MONITORING COASTAL SALT MARSHES IN THE SOUTHWEST ALASKA NETWORK

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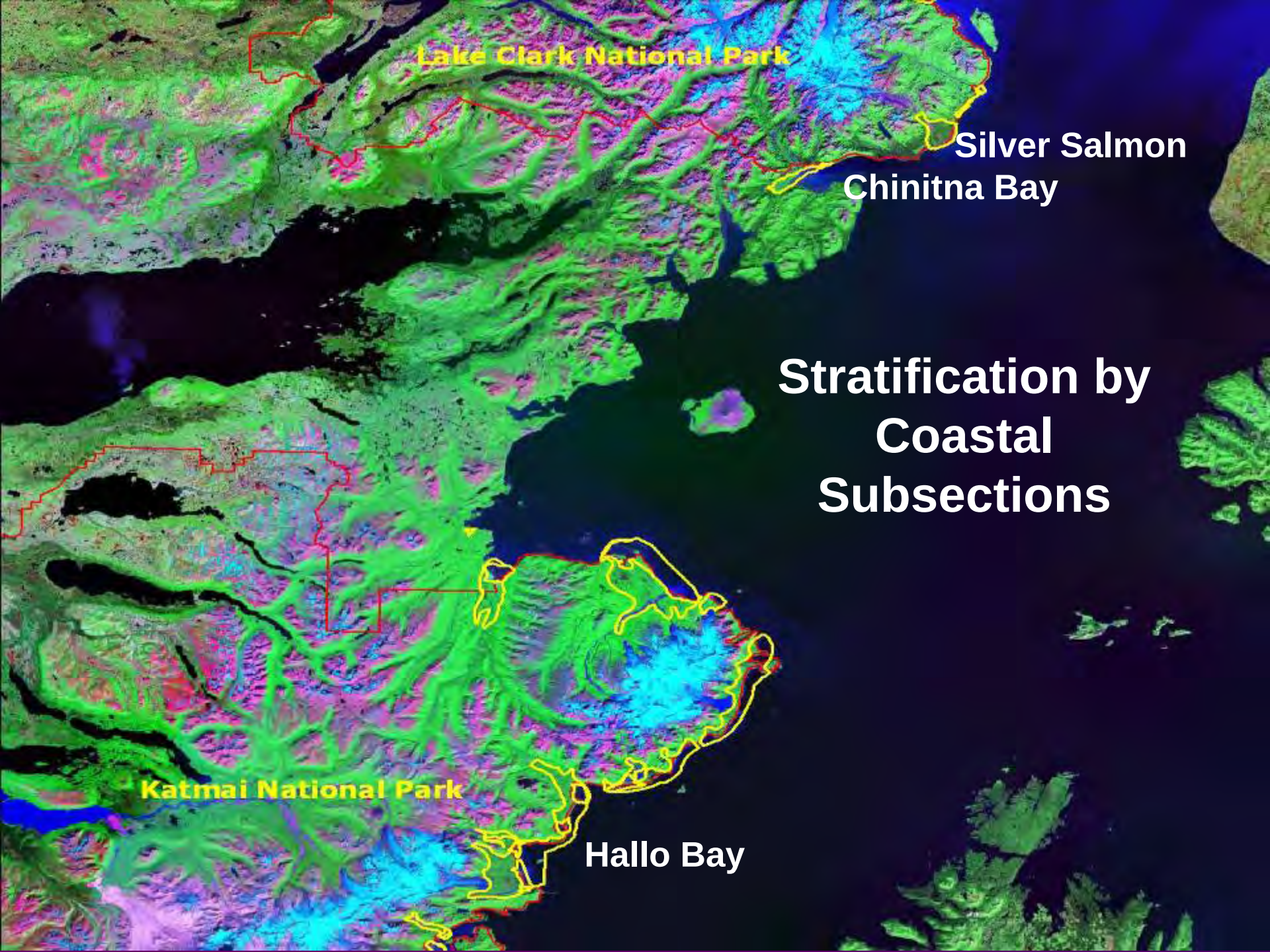
MONITORING KEY PROCESSES

- Tectonics
- Storm frequency
- Storm surge height
- Topography and Shorelines
- Sedimentation
- Geomorphic changes
- Salinization
- Paludification (OC accumulation)
- Vegetation change
- Wildlife Use

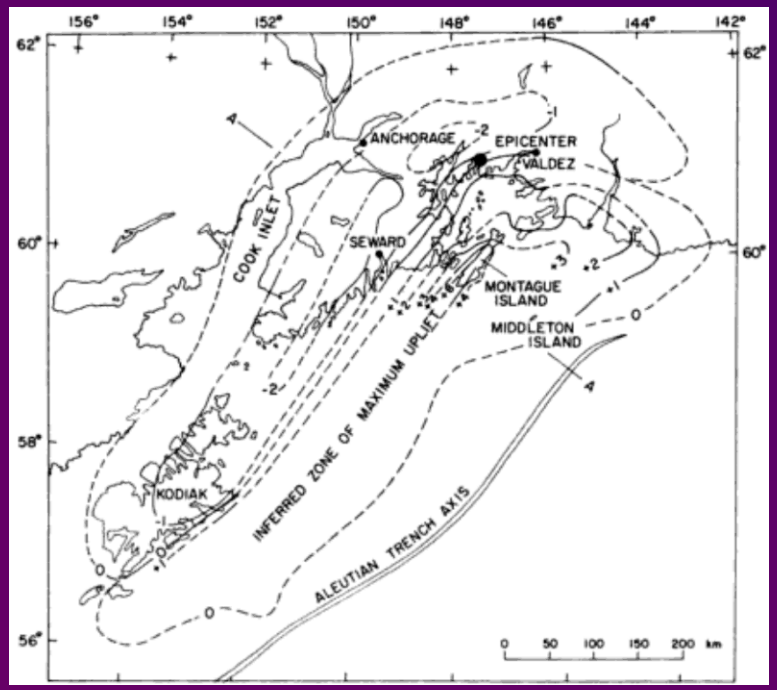

Lake Clark National Park
Silver Salmon
Chinitna Bay
Stratification by Coastal Subsections
Katmai National Park
Hallo Bay

Systematic Distribution of Transects and Plots

Tectonics

Benchmark Installation

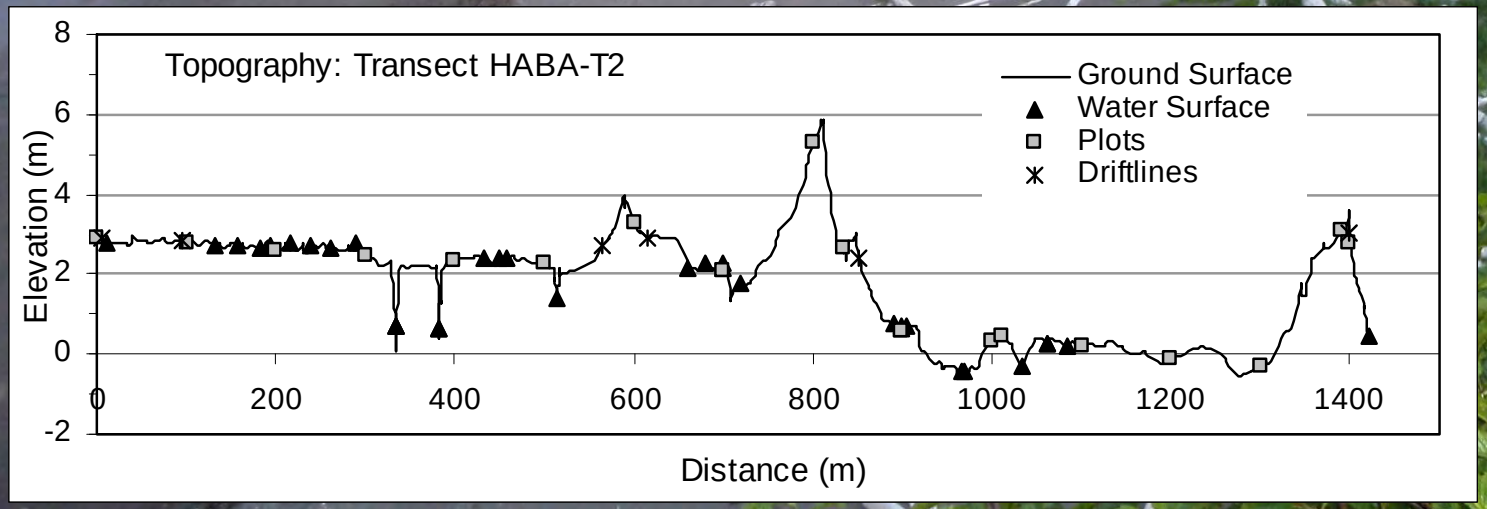
Uplift after 1964 Earthquake ~1 m



Topography and Shorelines

Tidal Flats

Beach Ridges



Geomorphic Changes

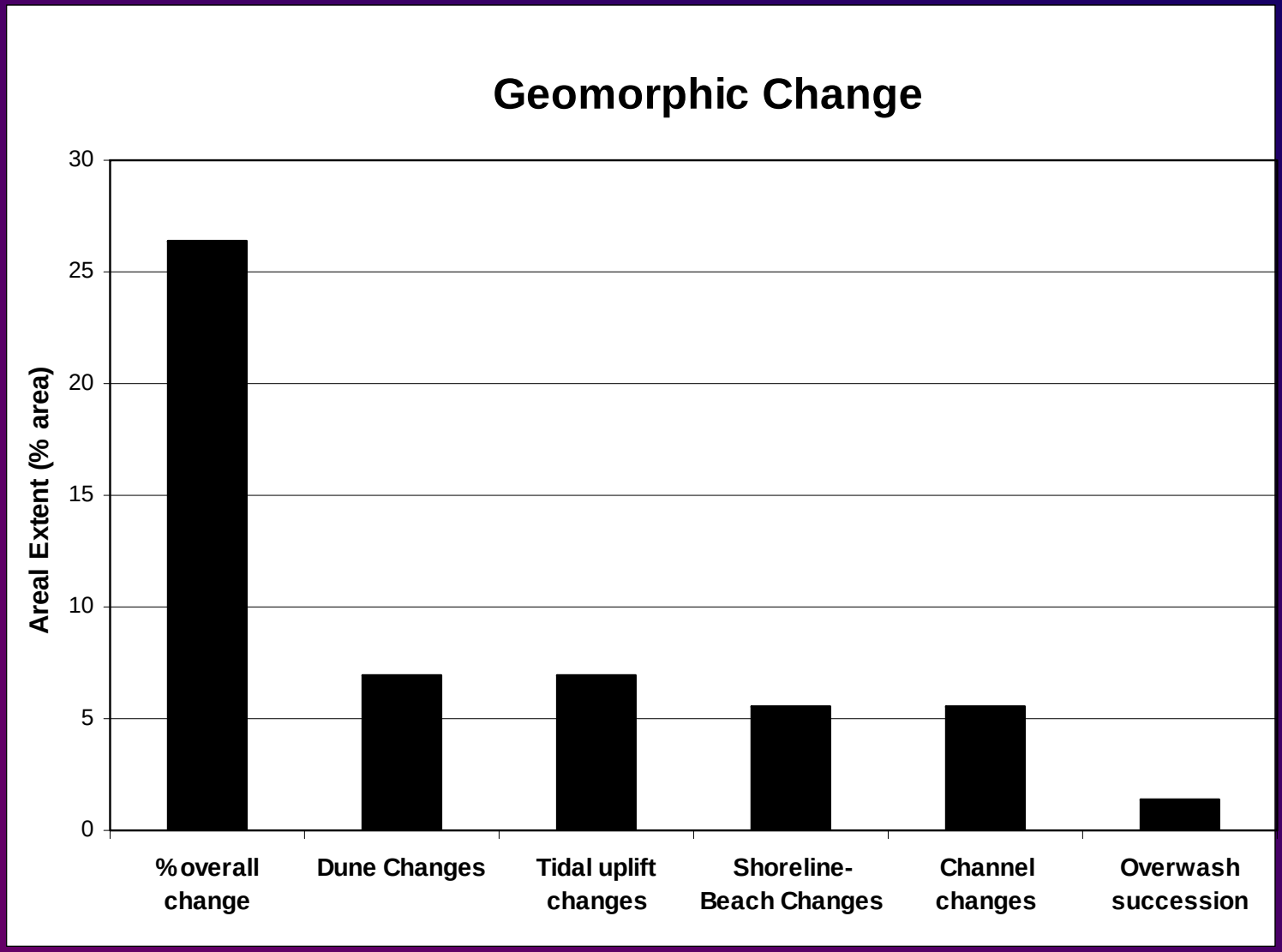
1953

1981

Hgwhgb
Hgwhgb
Hgwhgb
Hgwhgb
Hgwhgb
Bbg
Bbg
Hgll
Bbg
Ws
Ws
Ws
Storm overwash
Shoreline
Sitka Spruce

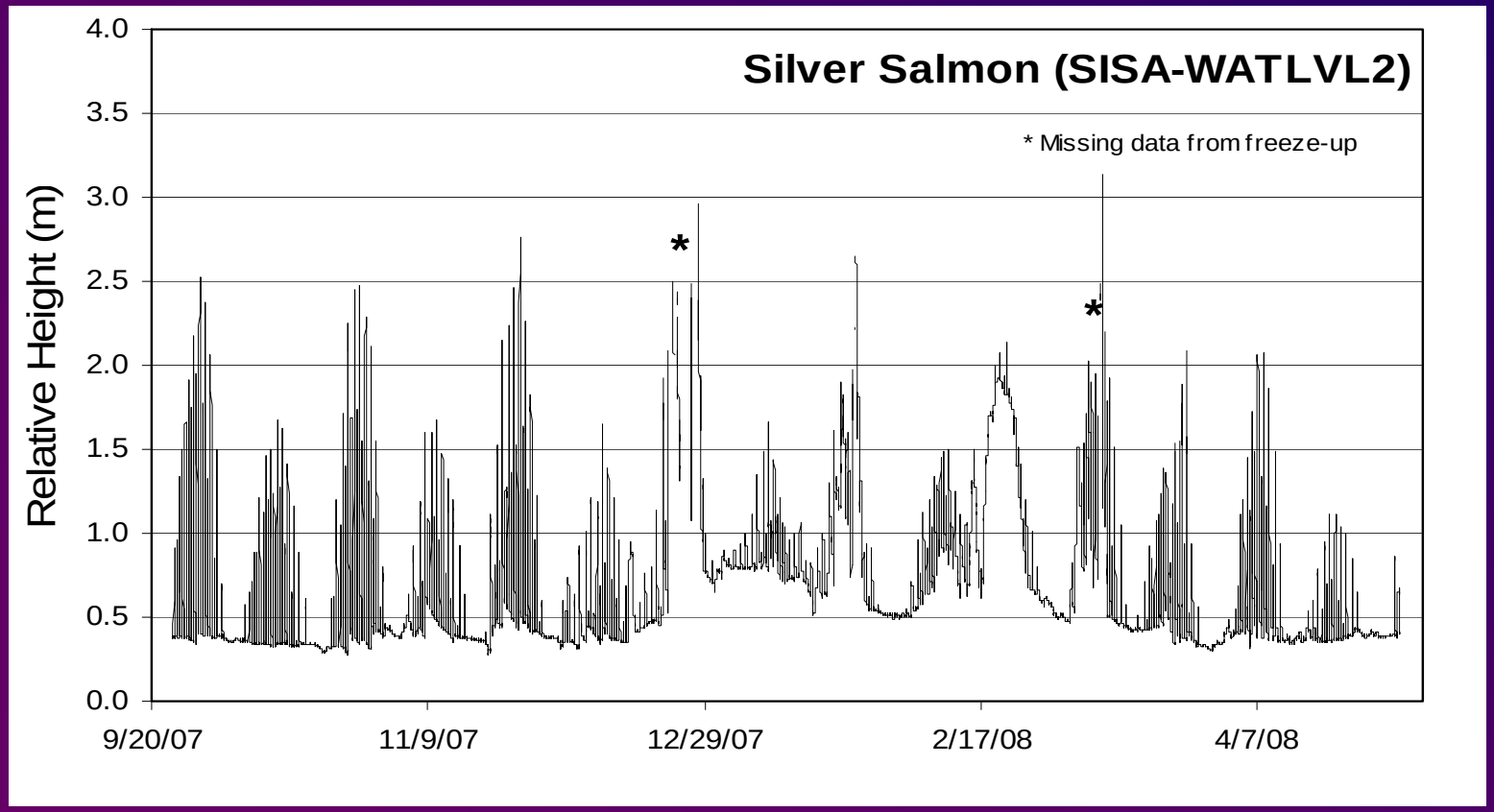
2004

Point Sampling of Change



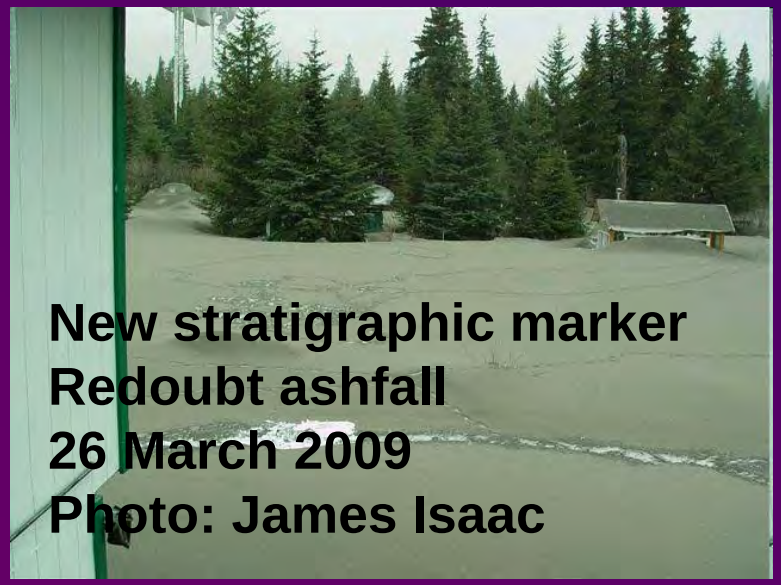
Tide Gauges

- Frequency peak stage
- Frequency of storm events



Sedimentation

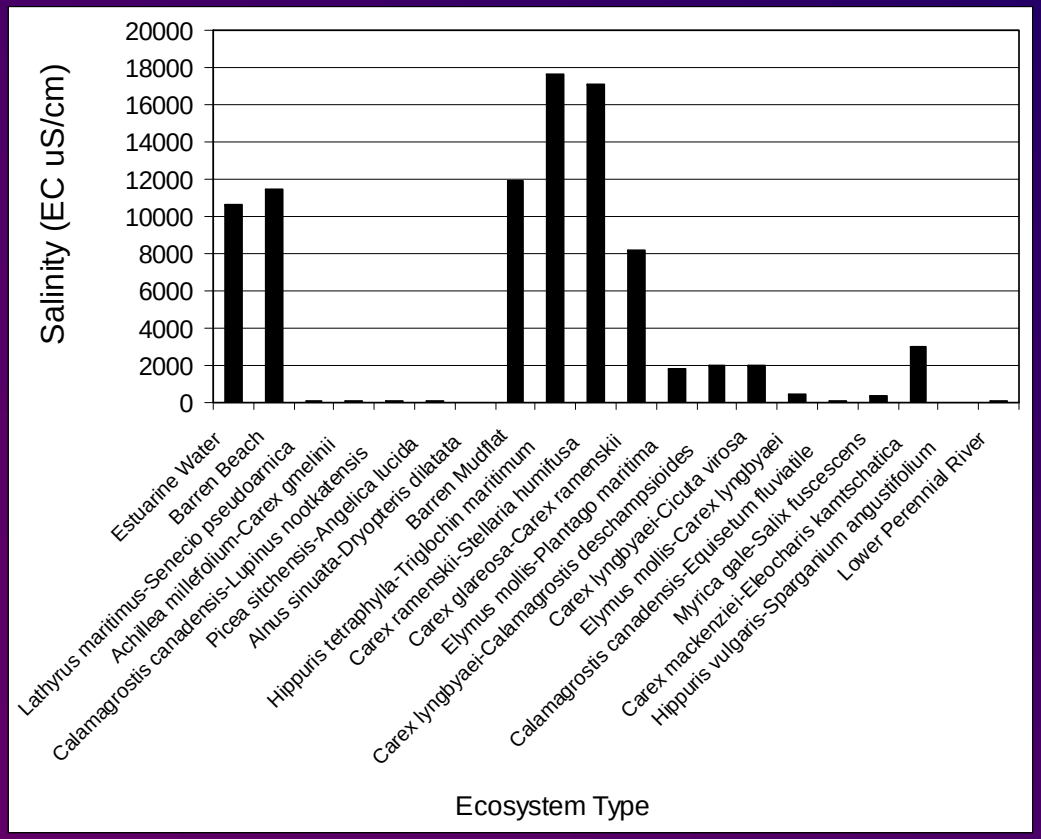
Tectonic Uplift
28 March 1964



Novarupta Ash
8 June 1912

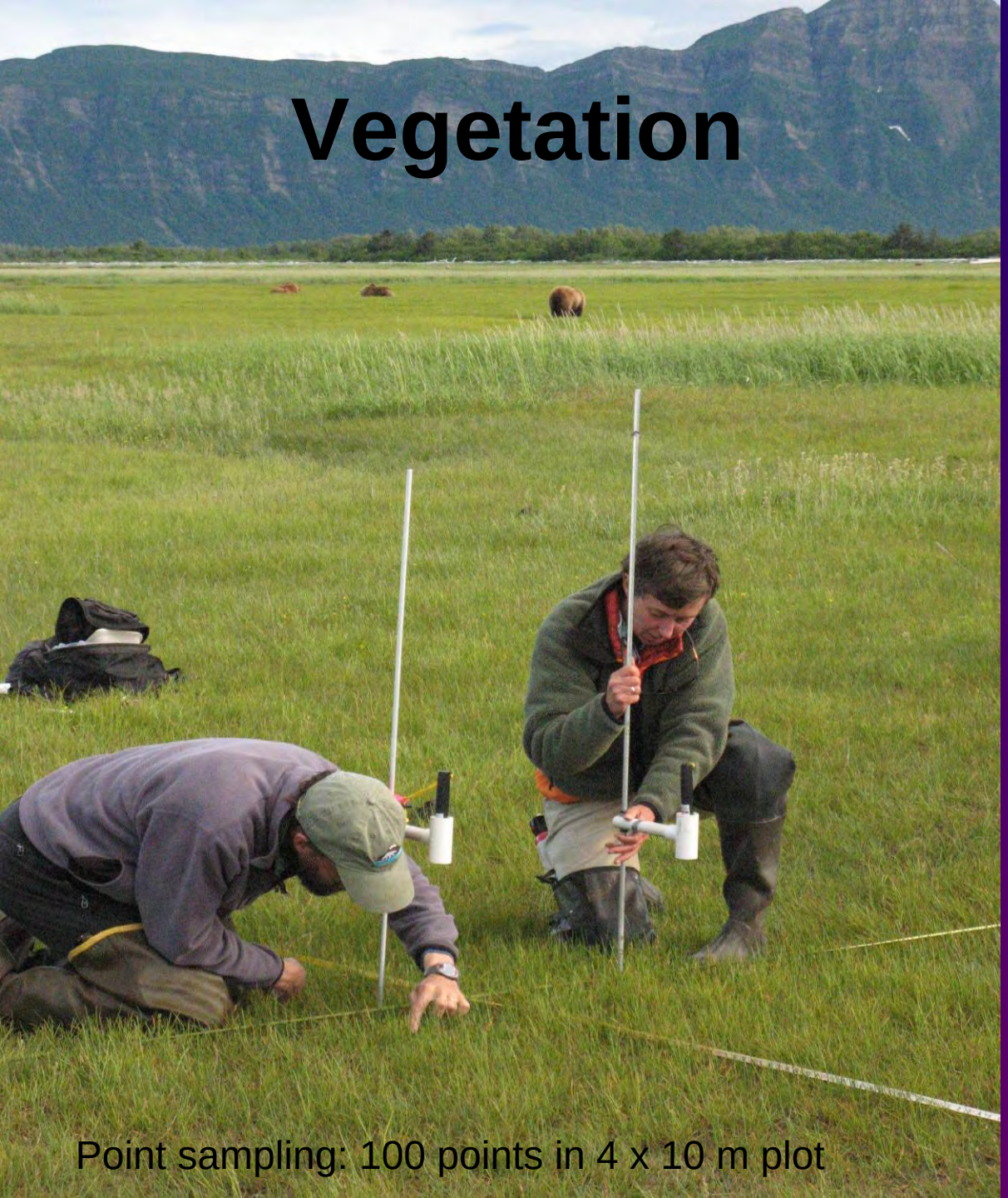
Sediment thickness can be measured relative to distinct stratigraphic markers

Salinity



Large salinity differences among ecosystem types

Vegetation



Point sampling: 100 points in 4 x 10 m plot

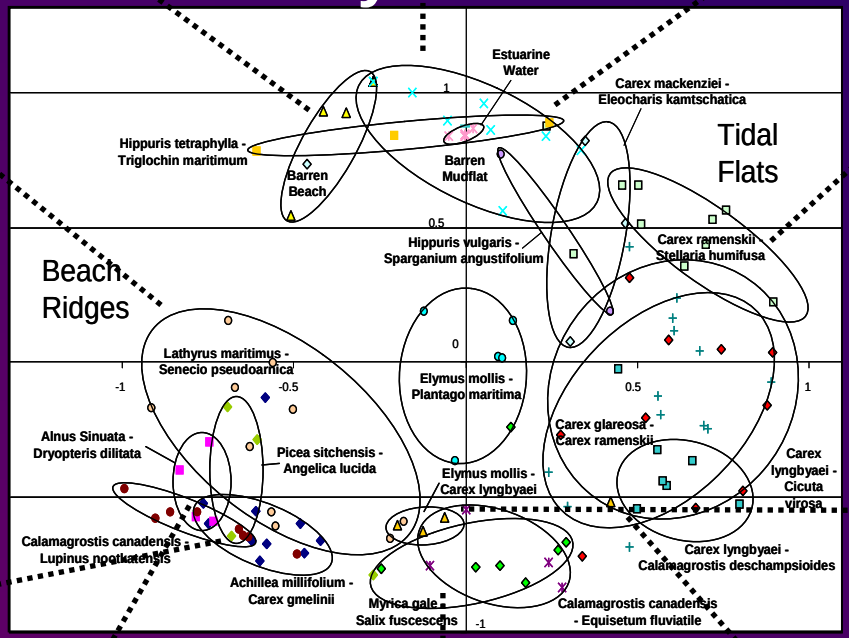
Senecio pseudoarnica

Plantago maritima

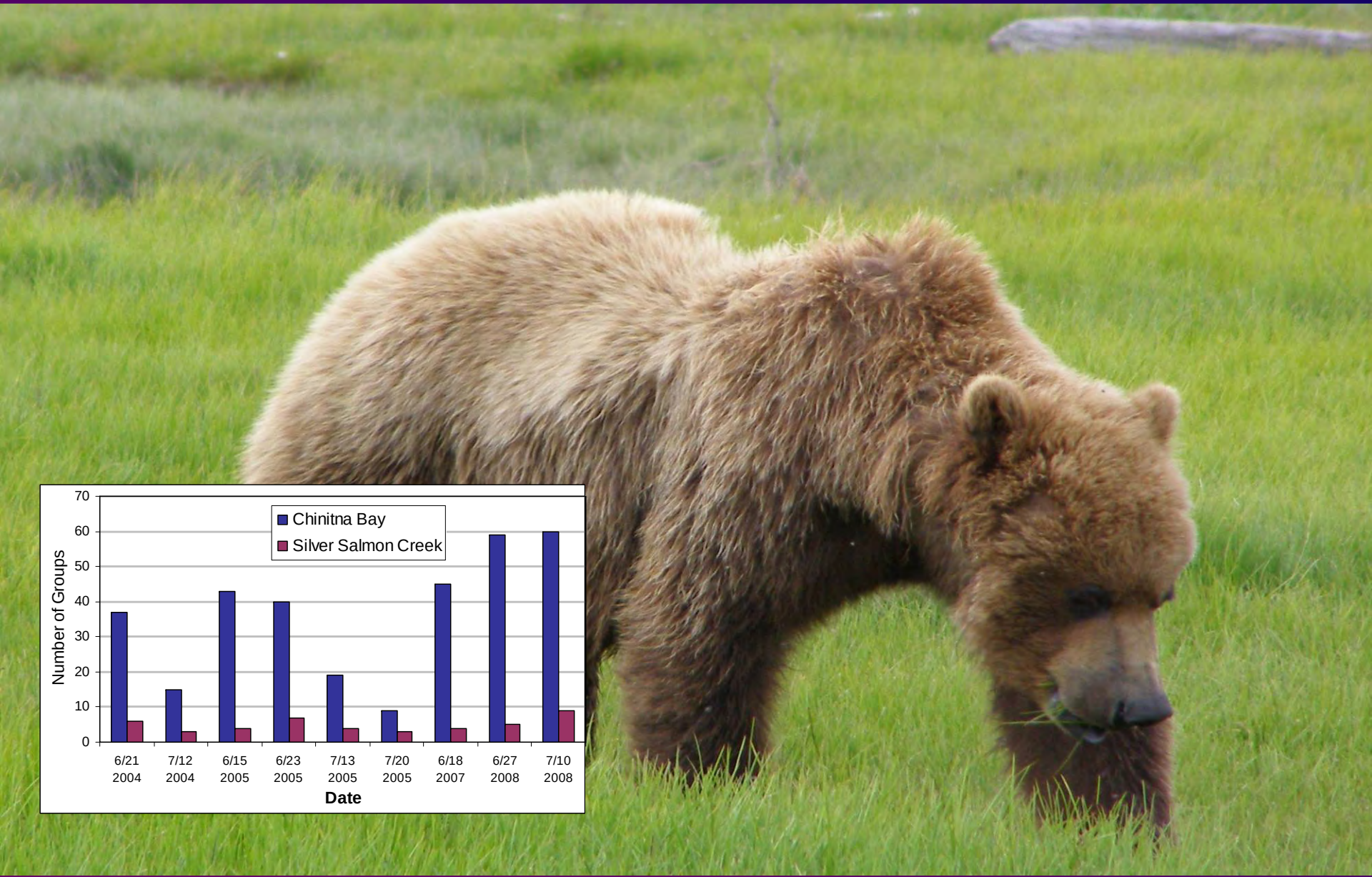
Lathyrus maritima

Carex macrocephala

Community Classification



Bears


Chinitna Bay
Silver Salmon Creek
Number of Groups
70
60
50
40
30
20
10
0
6/21 2004
7/12 2004
6/15 2005
6/23 2005
7/13 2005
7/20 2005
6/18 2007
6/27 2008
7/10 2008
Date

Wrnagells-St Elias Coast

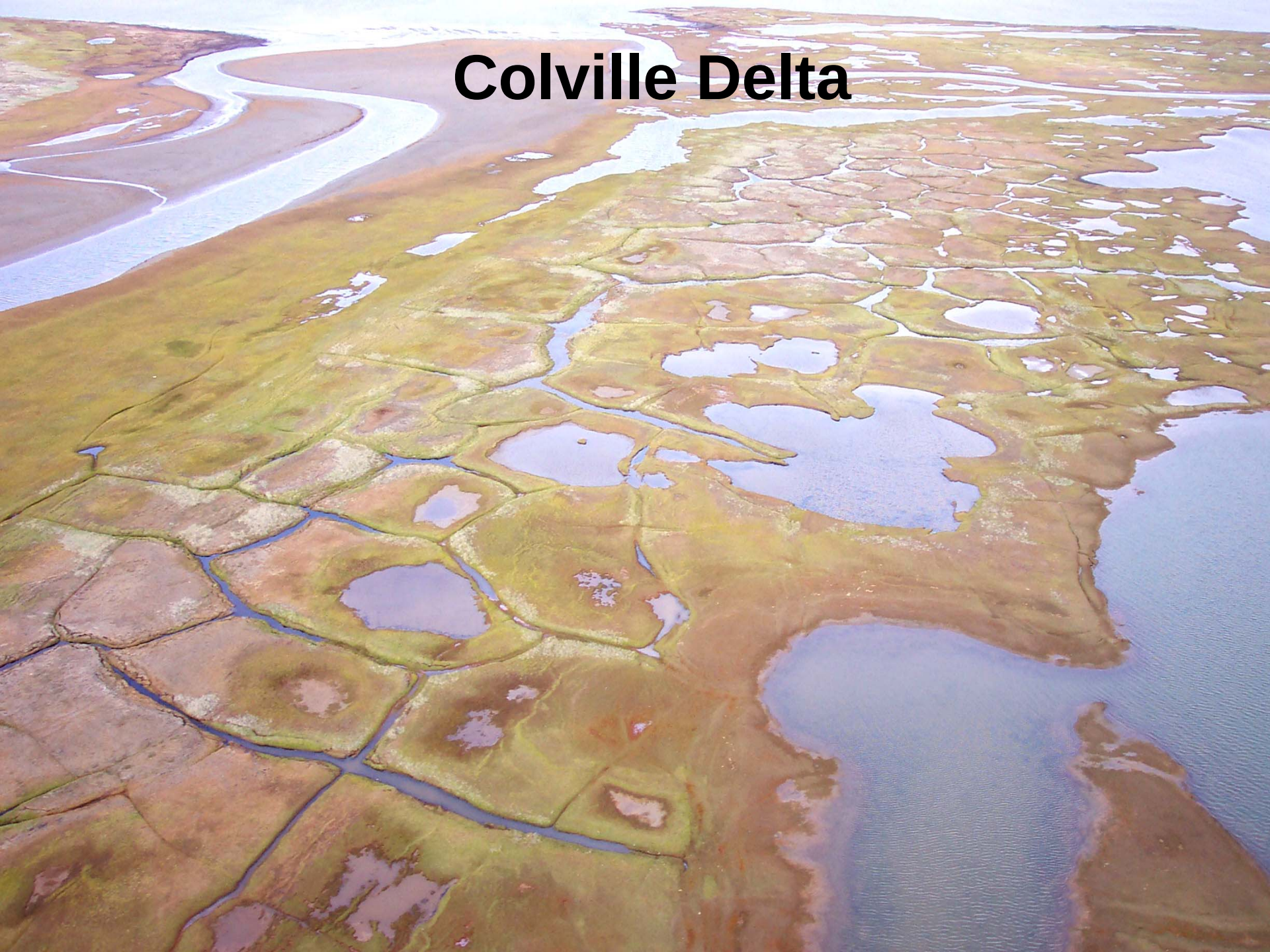
Yukon-Kuskokwim Delta

Deltaic Sedimentation and Soil Development

Bering Land Bridge

Bering Land Bridge

Colville Delta



Questions?