APPENDIX N. 1950s TO 1980s LOWER SUSITNA RIVER SEGMENT TURNOVER

Susitna-Watana Hydroelectric Project (FERC No. 14241)

Geomorphology Study (6.5)

Mapping of Geomorphic Features and Turnover within the Middle and Lower Susitna River Segments from 1950s, 1980s, and Current Aerials Technical Memorandum

Prepared for

Alaska Energy Authority

SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

Tetra Tech Inc.

September 2014

LOWER SUSITNA RIVER SEGMENT TURNOVER ANALYSIS 1950s - 1983

ALASKA ENERGY AUTHORITY

151°W 150°30'W 150°W 149°30'W 149°W 148°30'W 148°W 147°30'W

62°20'N 62°10'N 62°N 61°50'N 61°40'N 61°30'N 61°20'N

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Sheet 5
Sheet 4
Sheet 3
Sheet 1
Sheet 2

Deshka River
Yentna River
Susitna River
Kashwitna River
Willow Creek

Legend

- Sheet Extents
- Roads
- Railroads
- Rivers and Streams
- Waterbodies

Data Sources: See Map References

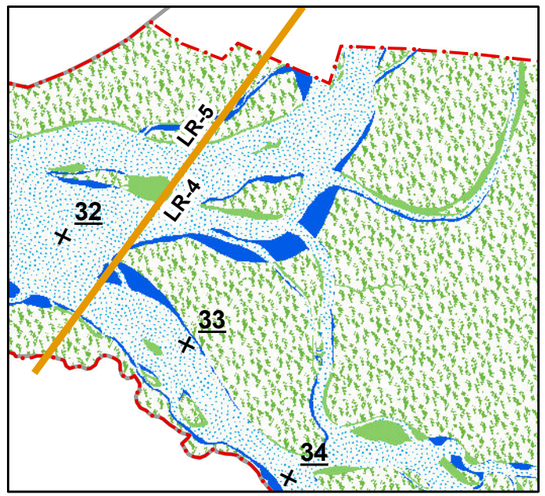
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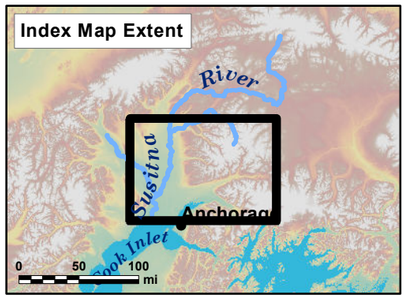
- Project River Miles
- Geomorphic Reach Breaks
- Analysis Extent Boundary
- Combined Extent of Aerial Photo Coverage for 1950s, 1983 & 2012

Turnover 1950s to 1983

- Floodplain to Channel
- Channel to Floodplain
- Channel in both years
- Floodplain in both years

Example Mapbook Page Data





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Date Created: 9/8/2014
Map Author: Tetra Tech
File: 1950sTo1983_LR_Turnover_v1_20140304_Cover.mxd

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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

ALEXANDER CREEK

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LR-5

LR-6

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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

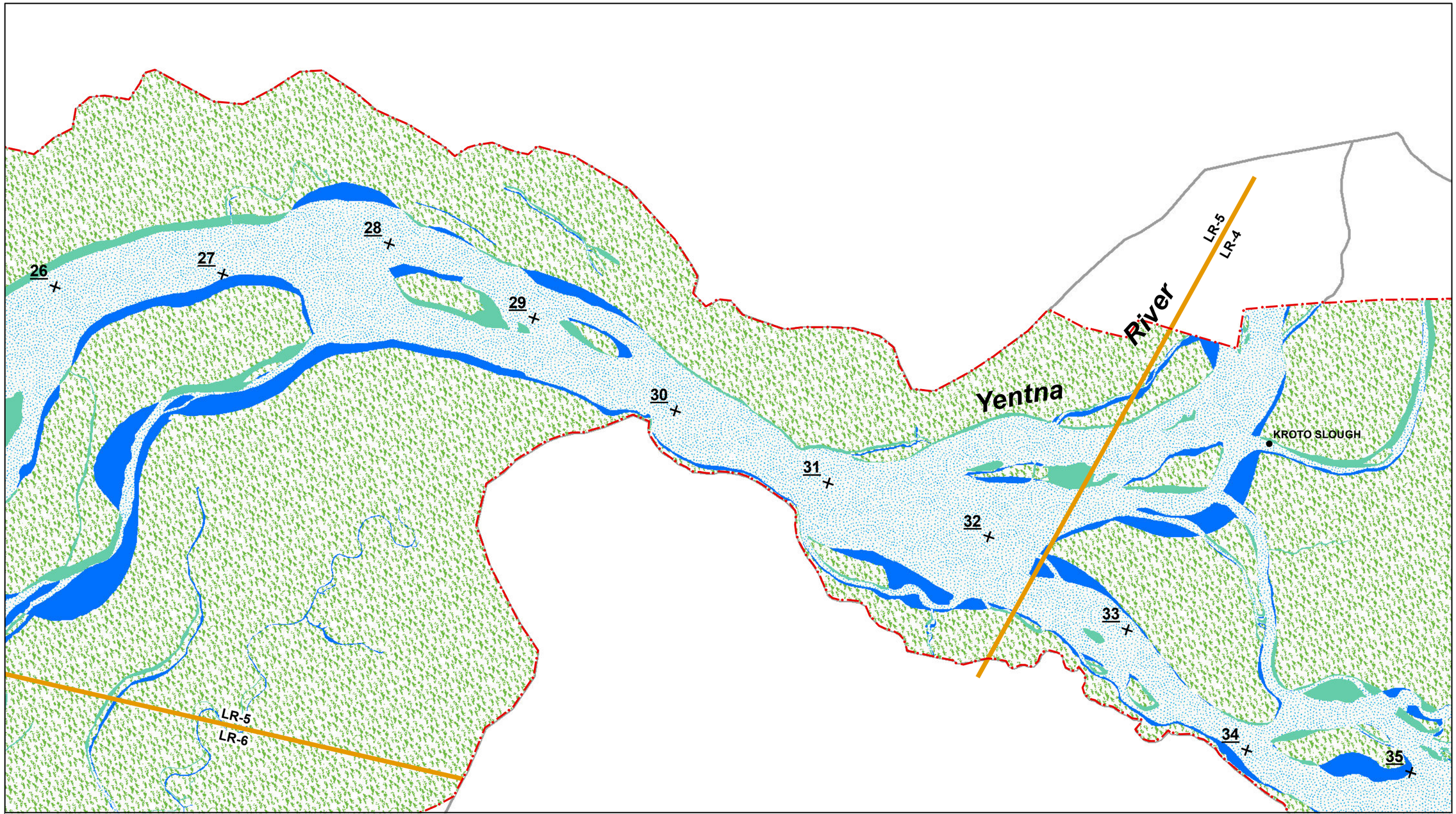


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LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

KROTO SLOUGH

DESHKA RIVER

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41

45

LR-3

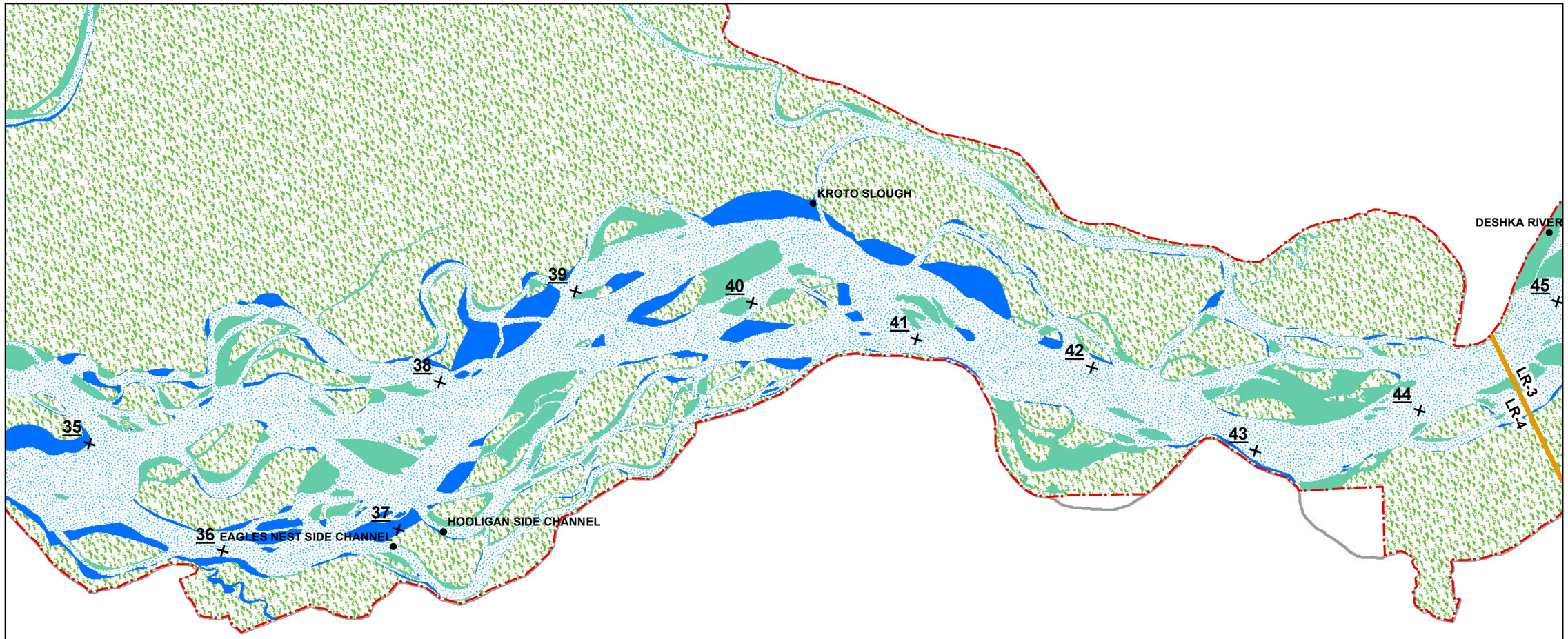
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LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

Deshka River

DESHKA RIVER

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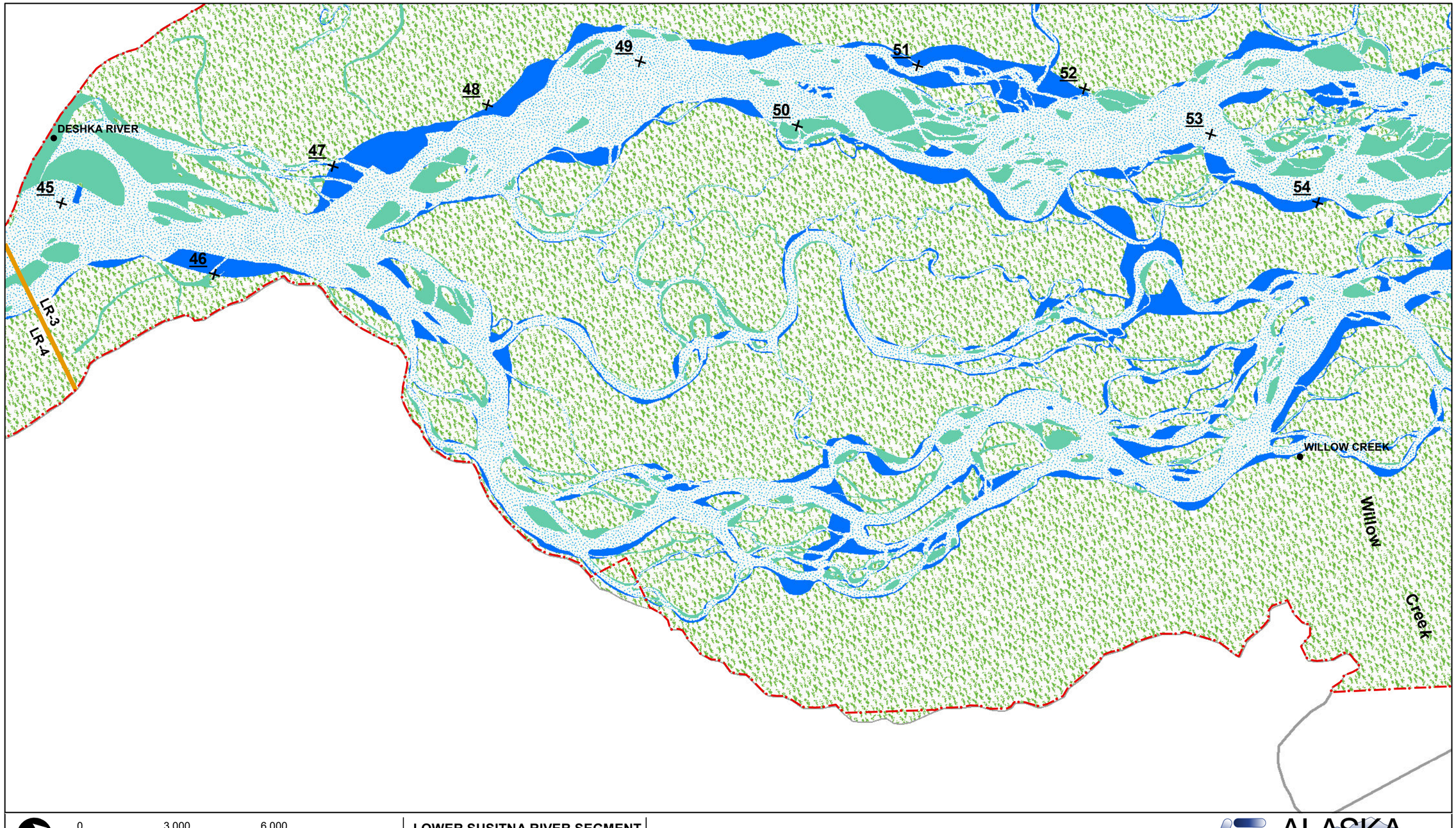
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LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

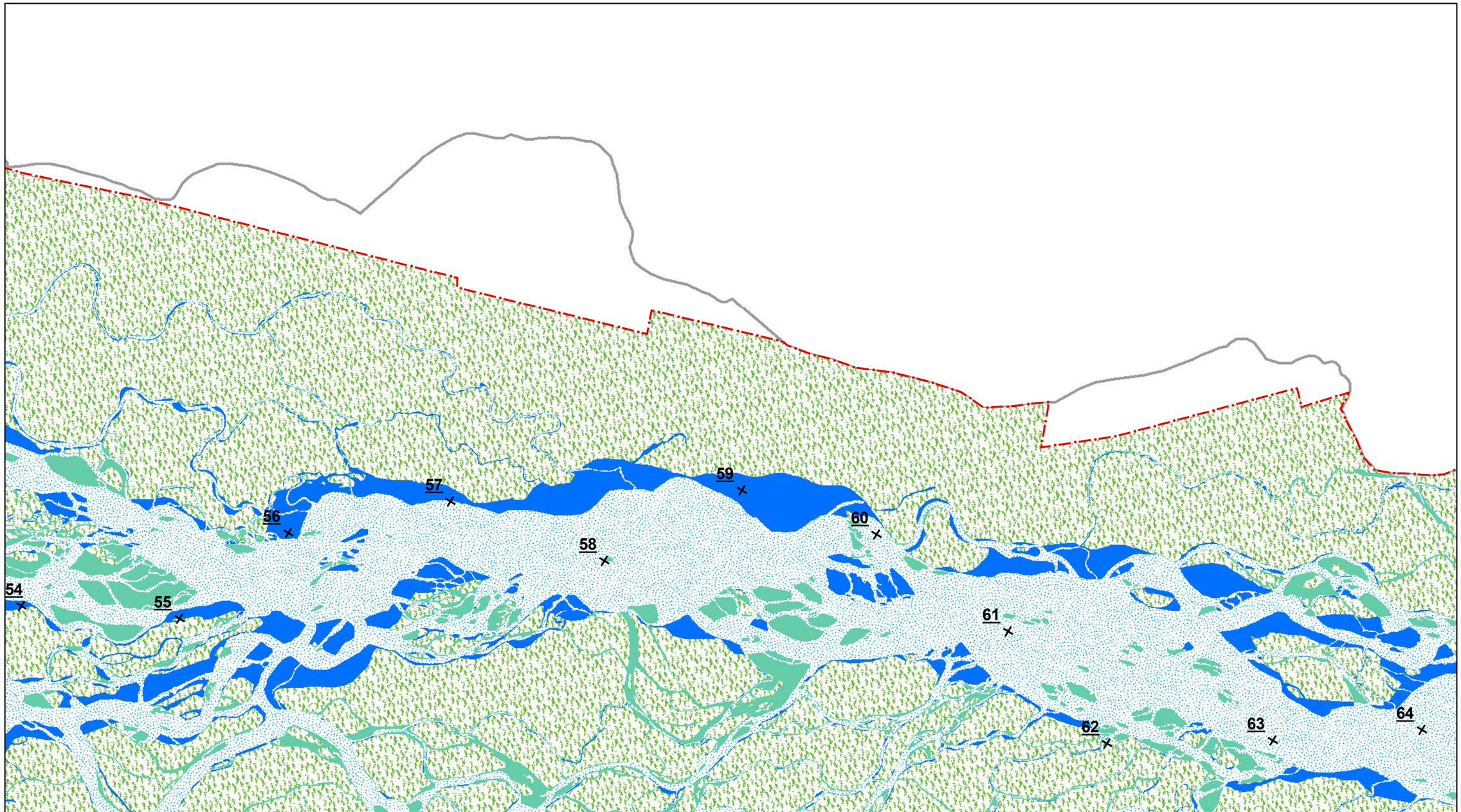


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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

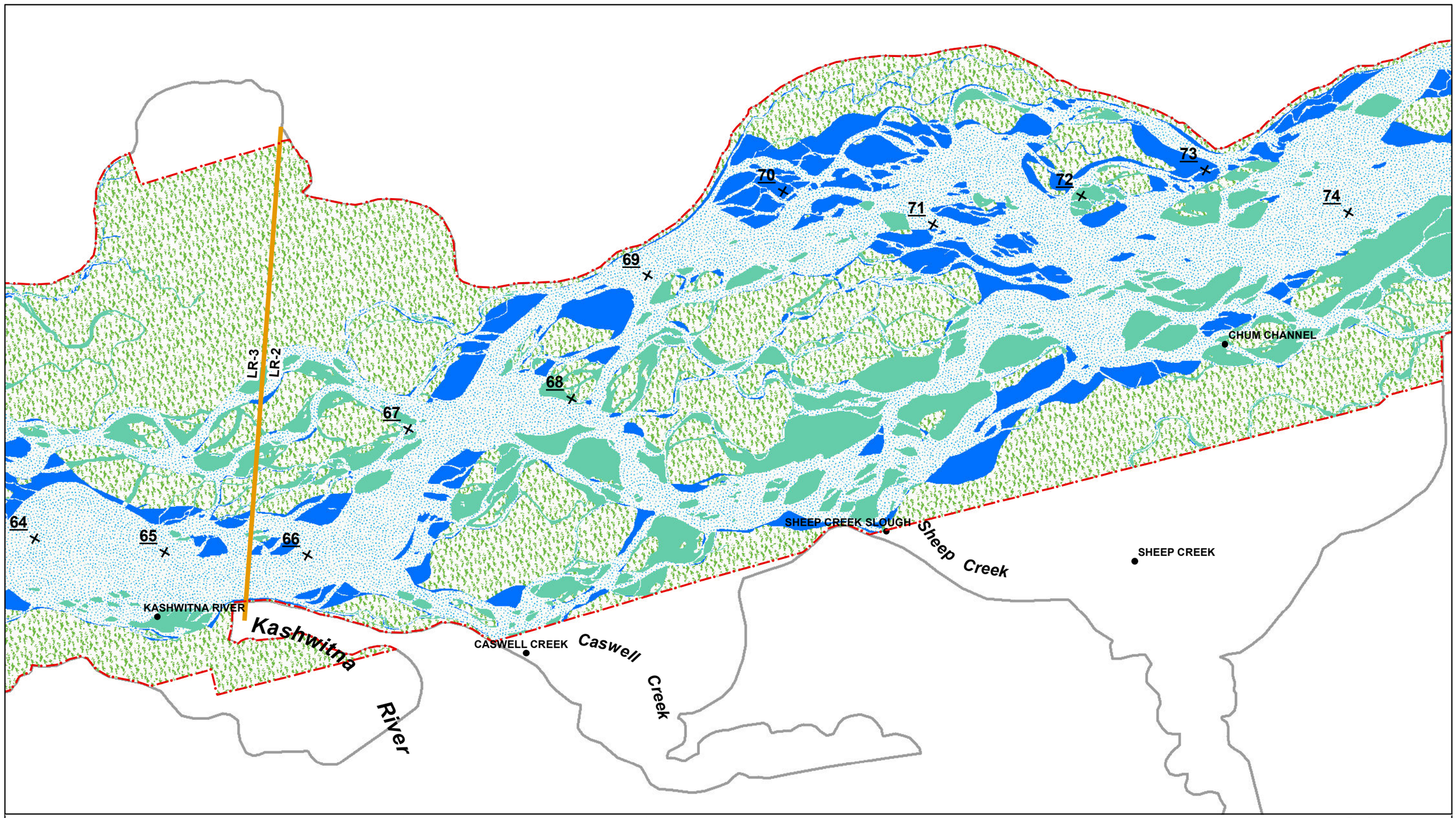


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LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

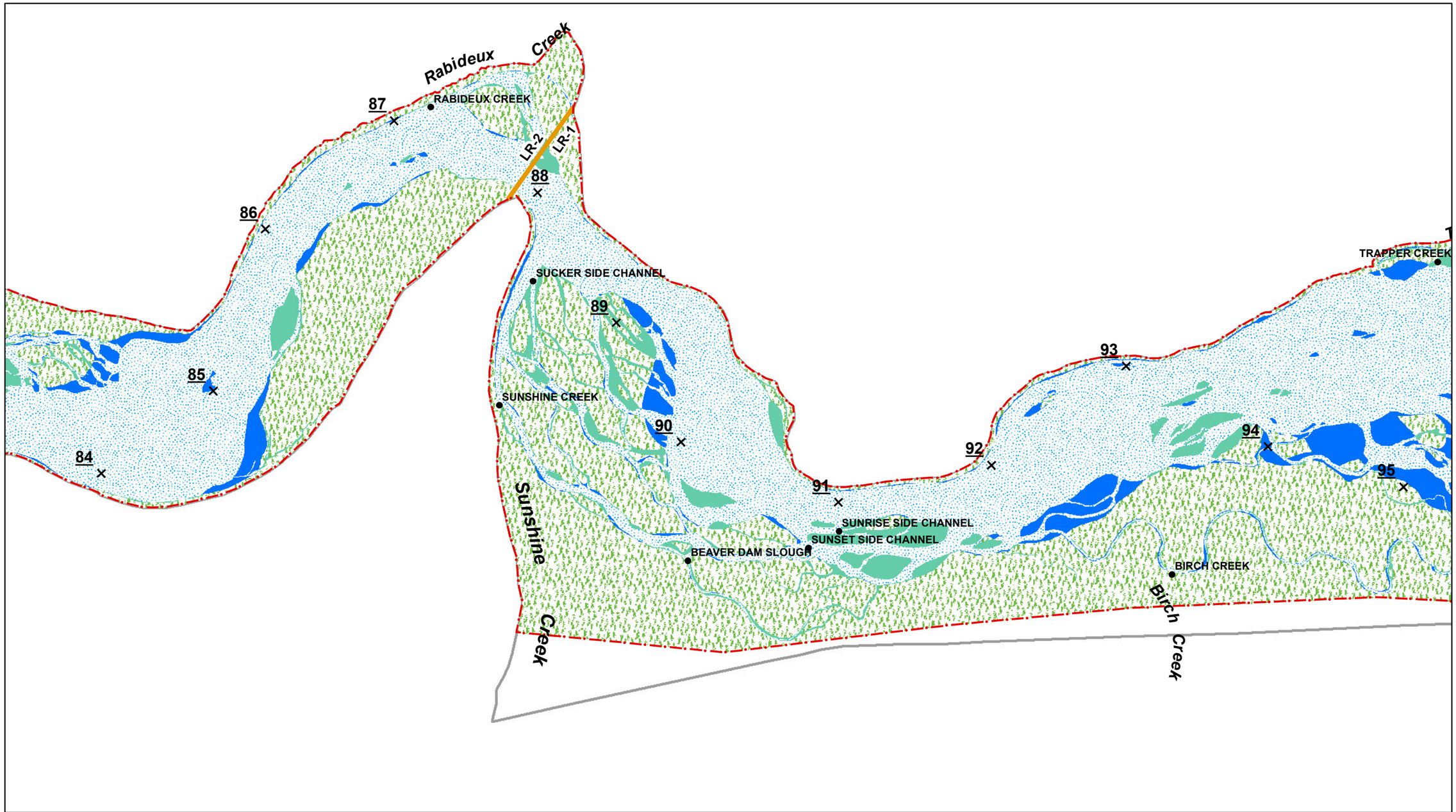
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WHITEFISH SLOUGH
GOOSE CREEK
GOOSE CREEK SLOUGH
Goose Creek
Montana Creek

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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

Trapper Creek

TRAPPER CREEK

Chulitna River

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100

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102

103

104

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Whiskers Slough

LR-1

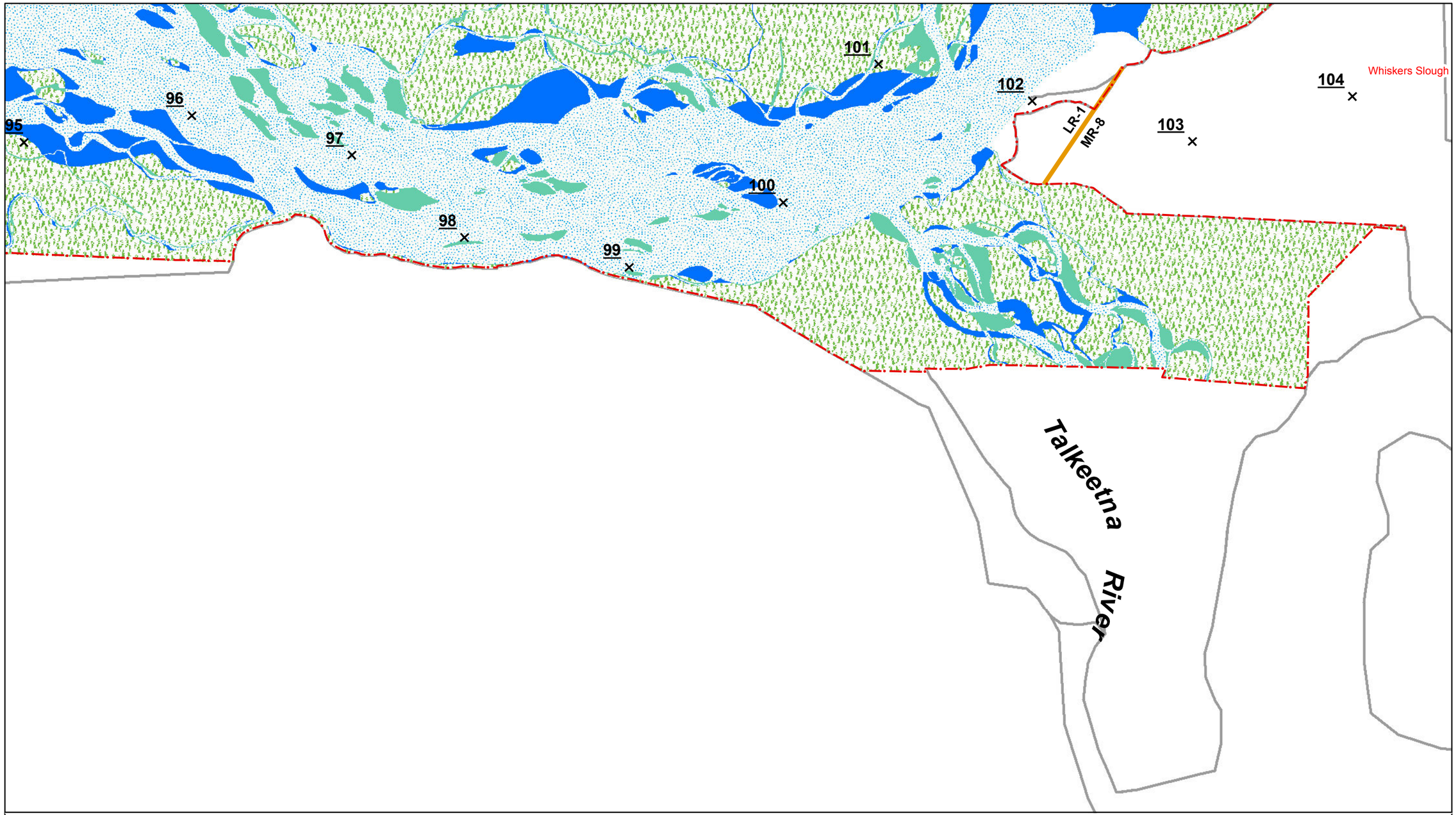
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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

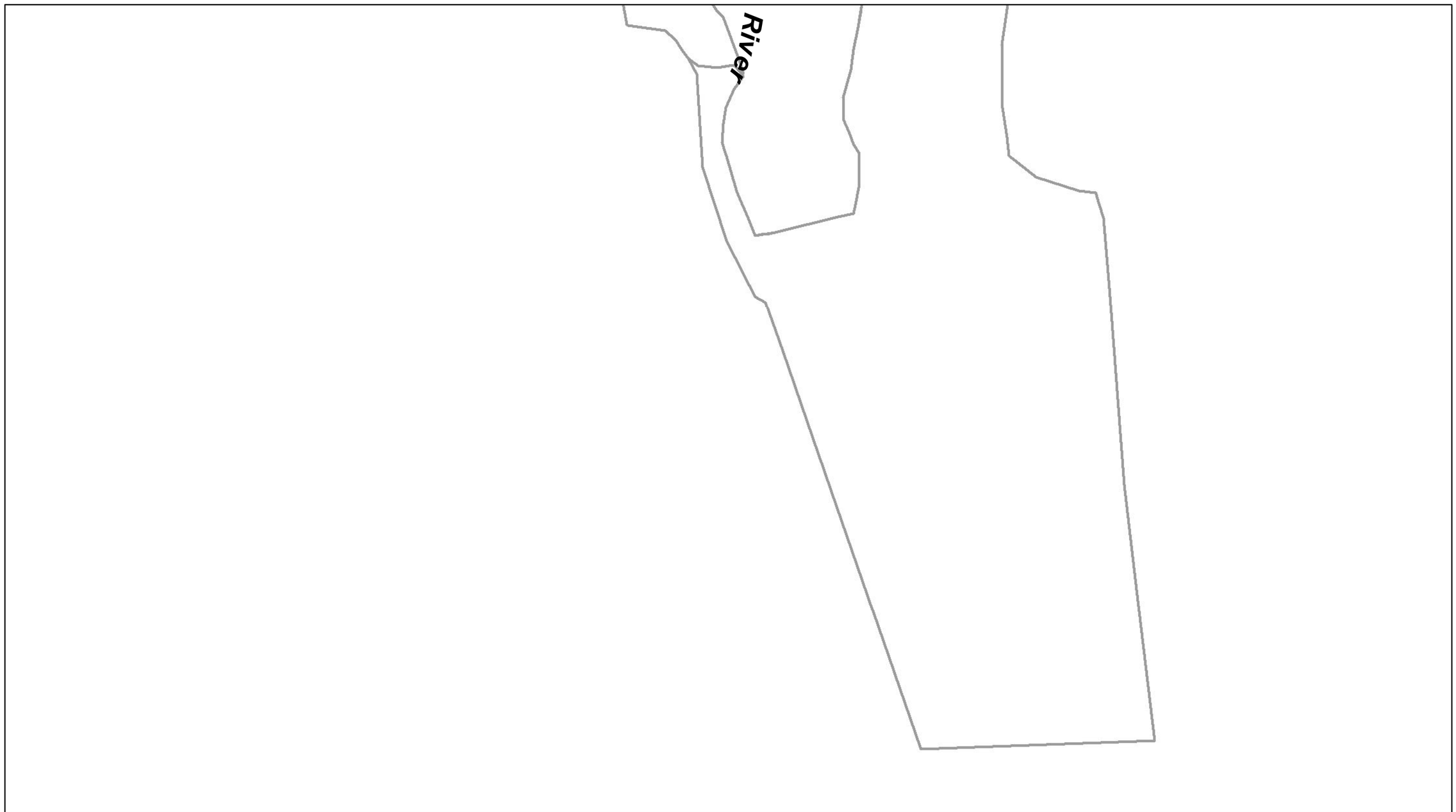


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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1950s to 1983 TURNOVER

ALASKA ENERGY AUTHORITY

APPENDIX O. 1980s TO 2012 LOWER SUSITNA RIVER SEGMENT TURNOVER

Susitna-Watana Hydroelectric Project
(FERC No. 14241)

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September 2014

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Deshka River
Yentna River
Susitna River
Kashwitna River
Willow Creek

ALASKA ENERGY AUTHORITY

LOWER SUSITNA RIVER SEGMENT TURNOVER ANALYSIS 1983 - 2012

Legend

- Sheet Extents
- Roads
- Railroads
- Rivers and Streams
- Waterbodies

Data Sources: See Map References

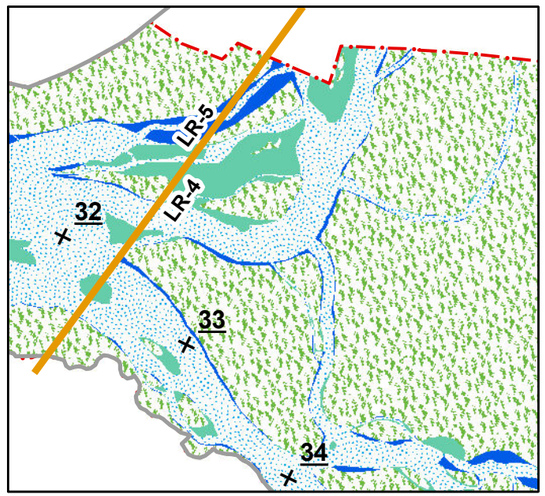
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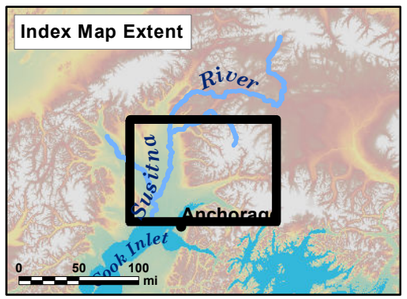
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- Geomorphic Reach Breaks
- Combined Extent of Aerial Photo Coverage for 1950s, 1983 & 2012
- Analysis Extent Boundary

Turnover 1983 to 2012

- Floodplain to Channel
- Channel to Floodplain
- Channel in both years
- Floodplain in both years

Example Mapbook Page Data





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Map Author: Tetra Tech
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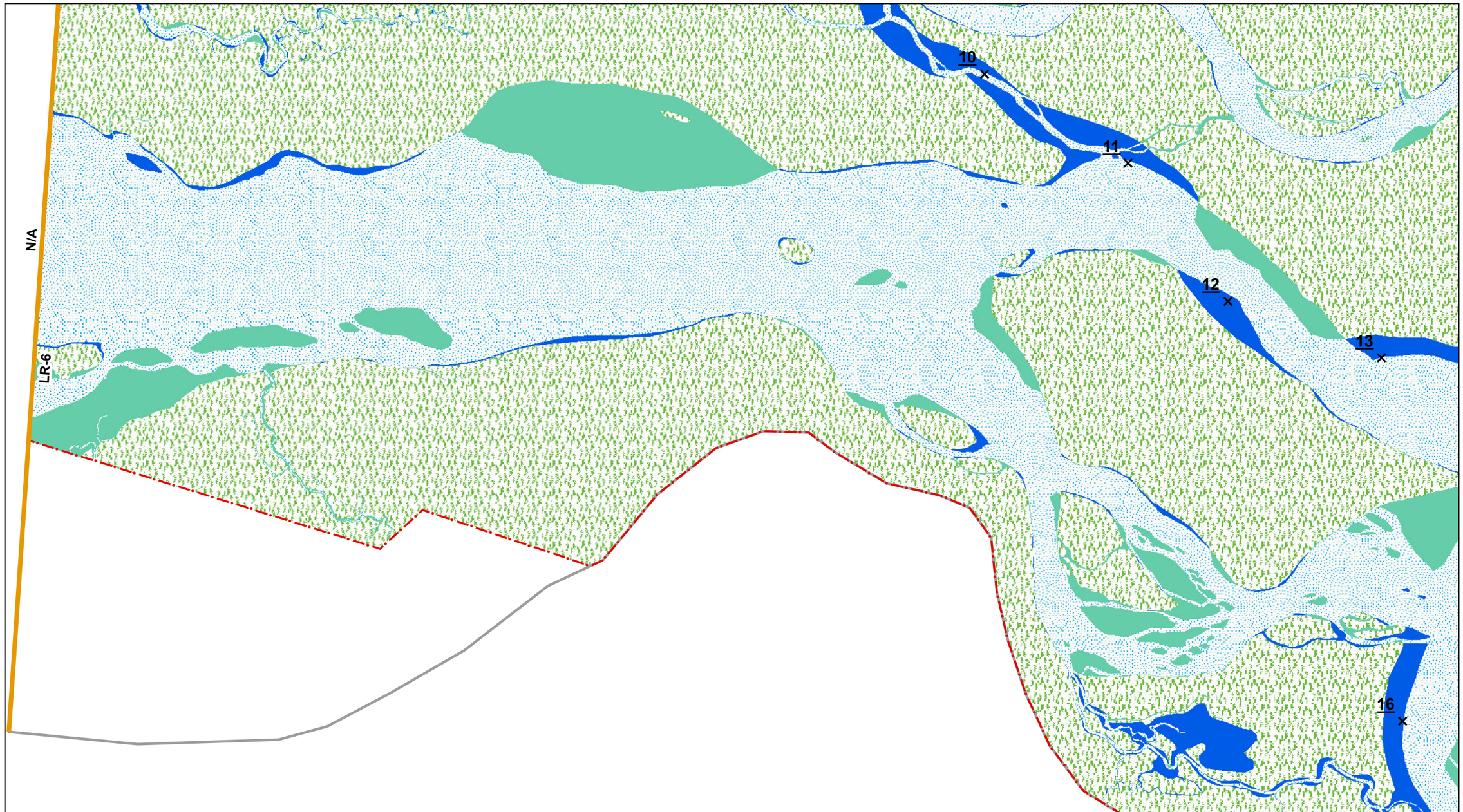
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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

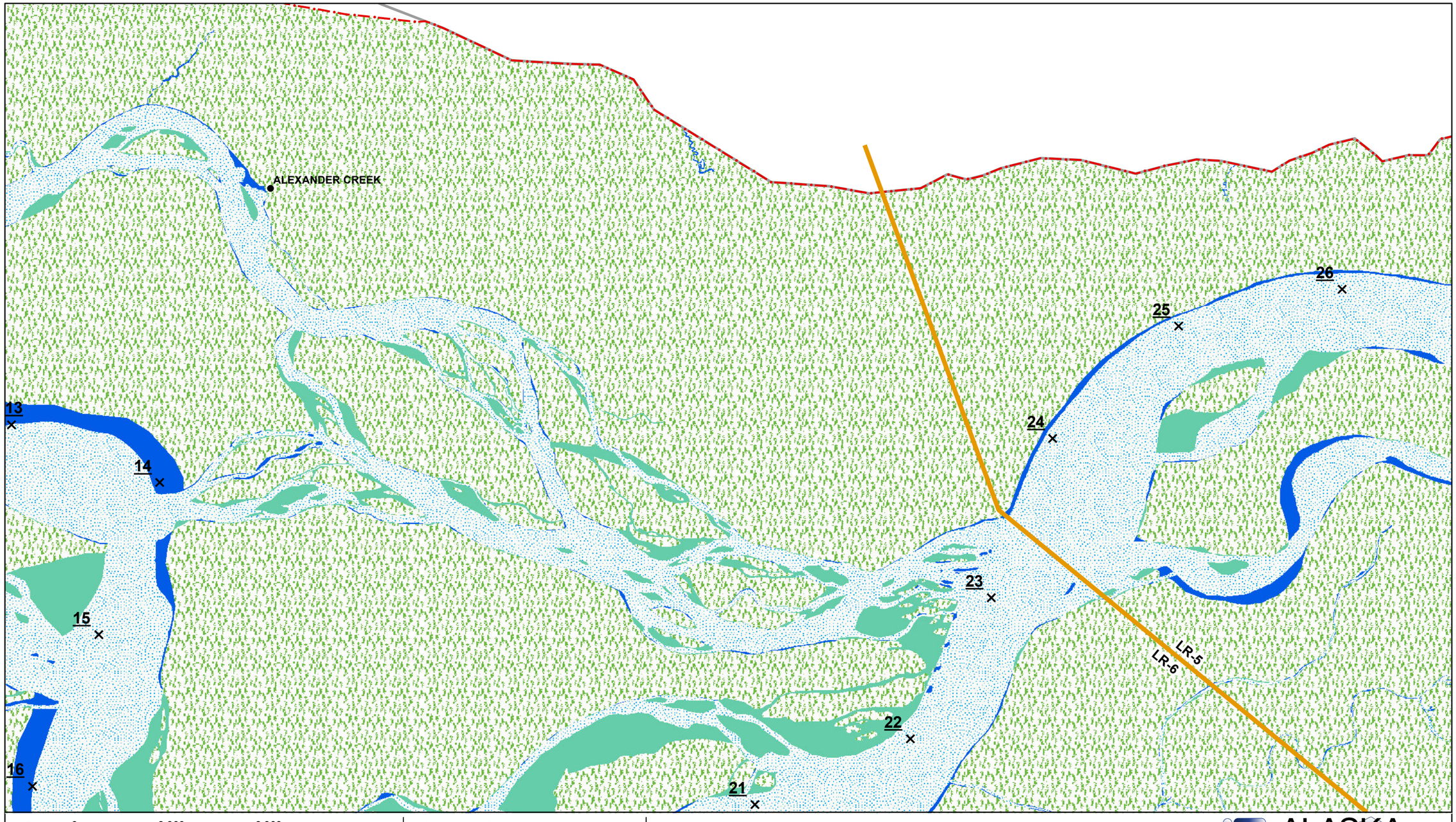


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LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

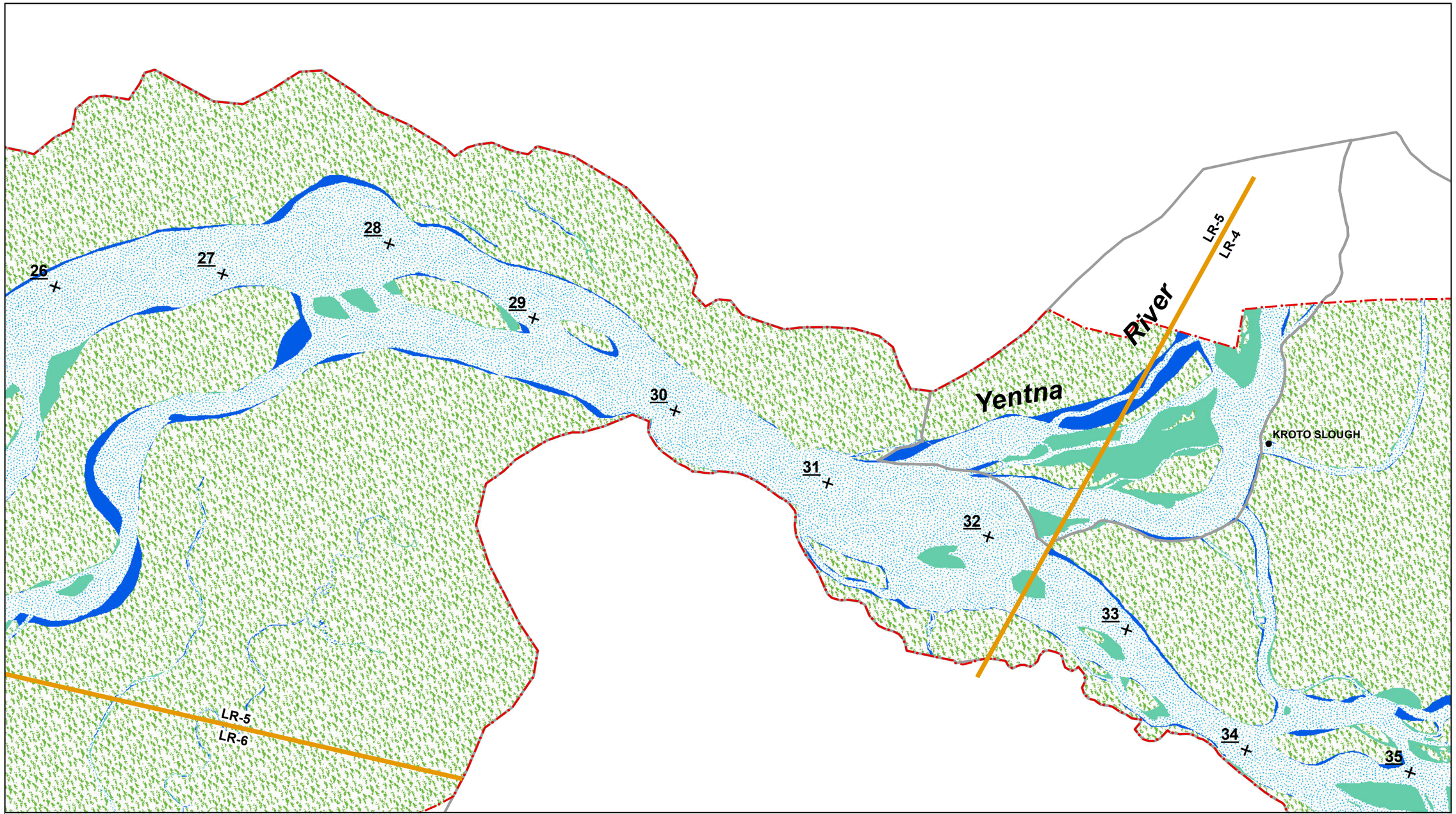


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LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

KROTO SLOUGH

DESHKA RIVER

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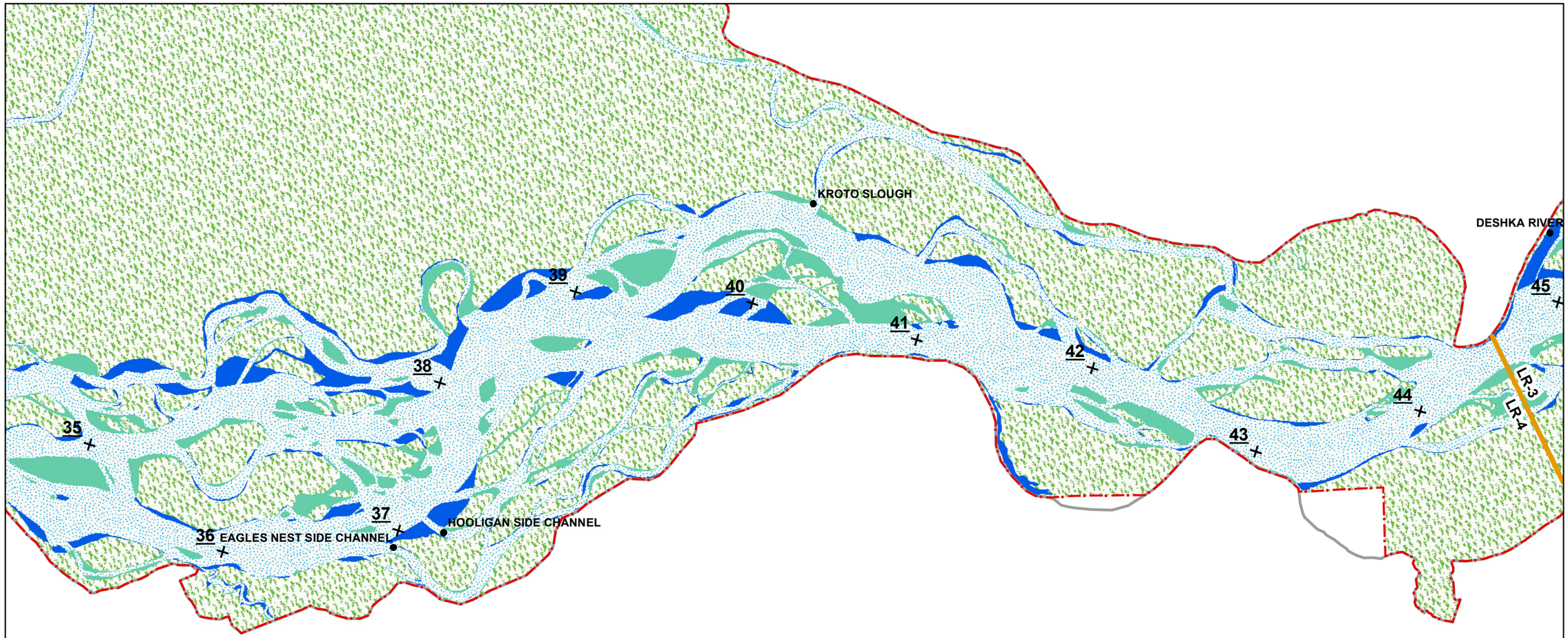
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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

Deshka River

DESHKA RIVER

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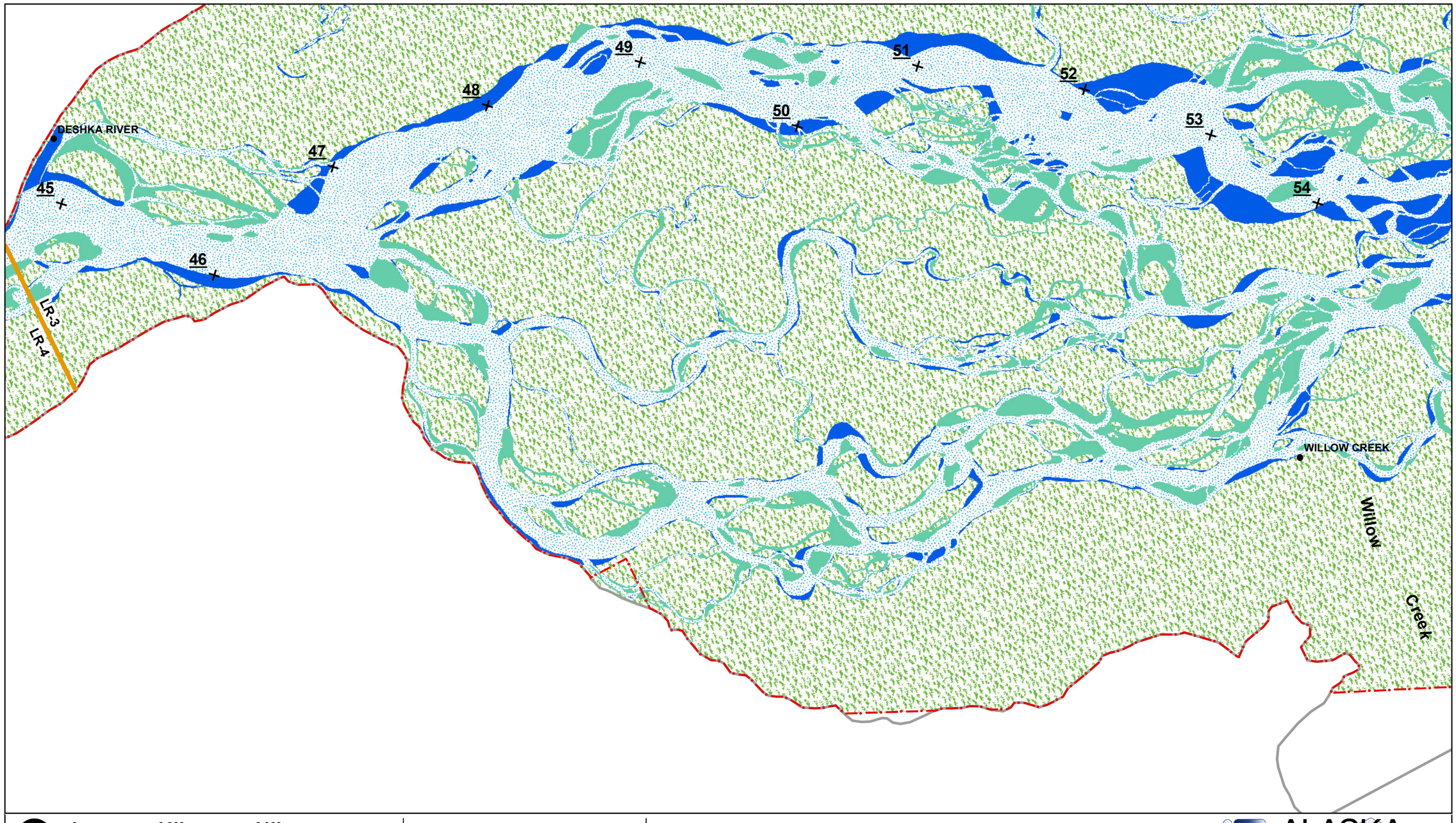
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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

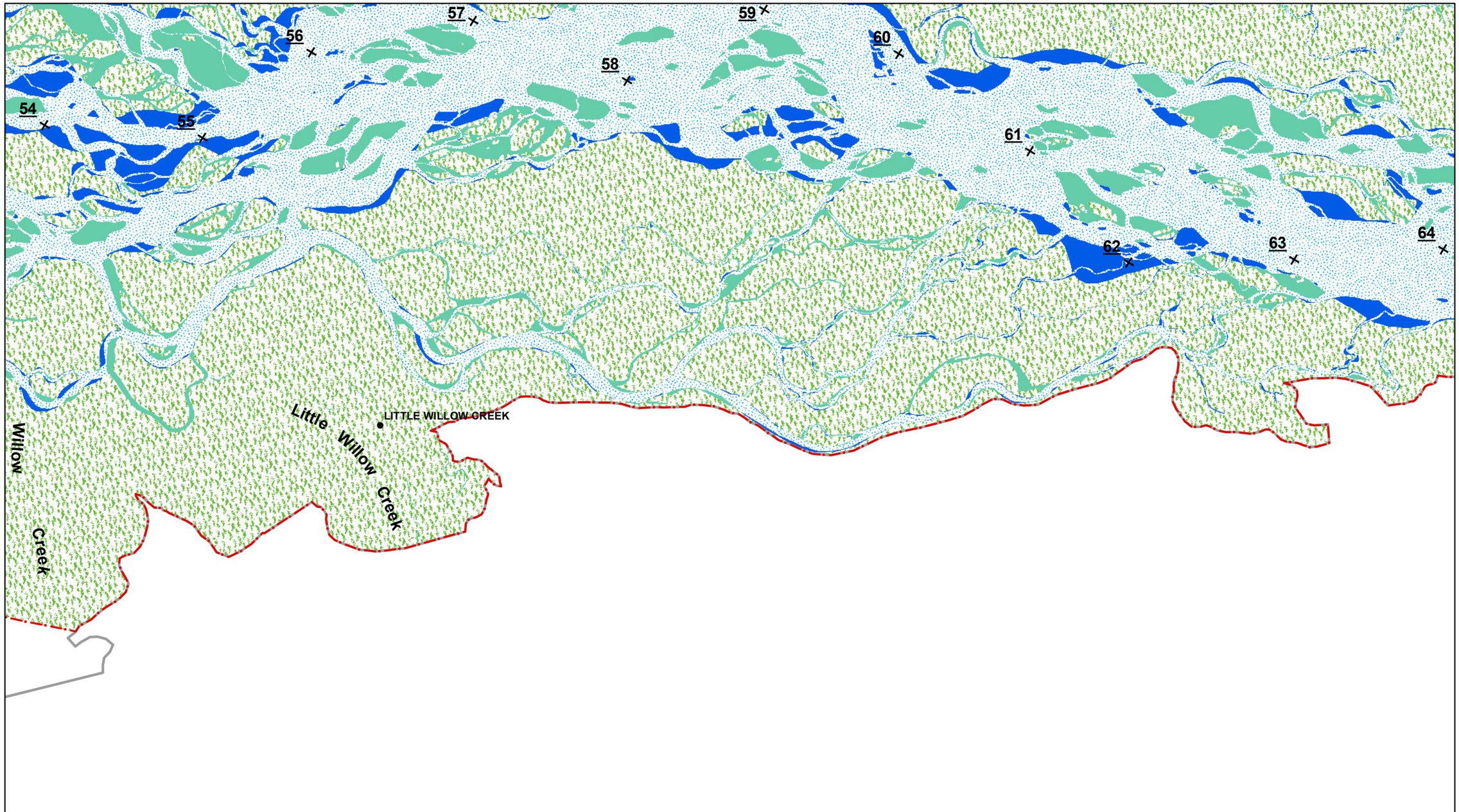
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LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

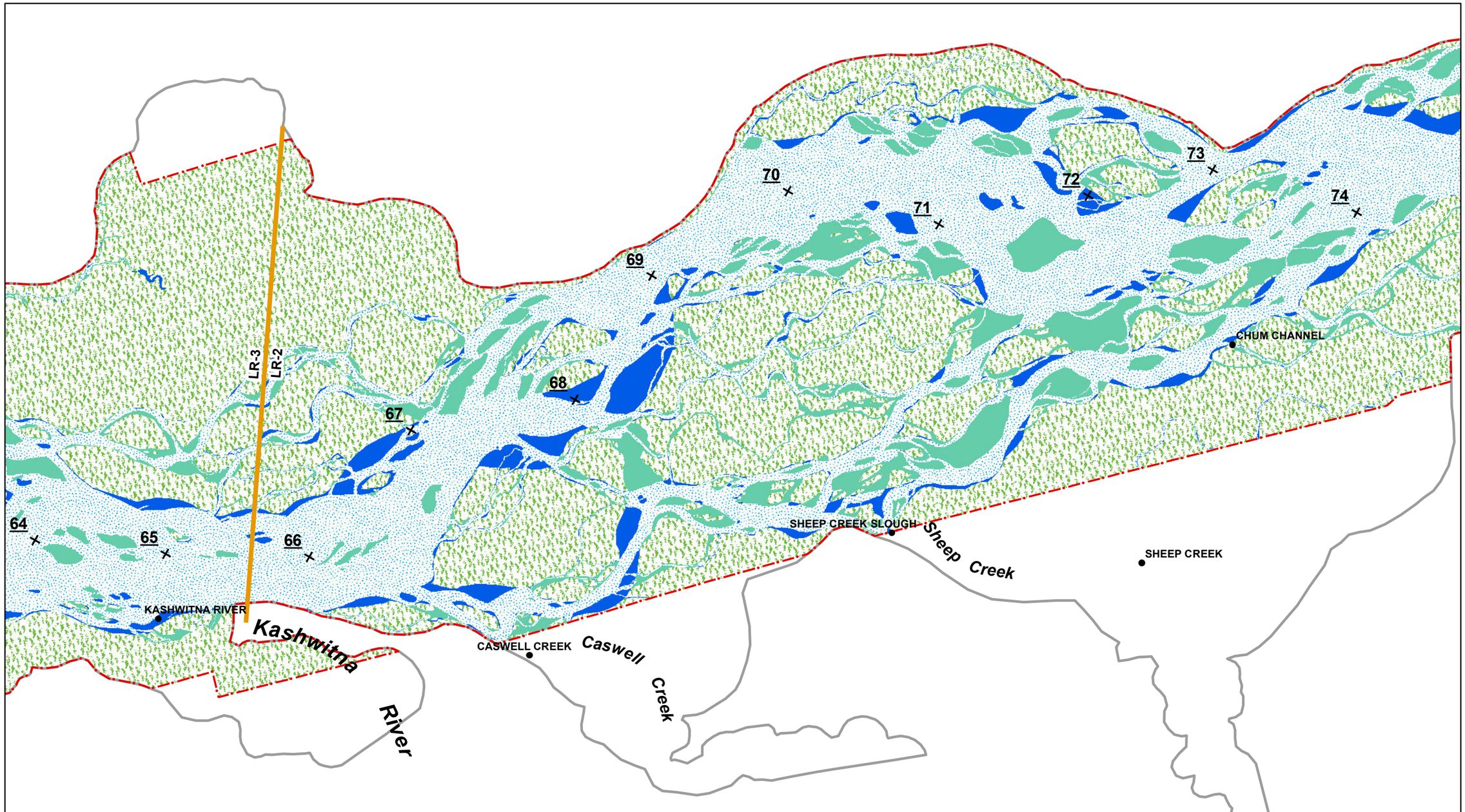


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LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

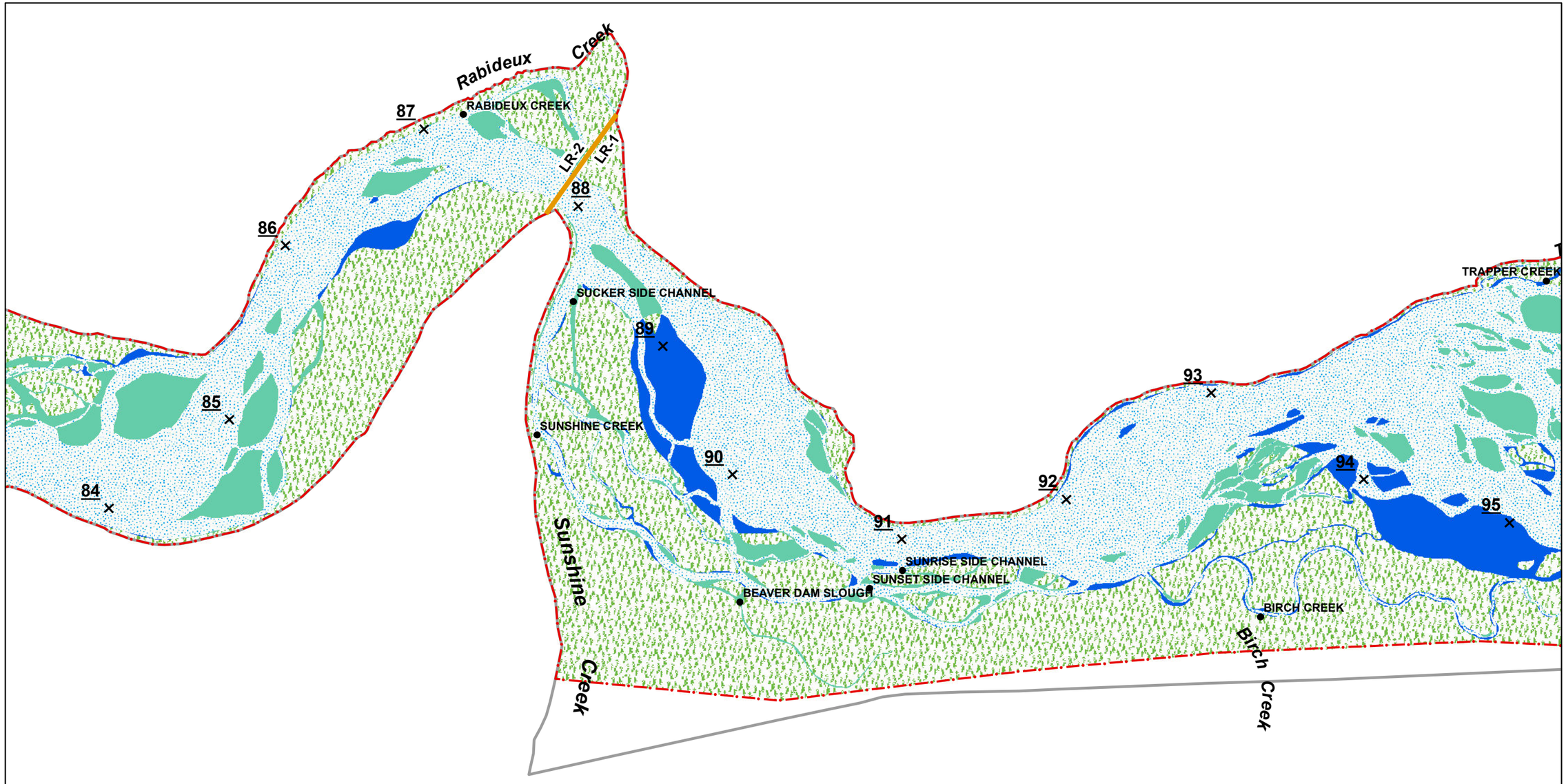
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WHITEFISH SLOUGH
GOOSE CREEK
GOOSE CREEK SLOUGH
Goose Creek
Montana Creek

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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



0 3,000 6,000 Feet

See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

Trapper Creek

TRAPPER CREEK

Chulitna River

Whiskers Slough

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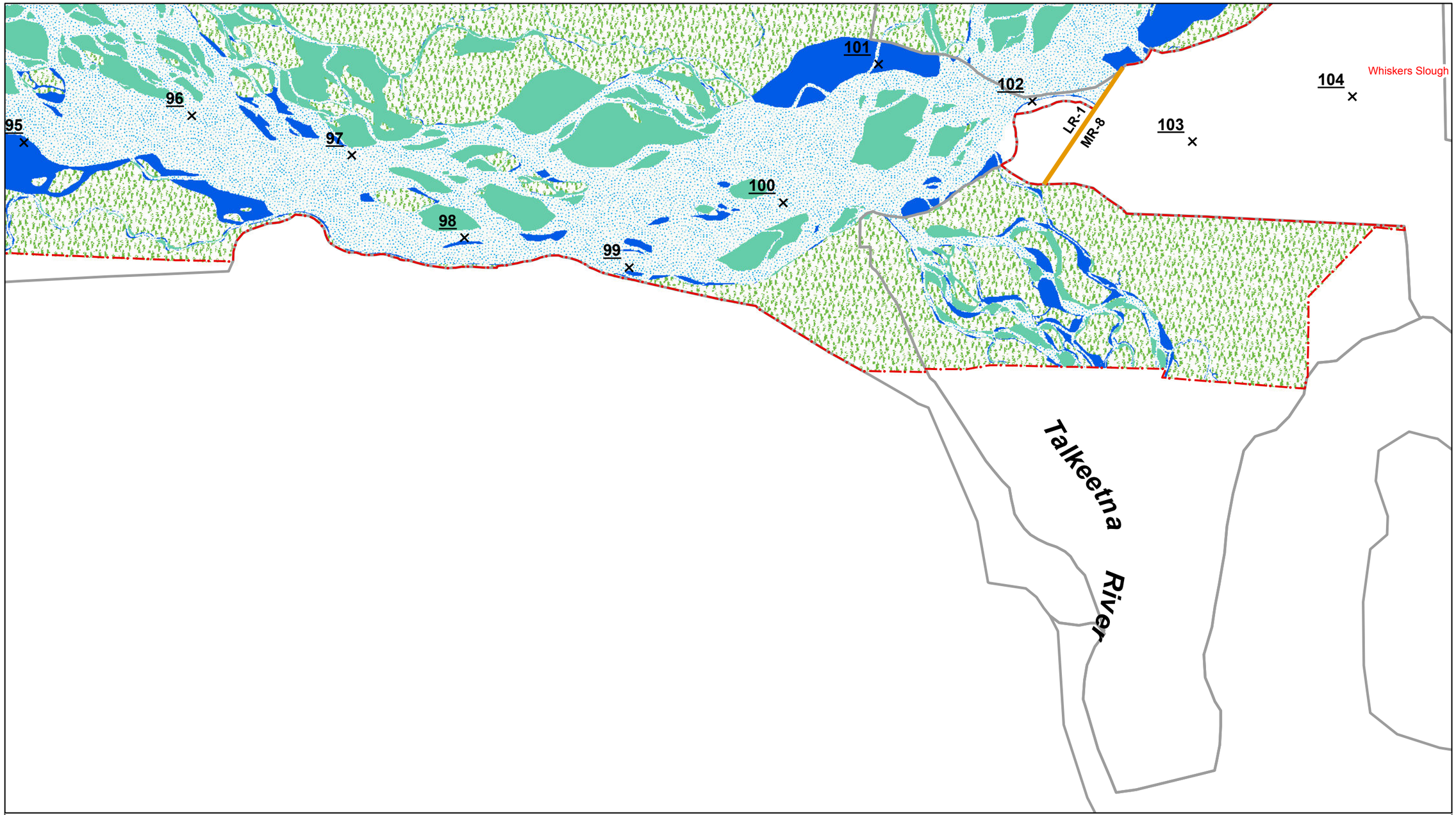
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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

River

0 3,000 6,000 Feet

See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY

Whiskers Slough

0 3,000 6,000 Feet

See index page for legend and additional data information.

LOWER SUSITNA RIVER SEGMENT
1983 to 2012 TURNOVER

ALASKA ENERGY AUTHORITY