



Apr 6th, 11:00 AM - 11:15 AM

Research into the cause of brackish marsh recession in the Fraser River estuary

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Speaker

Brent Gurd, Sean Boyd, Eric Balke, Richard Marijnissen, Brad Mason, and Kathleen Moore

Research into the Cause of Brackish Marsh Recession in the Fraser River Estuary

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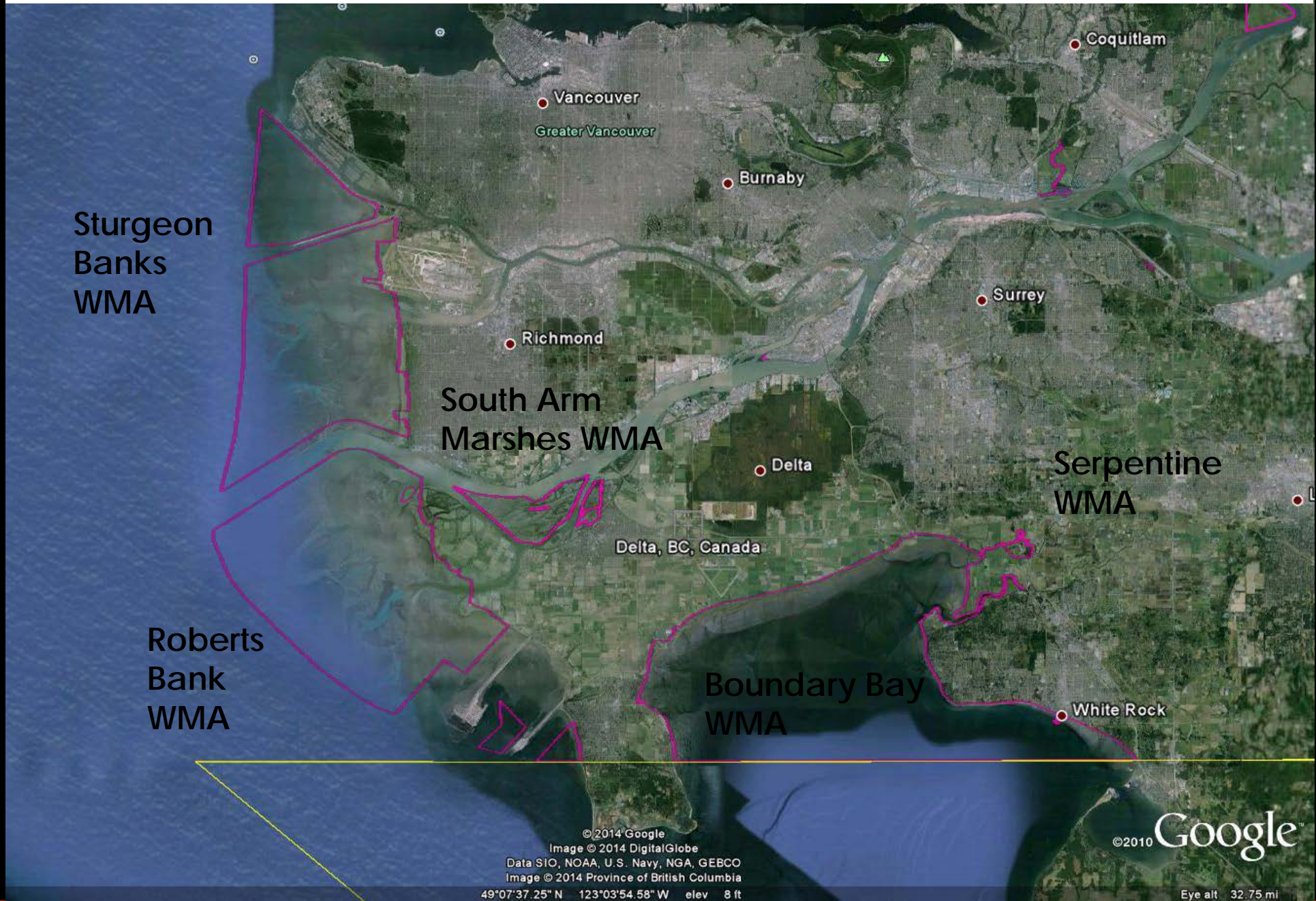


Sturgeon Bank

Westham Island



Provincial Wildlife Management Areas

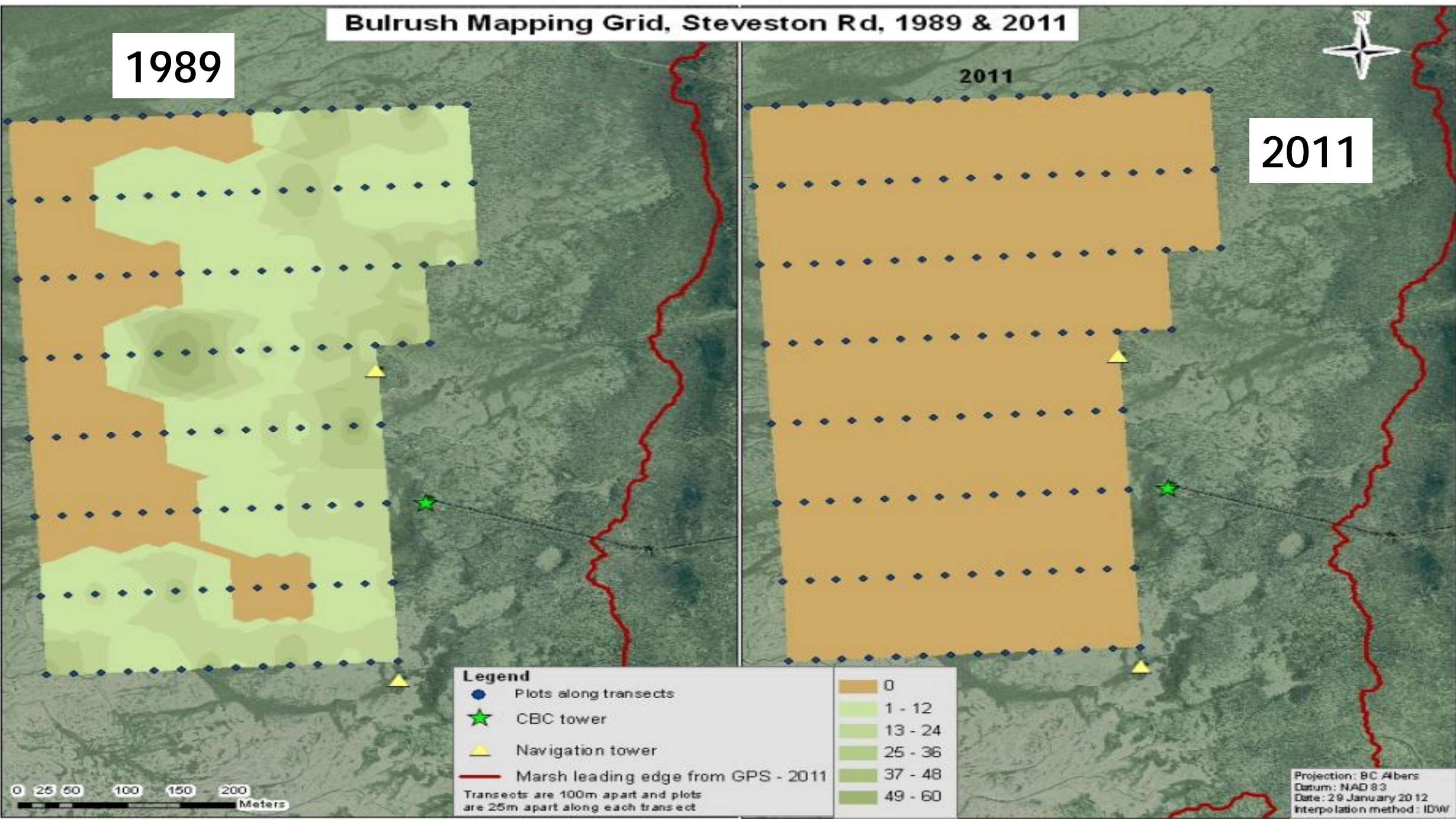


Bulrush Mapping Grid, Steveston Rd, 1989 & 2011

1989

2011

2011



July 1979



July 2011



Images: S. Boyd (L), S. Northrup (R)

0 250 500 1,000
Meters



Sturgeon
Bank



Marsh Leading Edge, Fraser River Delta 1989 to 2011

Grid	1989 Area (ha)	2011 Area (ha)	Change Area (%)	
Westminster Rd	26.8	22.8	-14.9	Sturgeon Bank
Steveston Rd	17.5	0.0	-100.0	
Outer Islands	21.0	19.5	-7.1	Westham Island
Reifel Refuge Inside	11.3	11.5	1.8	
Reifel Refuge Outside	25.0	22.5	-10.0	
Westham Island South	31.5	30.5	-3.2	
Brunswick Pt	37.8	23.3	-38.4	
Fraser River Delta	170.9	130.1	-23.9	

Sediment Deficit (Elevation) Hypothesis



North Arm

Vancouver

Middle Arm

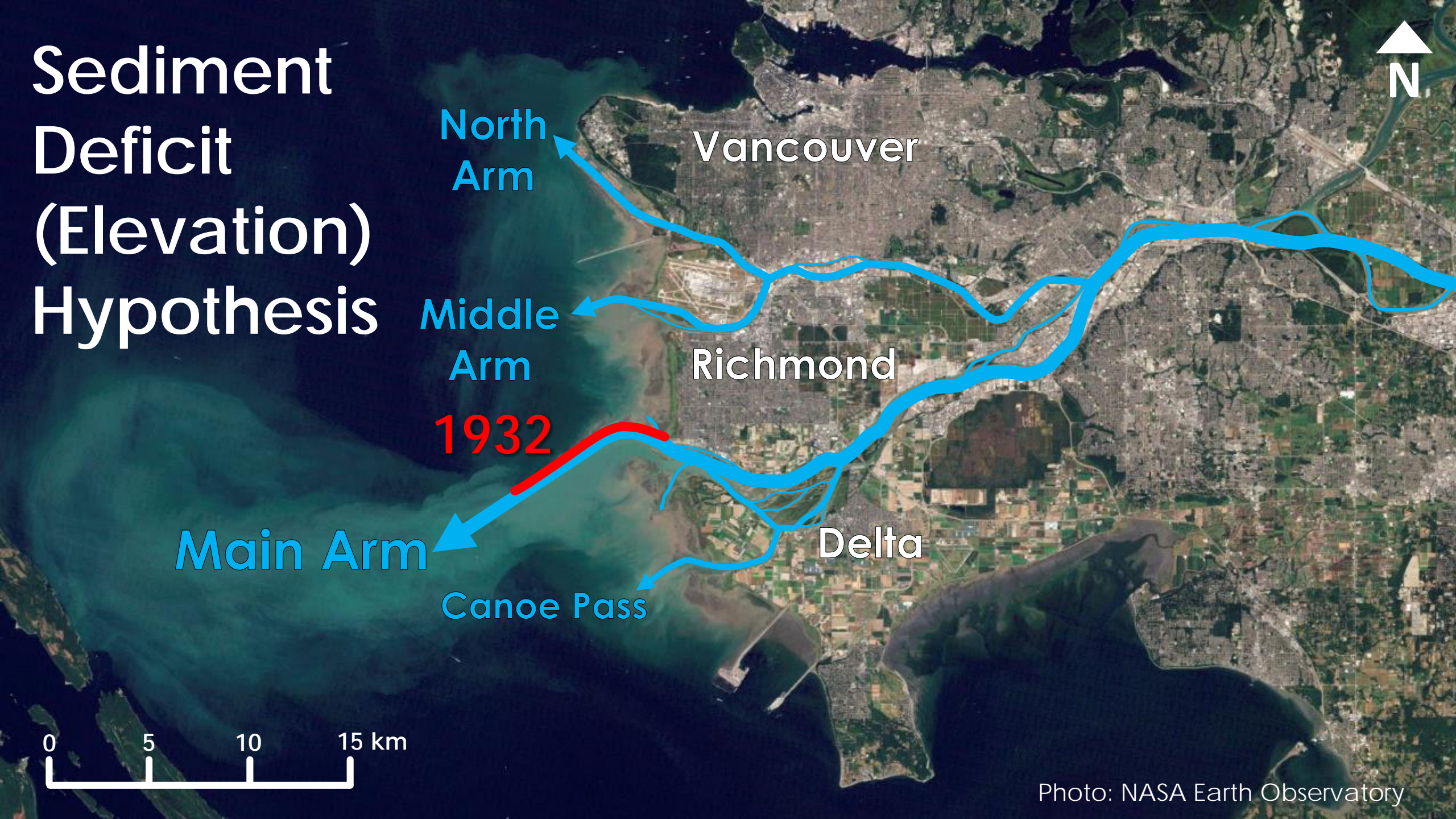
Richmond

1932

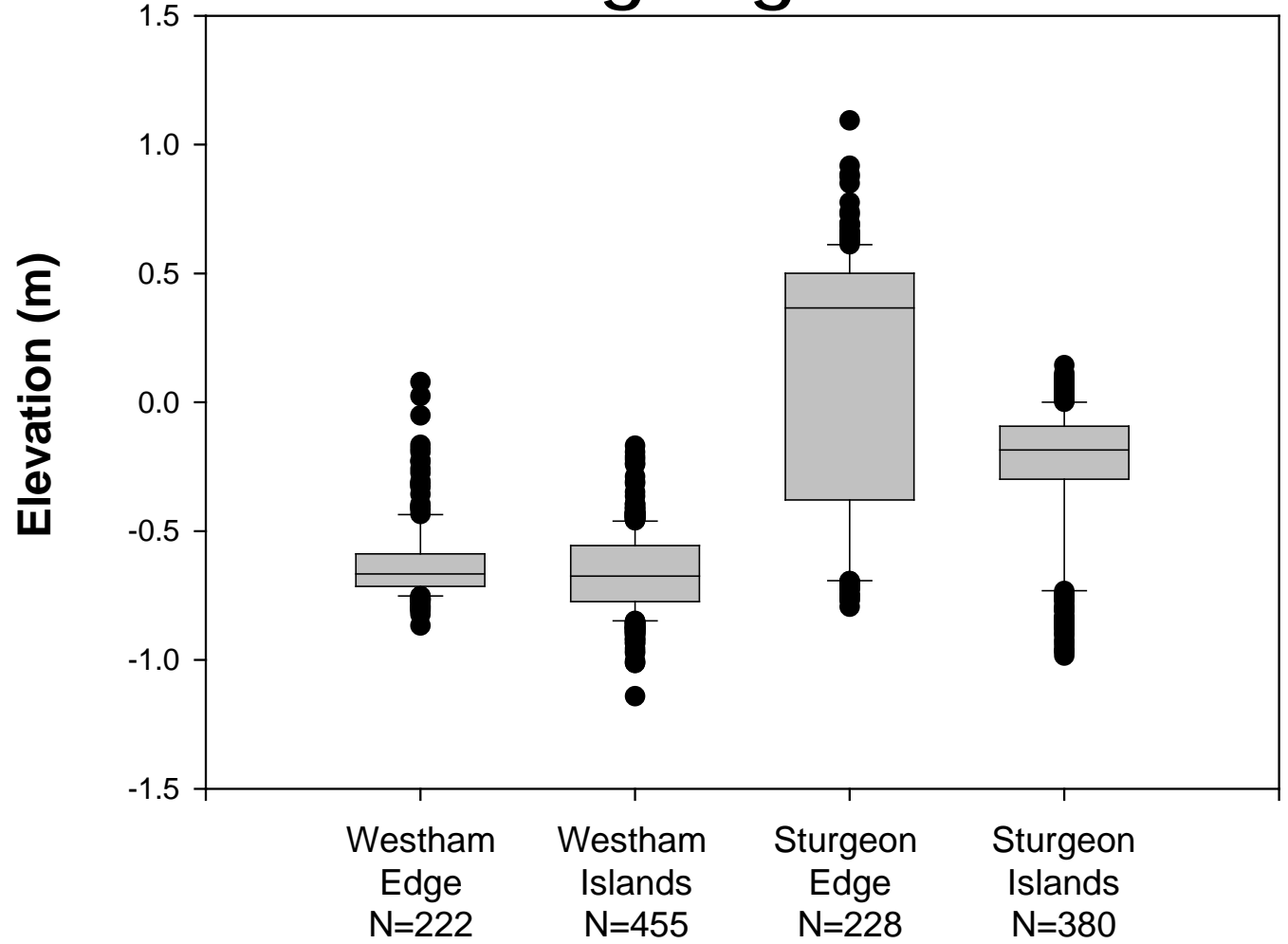
Main Arm

Delta

Canoe Pass



Elevation of Leading Edge and Islands

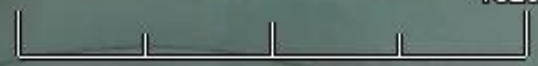


Sturgeon Bank

+0.5 m CGVD

-0.75 m CGVD

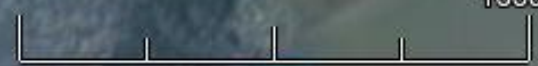
1829 m

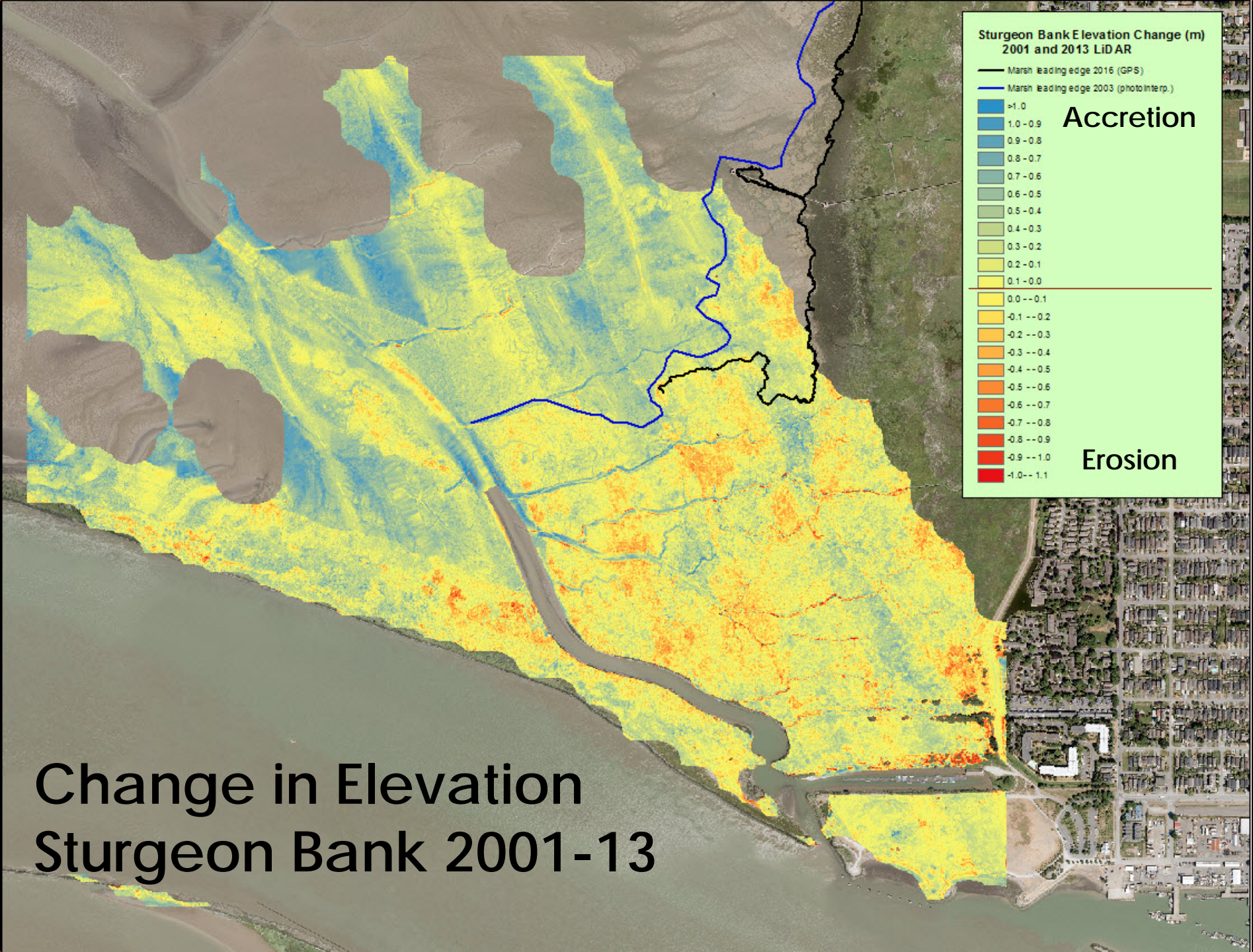


Westham Island

-0.75 m CGVD

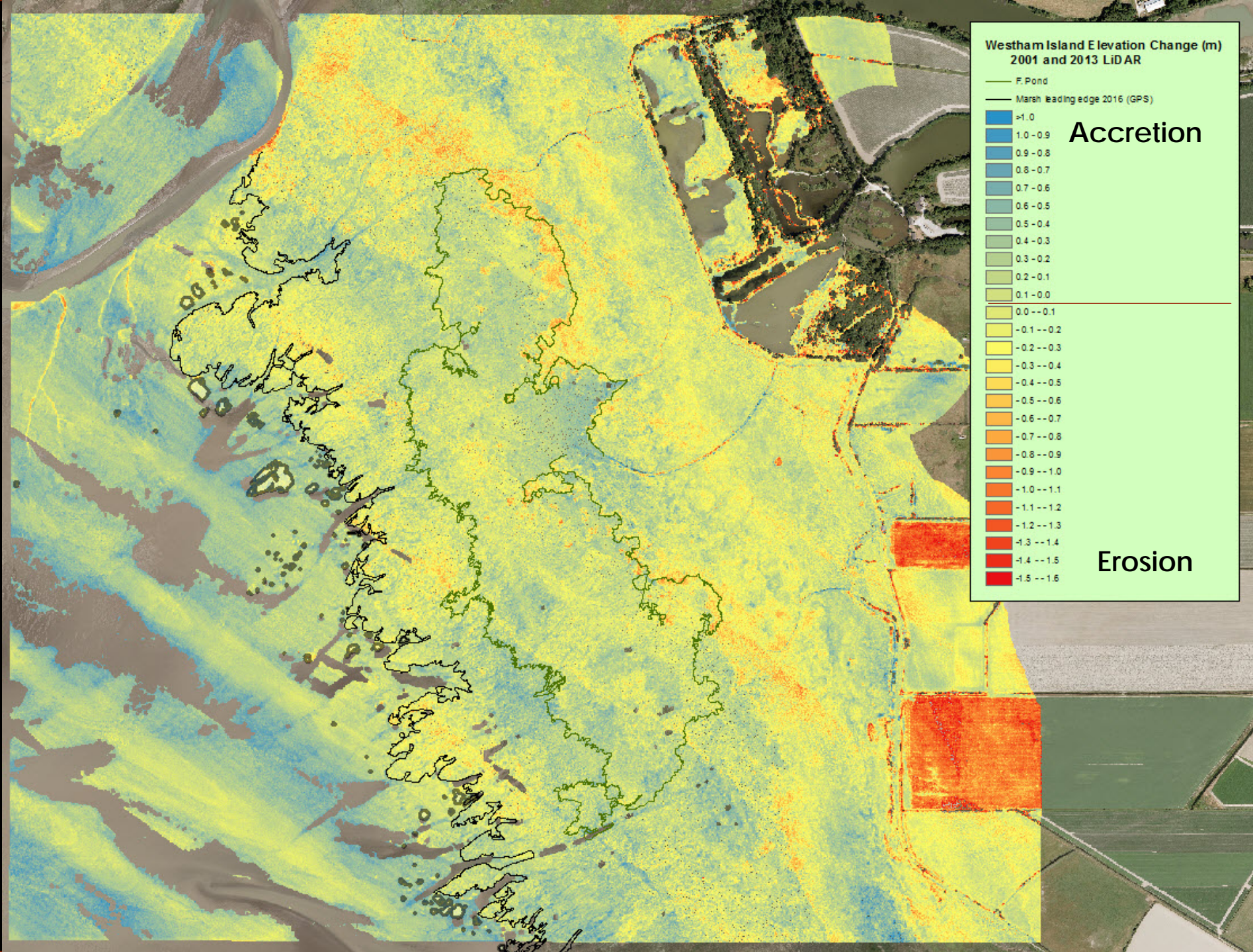
1883 m



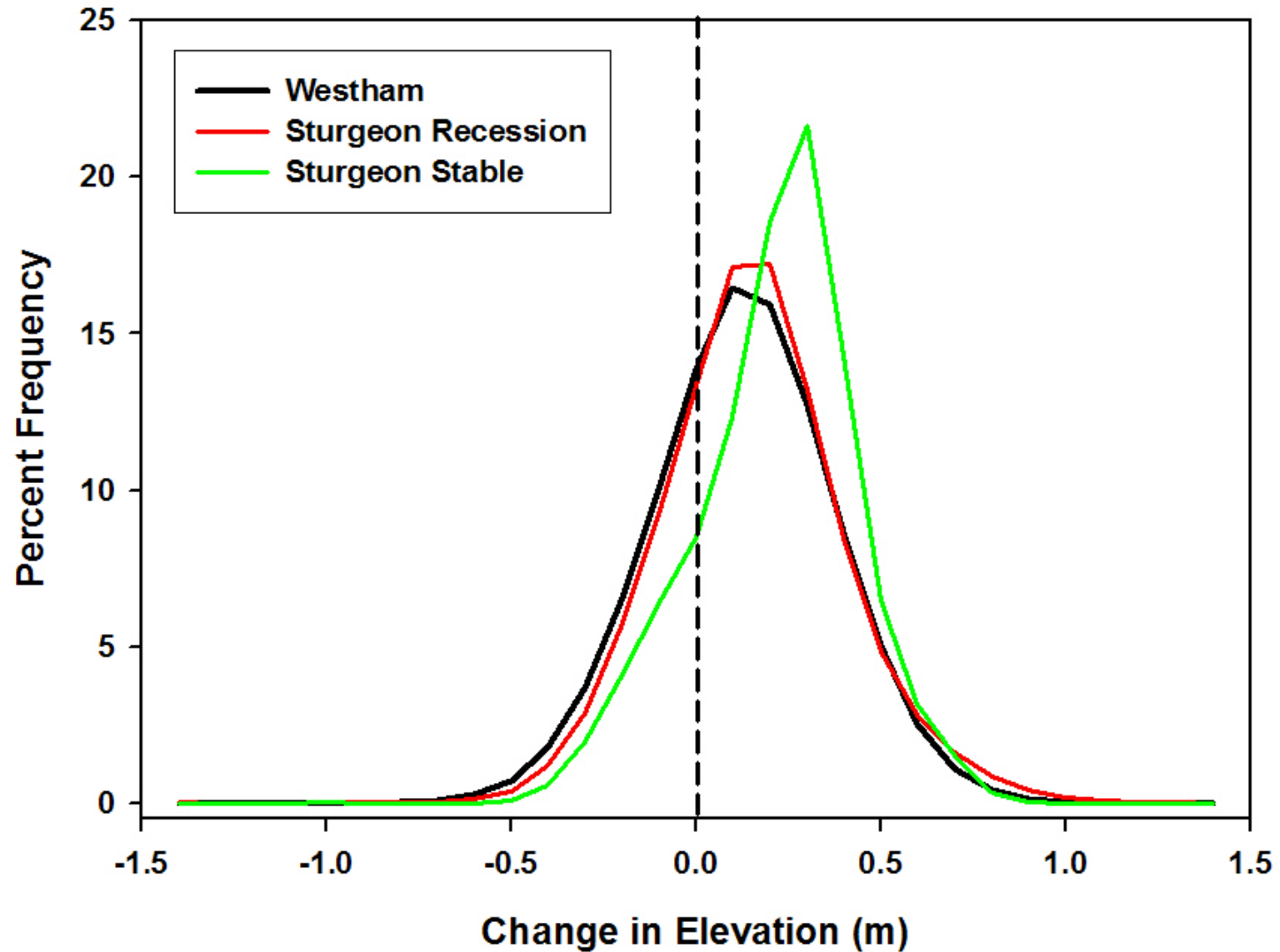


Change in Elevation
Sturgeon Bank 2001-13

Change in Elevation Westham Island 2001-13



Change in Elevation from 2001 to 2013



Salinity Hypothesis



North Arm

Vancouver

Middle Arm

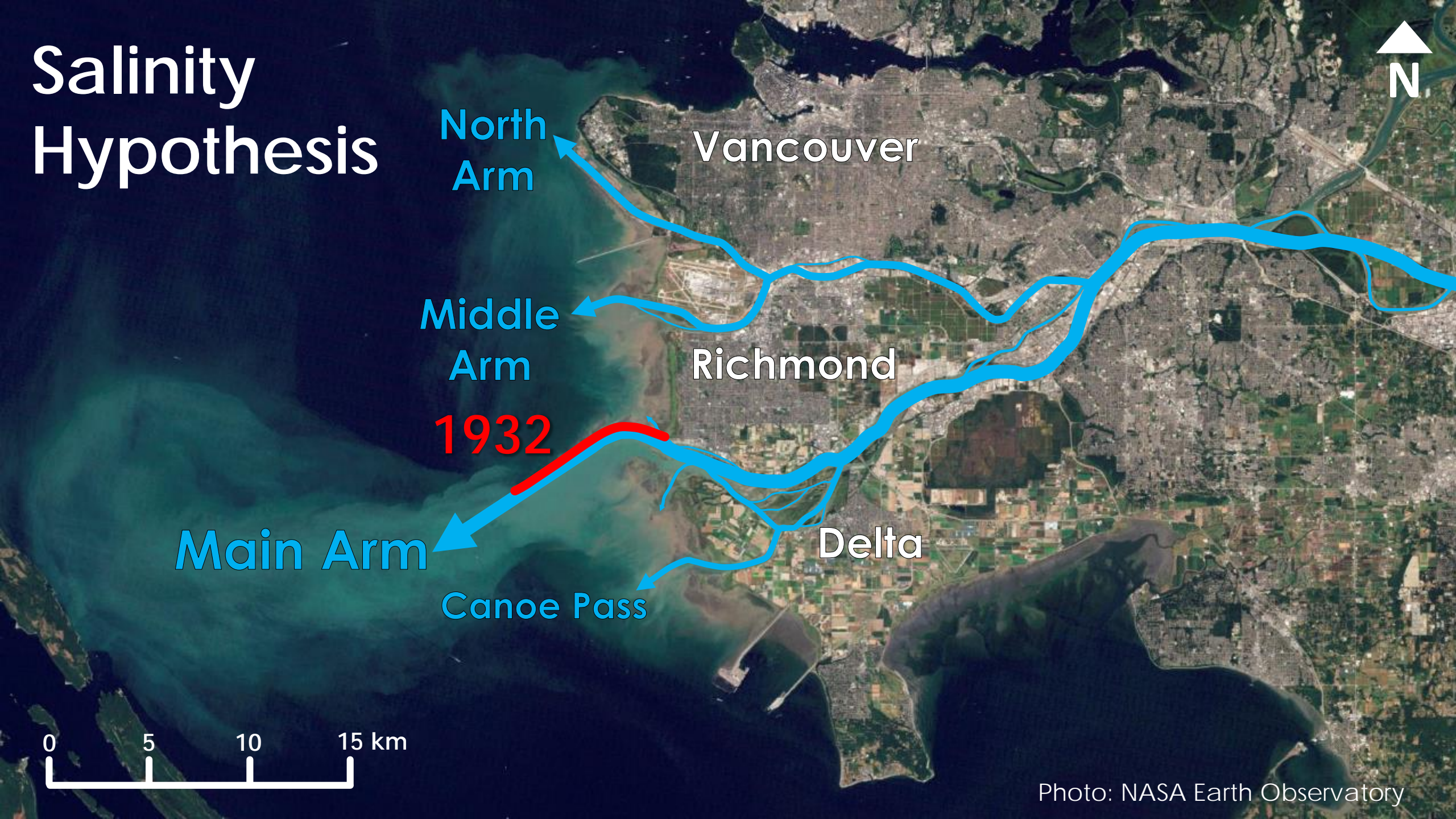
Richmond

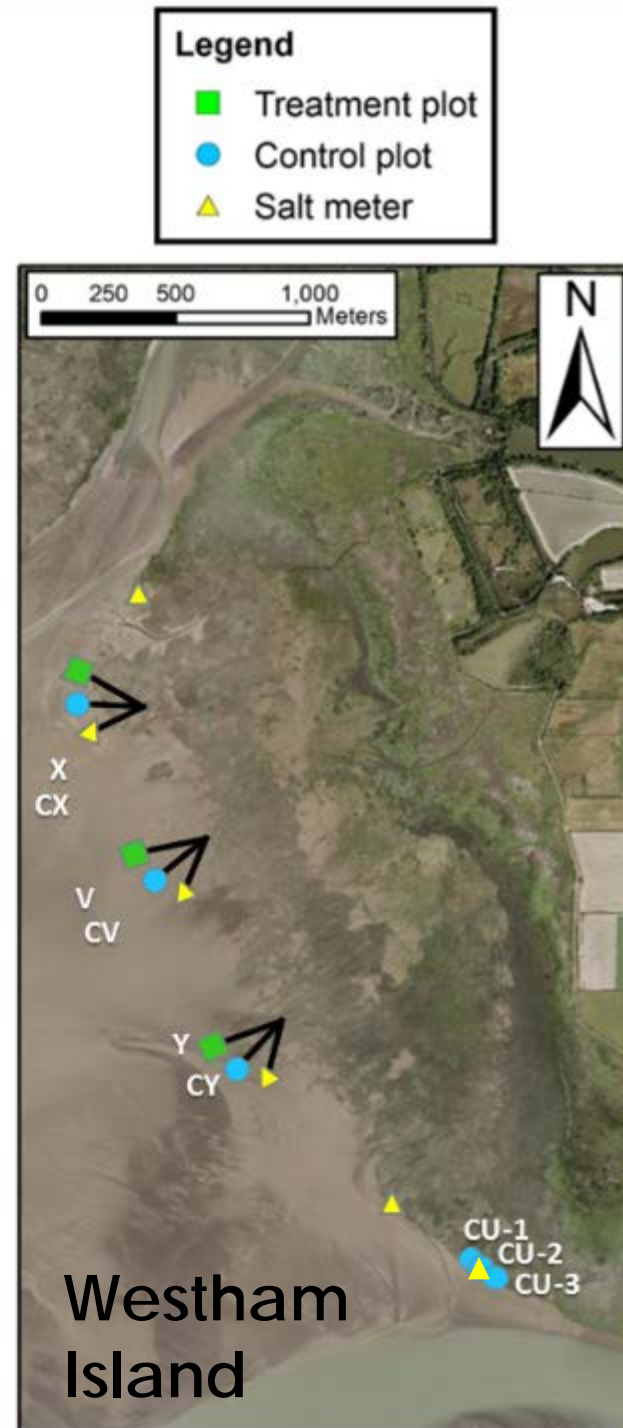
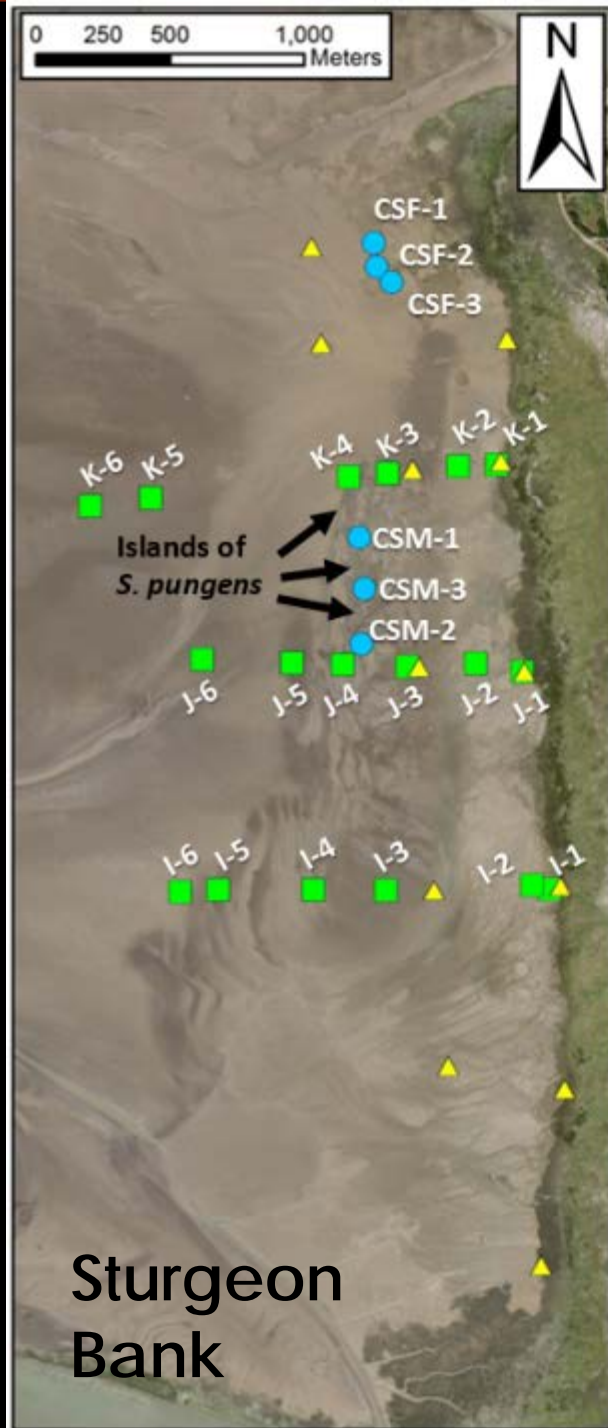
1932

Main Arm

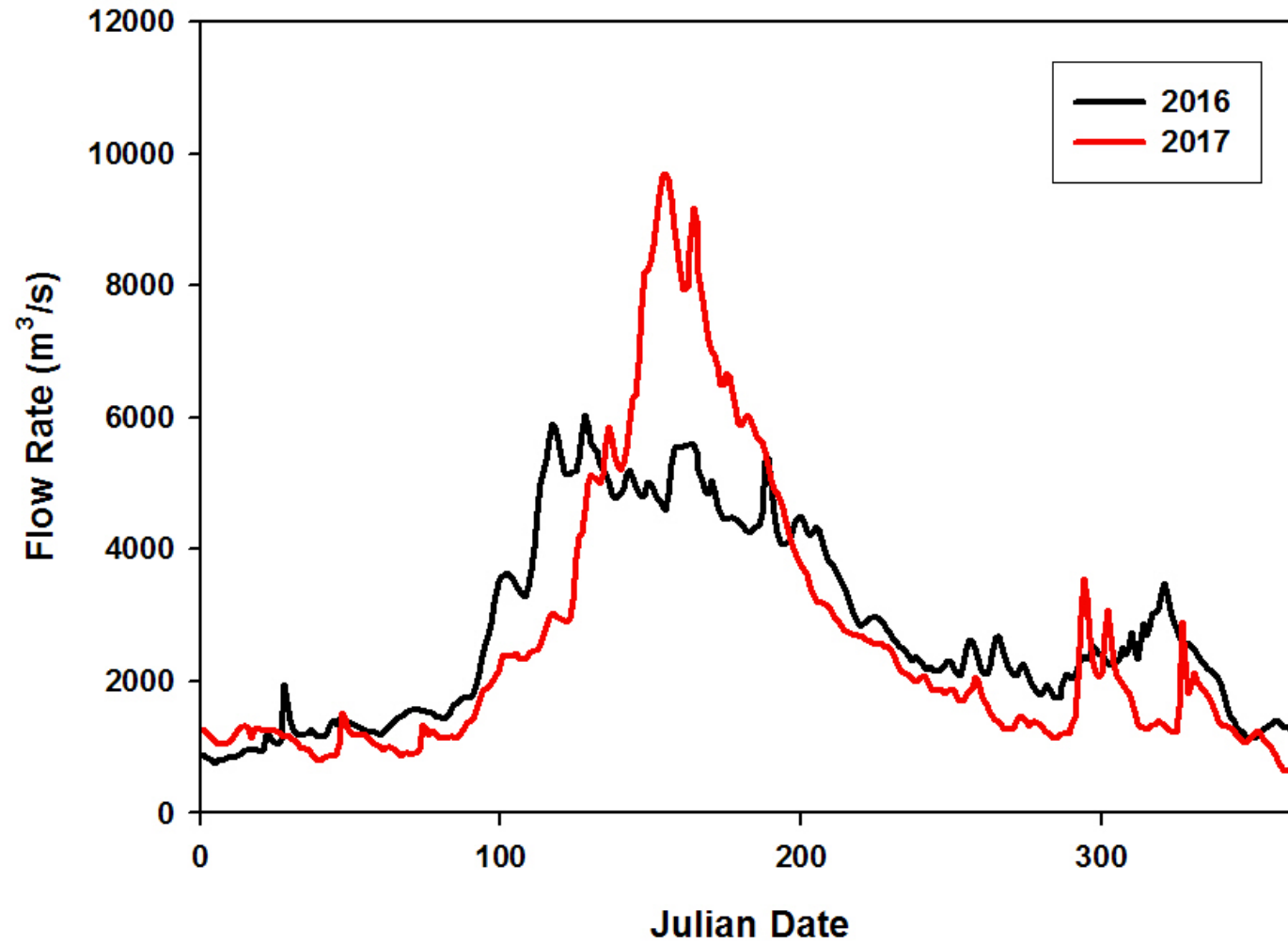
Delta

Canoe Pass

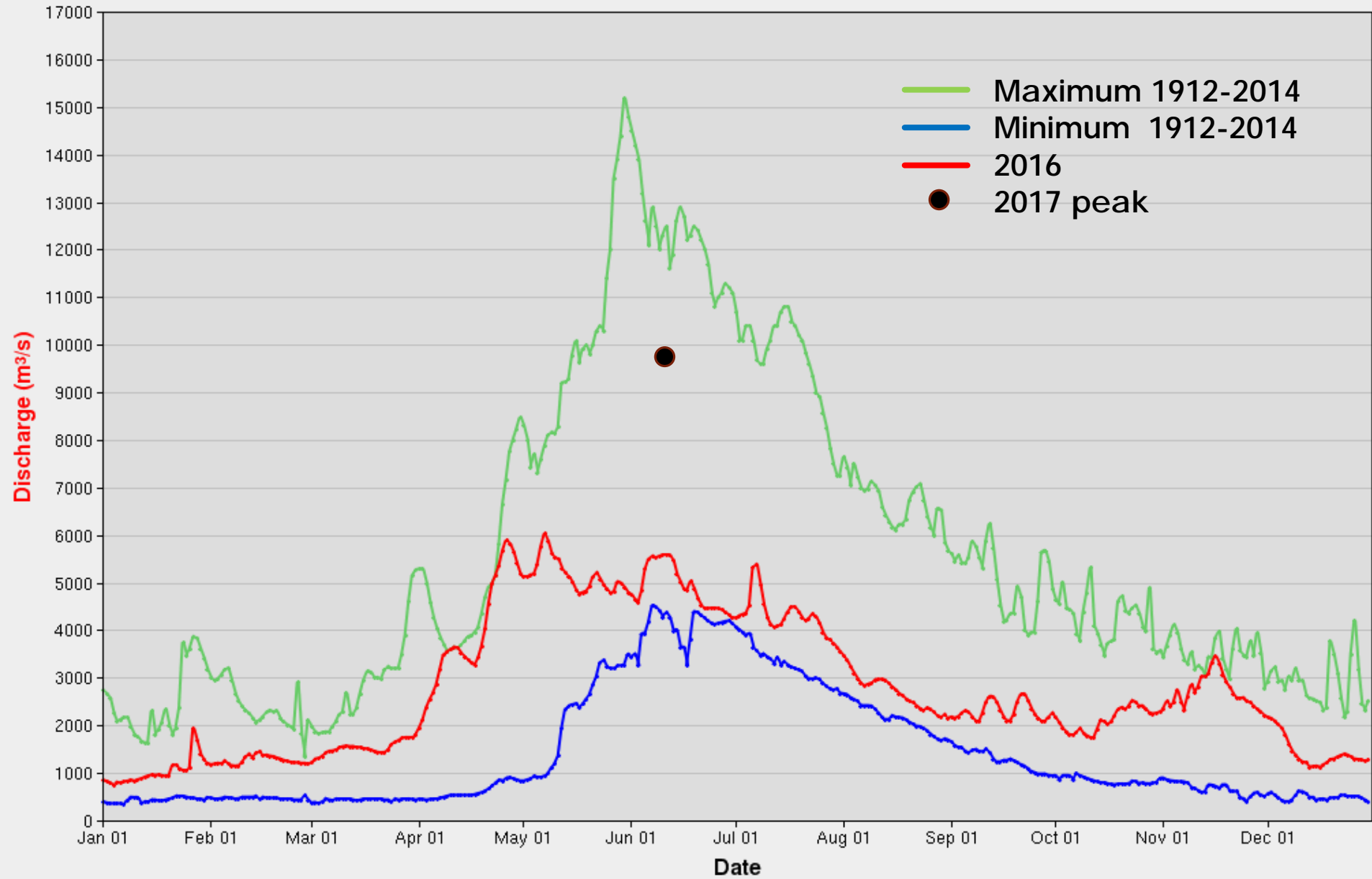




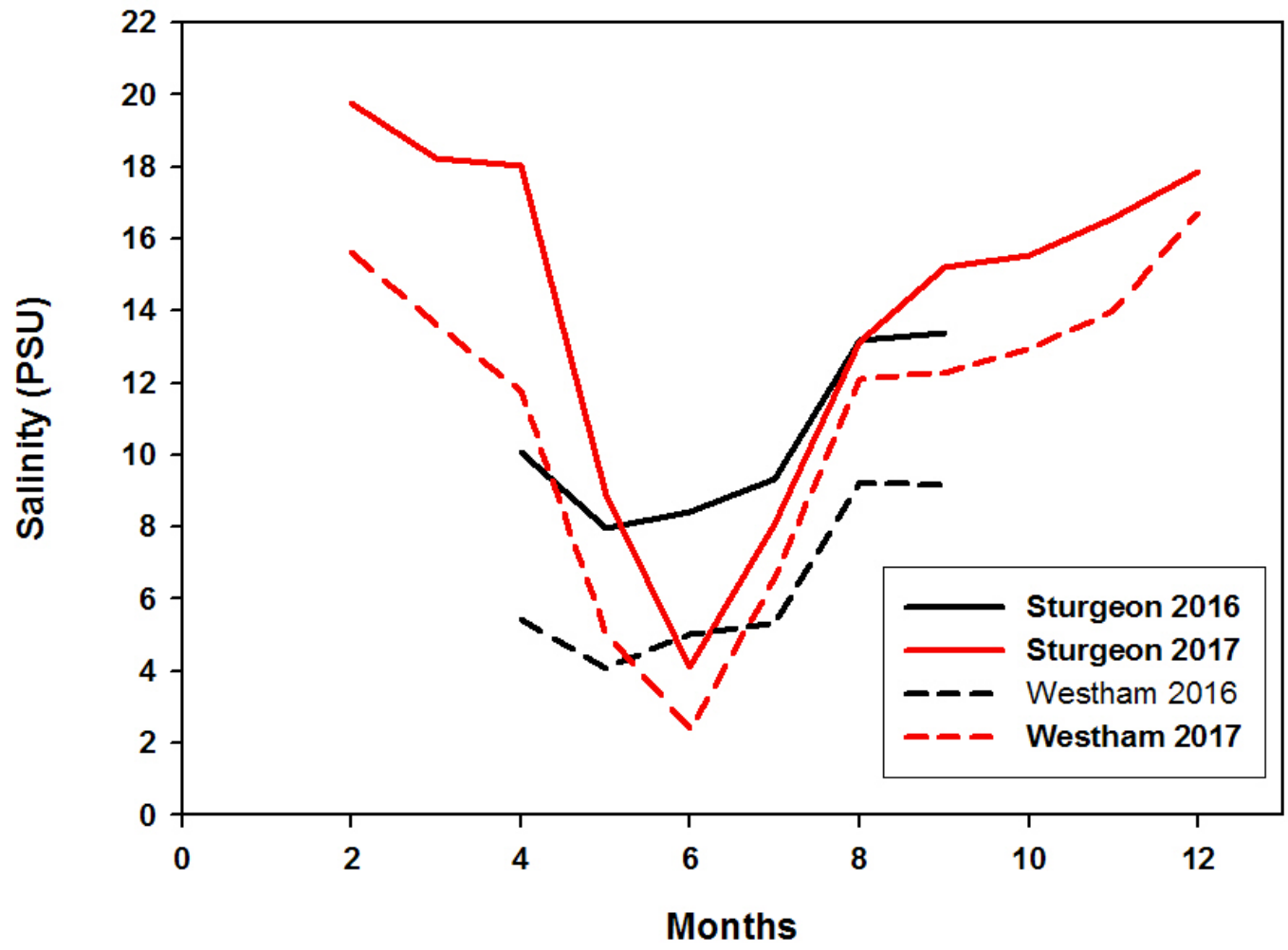
Fraser River Flow Rates at Hope



Fraser River Flow



Mean Monthly Salinity





Declining Leading Edge (S)



Mumblies (S)



Former Marsh (S)



Marsh Islands (S & W)

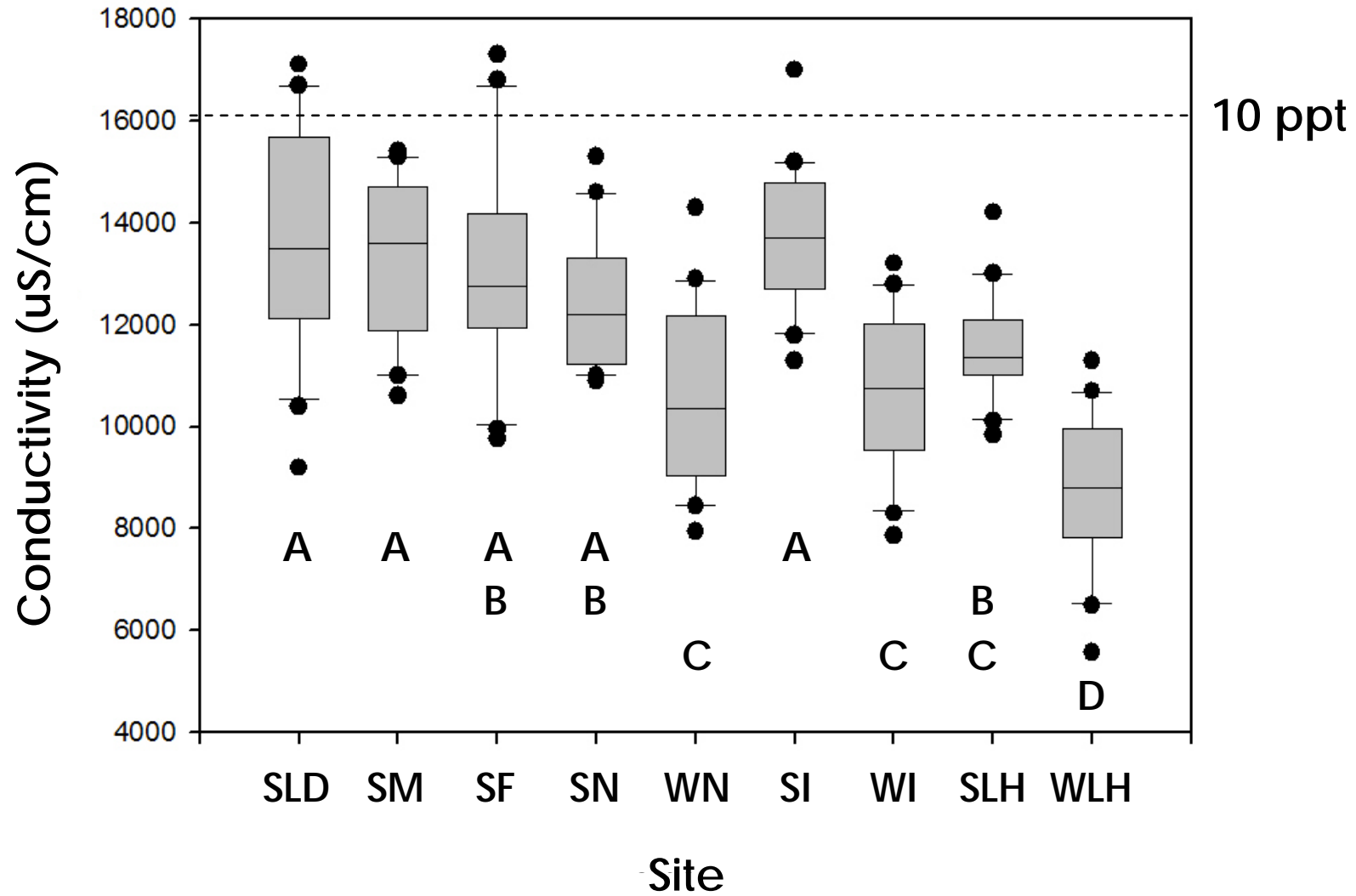


Never Marsh (S & W)



Healthy Leading Edge (S & W)

Soil Conductivity



N=20

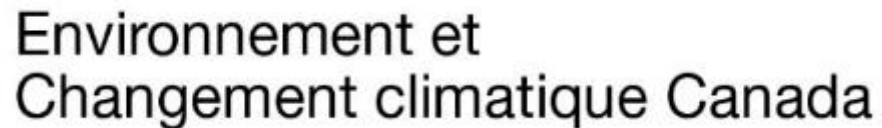
Collected in 2016



Where to From Here?



Acknowledgements



Questions?



Photo: E. Balke