2023

Dillingham, Alaska Coastal Profile Report: 2016-2023

PREPARED BY THE ARCTIC COASTAL GEOSCIENCE LAB

HARPER BALDWIN, DESI BOND, SUE FLENSBURG, RENEE LEE-ROQUE, CHRIS MAIO, REYCE BOGARDUS, SARA DATSON, ROBERTA GLENN, RICH BUZARD, JESSICA CHRISTIAN, MATTHEW BALAZS, MIKE LETZRING

Funding support provided by the National Science Foundation (Grant #s 1927827 and 1848542), Alaska Sea Grant, the Curyung Tribe, and the Geophysical Institute.

CROSS SHORE ELEVATION PROFILES:

Coastal elevation profiles represent the elevation of the beach from water (left) to land (right). When plotted through time, coastal elevation profiles can be used to understand coastal dynamics including the impacts of storms and changing ocean conditions. In absence of a DEM, profiles are the best method to measure beach erosion and scouring.

The ACGL collects data at 40 cross-shore transects in Dillingham (**Figure 1**). The profile extent has been expanded from 2016 through 2023; data collection occurred in 2016, 2017, 2018, 2021 (in May and October), 2022 (in both May and June), and September 2023. There are three community-based monitoring (CBM) sites in Dillingham, located at the sewage lagoon, peat meadows, and Kanakanak Flats. Profile plots in which the elevation of the beach is higher in 2023 than in 2016 indicate accretion at this site. In contrast, profile plots where the elevation of the beach is lower or the bluff edge is further back in 2023 than in 2016 (such as Profile 1) indicate erosion at this site.

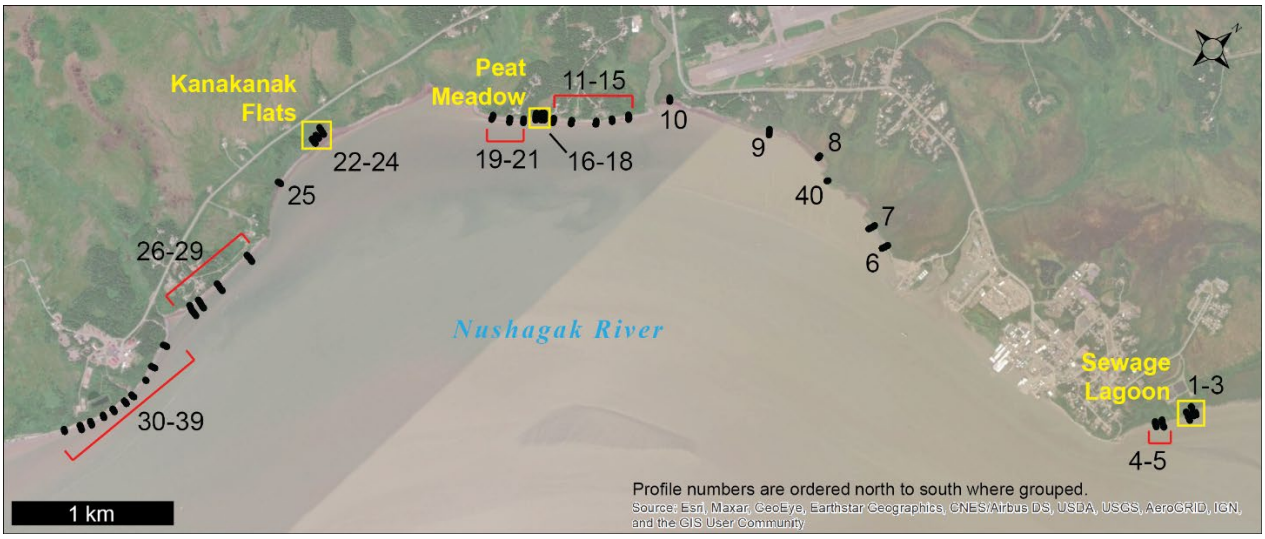
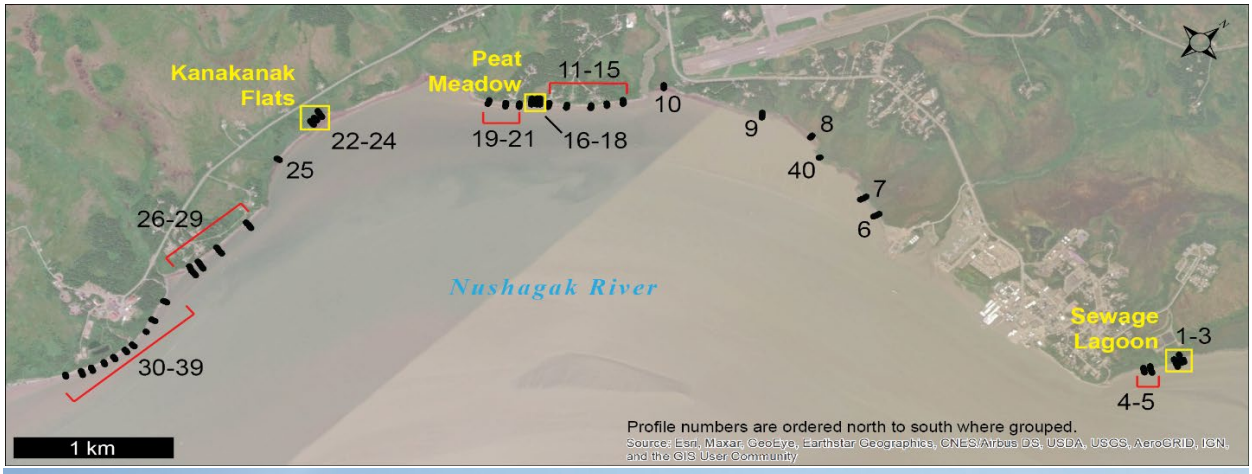
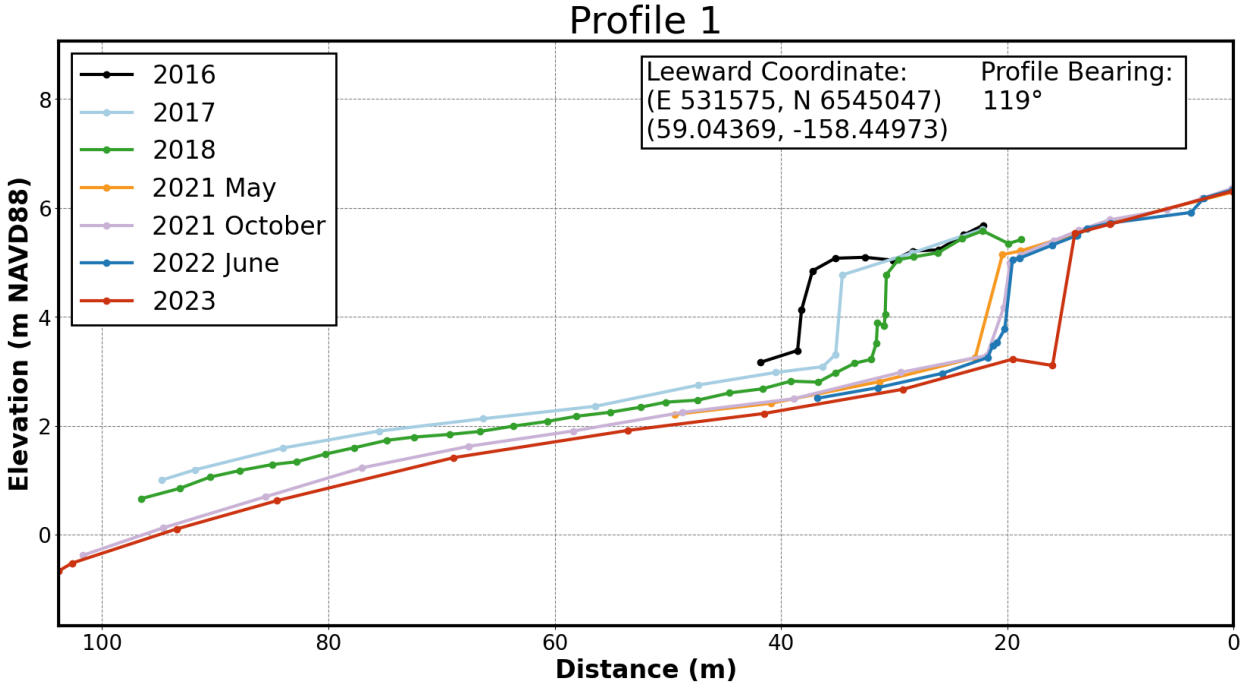
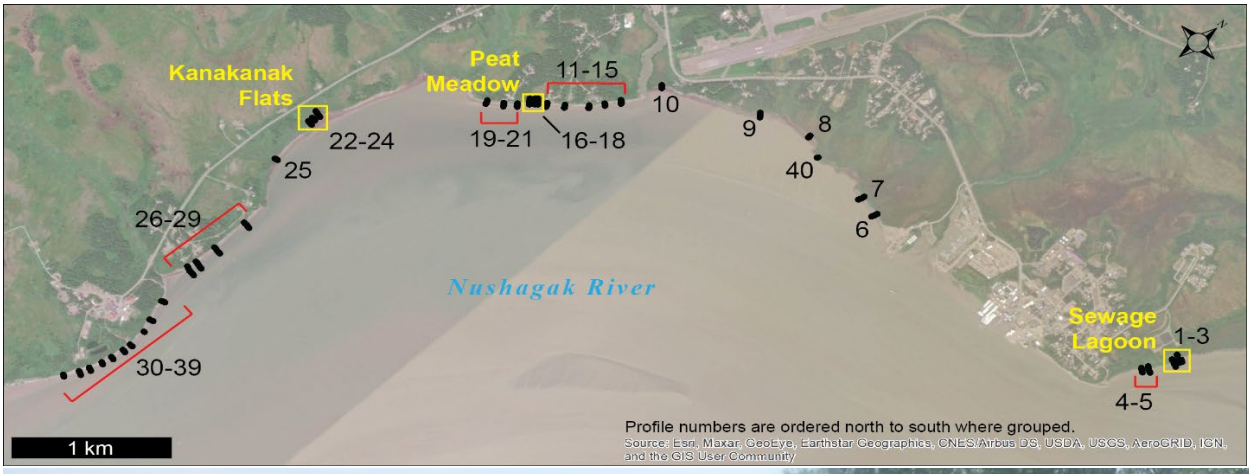


Figure 1. Coastal profile survey extent in Dillingham. Profiles with yellow boxes indicate community-based monitoring (CBM) sites. Profile numbers listed in groups are listed in order from north to south.

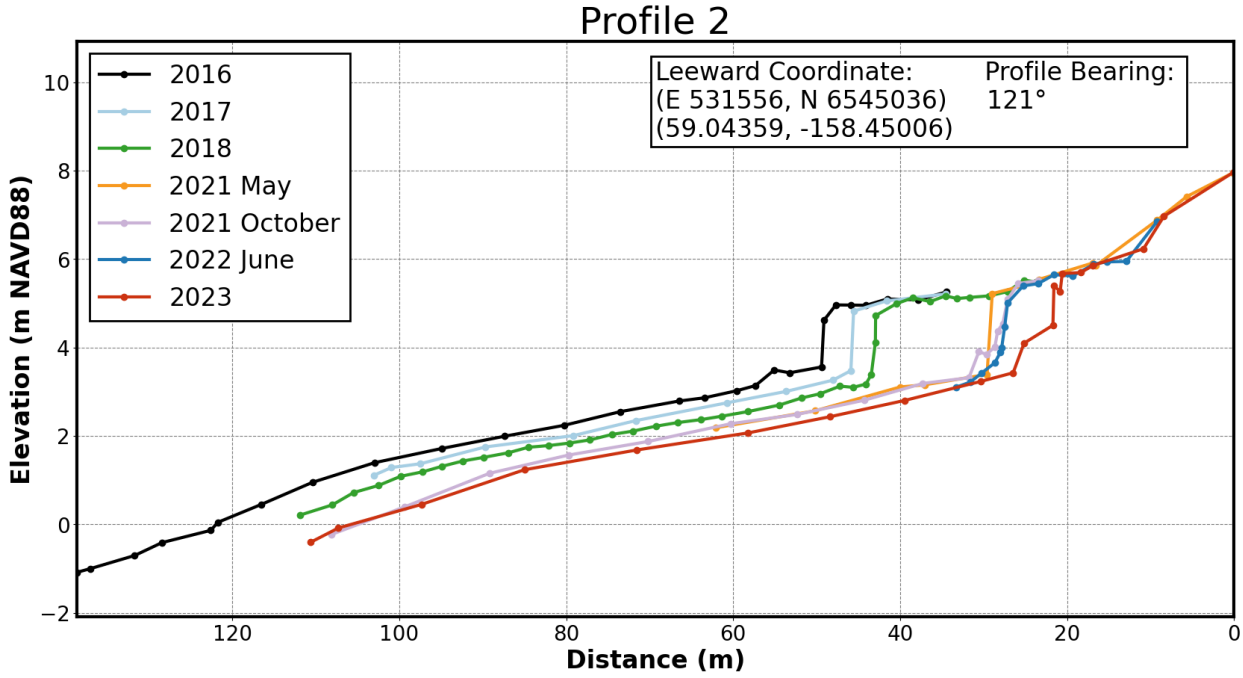

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

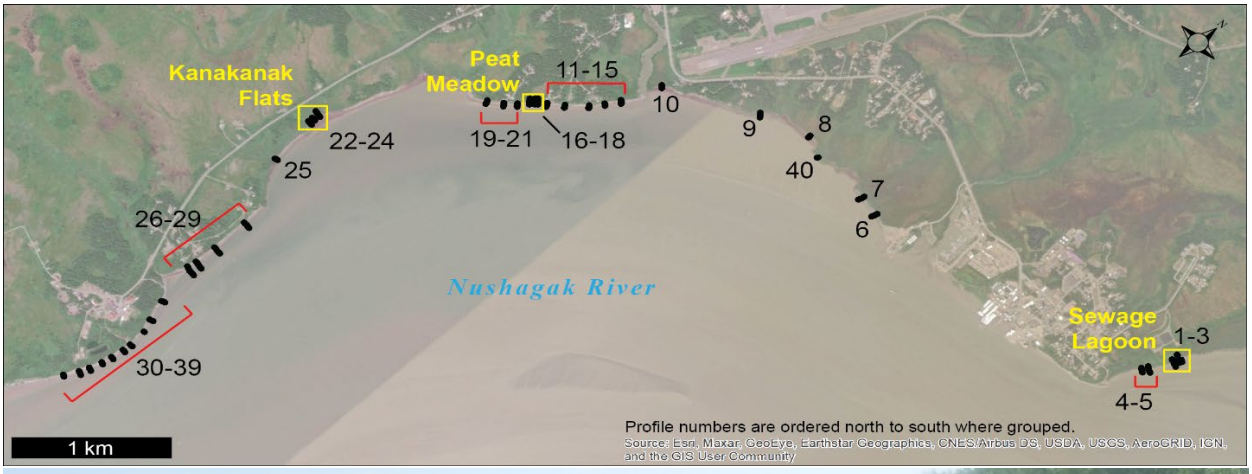



Profile 1
2016
2017
2018
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 531575, N 6545047)
(59.04369, -158.44973)
Profile Bearing:
119°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
100
80
60
40
20
0

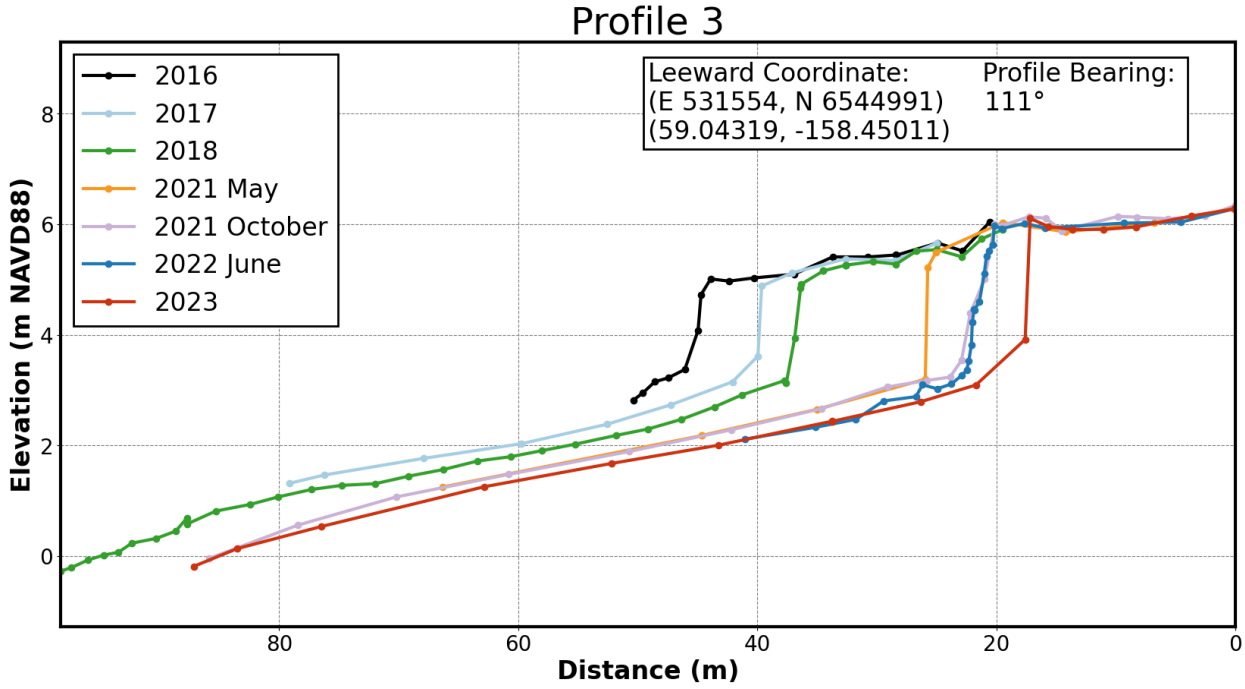

Kanakanak Flats
Peat Meadow
11-15
22-24
19-21
16-18
10
9
8
40
7
6
25
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

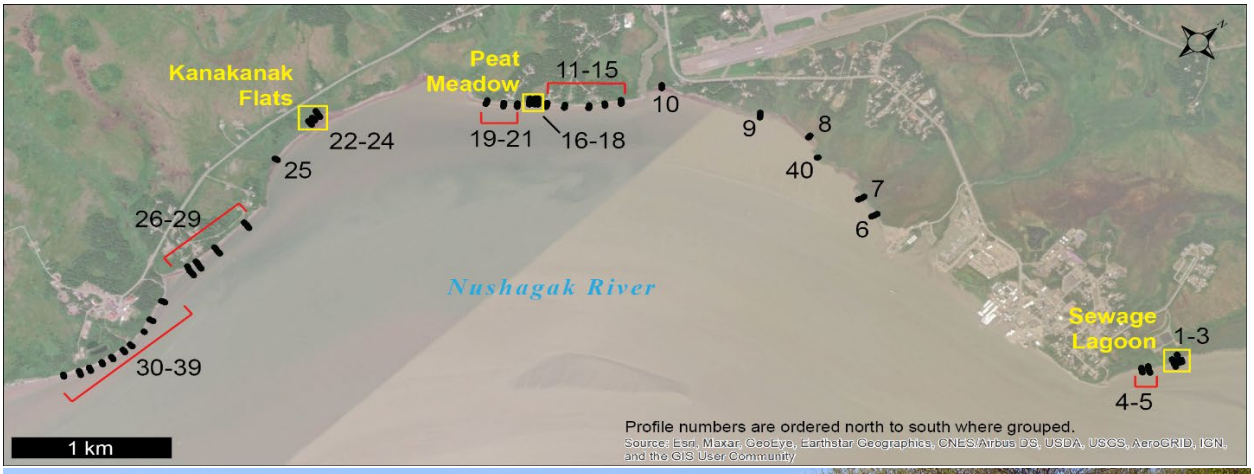



Profile 2
2016
2017
2018
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 531556, N 6545036)
(59.04359, -158.45006)
Profile Bearing:
121°
Elevation (m NAVD88)
Distance (m)
10
8
6
4
2
0
−2
120
100
80
60
40
20
0

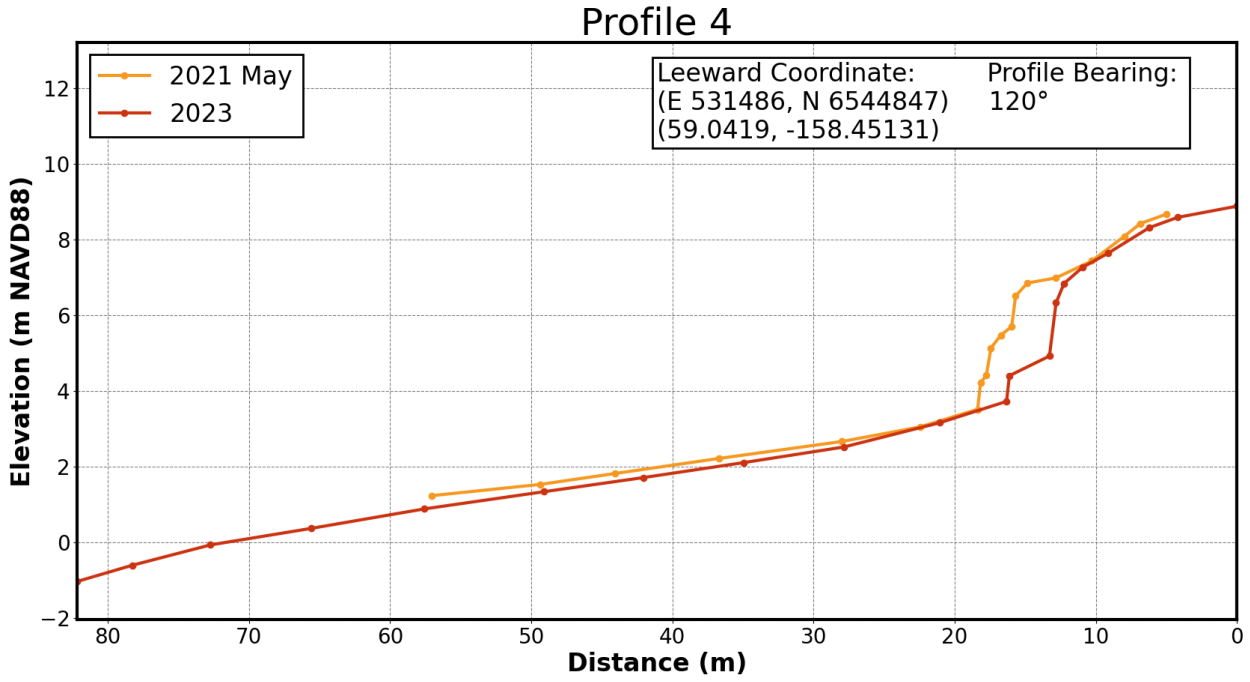

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

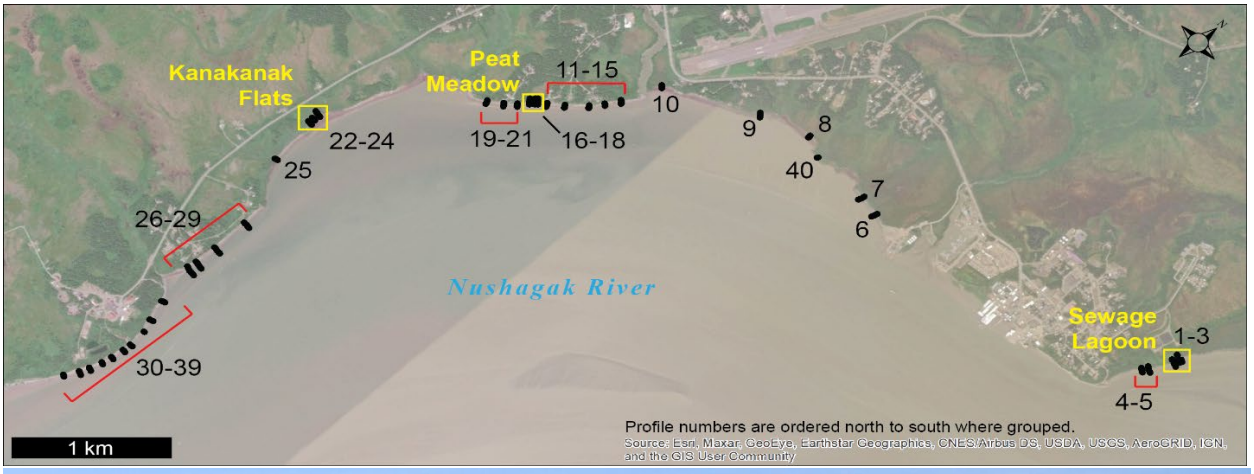



Profile 3
2016
2017
2018
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 531554, N 6544991)
(59.04319, -158.45011)
Profile Bearing:
111°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
80
60
40
20
0

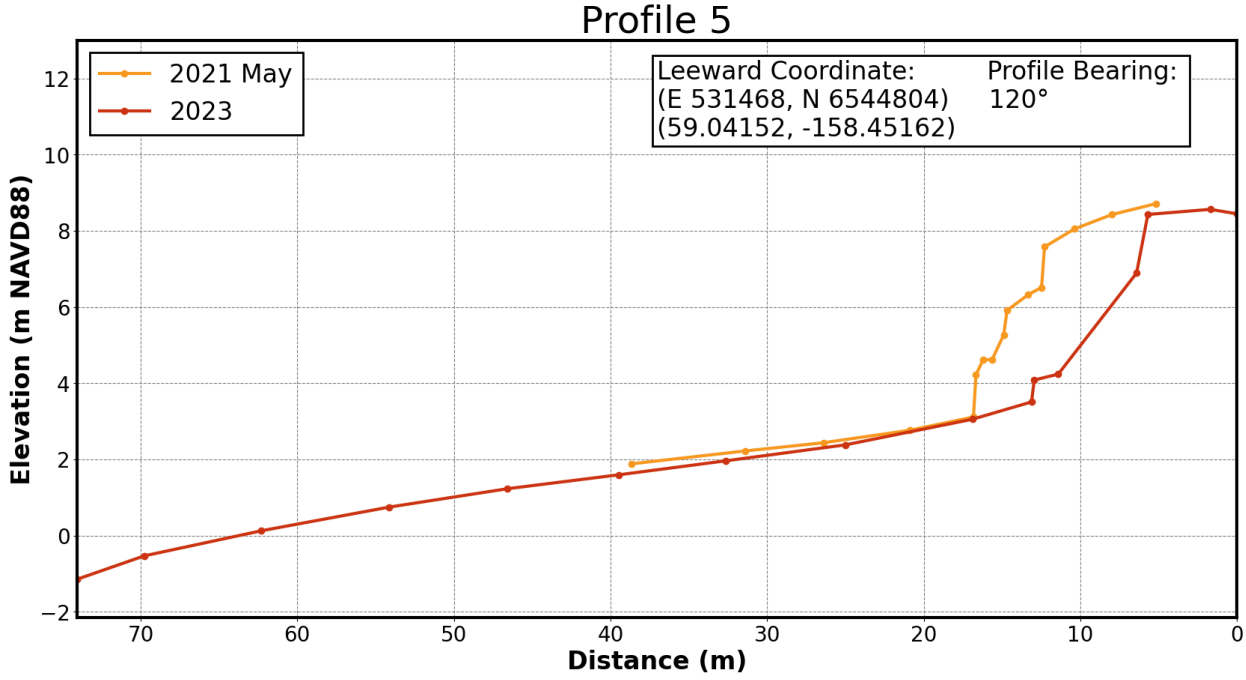

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

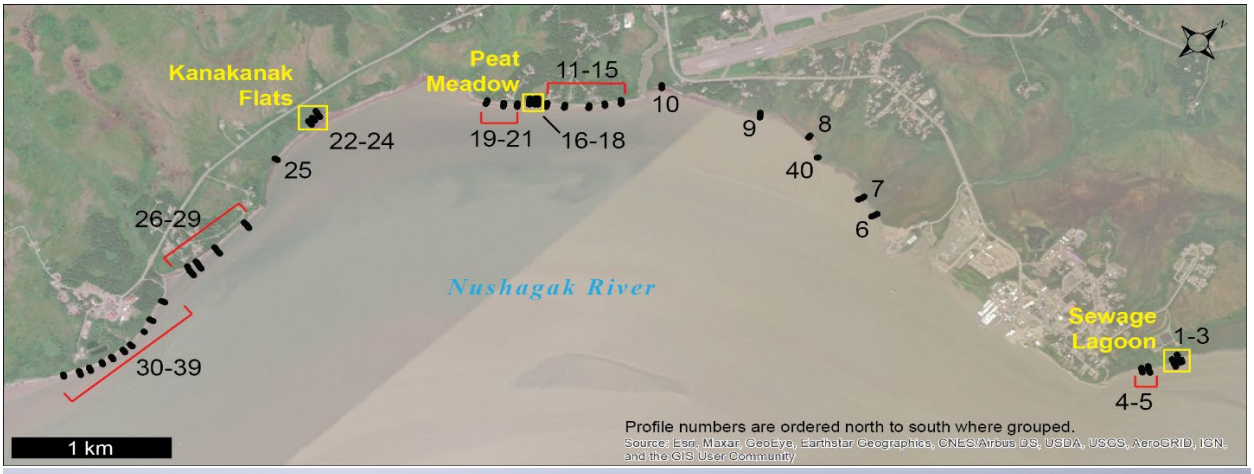



Profile 4
2021 May
2023
Leeward Coordinate:
(E 531486, N 6544847)
(59.0419, -158.45131)
Profile Bearing:
120°
Elevation (m NAVD88)
Distance (m)
12
10
8
6
4
2
0
−2
80
70
60
50
40
30
20
10
0

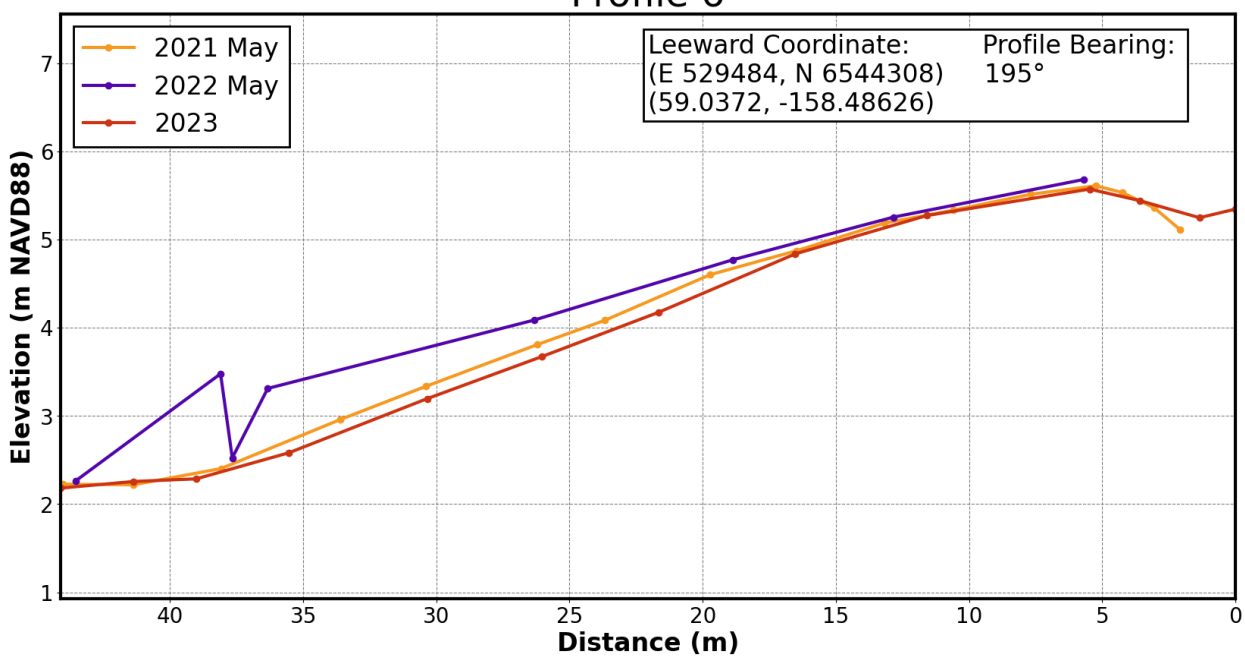

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

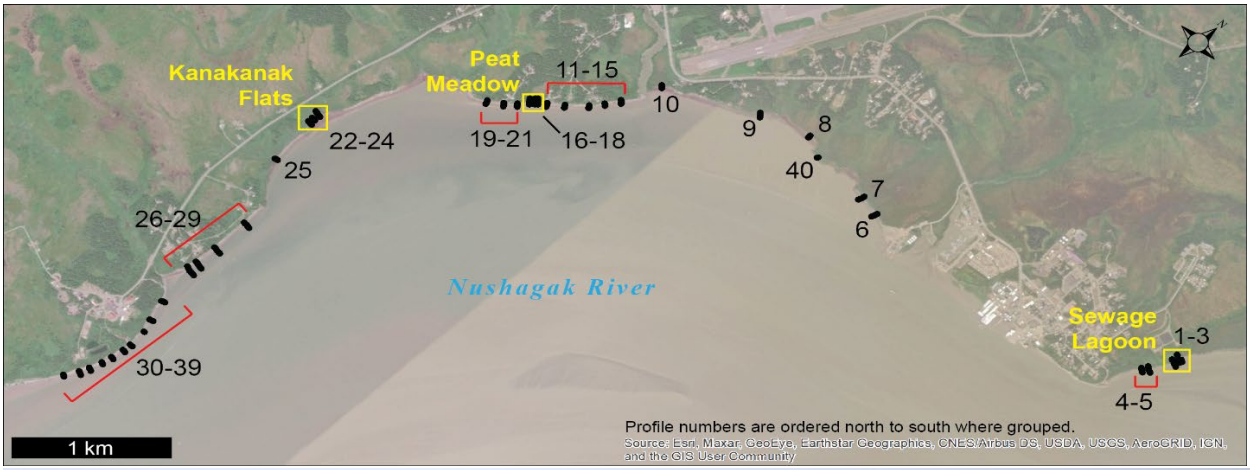



Profile 5
2021 May
2023
Leeward Coordinate:
(E 531468, N 6544804)
(59.04152, -158.45162)
Profile Bearing:
120°
Elevation (m NAVD88)
Distance (m)
12
10
8
6
4
2
0
−2
70
60
50
40
30
20
10
0

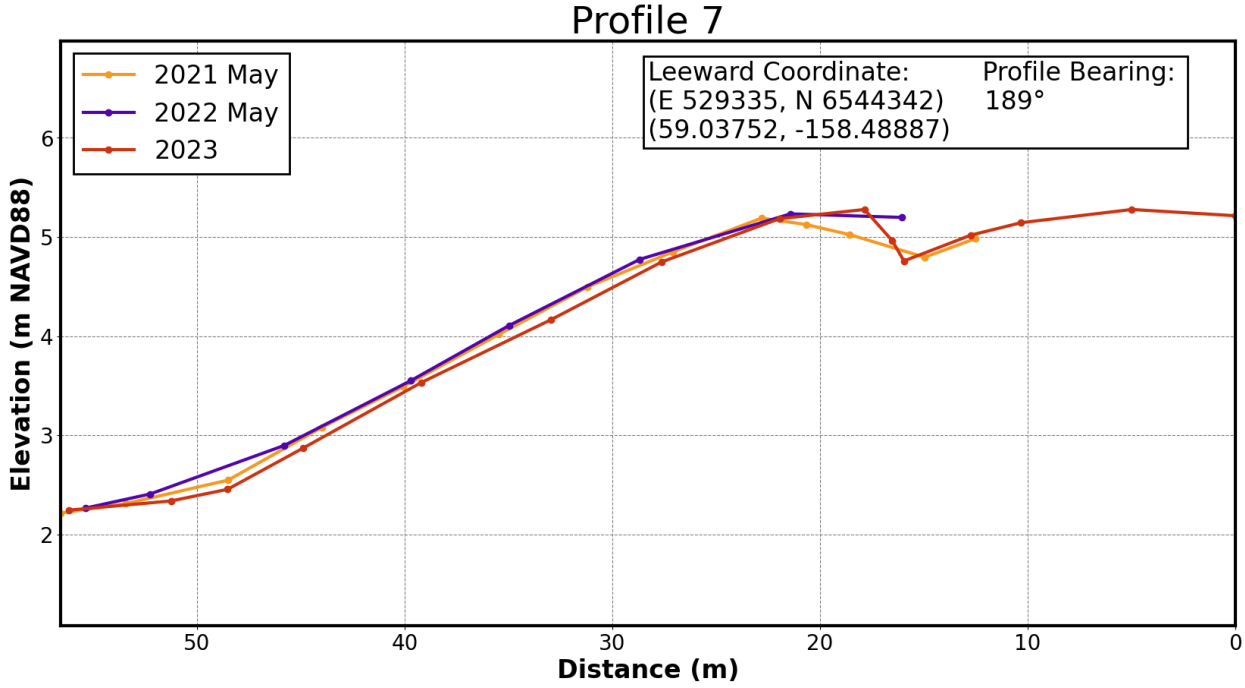

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

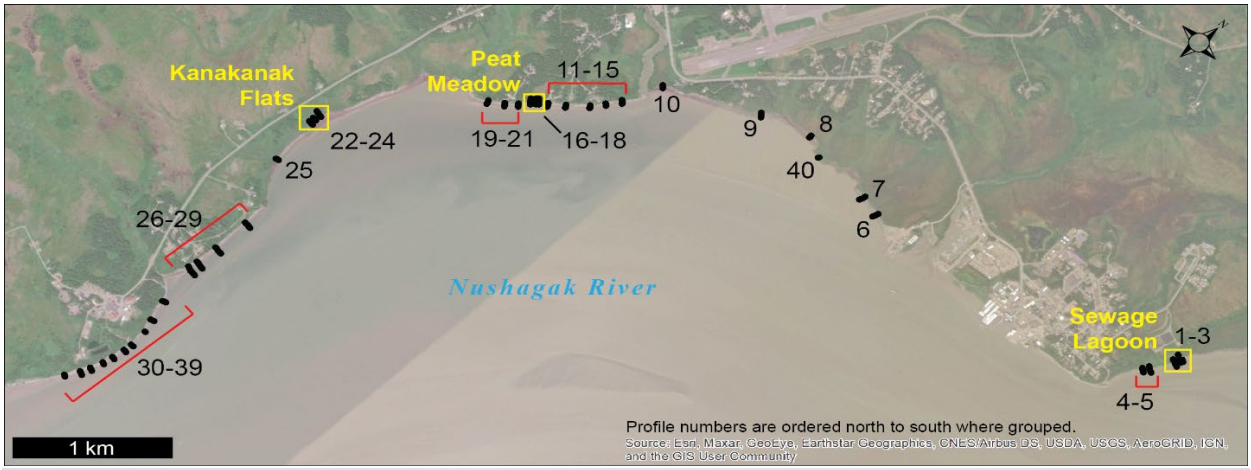



Profile 6
2021 May
2022 May
2023
Leeward Coordinate:
(E 529484, N 6544308)
(59.0372, -158.48626)
Profile Bearing:
195°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
1
40
35
30
25
20
15
10
5
0

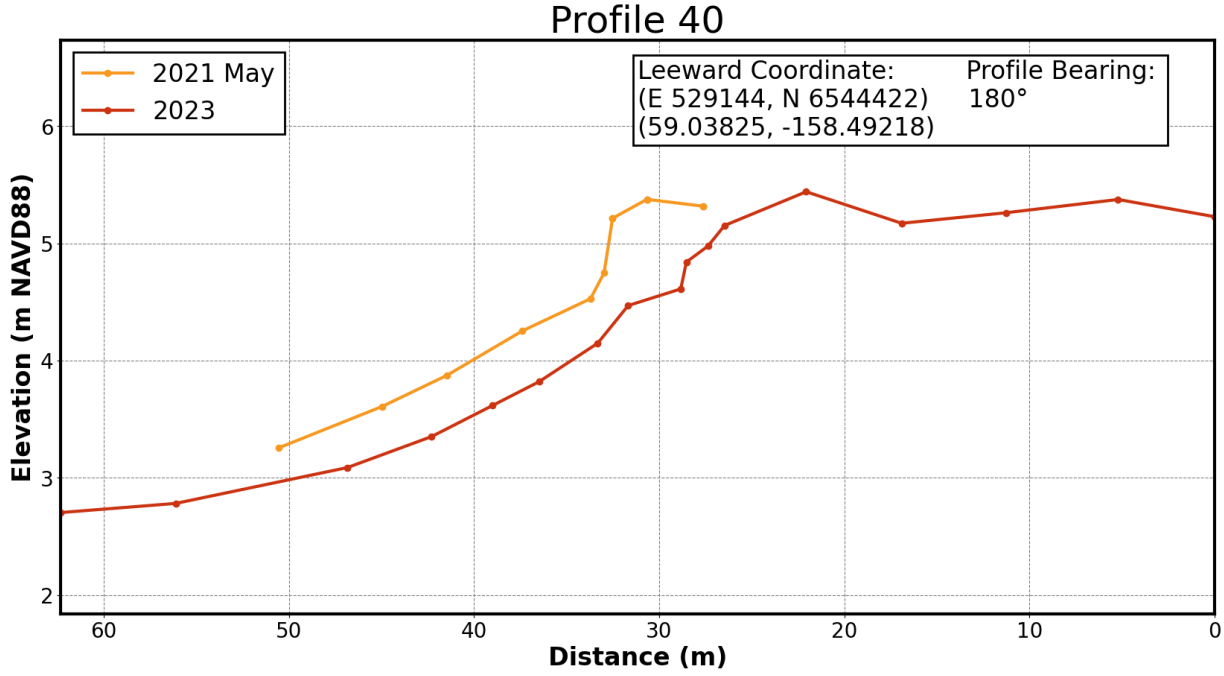

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

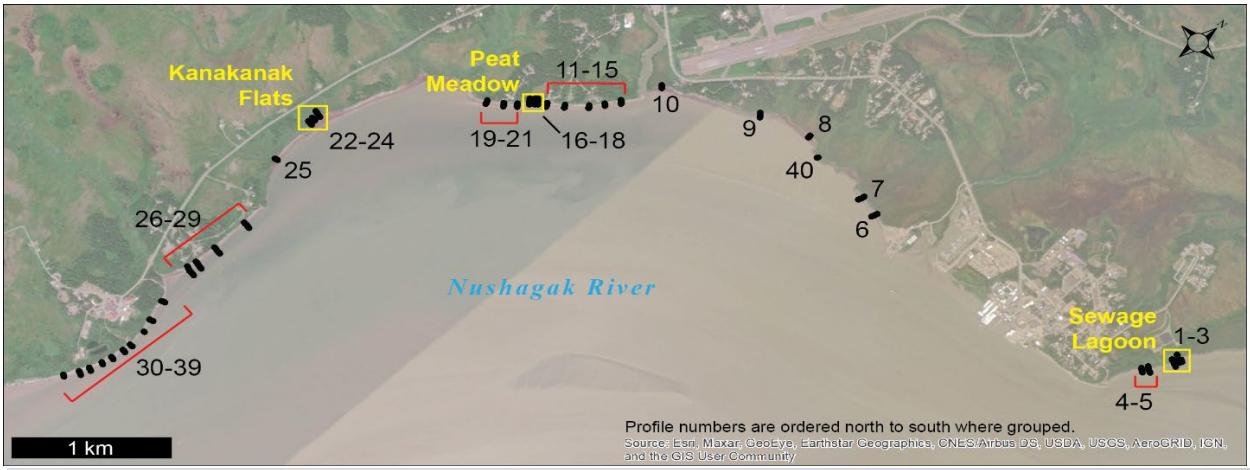



Profile 7
2021 May
2022 May
2023
Leeward Coordinate:
(E 529335, N 6544342)
(59.03752, -158.48887)
Profile Bearing:
189°
Elevation (m NAVD88)
Distance (m)
6
5
4
3
2
50
40
30
20
10
0

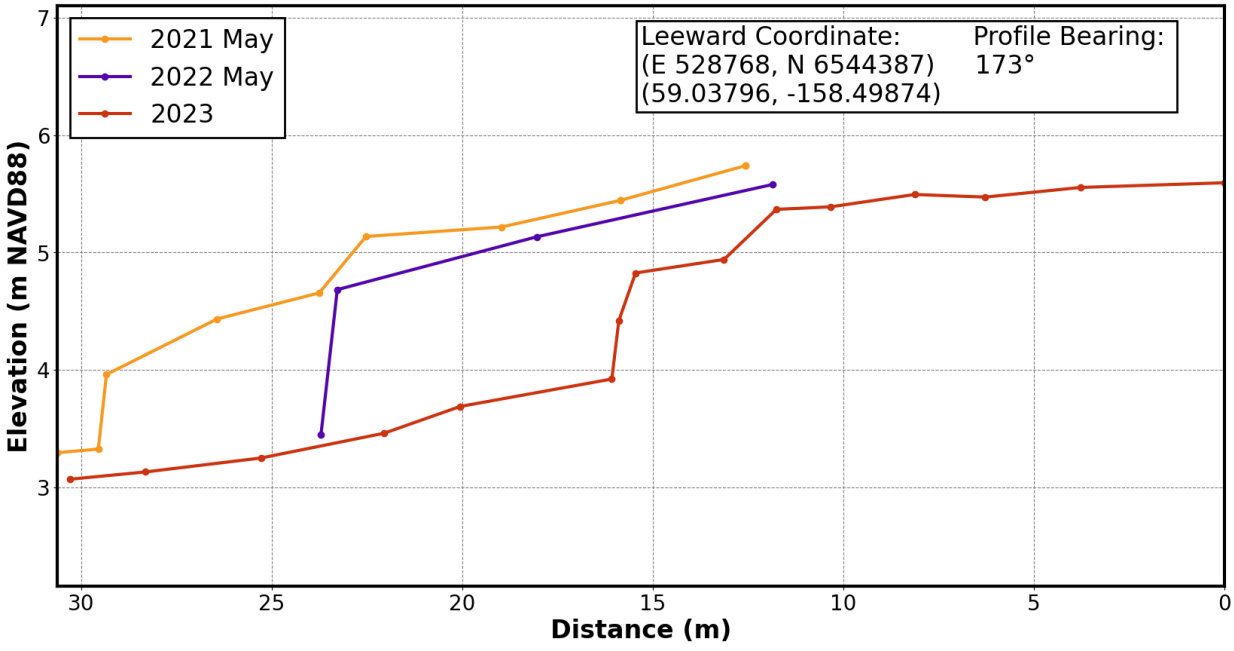

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

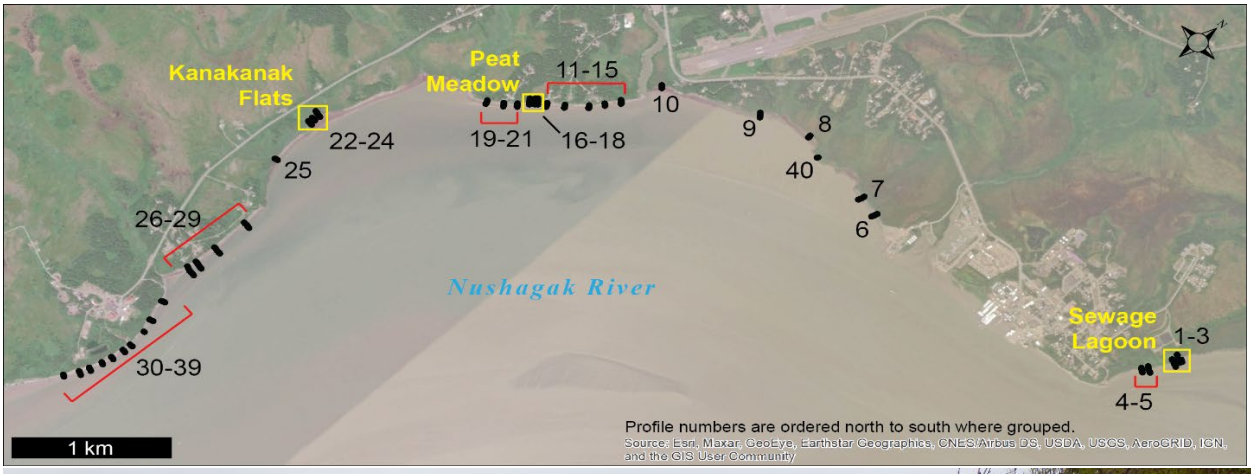



Profile 40
2021 May
2023
Leeward Coordinate:
(E 529144, N 6544422)
(59.03825, -158.49218)
Profile Bearing:
180°
Elevation (m NAVD88)
Distance (m)
6
5
4
3
2
60
50
40
30
20
10
0

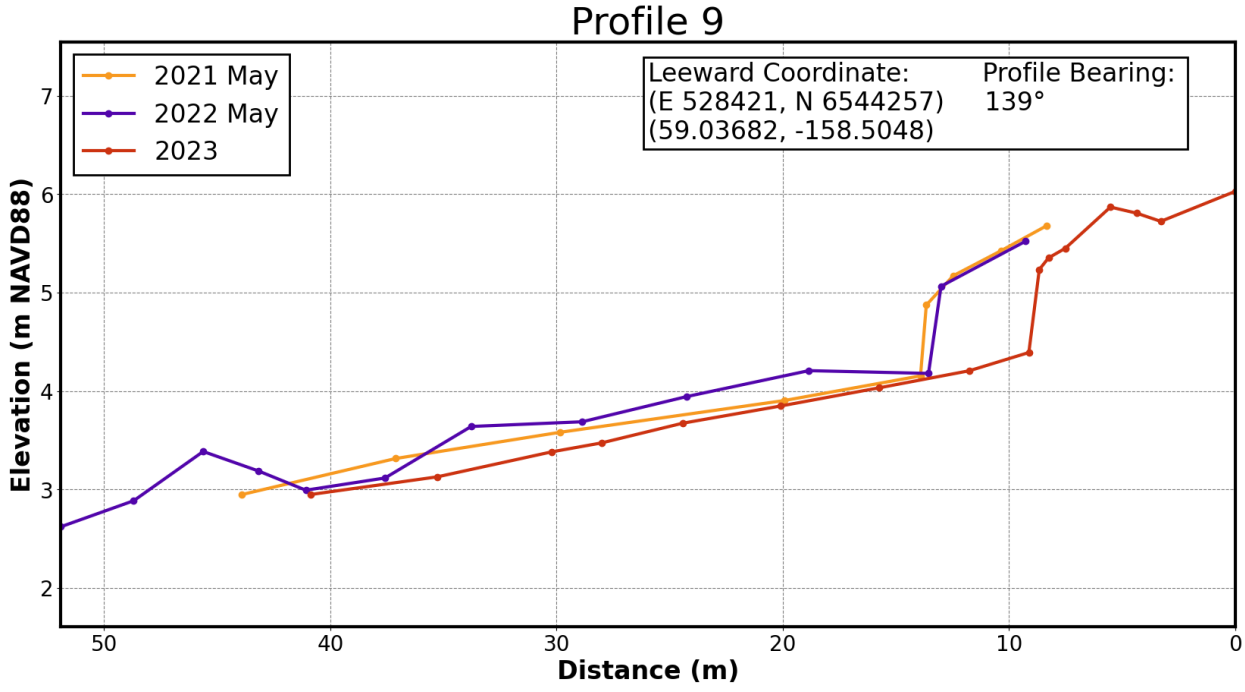

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

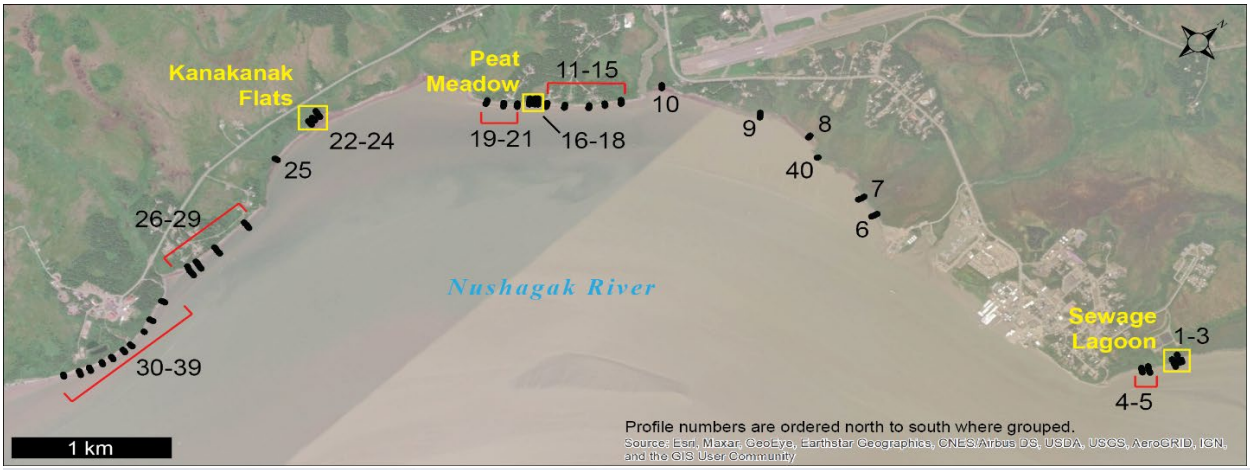



Profile 8
2021 May
2022 May
2023
Leeward Coordinate:
(E 528768, N 6544387)
(59.03796, -158.49874)
Profile Bearing:
173°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
30
25
20
15
10
5
0

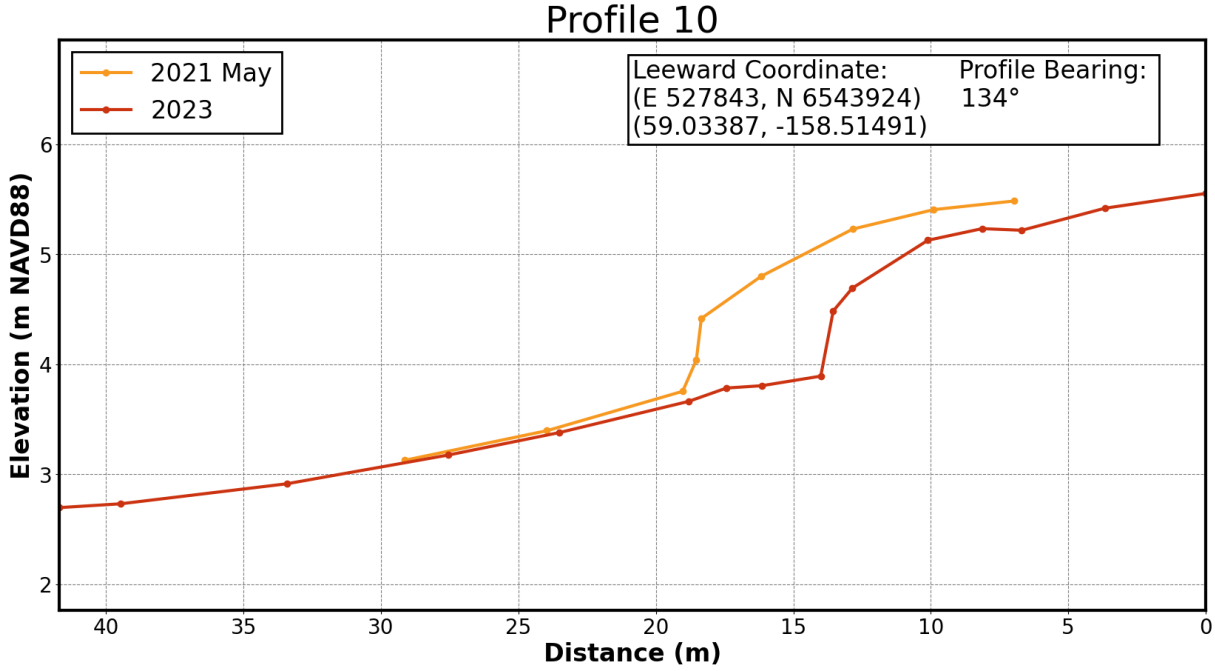

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

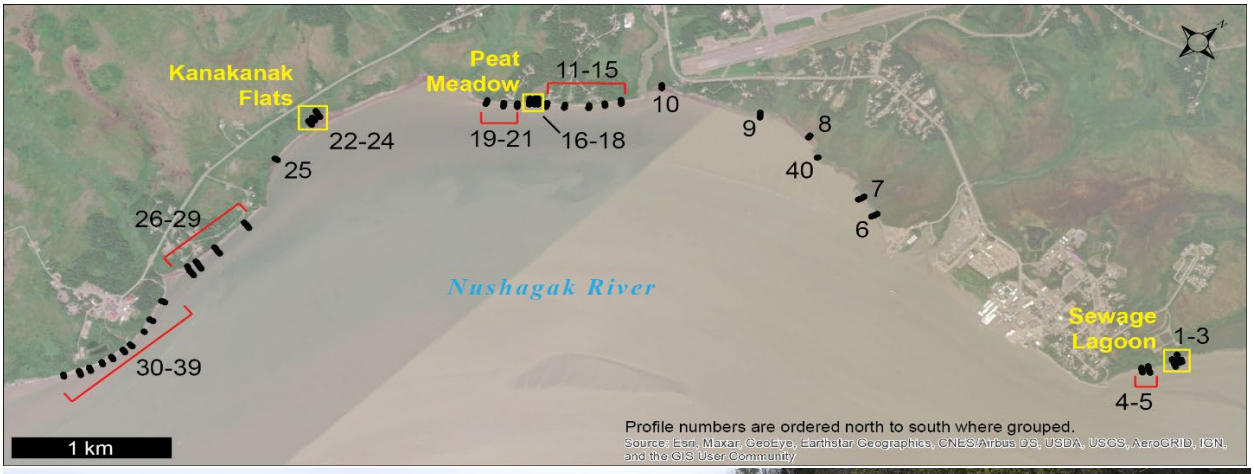



Profile 9
2021 May
2022 May
2023
Leeward Coordinate:
(E 528421, N 6544257)
(59.03682, -158.5048)
Profile Bearing:
139°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
50
40
30
20
10
0

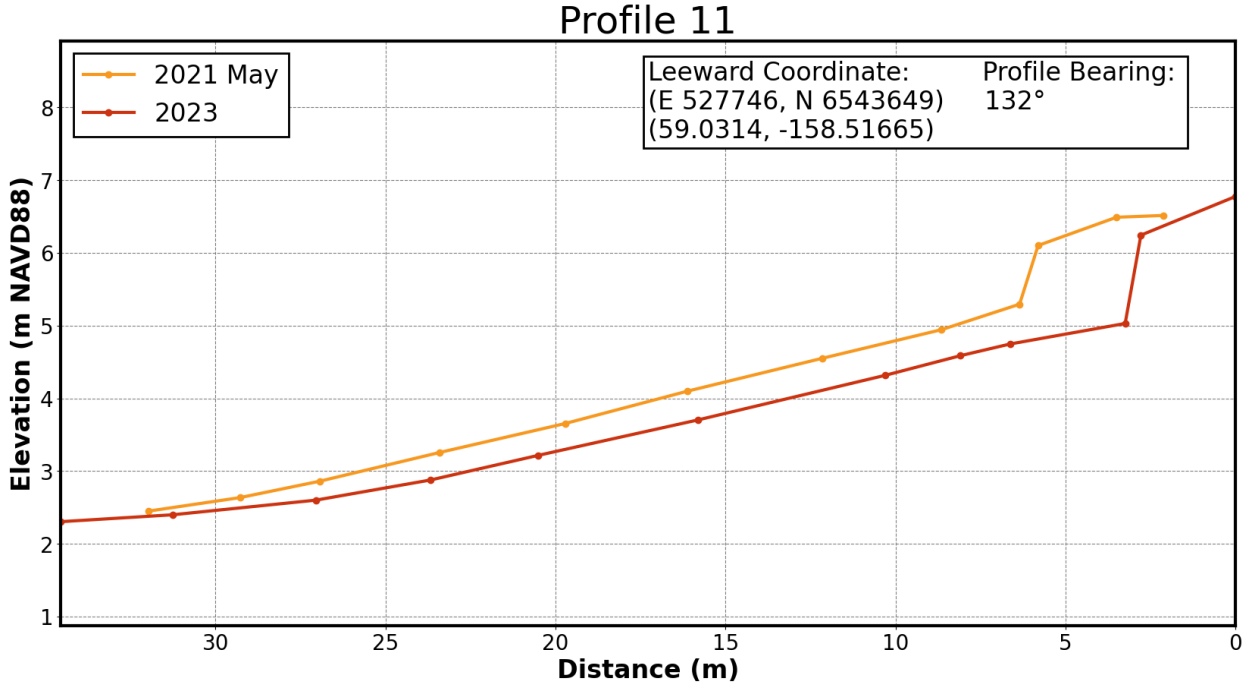

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

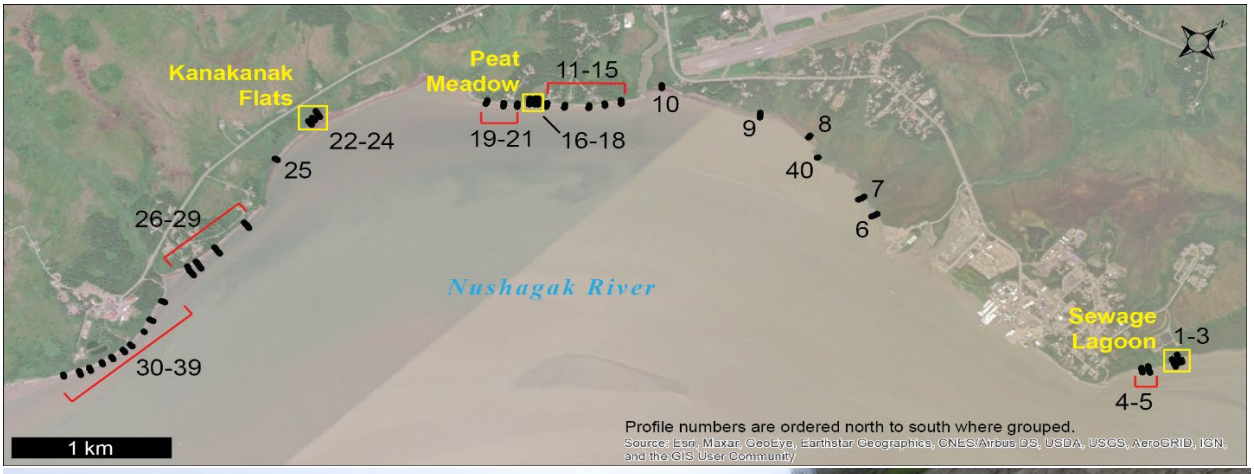



Profile 10
2021 May
2023
Leeward Coordinate:
(E 527843, N 6543924)
(59.03387, -158.51491)
Profile Bearing:
134°
Elevation (m NAVD88)
Distance (m)
6
5
4
3
2
40
35
30
25
20
15
10
5
0

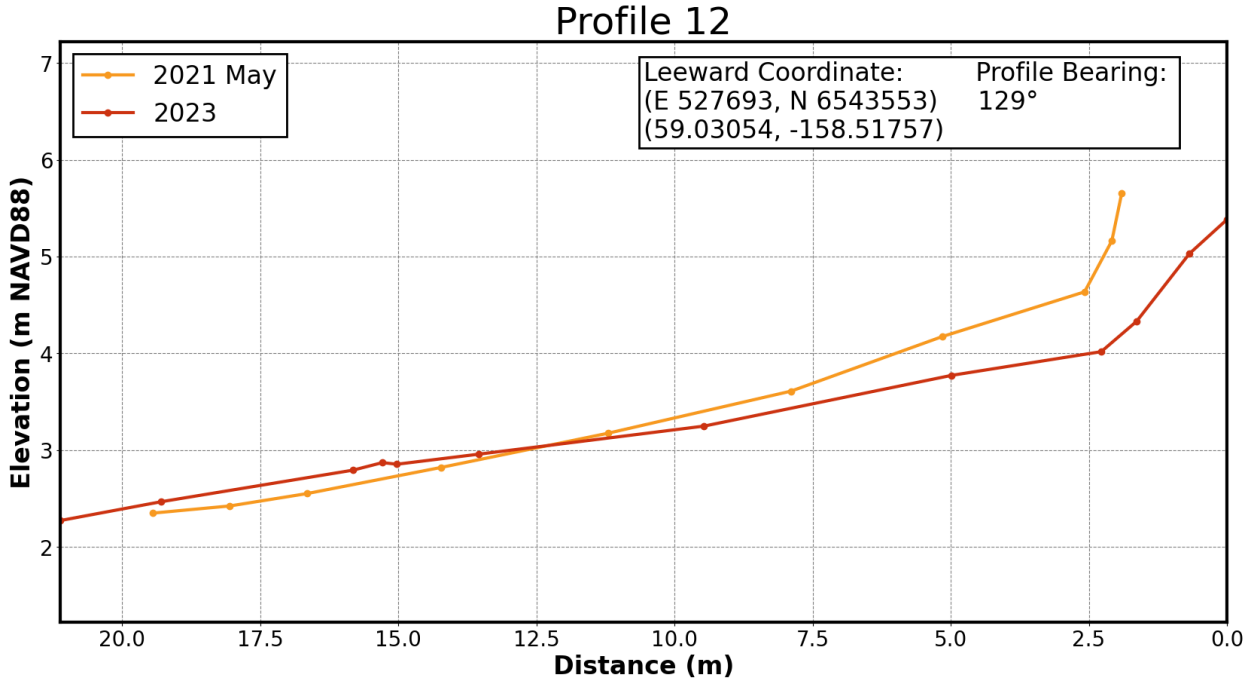

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

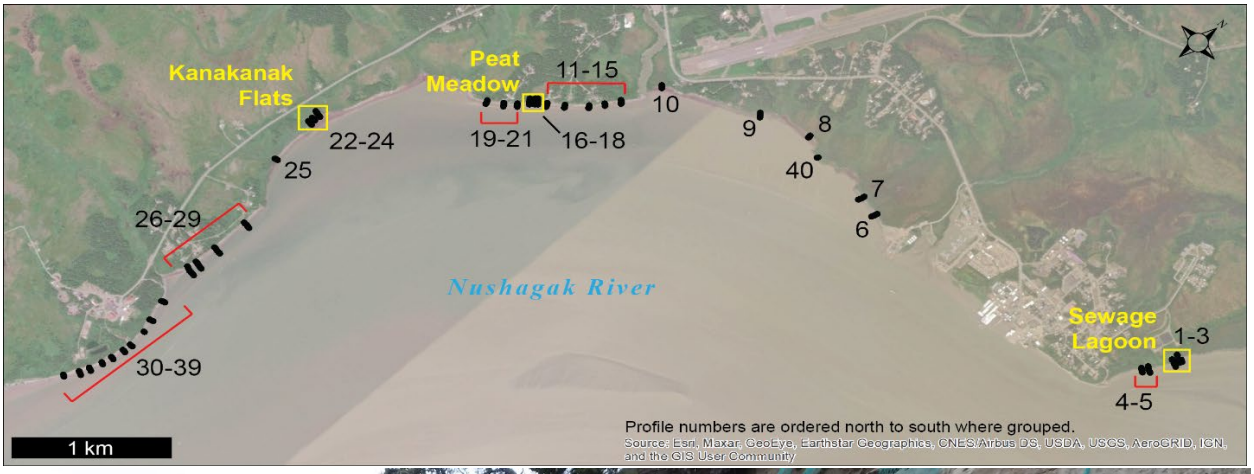



Profile 11
2021 May
2023
Leeward Coordinate:
(E 527746, N 6543649)
(59.0314, -158.51665)
Profile Bearing:
132°
Elevation (m NAVD88)
Distance (m)
1
2
3
4
5
6
7
8
30
25
20
15
10
5
0

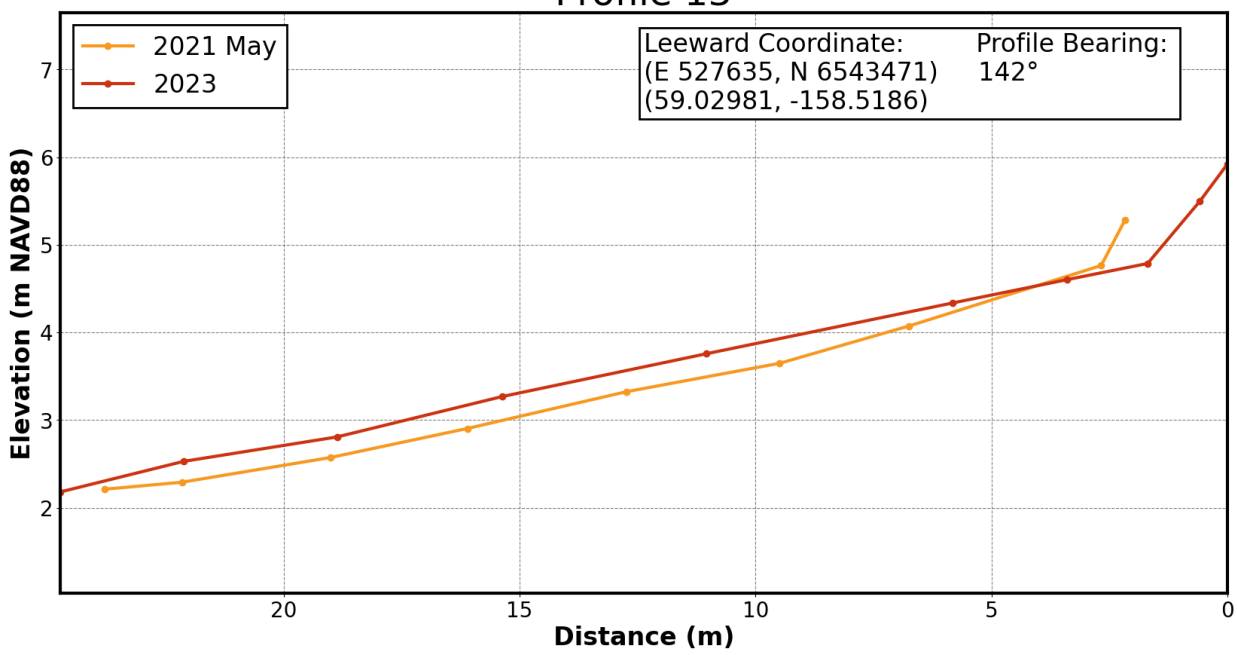

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

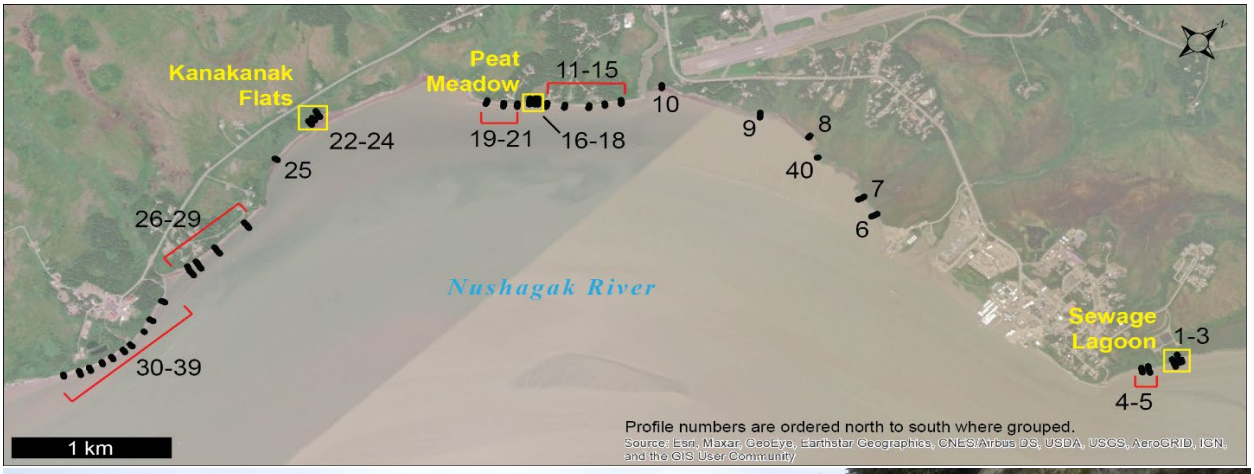



Profile 12
2021 May
2023
Leeward Coordinate:
(E 527693, N 6543553)
(59.03054, -158.51757)
Profile Bearing:
129°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0

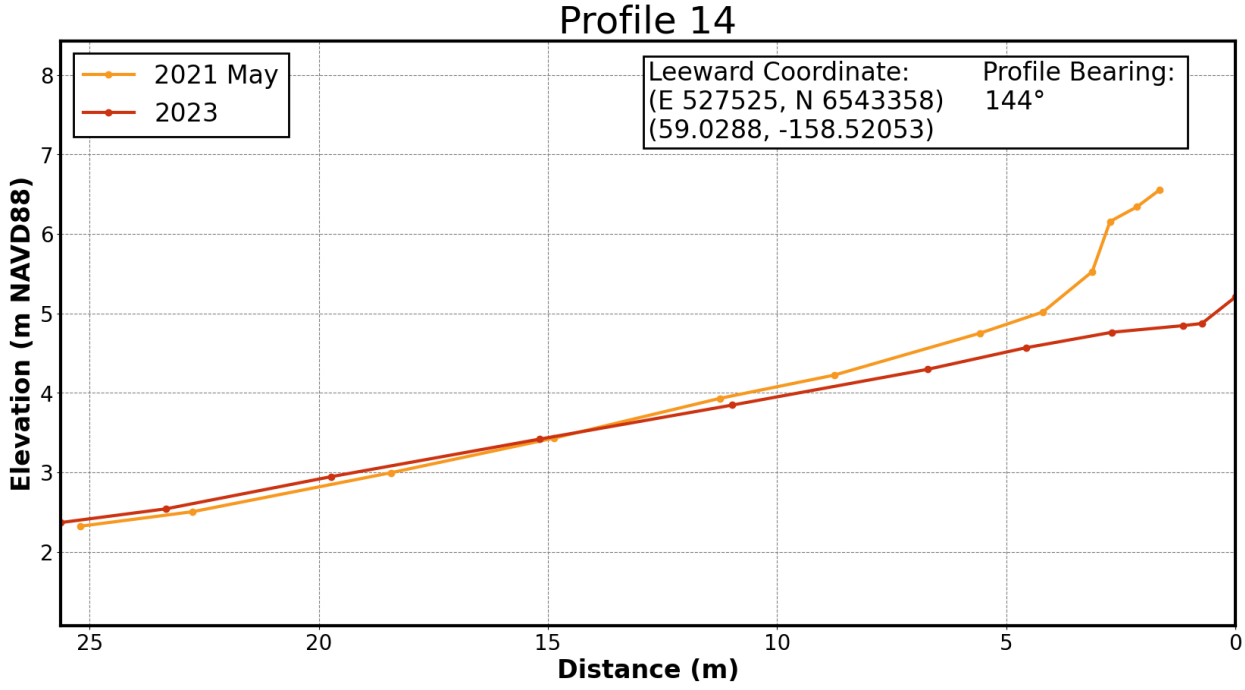

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

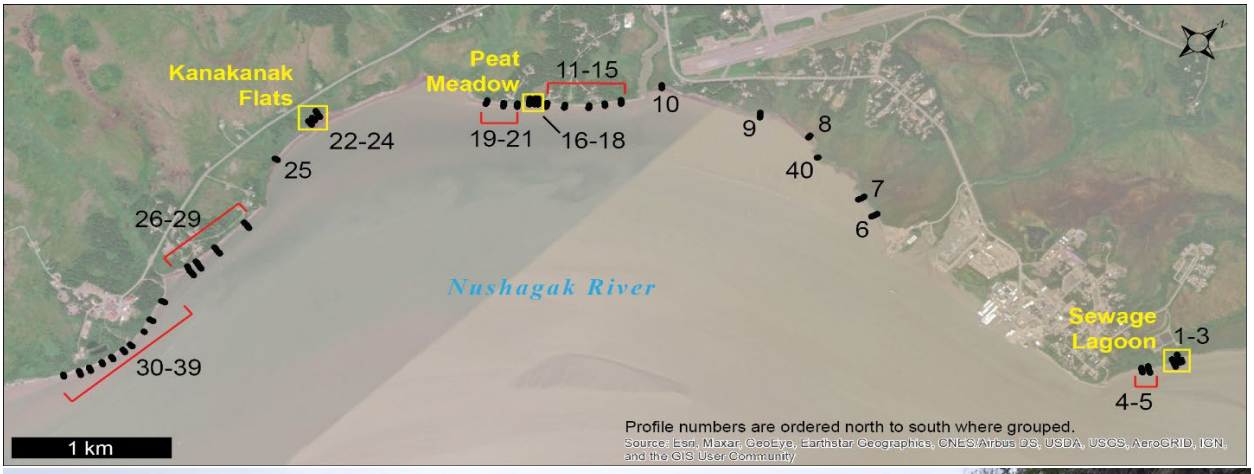



Profile 13
2021 May
2023
Leeward Coordinate:
(E 527635, N 6543471)
(59.02981, -158.5186)
Profile Bearing:
142°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
20
15
10
5
0

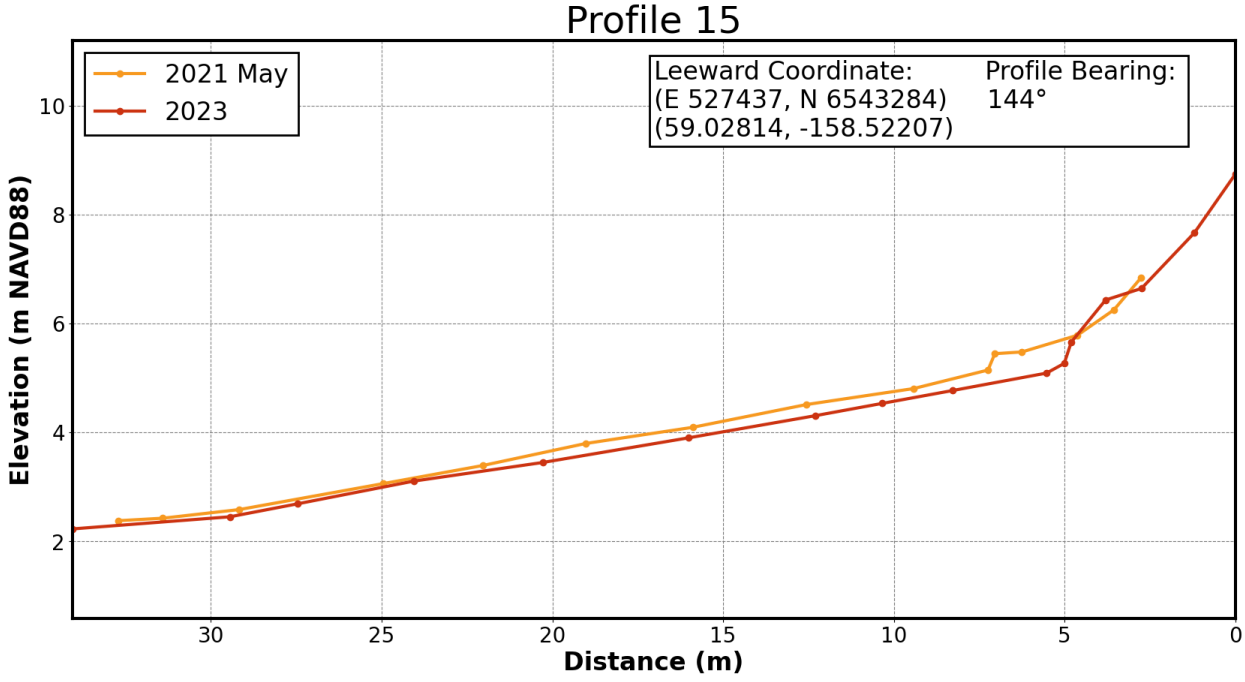

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

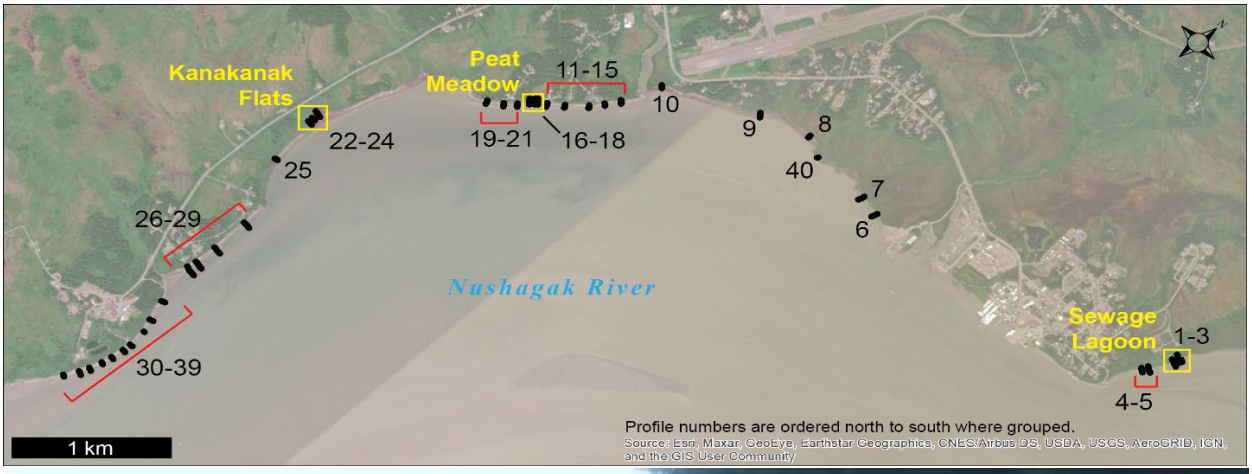



Profile 14
2021 May
2023
Leeward Coordinate:
(E 527525, N 6543358)
(59.0288, -158.52053)
Profile Bearing:
144°
Elevation (m NAVD88)
Distance (m)
8
7
6
5
4
3
2
25
20
15
10
5
0

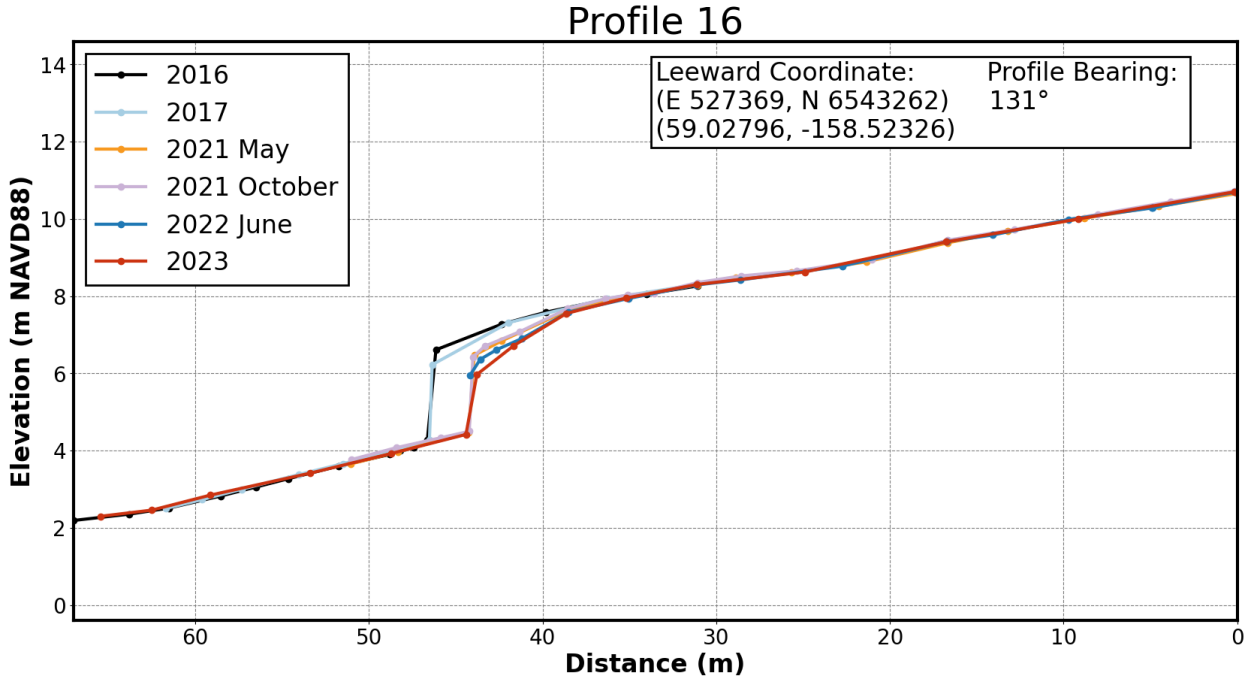

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

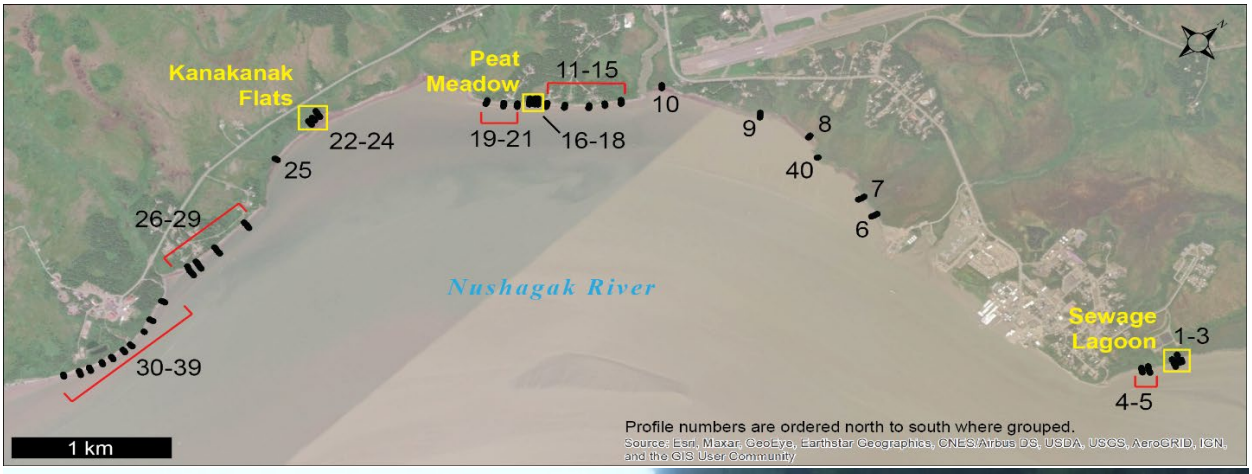



Profile 15
2021 May
2023
Leeward Coordinate:
(E 527437, N 6543284)
(59.02814, -158.52207)
Profile Bearing:
144°
Elevation (m NAVD88)
Distance (m)
10
8
6
4
2
30
25
20
15
10
5
0

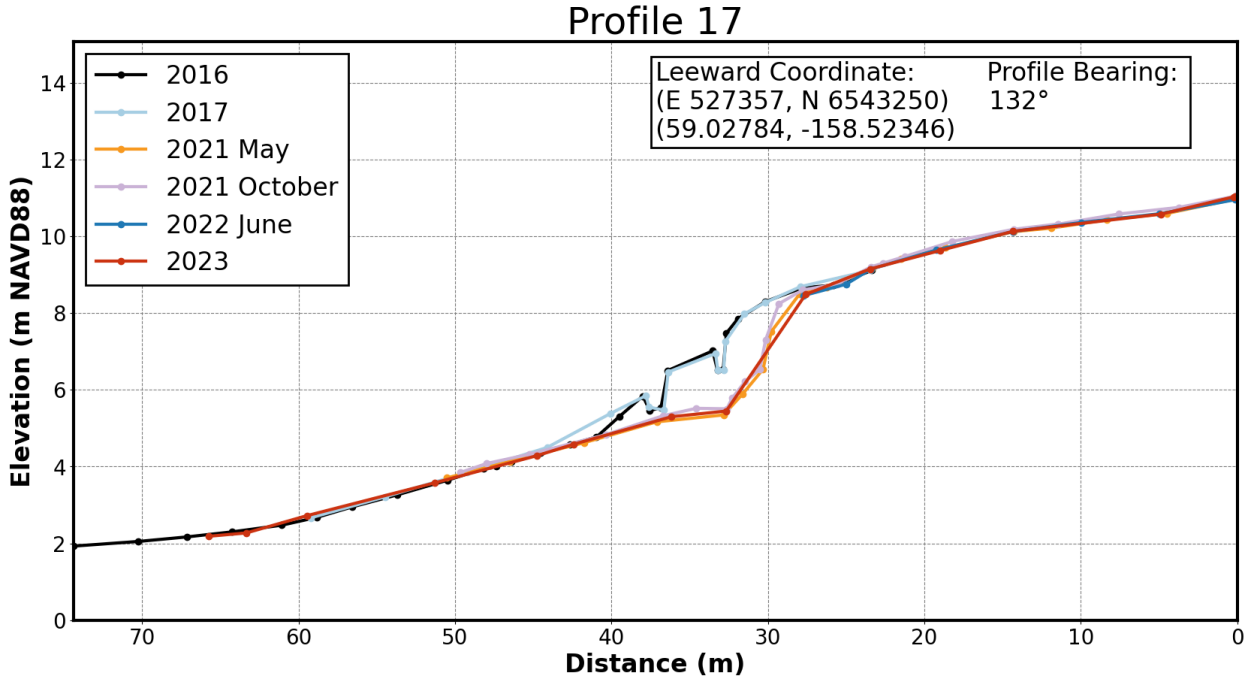

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

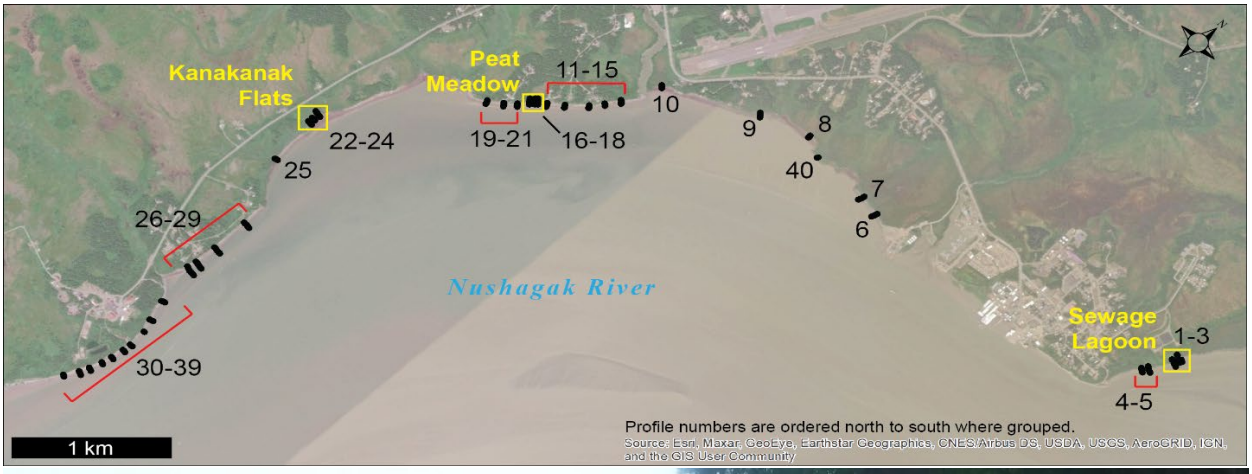



Profile 16
2016
2017
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 527369, N 6543262)
(59.02796, -158.52326)
Profile Bearing:
131°
Elevation (m NAVD88)
Distance (m)
0
2
4
6
8
10
12
14
60
50
40
30
20
10
0

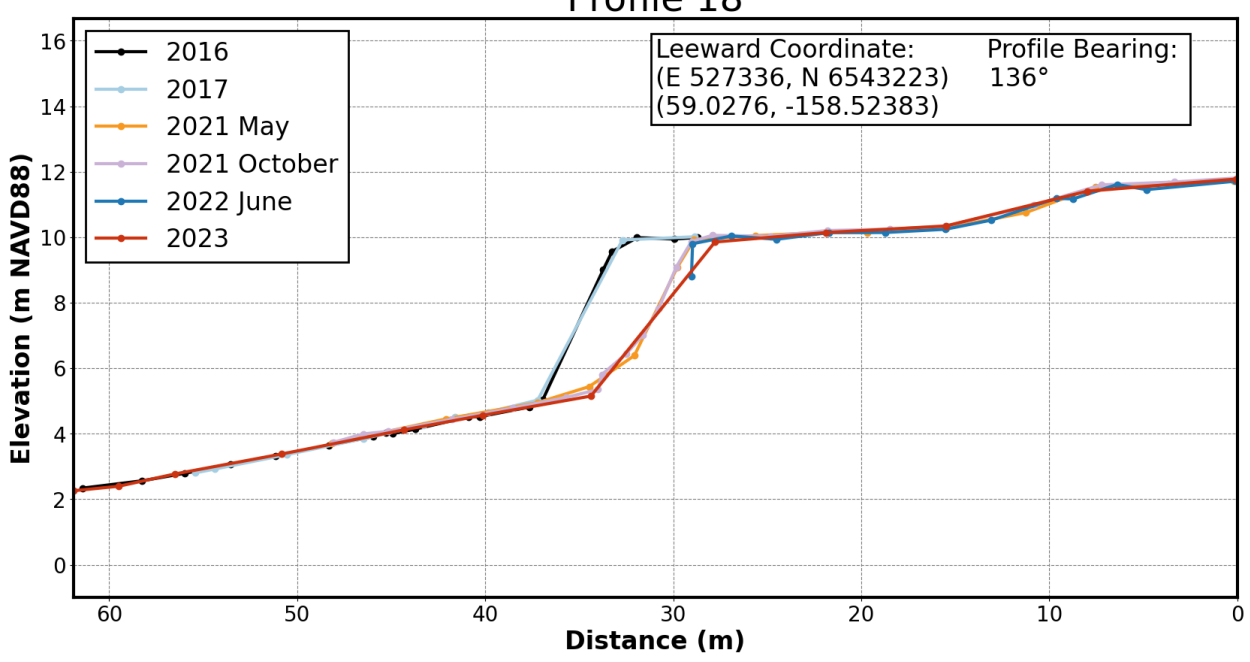

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

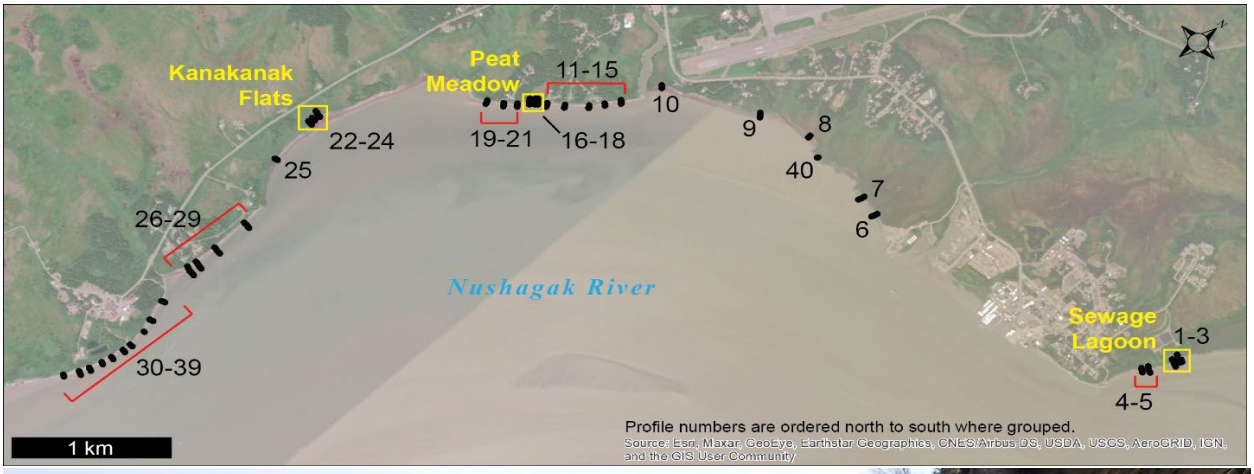



Profile 17
2016
2017
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 527357, N 6543250)
(59.02784, -158.52346)
Profile Bearing:
132°
Elevation (m NAVD88)
Distance (m)
0
2
4
6
8
10
12
14
70
60
50
40
30
20
10
0

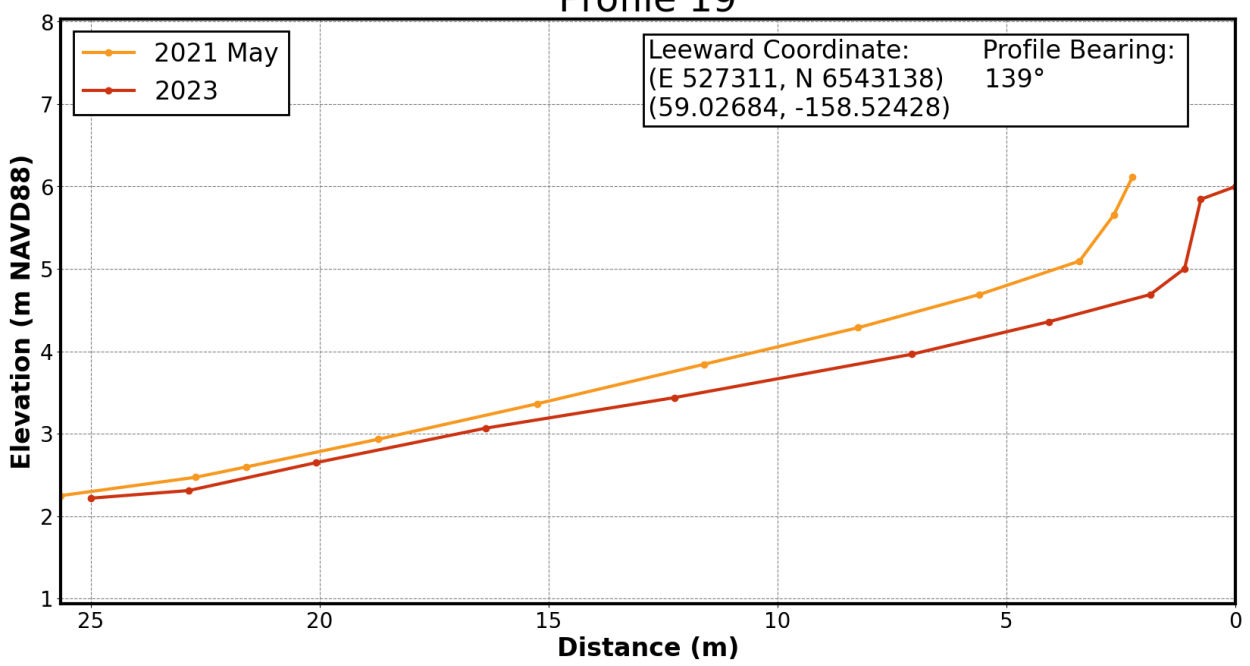

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
30-39
Sewage Lagoon
1-3
4-5
Profile numbers are ordered north to south where grouped.
1 km
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

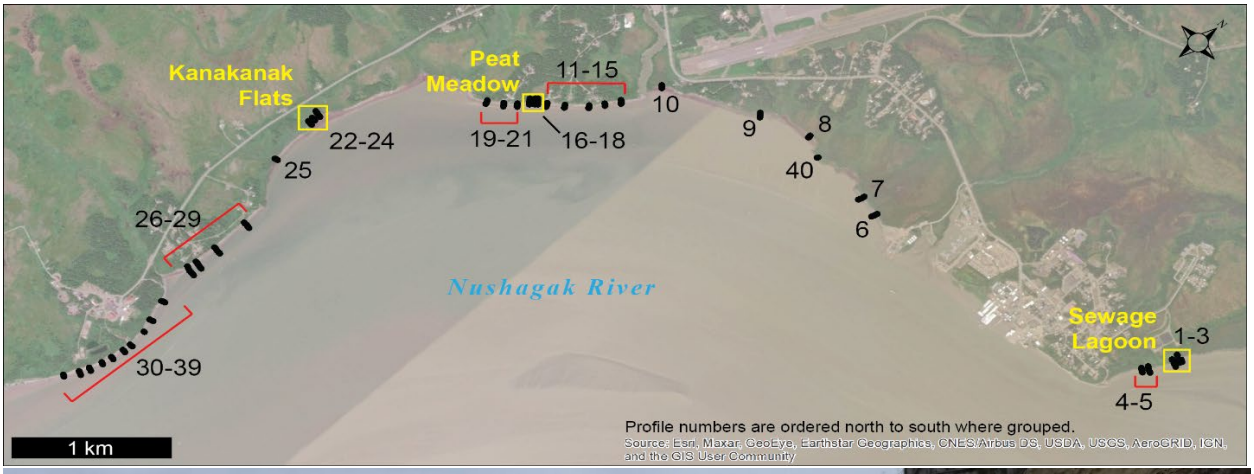



Profile 18
2016
2017
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 527336, N 6543223)
(59.0276, -158.52383)
Profile Bearing:
136°
Elevation (m NAVD88)
Distance (m)
0
2
4
6
8
10
12
14
16
60
50
40
30
20
10
0

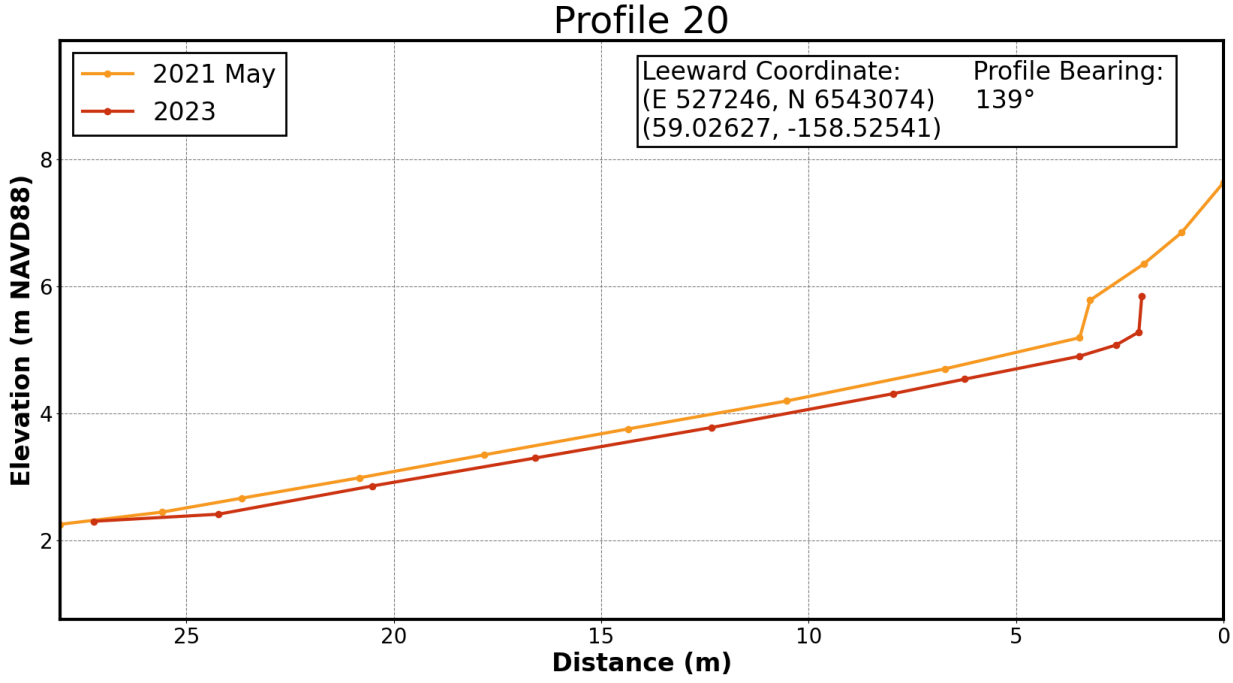

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

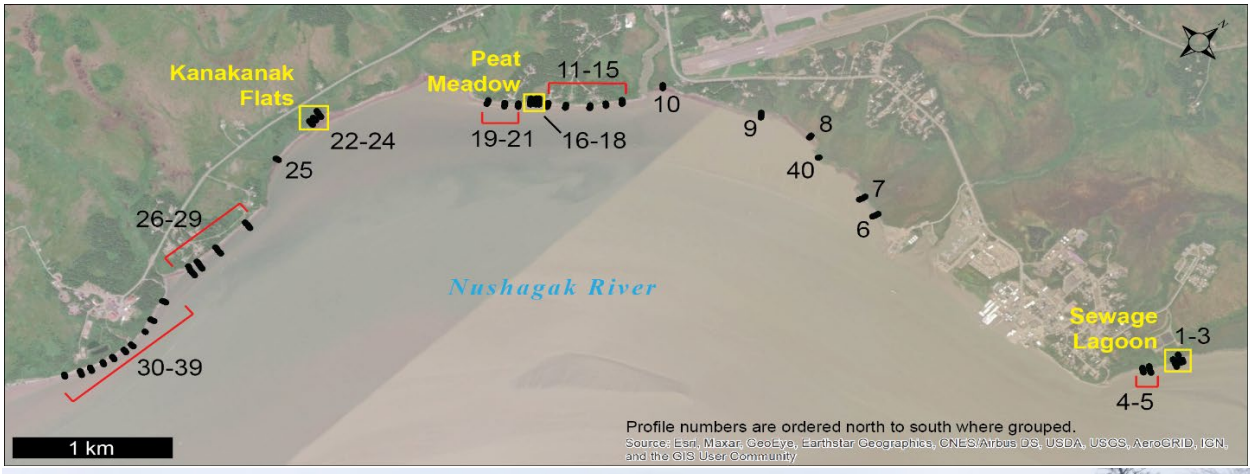



Profile 19
2021 May
2023
Leeward Coordinate:
(E 527311, N 6543138)
(59.02684, -158.52428)
Profile Bearing:
139°
Elevation (m NAVD88)
Distance (m)
8
7
6
5
4
3
2
1
25
20
15
10
5
0

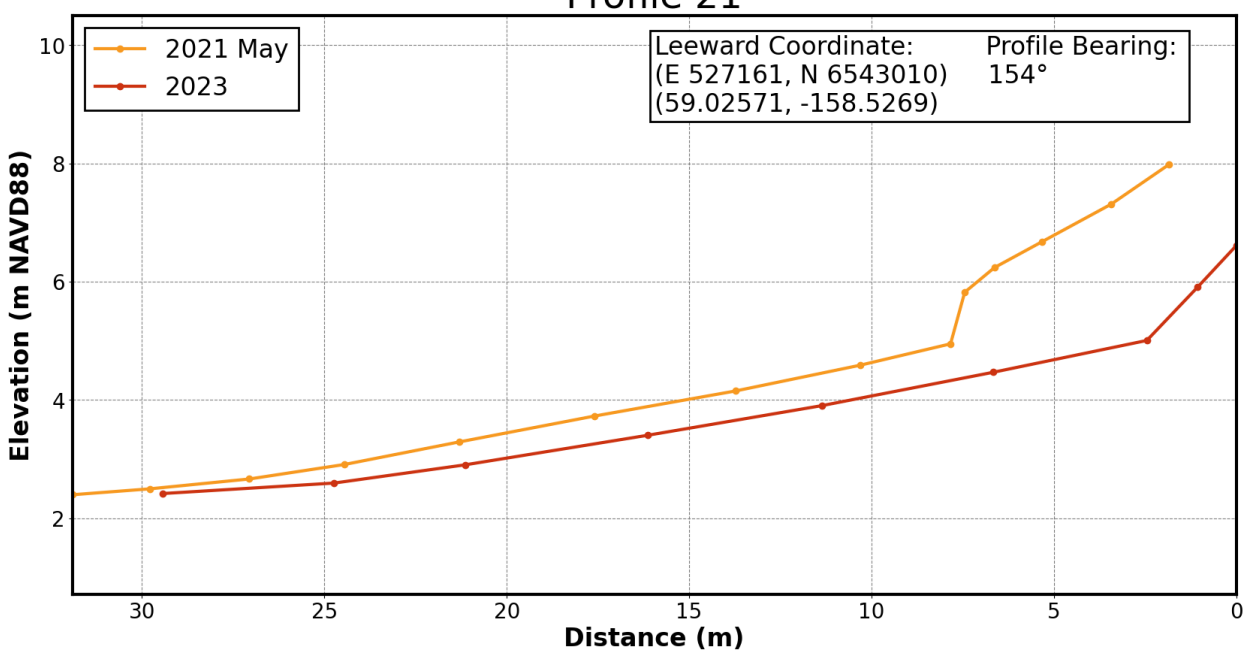

Kanakanak Flats
22-24
25
26-29
30-39
Peat Meadow
11-15
19-21
16-18
10
9
8
40
7
6
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

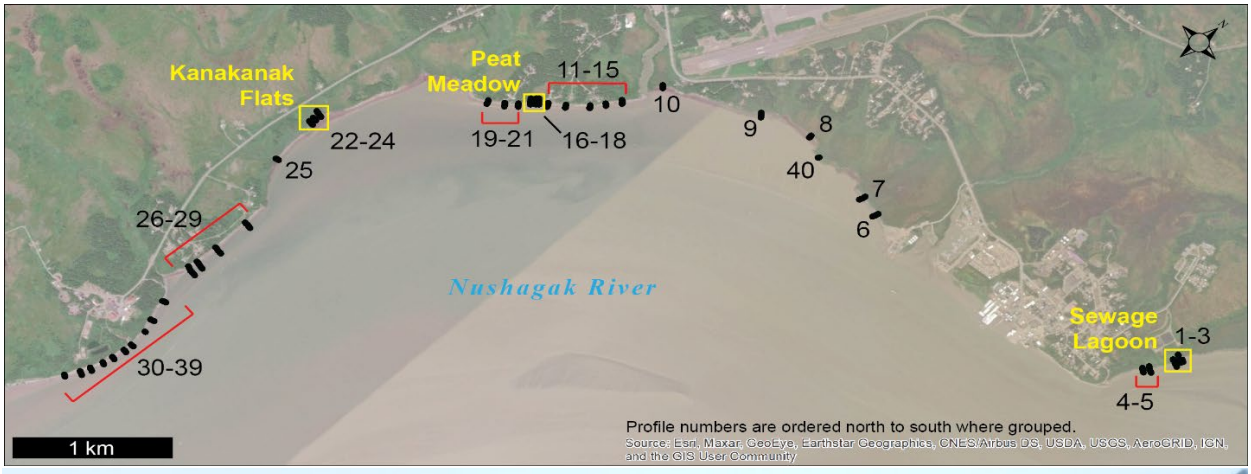



Profile 20
2021 May
2023
Leeward Coordinate:
(E 527246, N 6543074)
(59.02627, -158.52541)
Profile Bearing:
139°
Elevation (m NAVD88)
8
6
4
2
25
20
15
10
5
0
Distance (m)

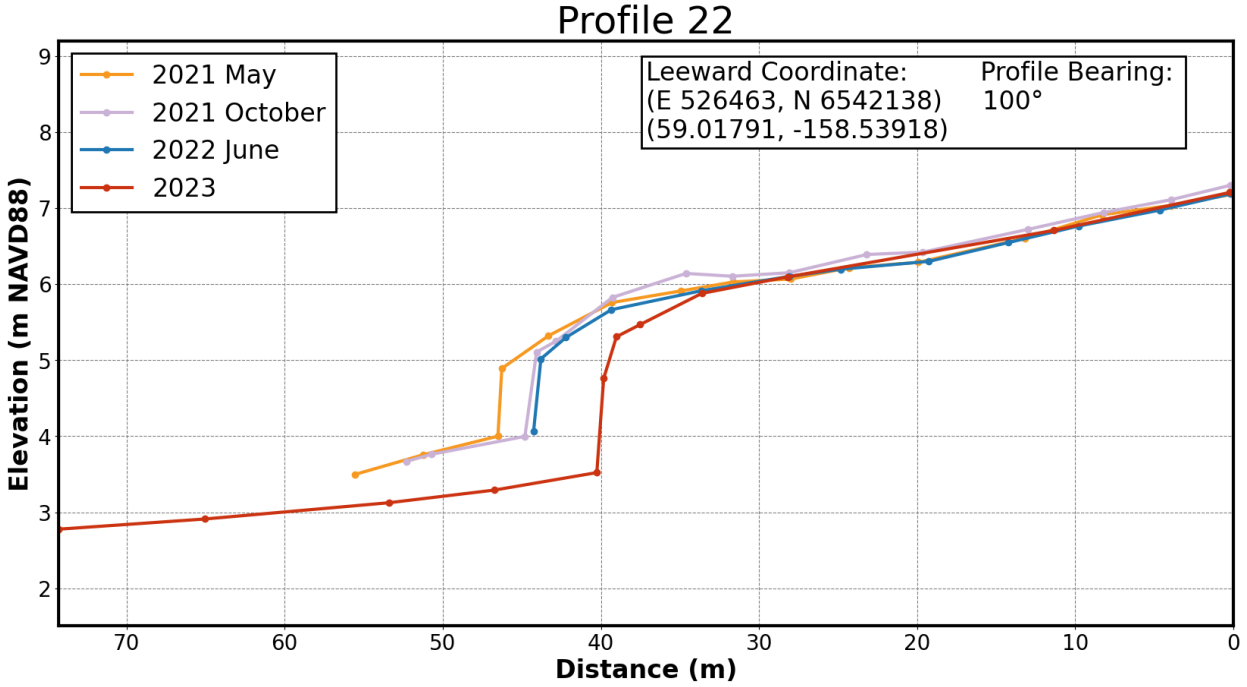

Kanakanak Flats
22-24
25
26-29
30-39
Peat Meadow
11-15
19-21
16-18
10
9
8
40
7
6
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

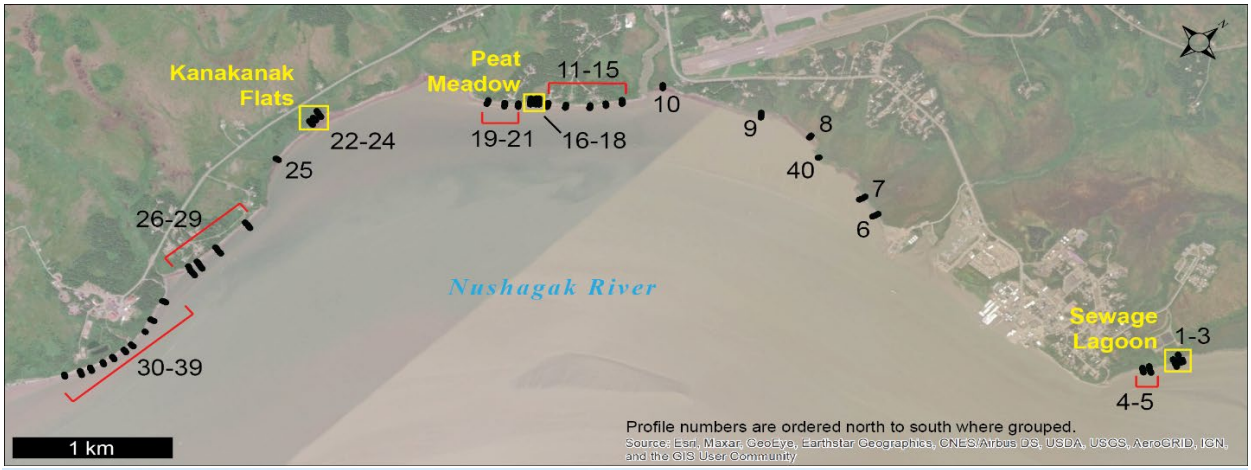



Profile 21
2021 May
2023
Leeward Coordinate:
(E 527161, N 6543010)
(59.02571, -158.5269)
Profile Bearing:
154°
Elevation (m NAVD88)
Distance (m)
10
8
6
4
2
30
25
20
15
10
5
0

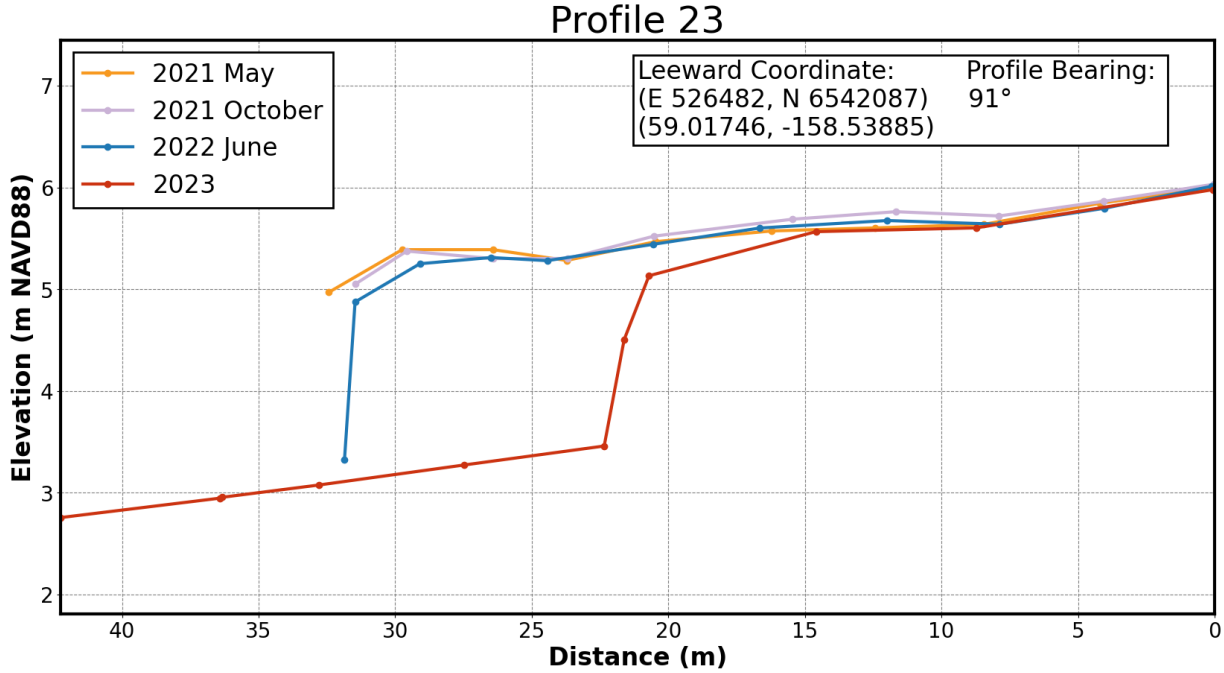

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

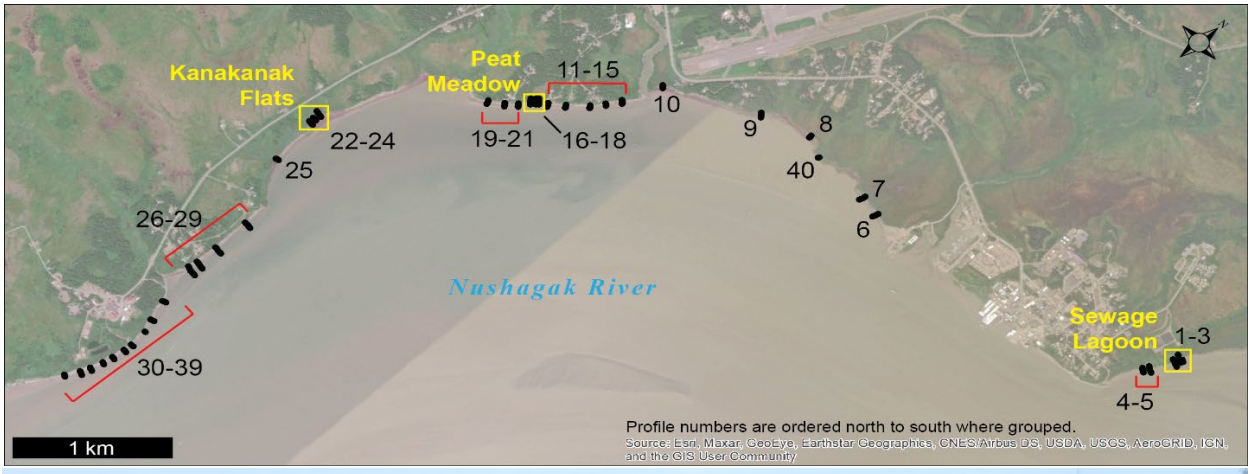



Profile 22
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526463, N 6542138)
(59.01791, -158.53918)
Profile Bearing:
100°
Elevation (m NAVD88)
Distance (m)
9
8
7
6
5
4
3
2
70
60
50
40
30
20
10
0

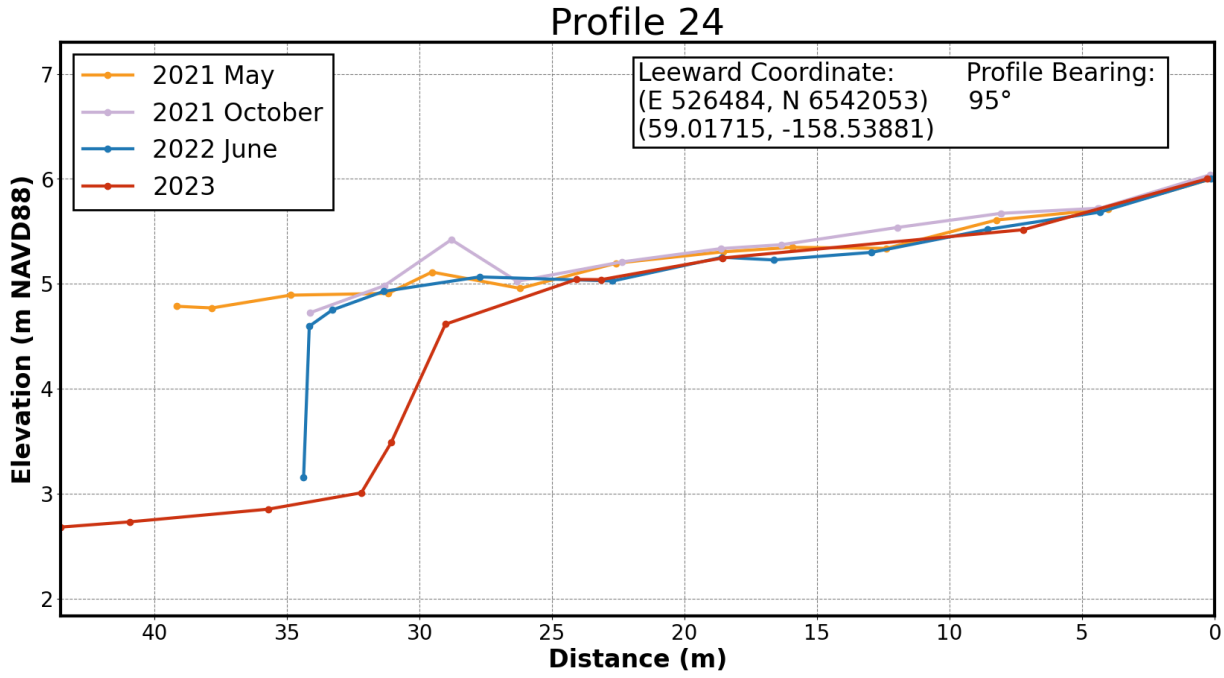

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

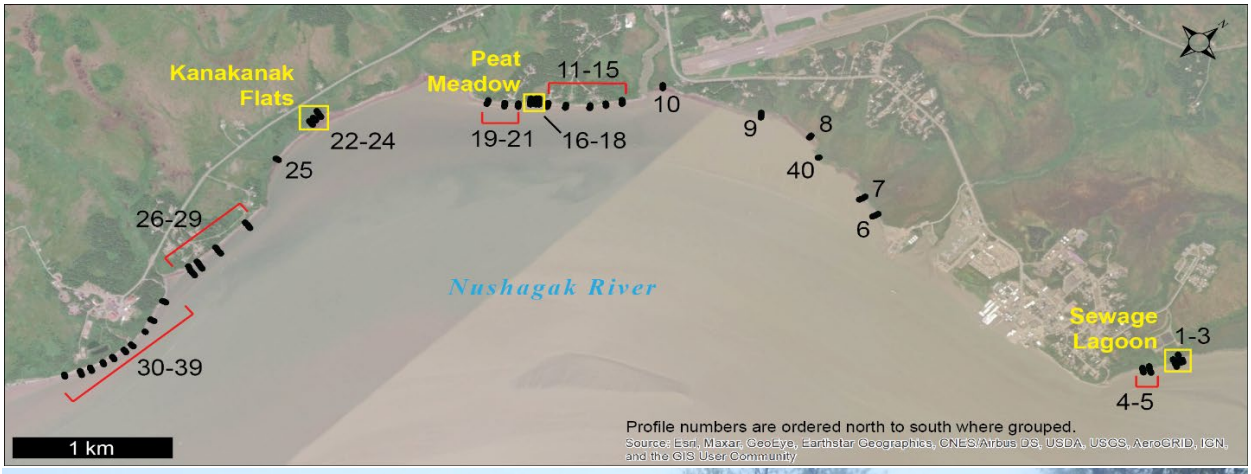



Profile 23
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526482, N 6542087)
(59.01746, -158.53885)
Profile Bearing:
91°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
40
35
30
25
20
15
10
5
0

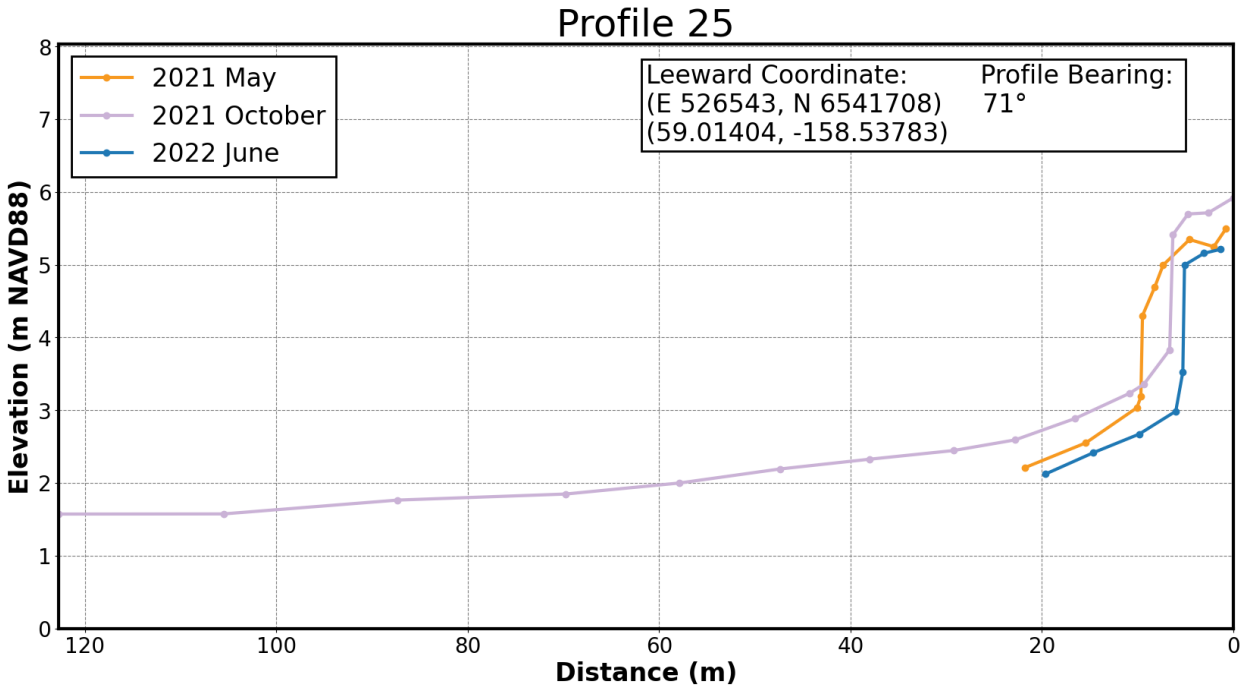

Kanakanak Flats
Peat Meadow
11-15
22-24
19-21
16-18
10
9
8
40
7
6
25
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

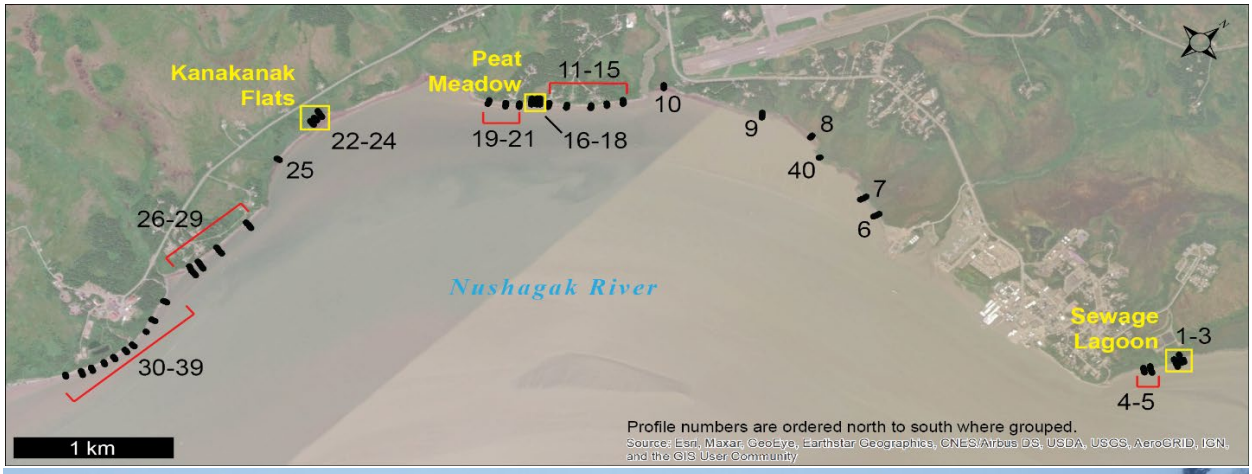


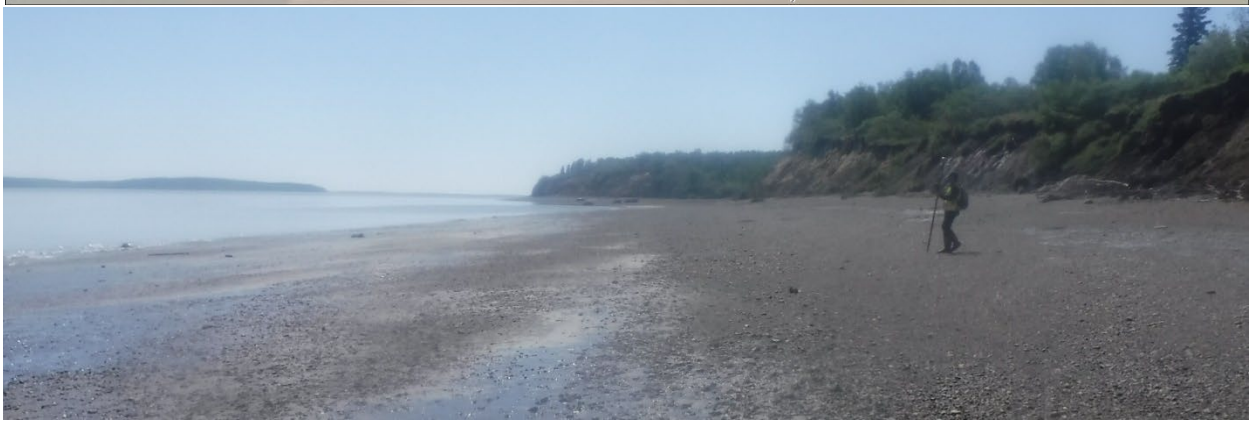

Profile 24
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526484, N 6542053)
(59.01715, -158.53881)
Profile Bearing:
95°
Elevation (m NAVD88)
Distance (m)
7
6
5
4
3
2
40
35
30
25
20
15
10
5
0

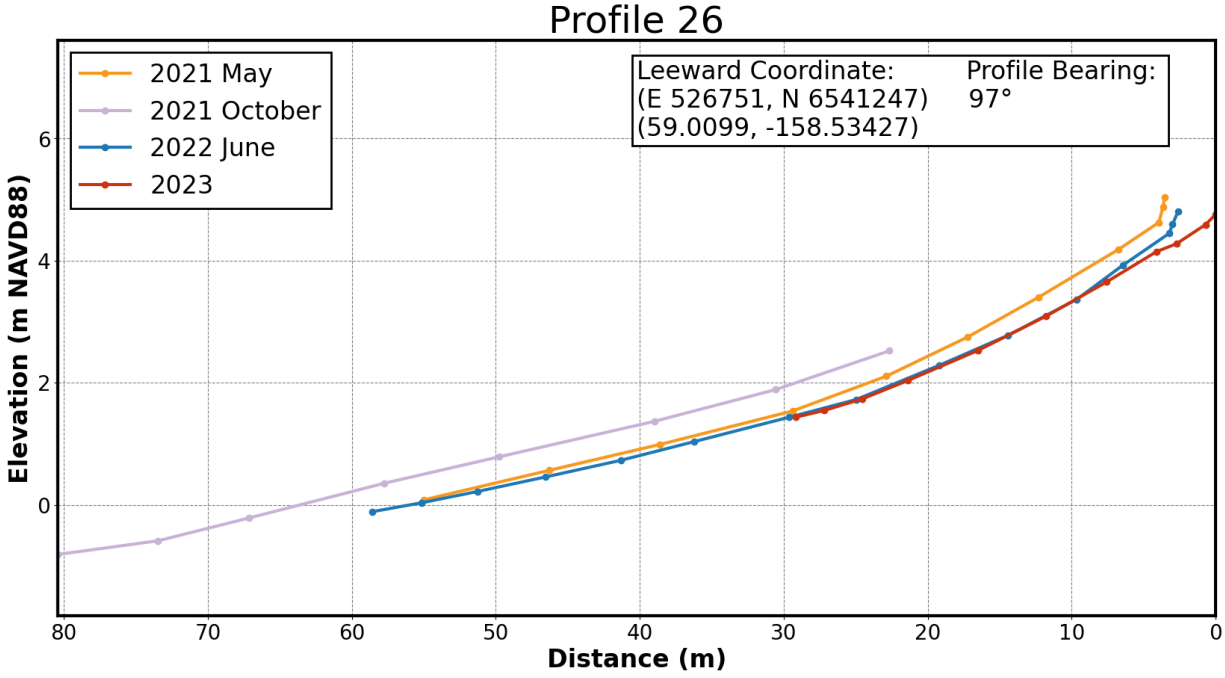

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

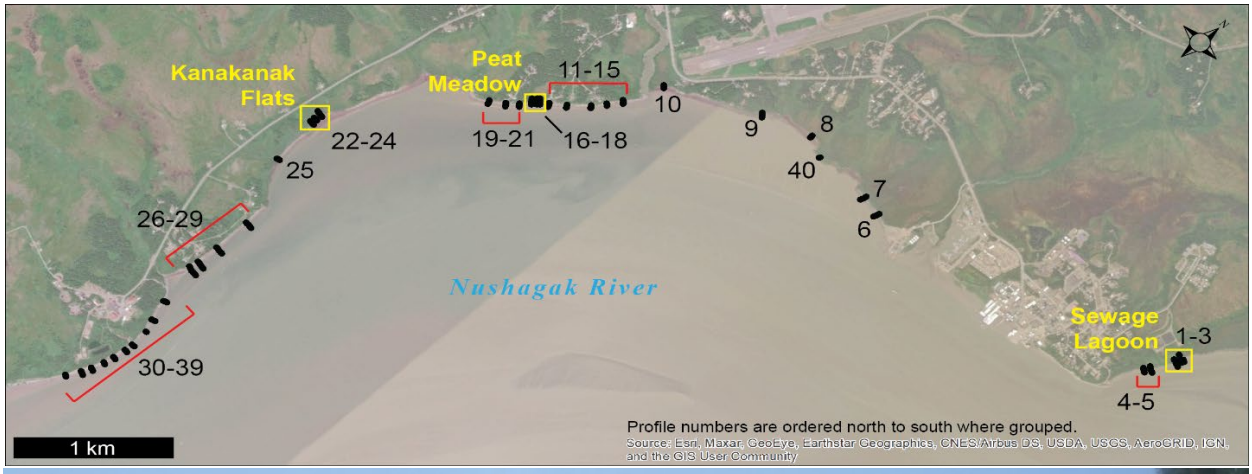



Profile 25
2021 May
2021 October
2022 June
Leeward Coordinate:
(E 526543, N 6541708)
(59.01404, -158.53783)
Profile Bearing:
71°
Elevation (m NAVD88)
Distance (m)
0
1
2
3
4
5
6
7
8
120
100
80
60
40
20
0

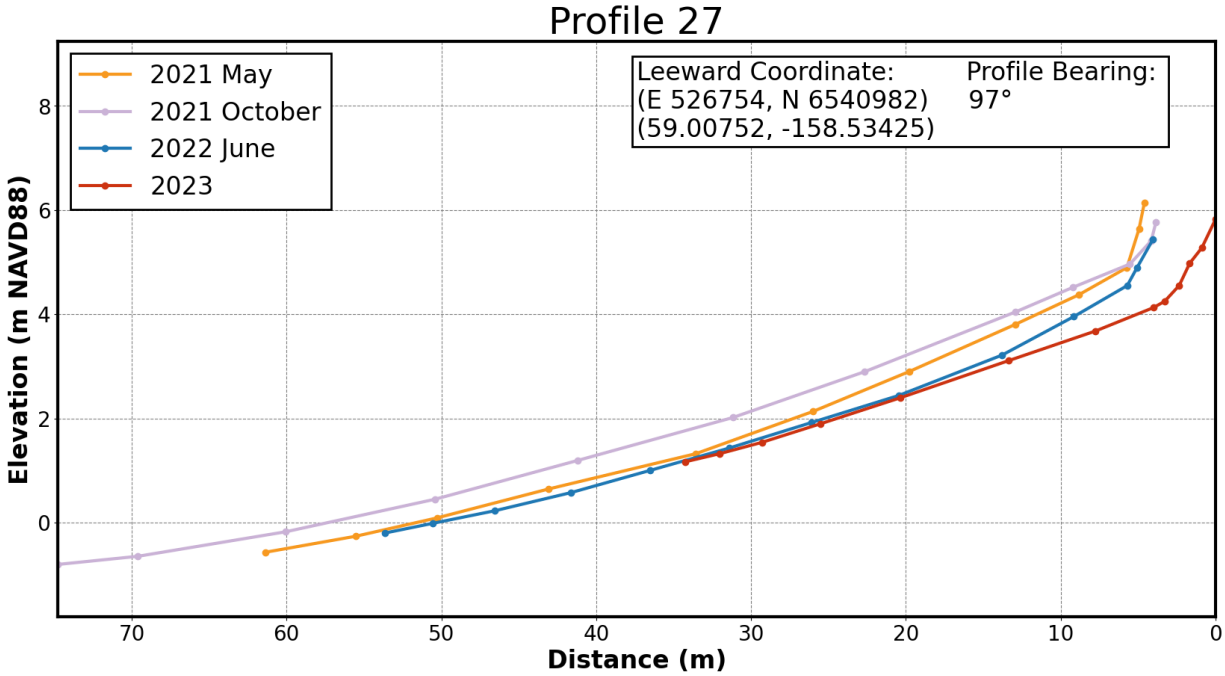

Kanakanak Flats
Peat Meadow
11-15
22-24
19-21
16-18
10
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

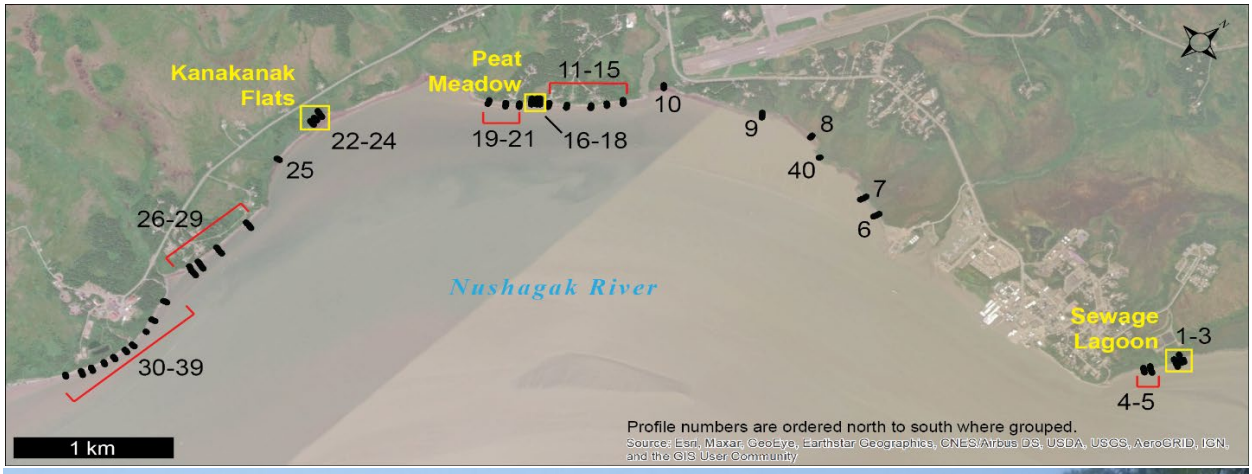



Profile 26
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526751, N 6541247)
(59.0099, -158.53427)
Profile Bearing:
97°
Elevation (m NAVD88)
Distance (m)
6
4
2
0
80
70
60
50
40
30
20
10
0

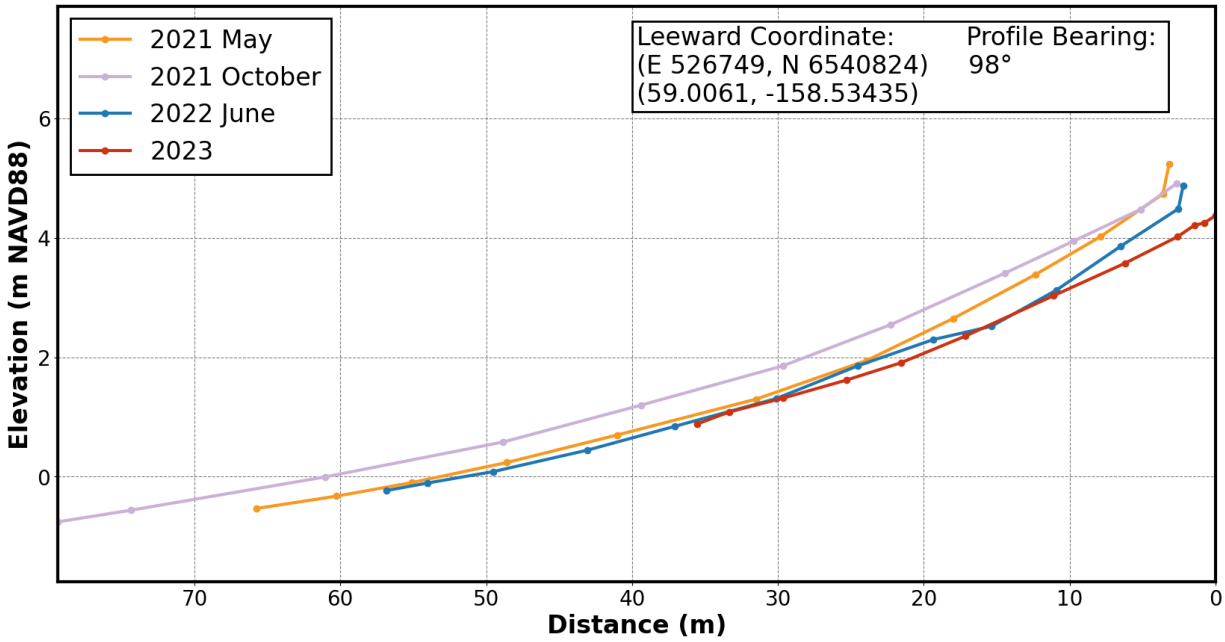

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

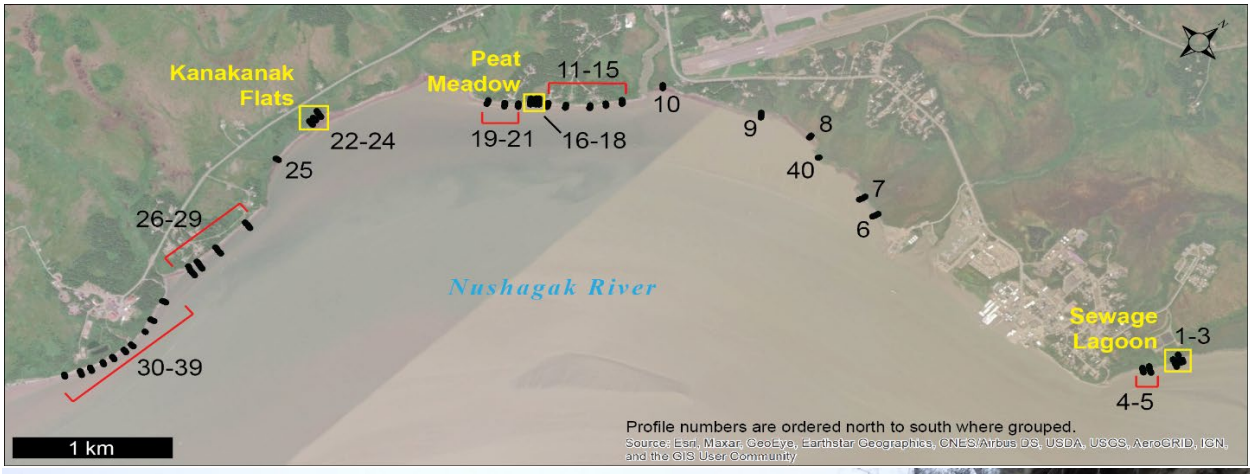



Profile 27
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526754, N 6540982)
(59.00752, -158.53425)
Profile Bearing:
97°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
70
60
50
40
30
20
10
0

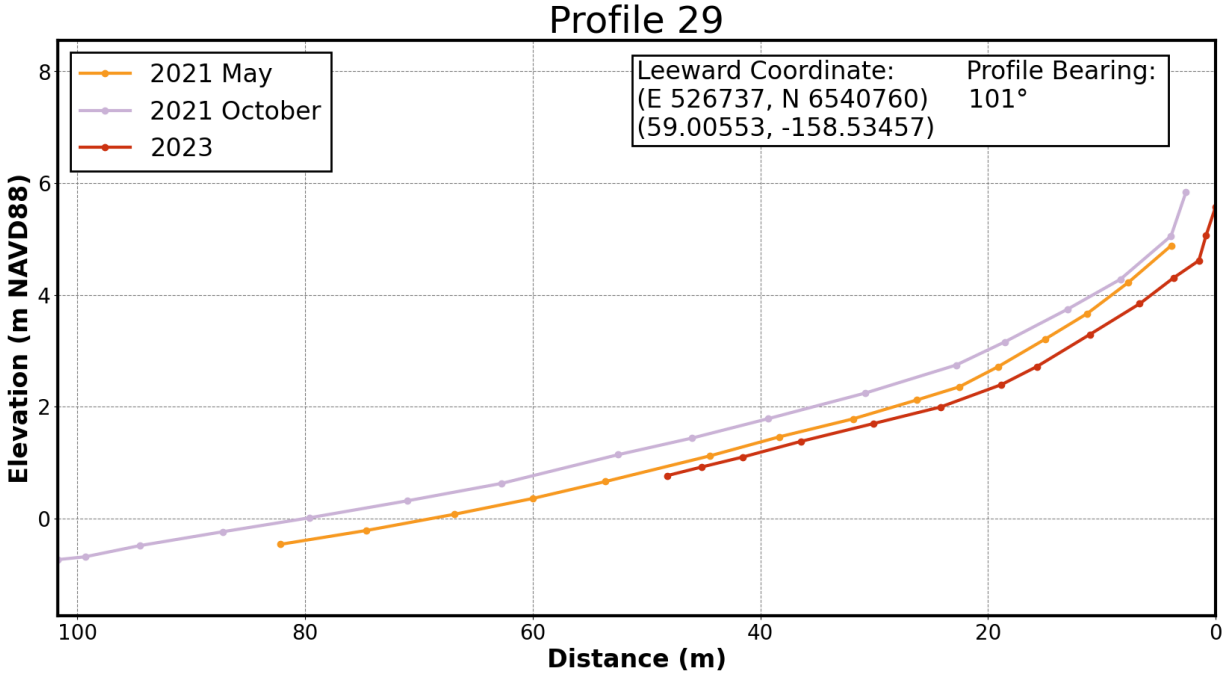

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

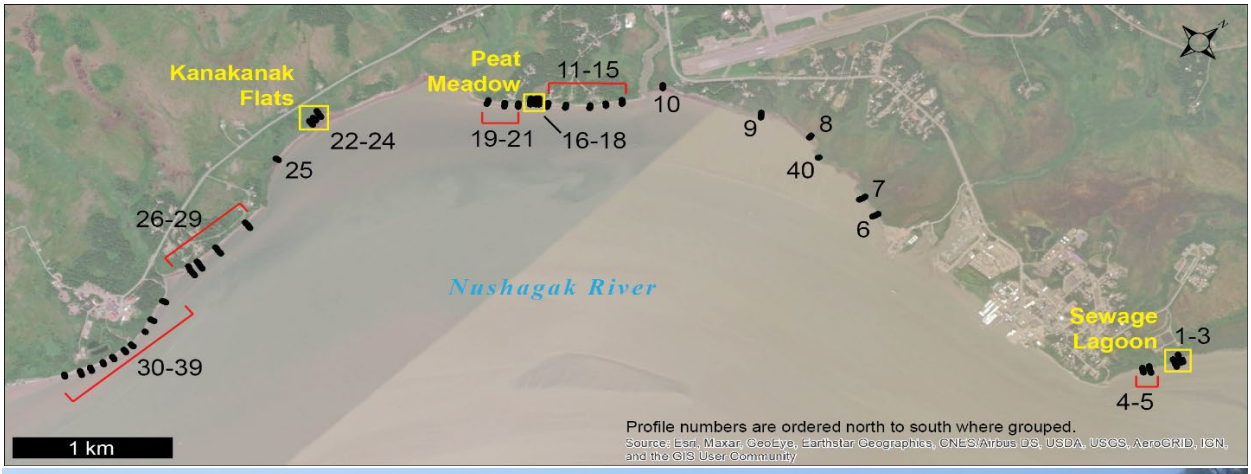


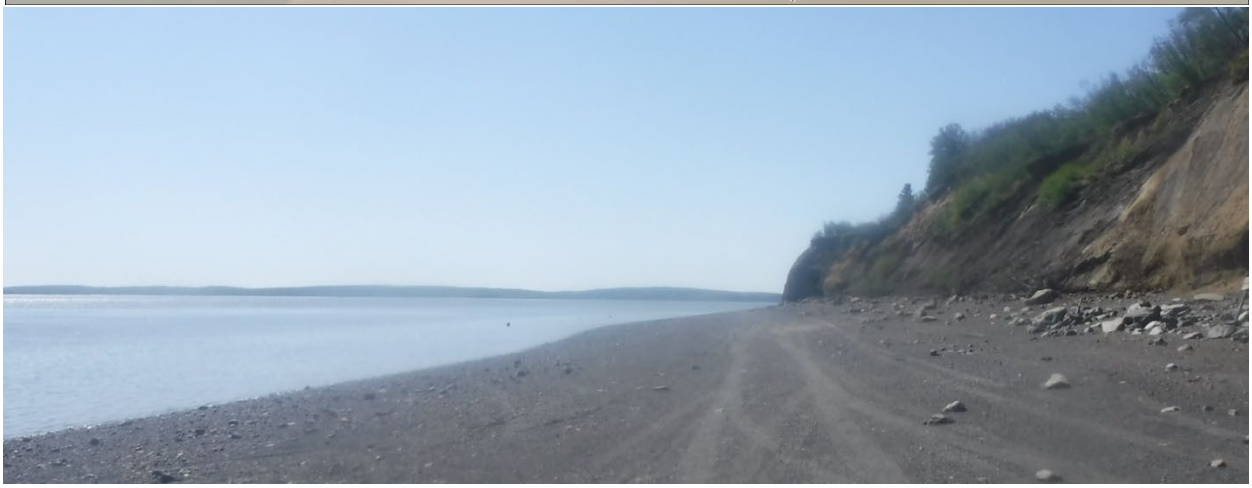

Profile 28
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526749, N 6540824)
(59.0061, -158.53435)
Profile Bearing:
98°
Elevation (m NAVD88)
6
4
2
0
70
60
50
40
30
20
10
0
Distance (m)

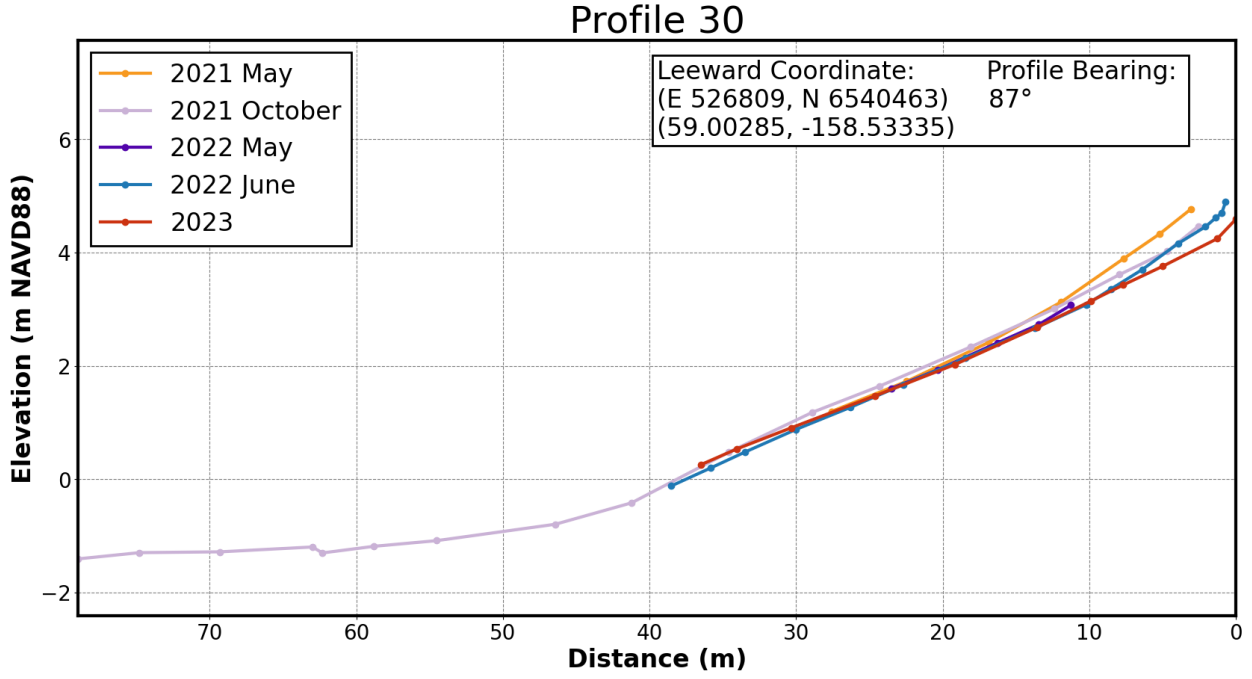

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
Profile numbers are ordered north to south where grouped.
1 km
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

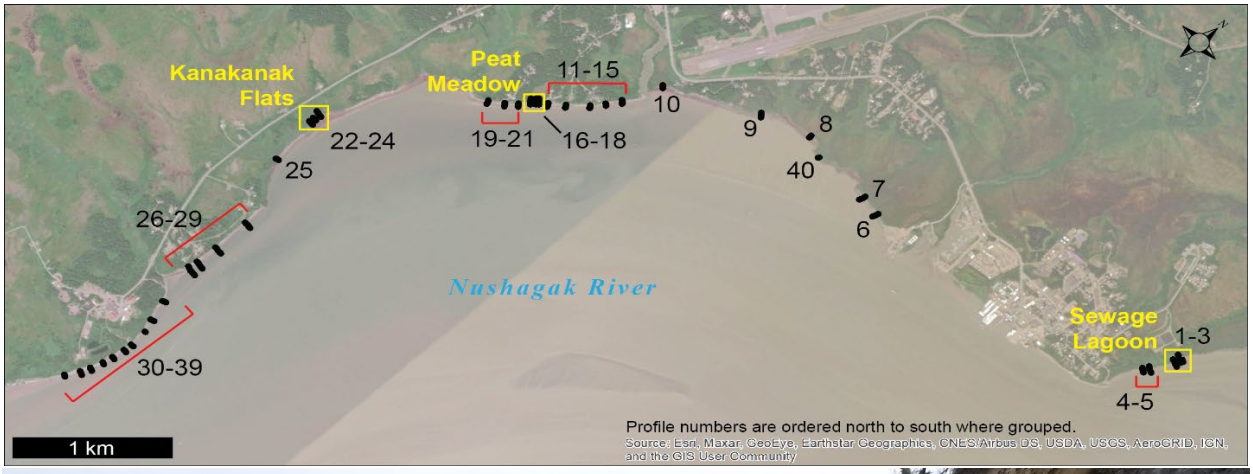



Profile 29
2021 May
2021 October
2023
Leeward Coordinate:
(E 526737, N 6540760)
(59.00553, -158.53457)
Profile Bearing:
101°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
100
80
60
40
20
0

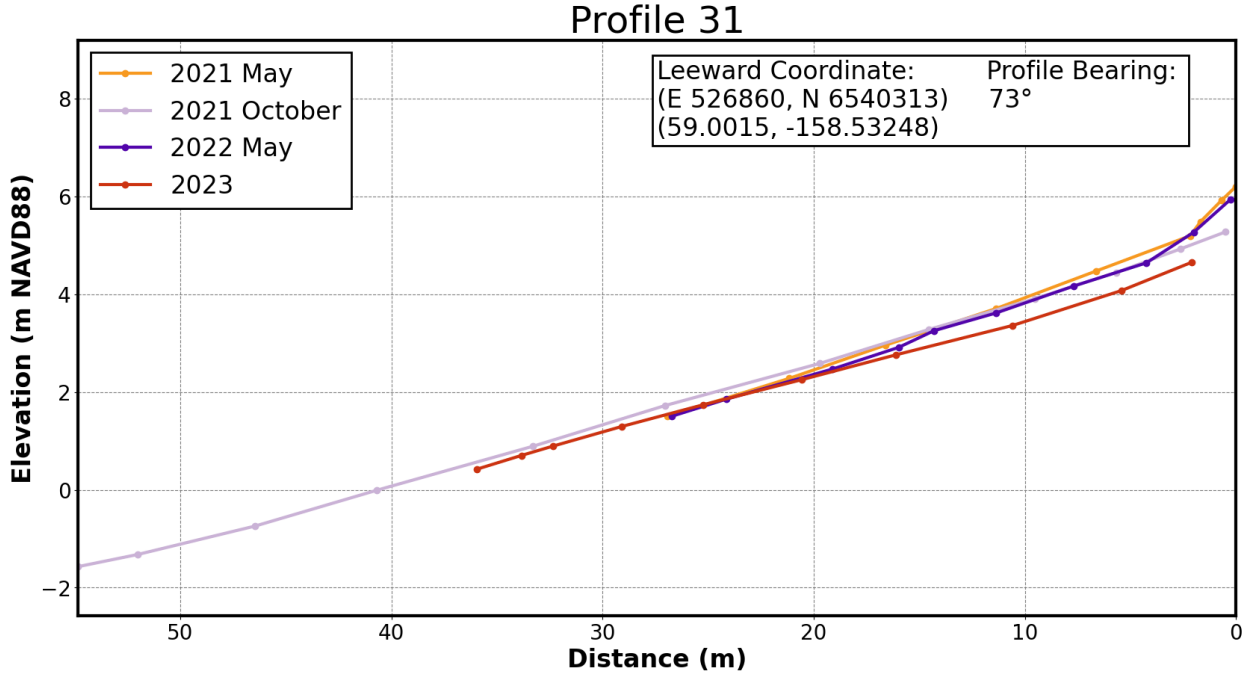

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

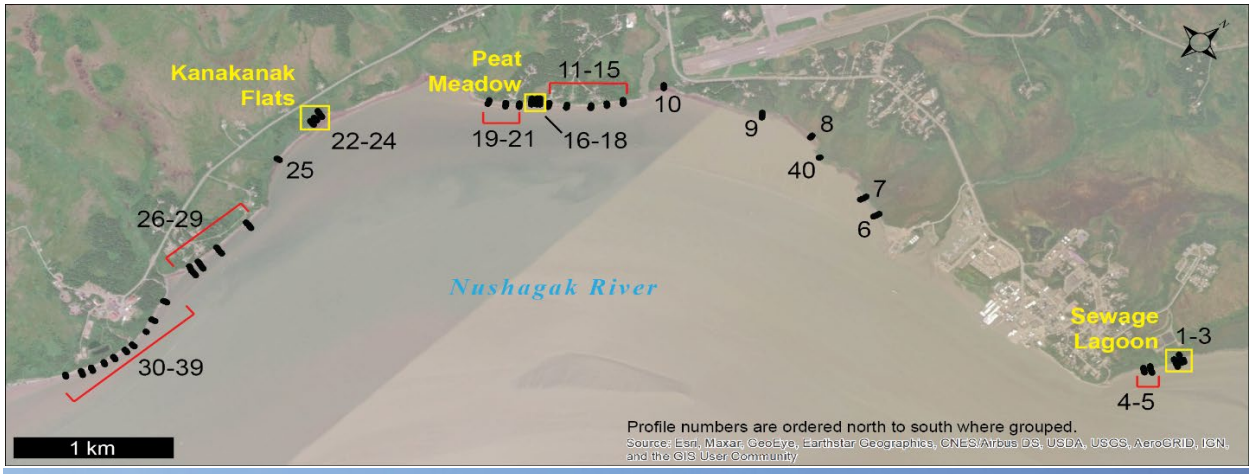


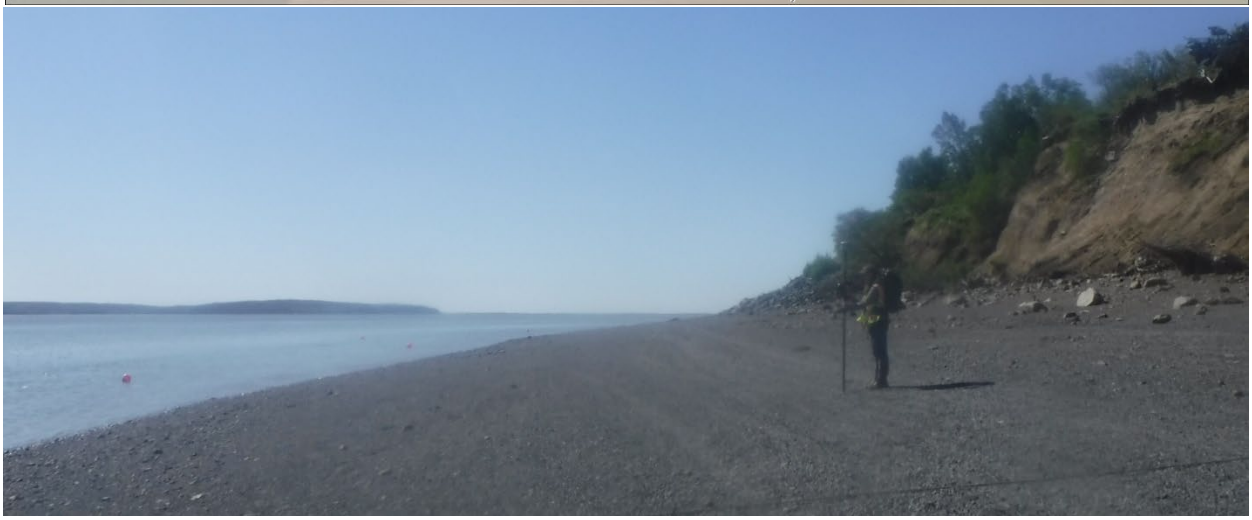

Profile 30
2021 May
2021 October
2022 May
2022 June
2023
Leeward Coordinate:
(E 526809, N 6540463)
(59.00285, -158.53335)
Profile Bearing:
87°
Elevation (m NAVD88)
6
4
2
0
−2
70
60
50
40
30
20
10
0
Distance (m)

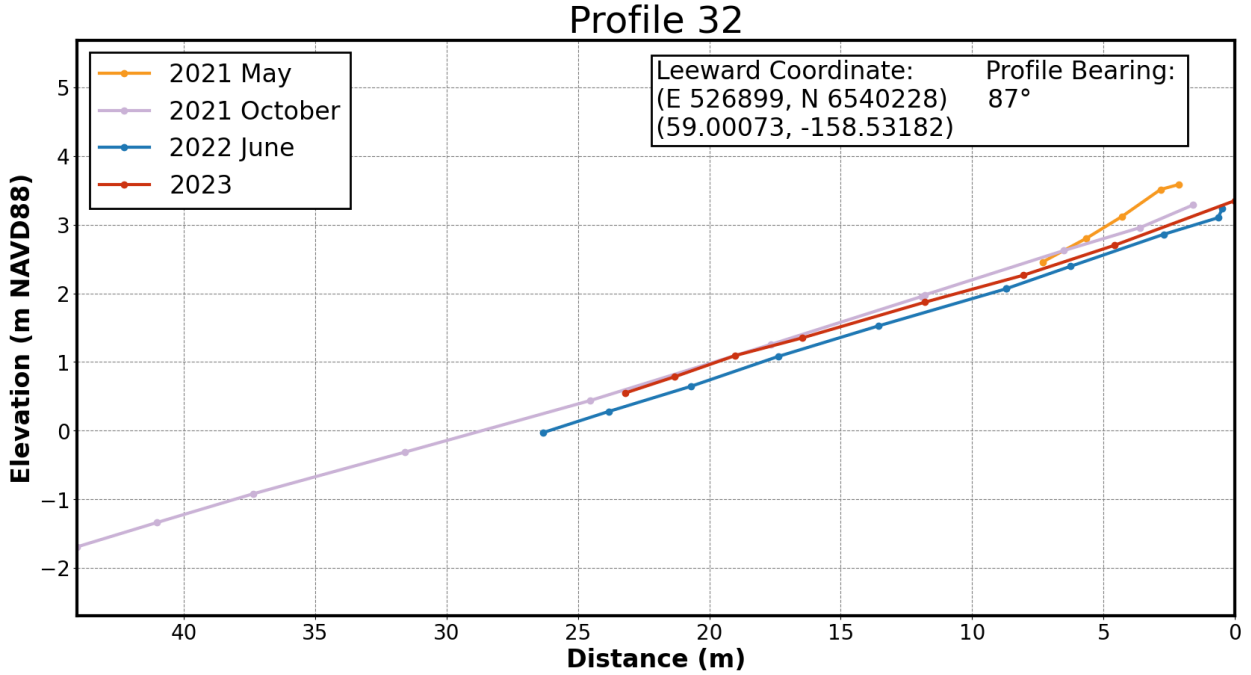

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

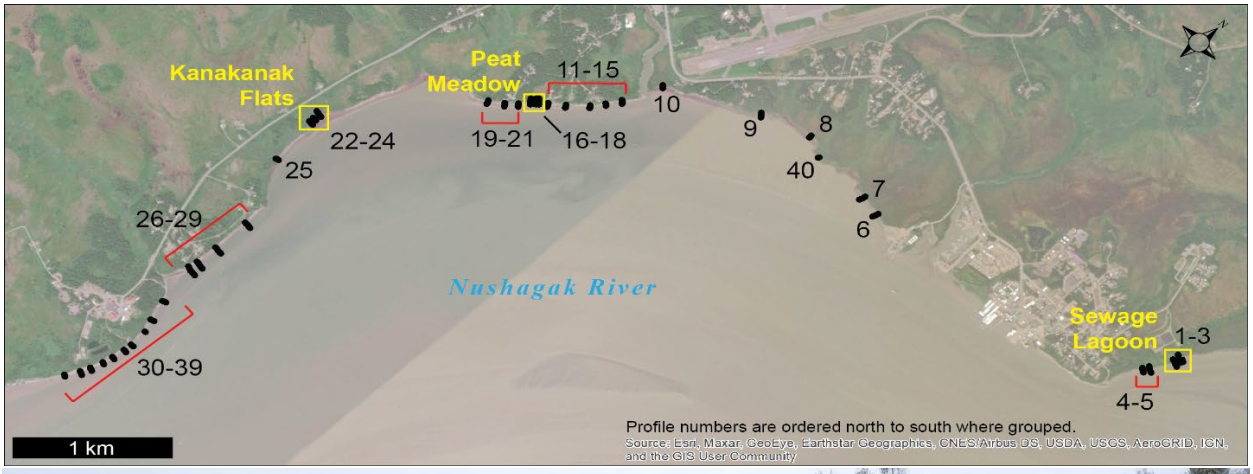



Profile 31
2021 May
2021 October
2022 May
2023
Leeward Coordinate:
(E 526860, N 6540313)
(59.0015, -158.53248)
Profile Bearing:
73°
Elevation (m NAVD88)
8
6
4
2
0
−2
50
40
30
20
10
0
Distance (m)

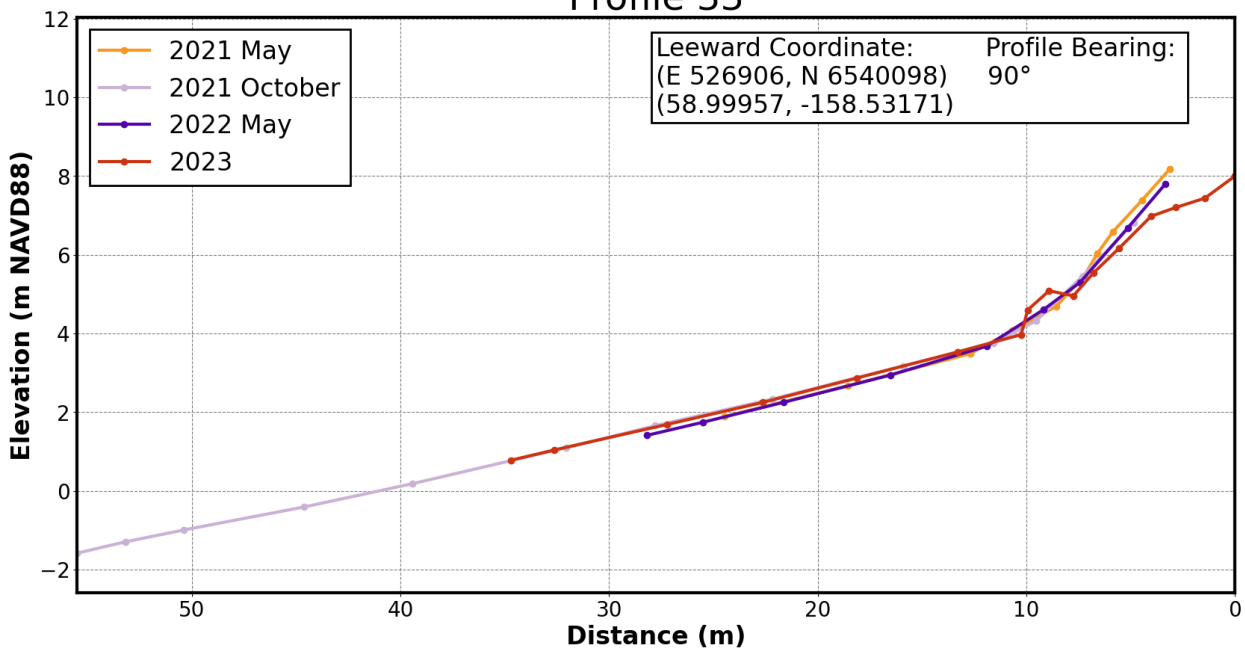

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

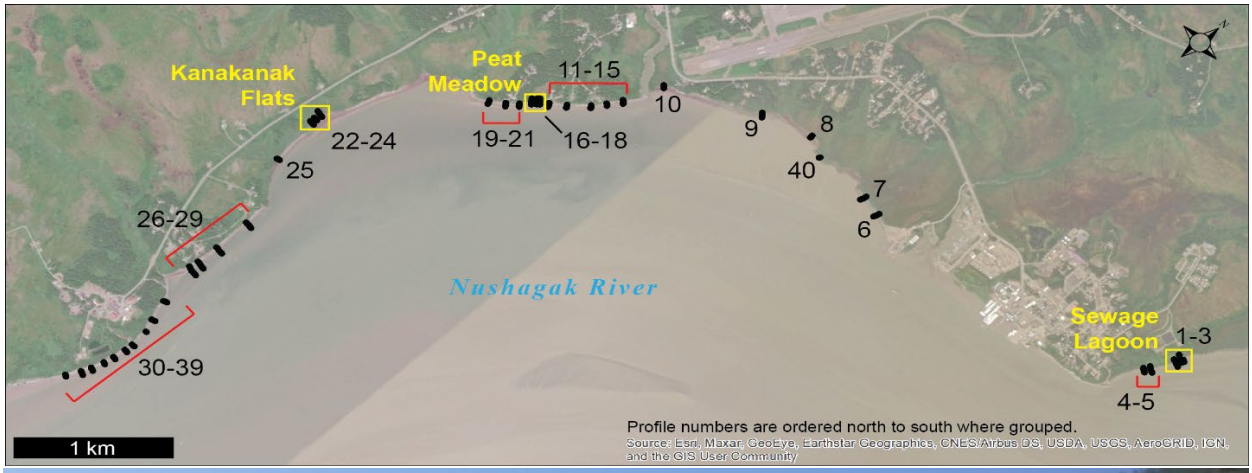


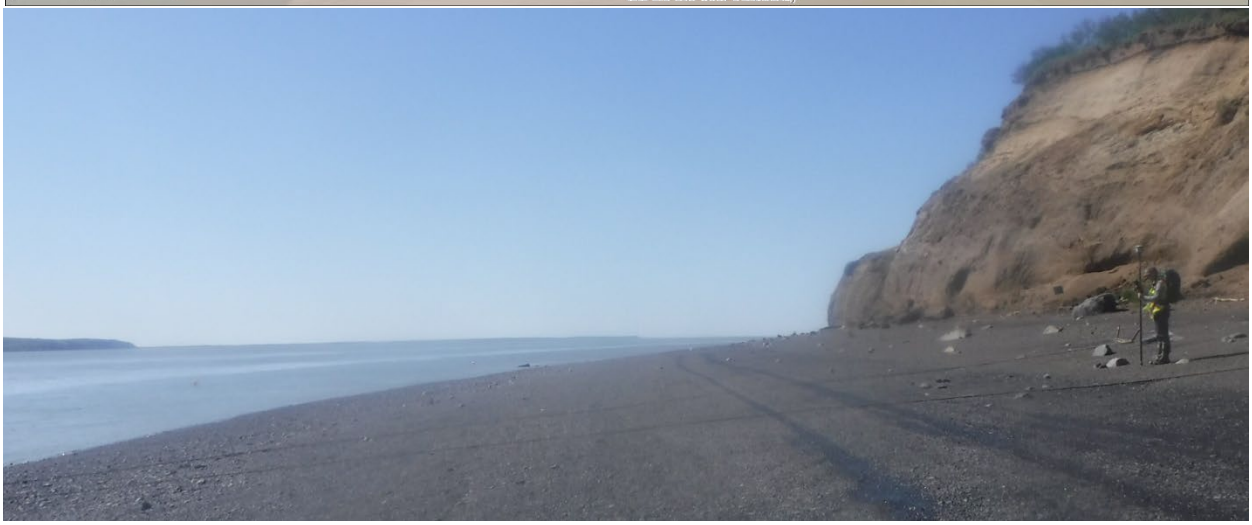

Profile 32
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526899, N 6540228)
(59.00073, -158.53182)
Profile Bearing:
87°
Elevation (m NAVD88)
Distance (m)
5
4
3
2
1
0
−1
−2
40
35
30
25
20
15
10
5
0

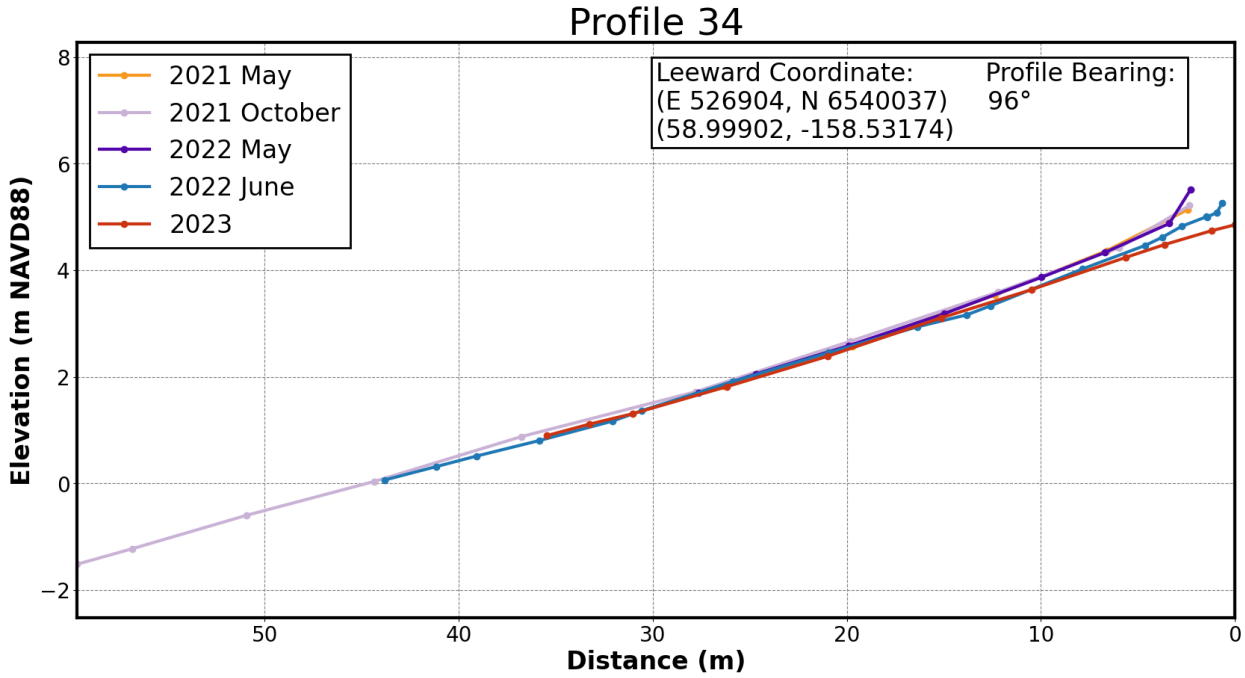

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
Profile numbers are ordered north to south where grouped.
1 km
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

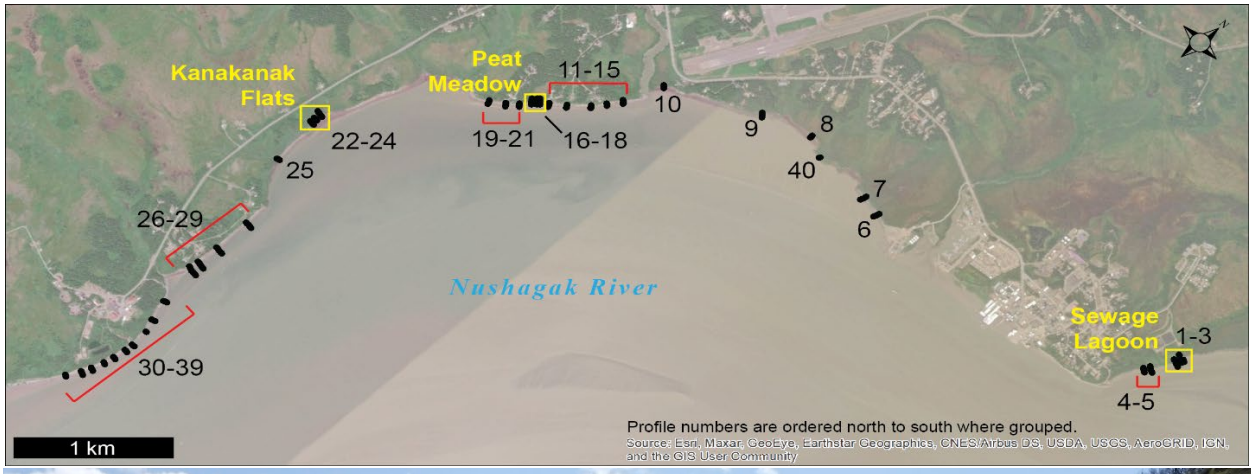



Profile 33
2021 May
2021 October
2022 May
2023
Leeward Coordinate:
(E 526906, N 6540098)
(58.99957, -158.53171)
Profile Bearing:
90°
Elevation (m NAVD88)
Distance (m)
12
10
8
6
4
2
0
−2
50
40
30
20
10
0

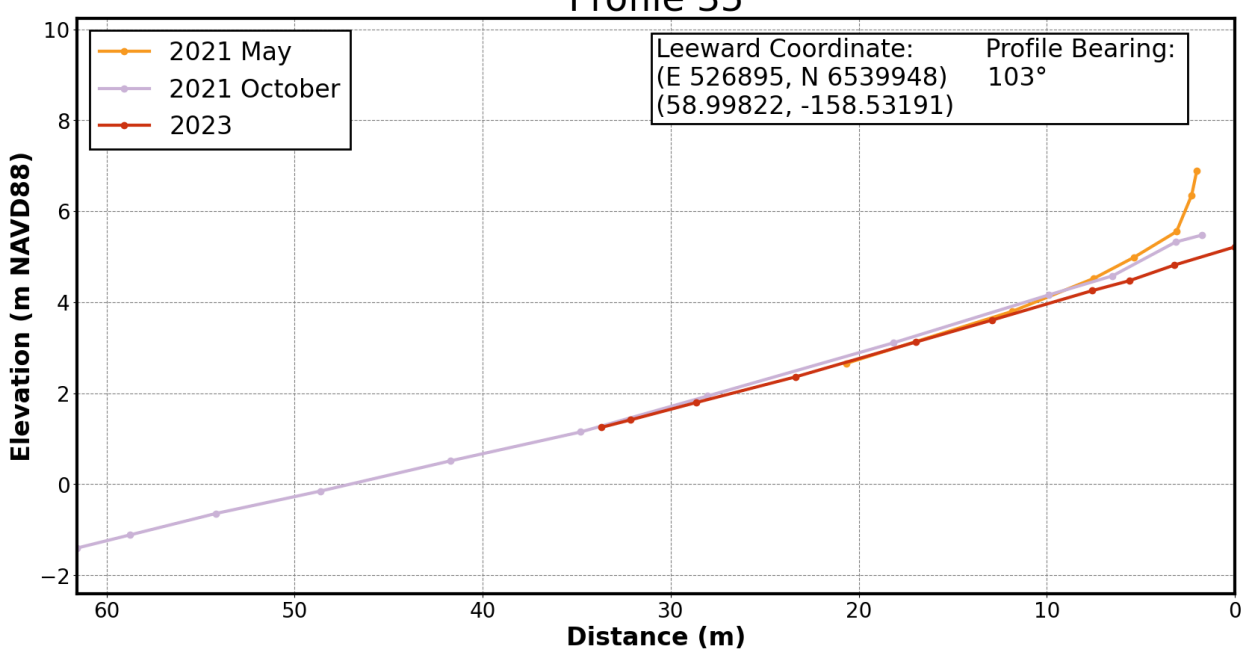

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

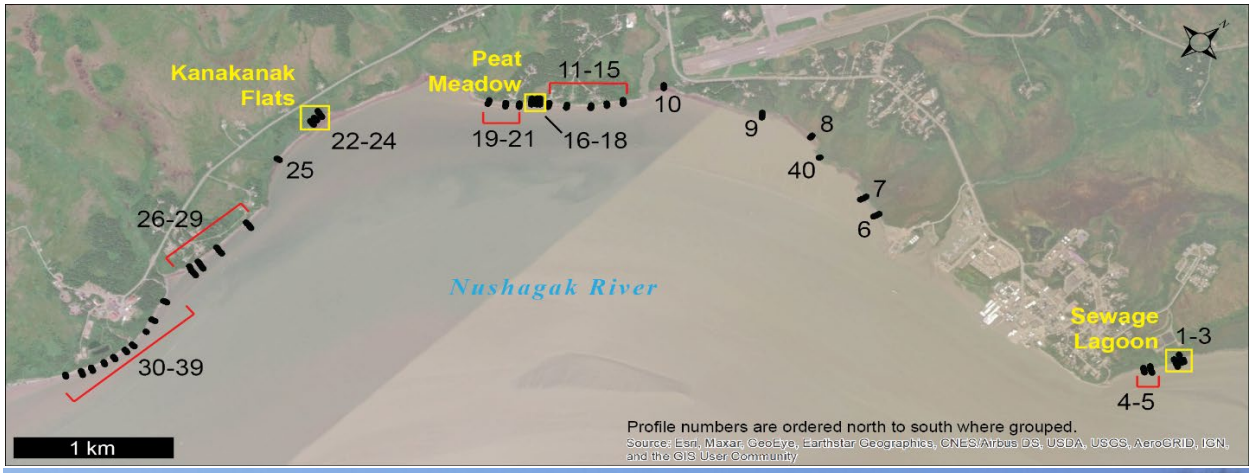



Profile 34
2021 May
2021 October
2022 May
2022 June
2023
Leeward Coordinate:
(E 526904, N 6540037)
(58.99902, -158.53174)
Profile Bearing:
96°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
−2
50
40
30
20
10
0

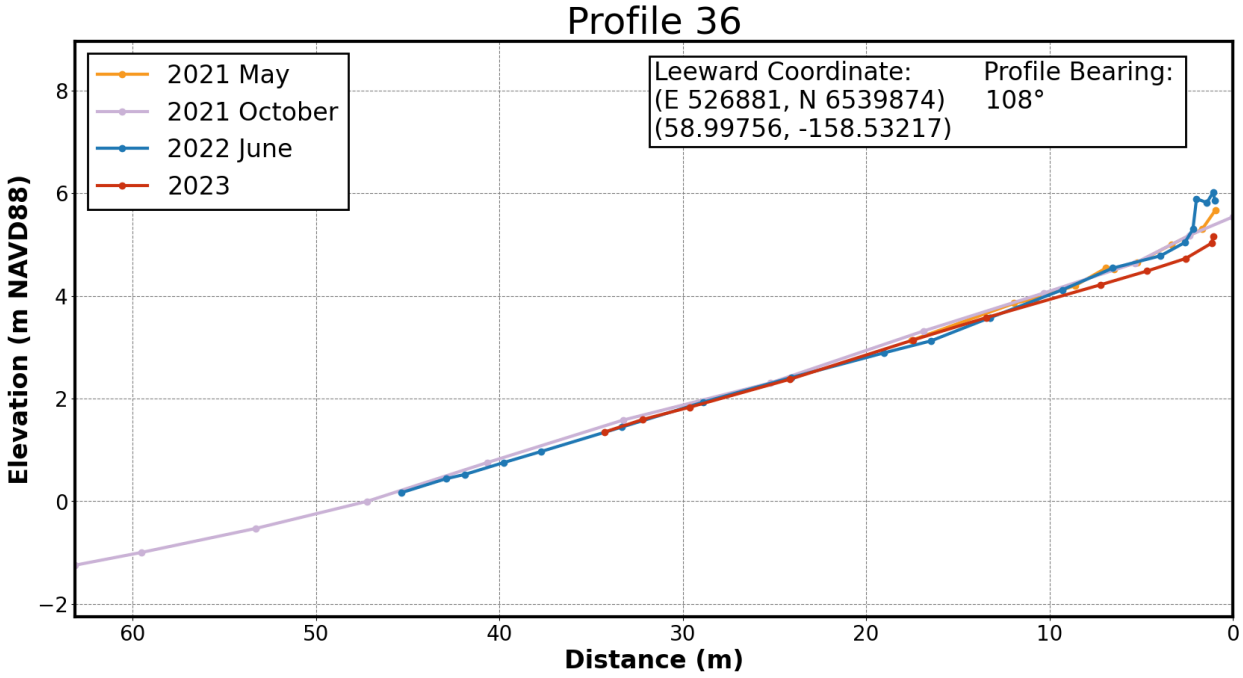

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
Profile numbers are ordered north to south where grouped.
1 km
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

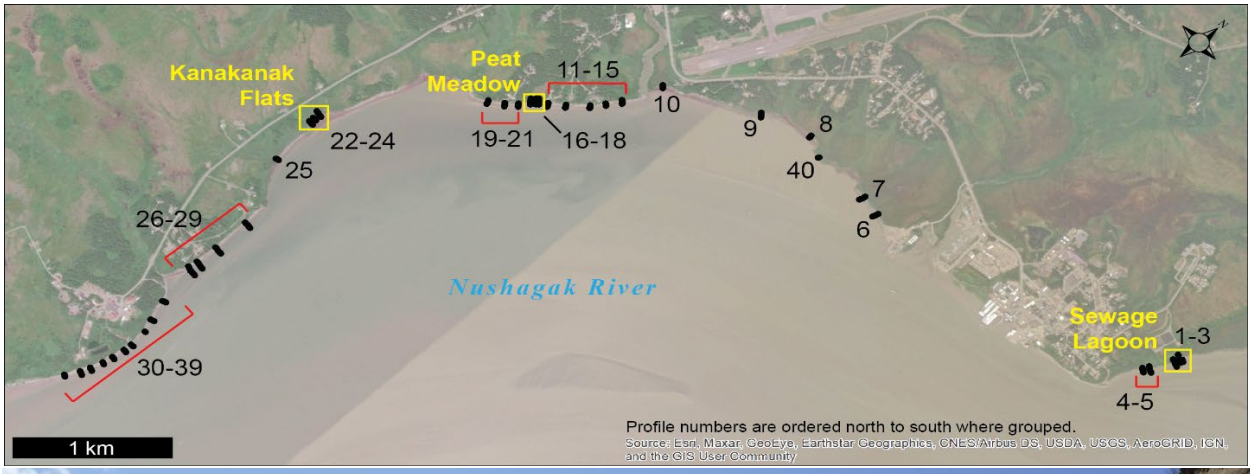



Profile 35
2021 May
2021 October
2023
Leeward Coordinate:
(E 526895, N 6539948)
(58.99822, -158.53191)
Profile Bearing:
103°
Elevation (m NAVD88)
Distance (m)
10
8
6
4
2
0
−2
60
50
40
30
20
10
0

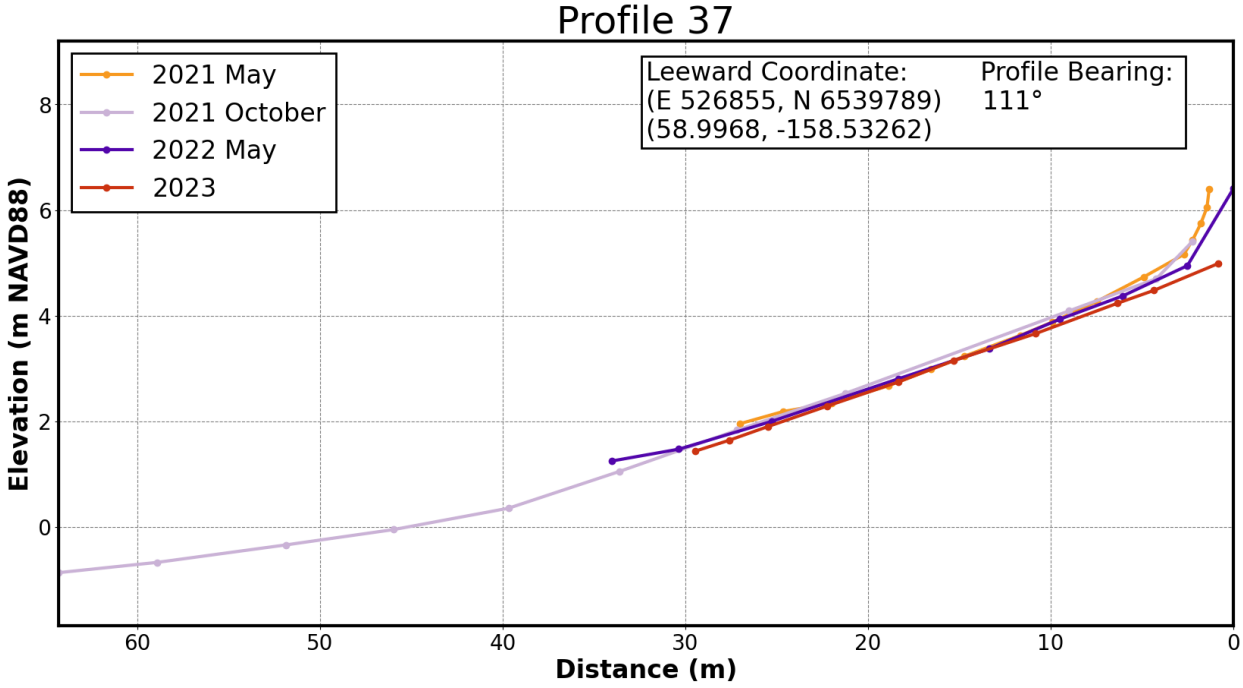

Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

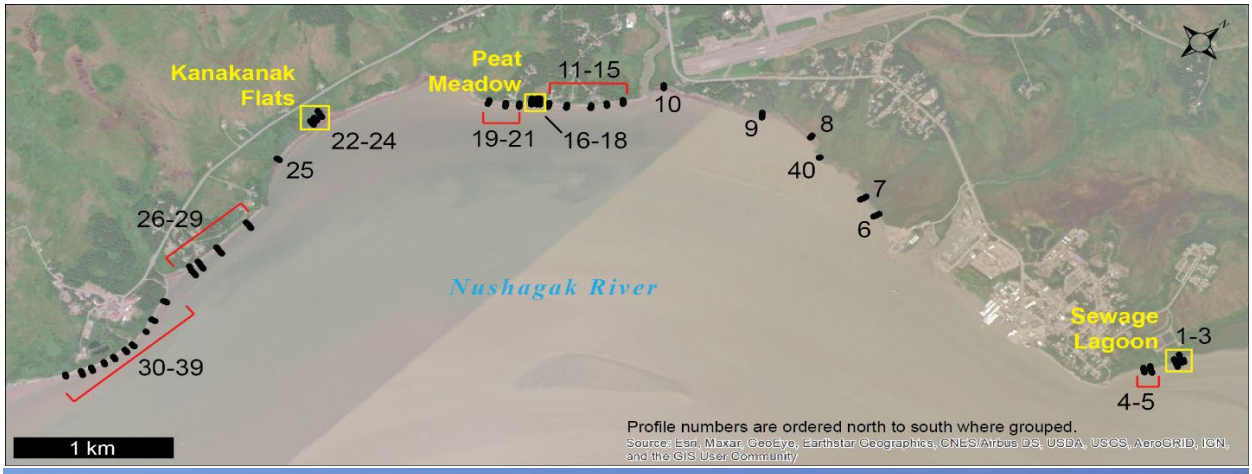



Profile 36
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526881, N 6539874)
(58.99756, -158.53217)
Profile Bearing:
108°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
−2
60
50
40
30
20
10
0

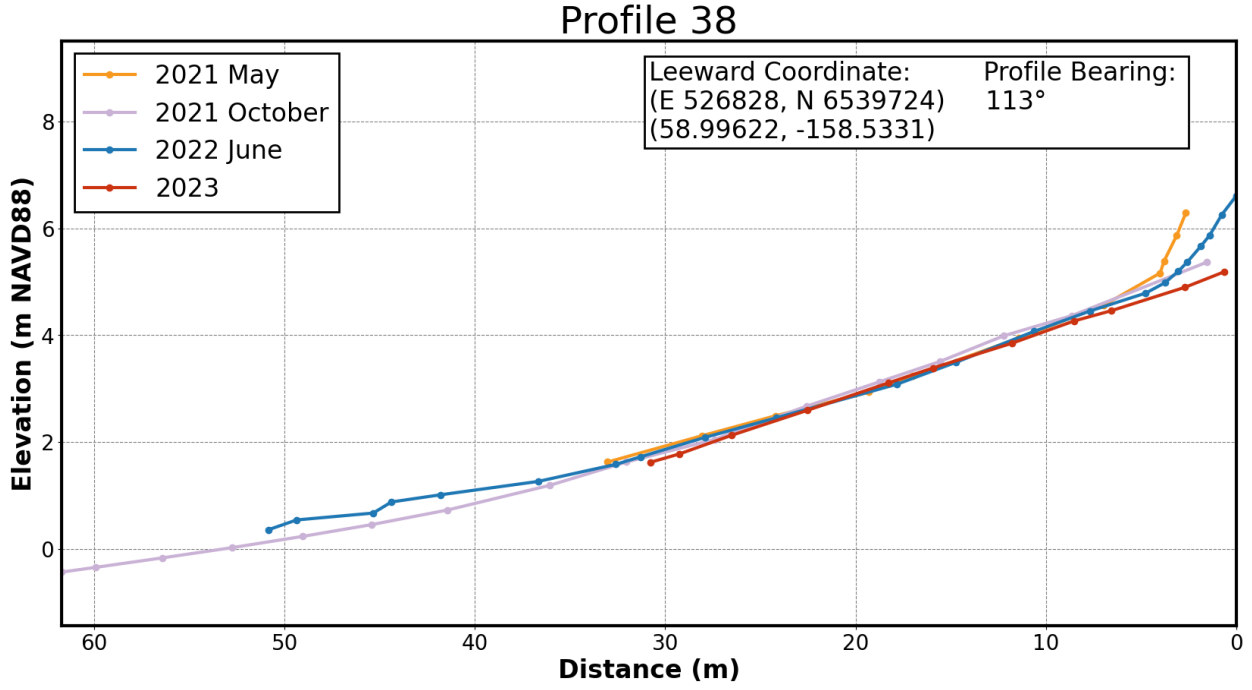

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

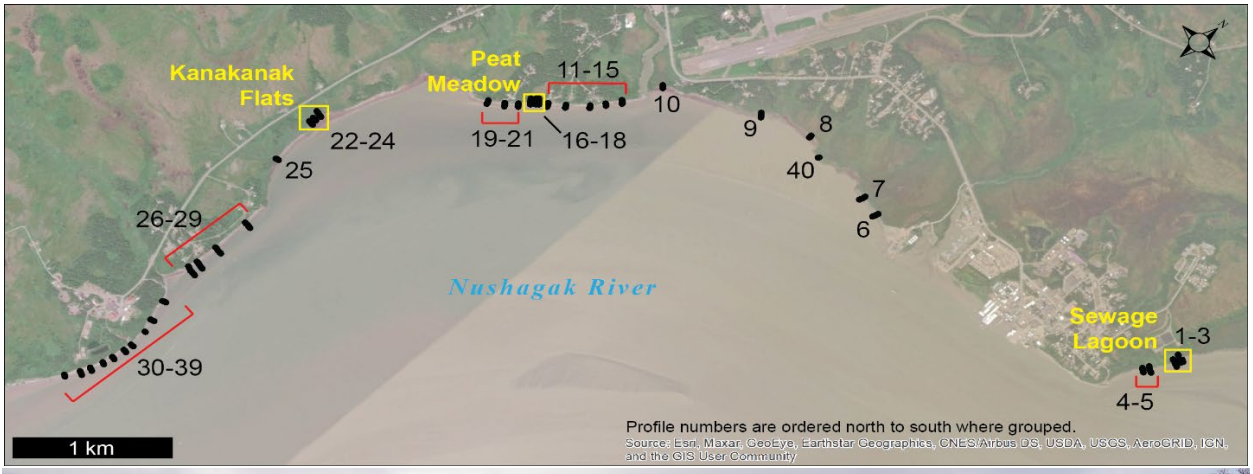


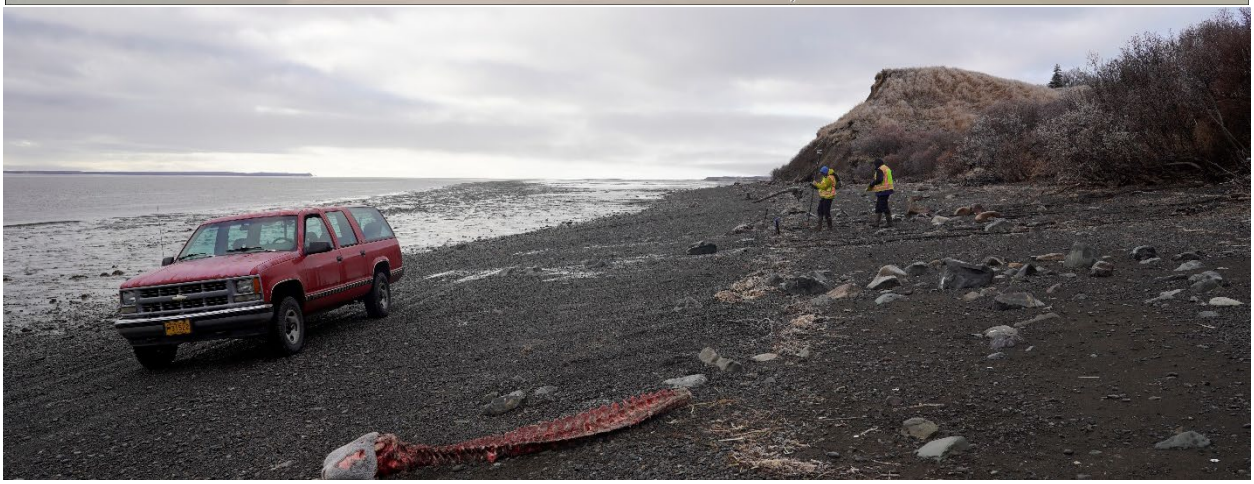

Profile 37
2021 May
2021 October
2022 May
2023
Leeward Coordinate:
(E 526855, N 6539789)
(58.9968, -158.53262)
Profile Bearing:
111°
Elevation (m NAVD88)
Distance (m)
8
6
4
2
0
60
50
40
30
20
10
0

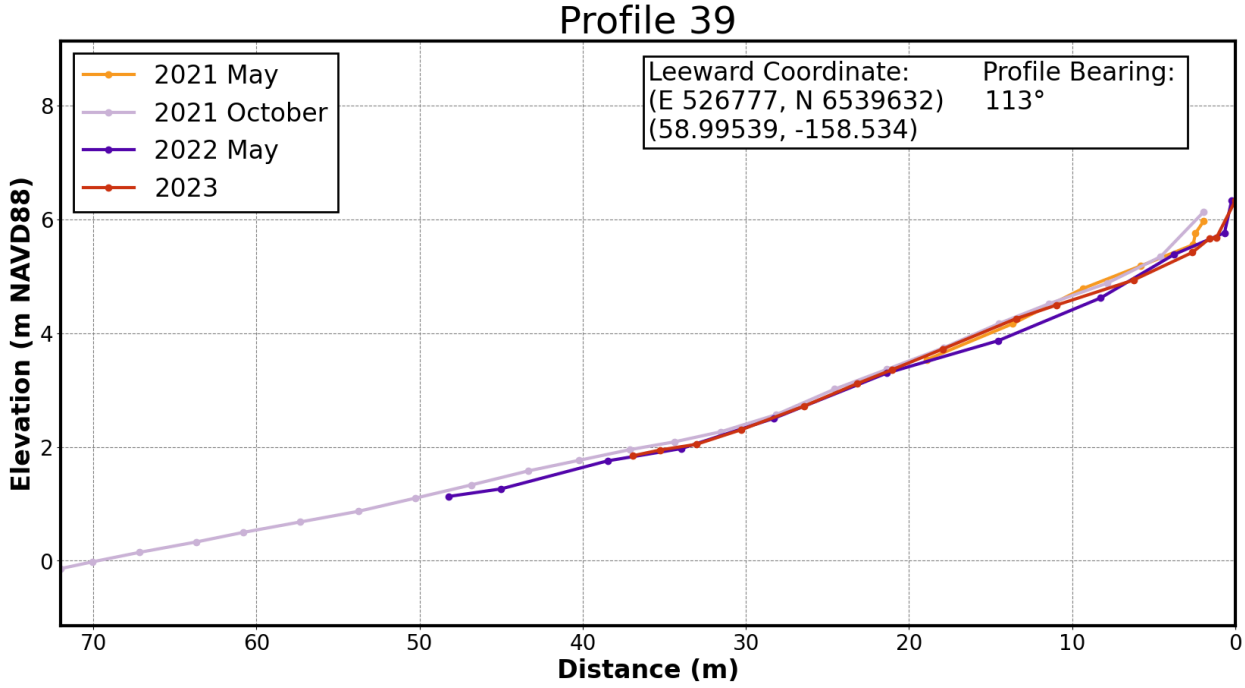

Kanakanak Flats
Peat Meadow
11-15
10
22-24
19-21
16-18
9
8
40
25
7
6
26-29
Nushagak River
Sewage Lagoon
1-3
4-5
30-39
1 km
Profile numbers are ordered north to south where grouped.
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community




Profile 38
2021 May
2021 October
2022 June
2023
Leeward Coordinate:
(E 526828, N 6539724)
(58.99622, -158.5331)
Profile Bearing:
113°
Elevation (m NAVD88)
Distance (m)
0
2
4
6
8
60
50
40
30
20
10
0


Kanakanak Flats
Peat Meadow
11-15
10
9
8
40
7
6
22-24
25
19-21
16-18
26-29
30-39
Nushagak River
Sewage Lagoon
1-3
4-5
Profile numbers are ordered north to south where grouped.
1 km
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community




Profile 39
2021 May
2021 October
2022 May
2023
Leeward Coordinate:
(E 526777, N 6539632)
(58.99539, -158.534)
Profile Bearing:
113°
Elevation (m NAVD88)
Distance (m)
0
2
4
6
8
70
60
50
40
30
20
10
0