Climate Change's Impacts on Cultural Resources in the Arctic

Mariama Dryak
Western Arctic National Parklands

Western Arctic National Parklands (WEAR)

- Bering Land Bridge National Preserve (BELA)
- Cape Krusenstern National Monument (CAKR)
- Noatak National Preserve (NOAT)
- Kobuk Valley National Park (KOVA)

Kotzebue, AK

- *Qikiktagruk* - 'almost an island'
- Population: 3,200
- Accessibility:
  - two daily commercial flights to Anchorage
  - 8 mile loop road
- 33 miles north of the arctic circle

Project Objective

Assess the effects of climate change on cultural resources along the NW coast of Alaska

Components

- Field work
- Office work

Prezi

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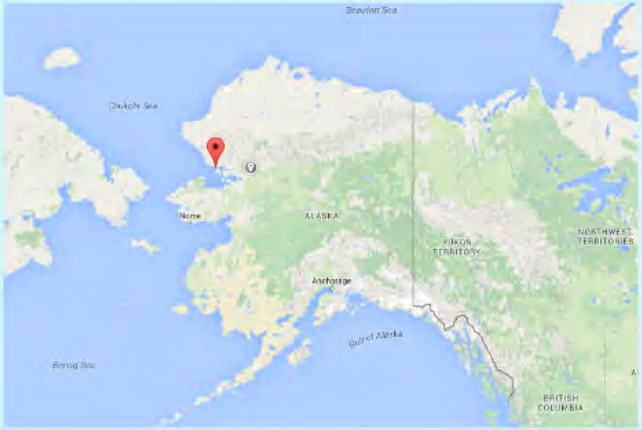

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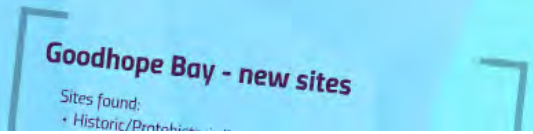

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In the field:

- Surveying for coastal erosion affecting archaeological 'sites'
- Recording sites - known, new
- Emergency data recovery
- Collection of highly significant artifacts
- Digging test pits

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Coastal Areas

- Goodhope Bay - BELA
- Cape Espenberg, Ublasaun - BELA
- Cape Krusenstern - CAKR

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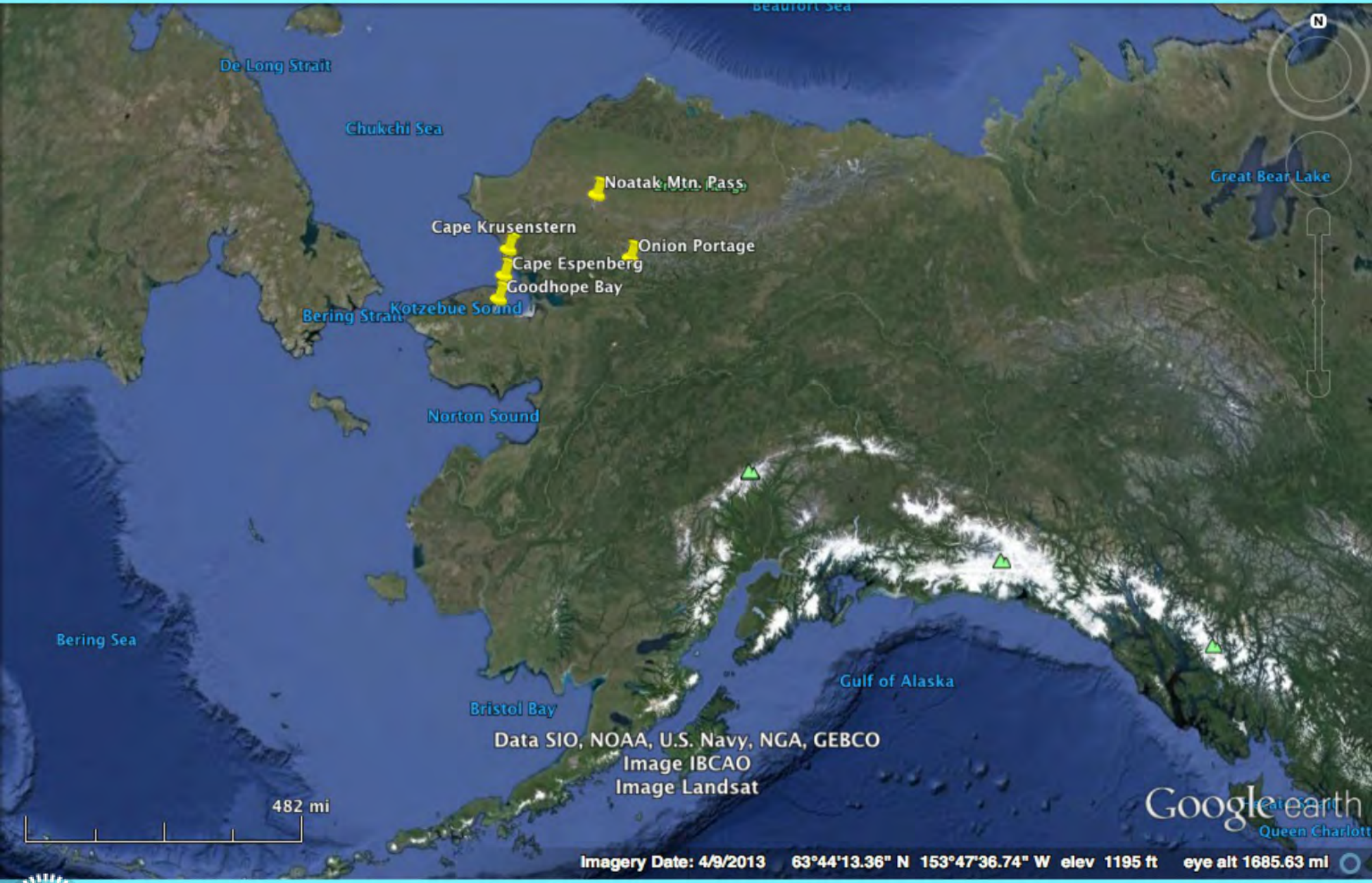
De Long Strait
Chukchi Sea
Noatak Mtn. Pass
Great Bear Lake
Cape Krusenstern
Onion Portage
Cape Espenberg
Goodhope Bay
Kotzebue Sound
Bering Strait
Norton Sound
Bering Sea
Gulf of Alaska
Bristol Bay
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO
Image Landsat
482 mi
Google earth
Imagery Date: 4/9/2013 63°44'13.36" N 153°47'36.74" W elev 1195 ft eye alt 1685.63 mi

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Cape Krusenstern
Cape Espenberg
Kotzebue Sound
Goodhope Bay
Image © 2015 TerraMetrics
Image IBCAO
Image Landsat
50 mi
Google earth
Imagery Date: 4/9/2013 66°41'19.12" N 163°10'27.15" W elev -48 ft eye alt 210.61 mi

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In the field:

- Surveying for coastal erosion affecting archaeological 'sites'
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Prezi

Prezi

Goodhope Bay - known sites

Sites found:

- Historic, Protohistoric, Prehistoric
  - House pits and caches
  - Activity

Site Disturbance:

- Erosion- weathering, flooding, etc.
- Animal disturbance

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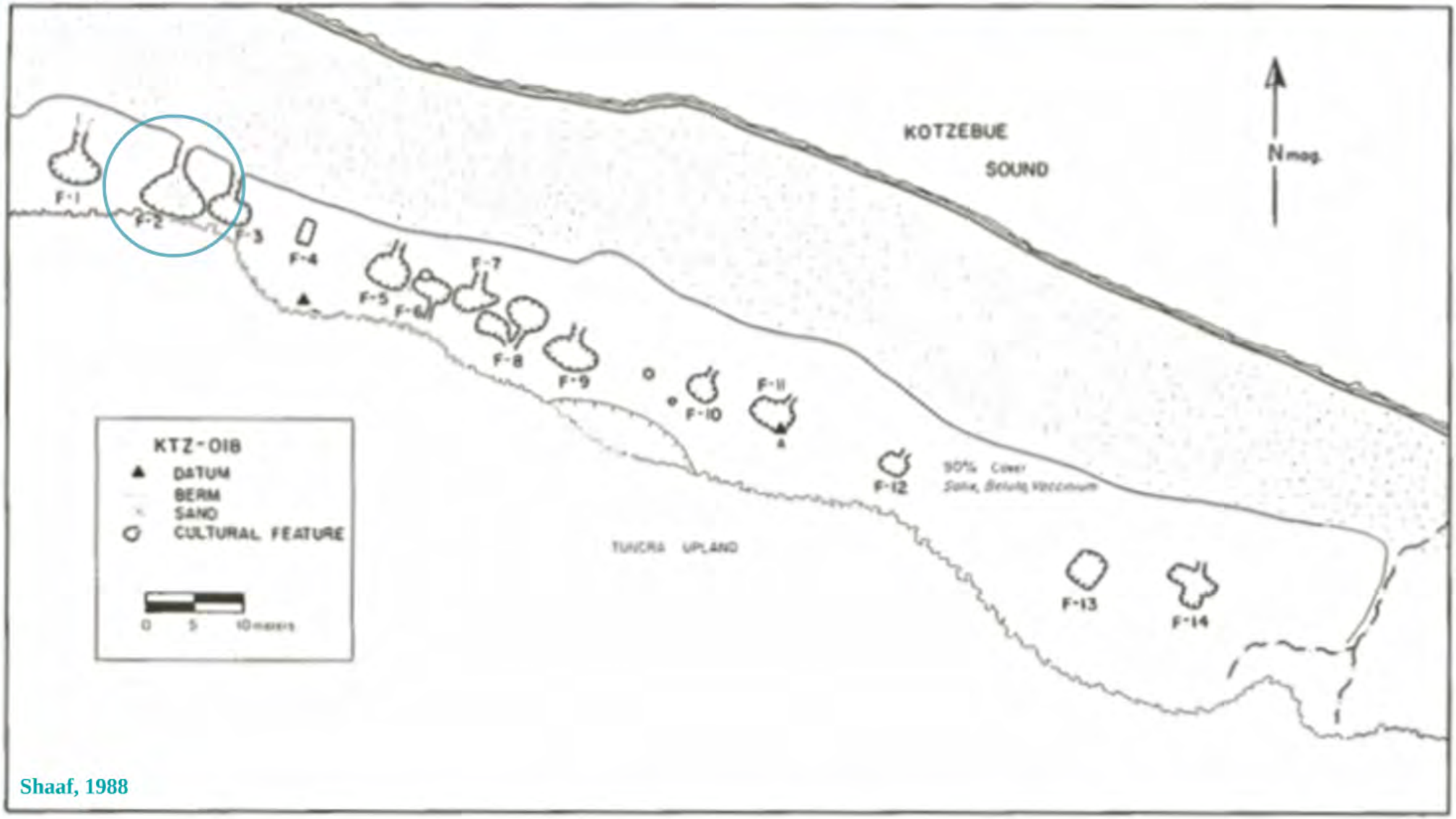
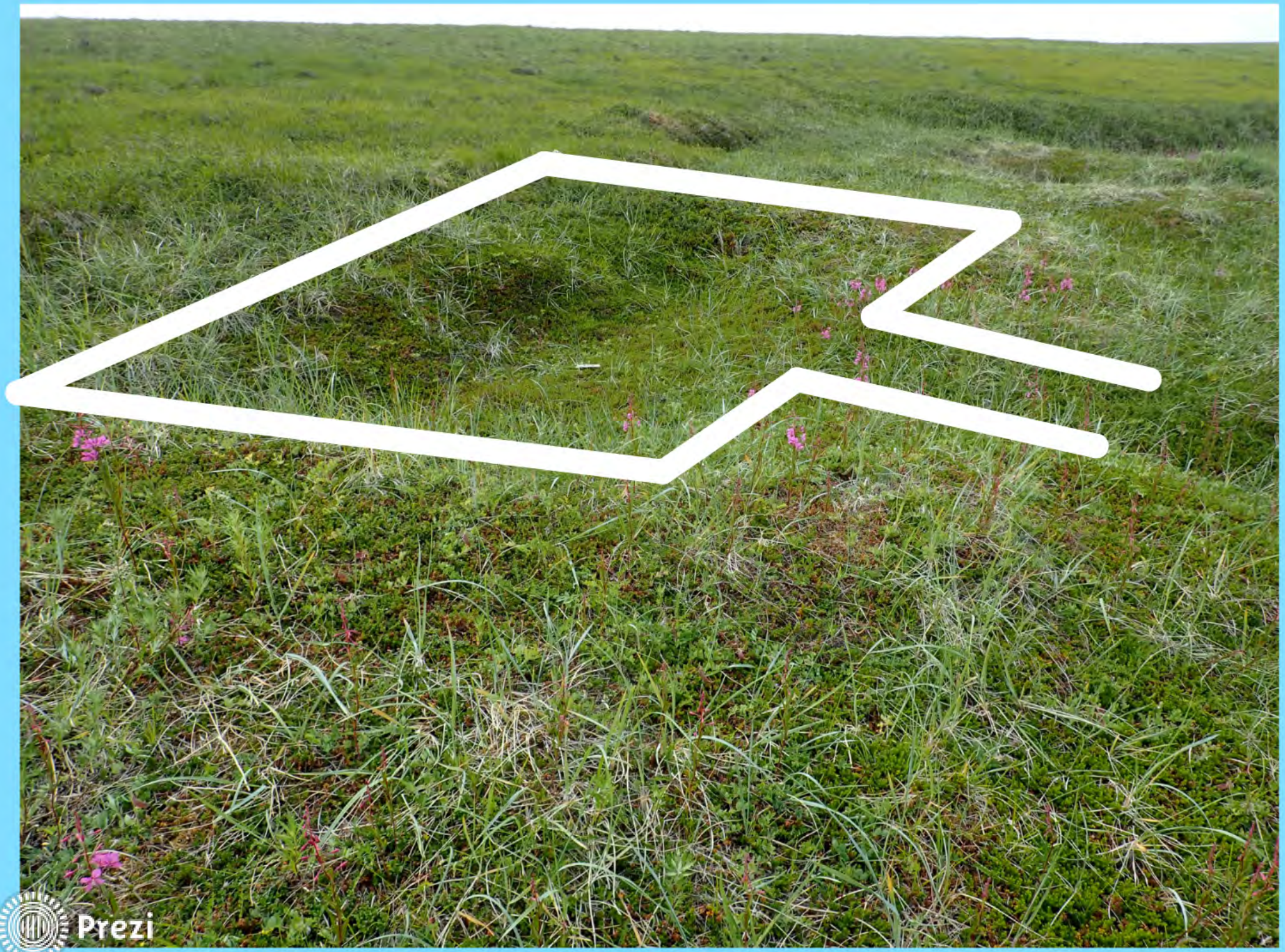

KOTZEBUE
SOUND
N mag.
F-1
F-2
F-3
F-4
F-5
F-6
F-7
F-8
F-9
F-10
F-11
F-12
F-13
F-14
KTZ-018
DATUM
BERM
SAND
CULTURAL FEATURE
0 5 10 meters
TUNDRA UPLAND

Shaaf, 1988



Prezi

Goodhope Bay - known sites

Sites found:

- Historic, Protohistoric, Prehistoric
  - House pits and caches
  - Activity

Site Disturbance:

- Erosion- weathering, flooding, etc.
- Animal disturbance

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Case Study: Historic Belaying Site

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Goodhope Bay - new sites

Sites found:

- Historic/Protohistoric/Prehistoric
    - Activity/temporary camp- individual finds
    - Bluff faces, beaches

Site Disturbance:

- Melting permafrost
- Erosion- high-energy waves, storm surges, etc.
- Human disturbance

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Artifacts

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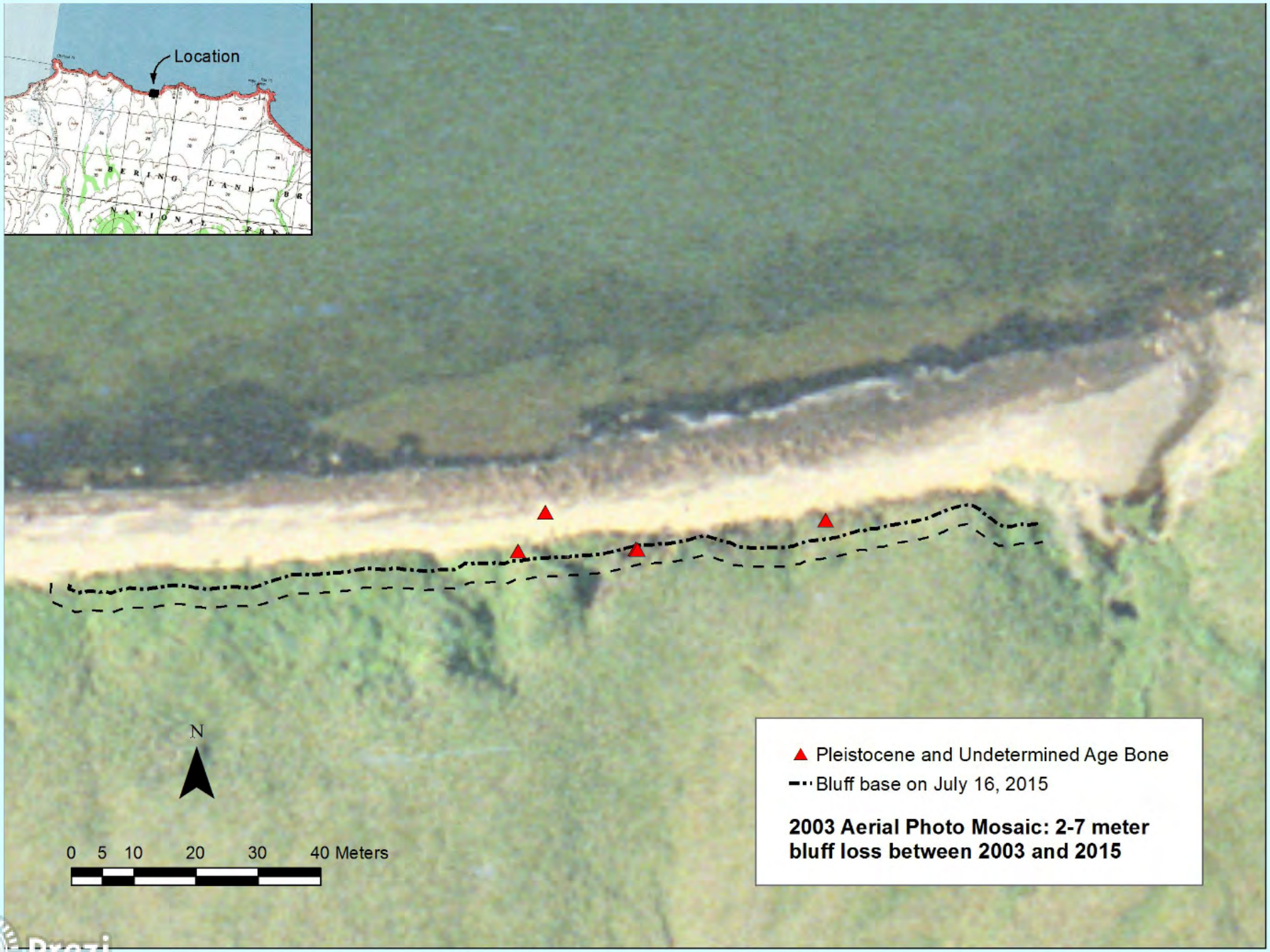
Location
BERING LAND BR
NATIONAL PRE
N
0 5 10 20 30 40 Meters
Pleistocene and Undetermined Age Bone
Bluff base on July 16, 2015
2003 Aerial Photo Mosaic: 2-7 meter bluff loss between 2003 and 2015

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In the office:

- Post-fieldwork data organization and analysis
  - Photo logging
  - Data input/catch-up on data backlogging
  - Transcribing field journals
- Preparation for future field excursions
- **Media project for public**

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Challenges

- Preservation of important cultural resources
  - on allotment lands
  - unauthorized collection
  - remoteness of locations
    - protects/threatens
  - easily accessible on coast/ river

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Future Related Projects

- Erosion due to flash-floods on river edges
  - near Onion Portage - KOVA
  - Noatak mountain pass - NOAT

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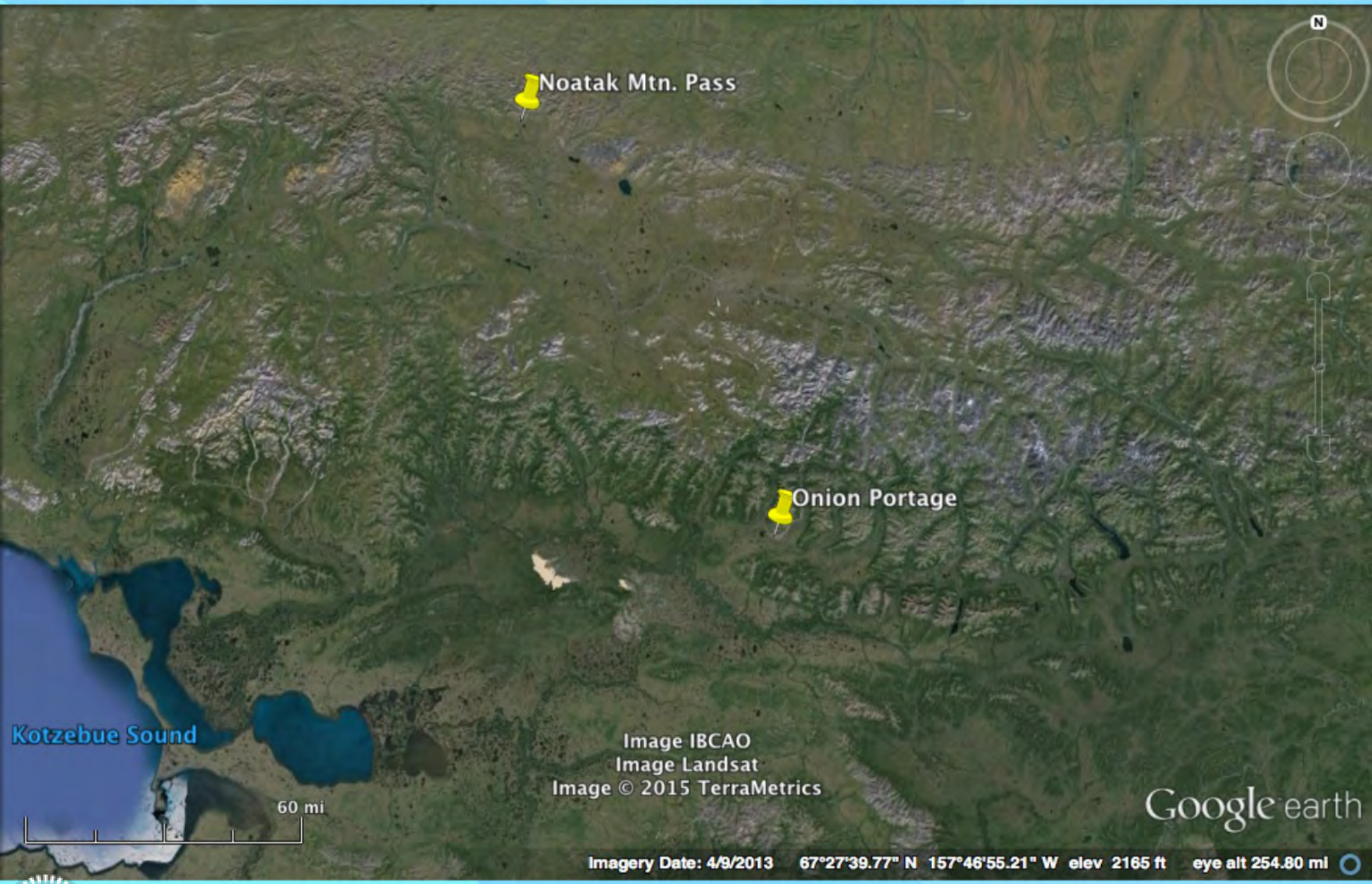
Noatak Mtn. Pass
Onion Portage
Kotzebue Sound
60 mi
Image IBCAO
Image Landsat
Image © 2015 TerraMetrics
Google earth
Imagery Date: 4/9/2013 67°27'39.77" N 157°46'55.21" W elev 2165 ft eye alt 254.80 mi

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