Sea

Next Steps

- Additional study of biota data
- Water column experimentation with sampling plan and instrument mooring installation
- Caged mussel study to be repeated
- Sediment and macro benthos component to be re-examined

Questions?