APPENDIX B. CURRENT (2012/2013) MIDDLE SUSITNA RIVER SEGMENT AQUATIC MACROHABITAT TYPES

Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Geomorphology Study (6.5)

Updated Mapping of Aquatic Macrohabitat Types in the Middle Susitna River Segment from 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

150°W
149°30'W
149°W
148°30'W
62°50'N
62°40'N
62°30'N
62°20'N

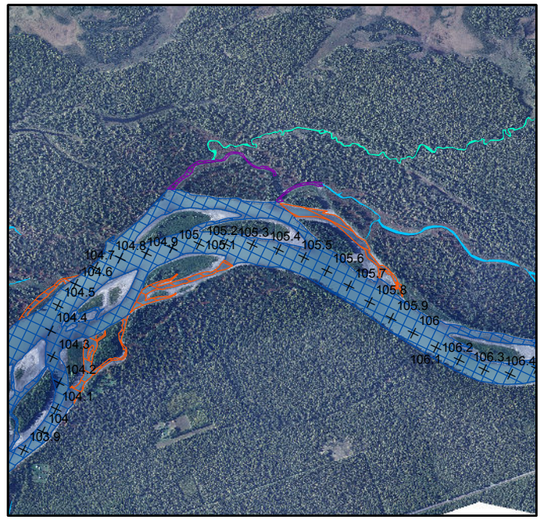
Indian River
Portage Creek
Devil Creek
Tsusena Creek
Susitna River
Chulitna River
Talkeetna River

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Legend For Individual Mapbook Pages

- Project River Miles
- 2012 Geomorphic Reaches
- Analysis Extent Boundary
- Main Channel (MC)
- Side Channel (SC)
- Side Slough (SS)
- Tributary (TR)
- Tributary Mouth (TM)
- Upland Slough (US)

Example Mapbook Page Data



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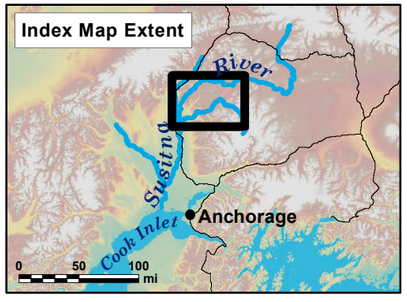
MIDDLE SUSITNA RIVER SEGMENT CURRENT AQUATIC MACROHABITAT

Legend

- Proposed Watana Dam Site
- Sheet Extents
- Roads
- Railroads
- Rivers and Streams
- Waterbodies

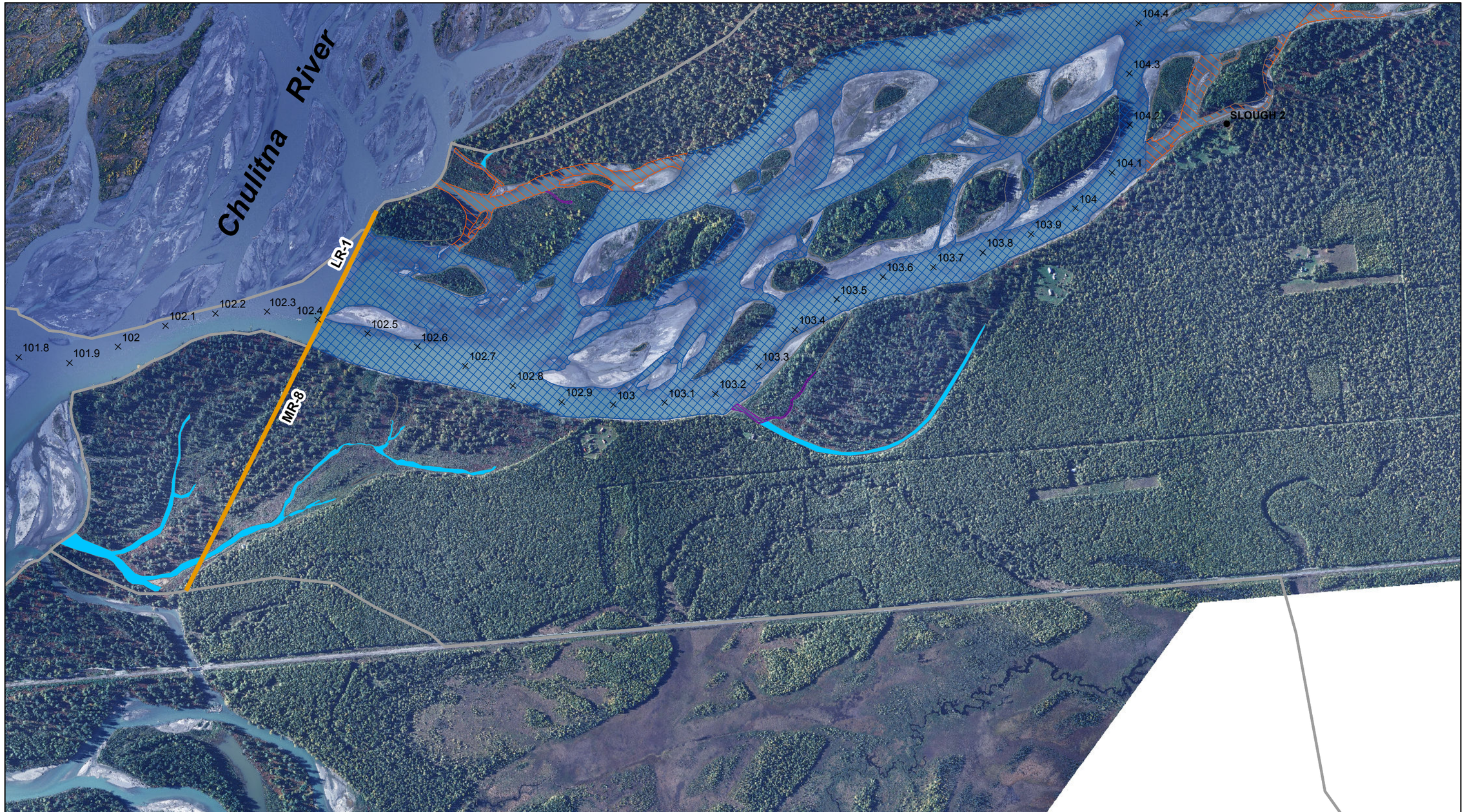
Data Sources: See Map References

Index Map Extent



0 5 10 mi

Projection: NAD83 State Plane Alaska 4 FIPS 5004 (ft)
Date Created: 8/25/2014
Map Author: Tetra Tech
File: Current_AqMHab_20140801_Cover.mxd



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See index page for legend and additional data information.

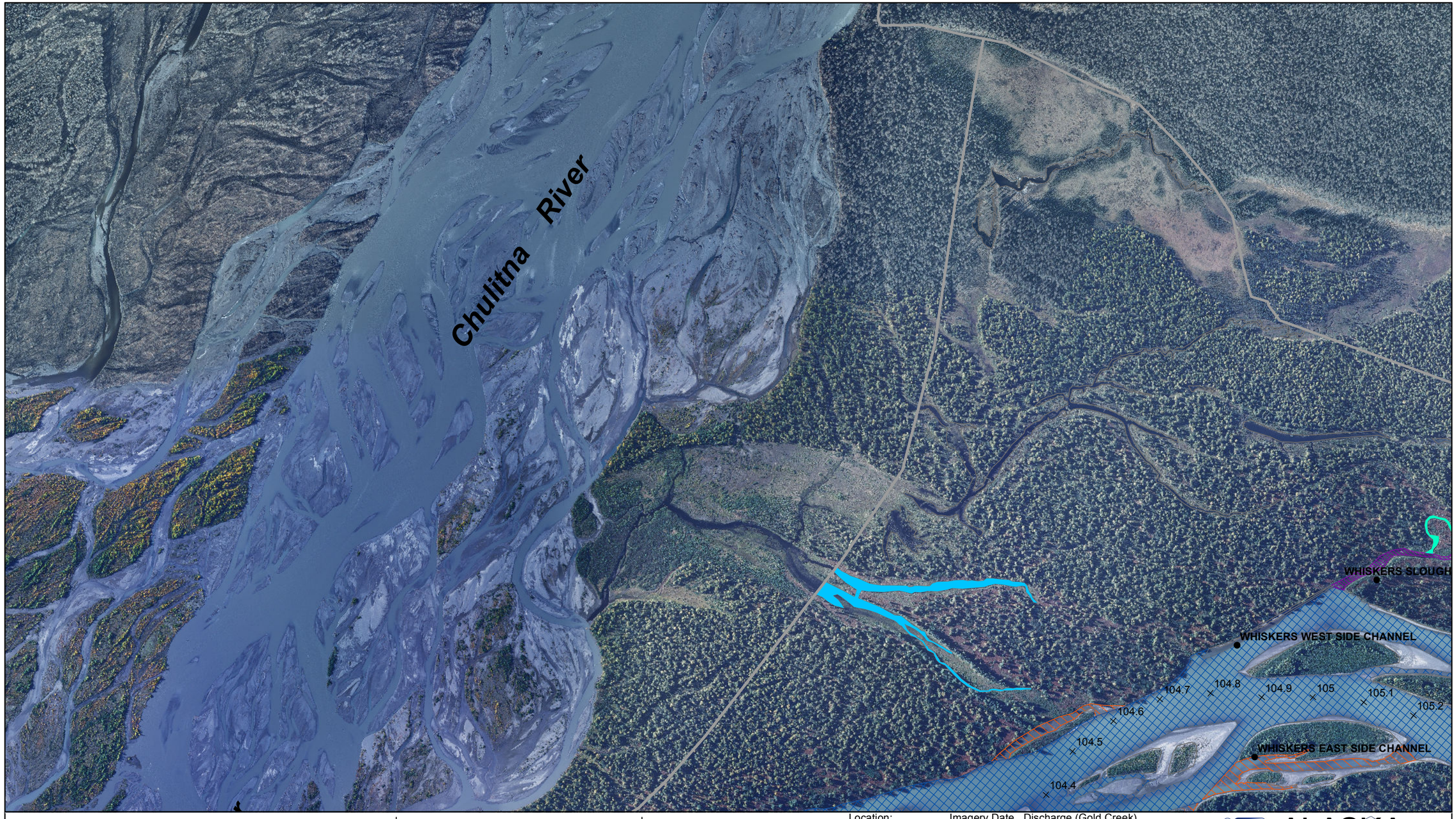
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date:	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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1 inch = 1,000 feet

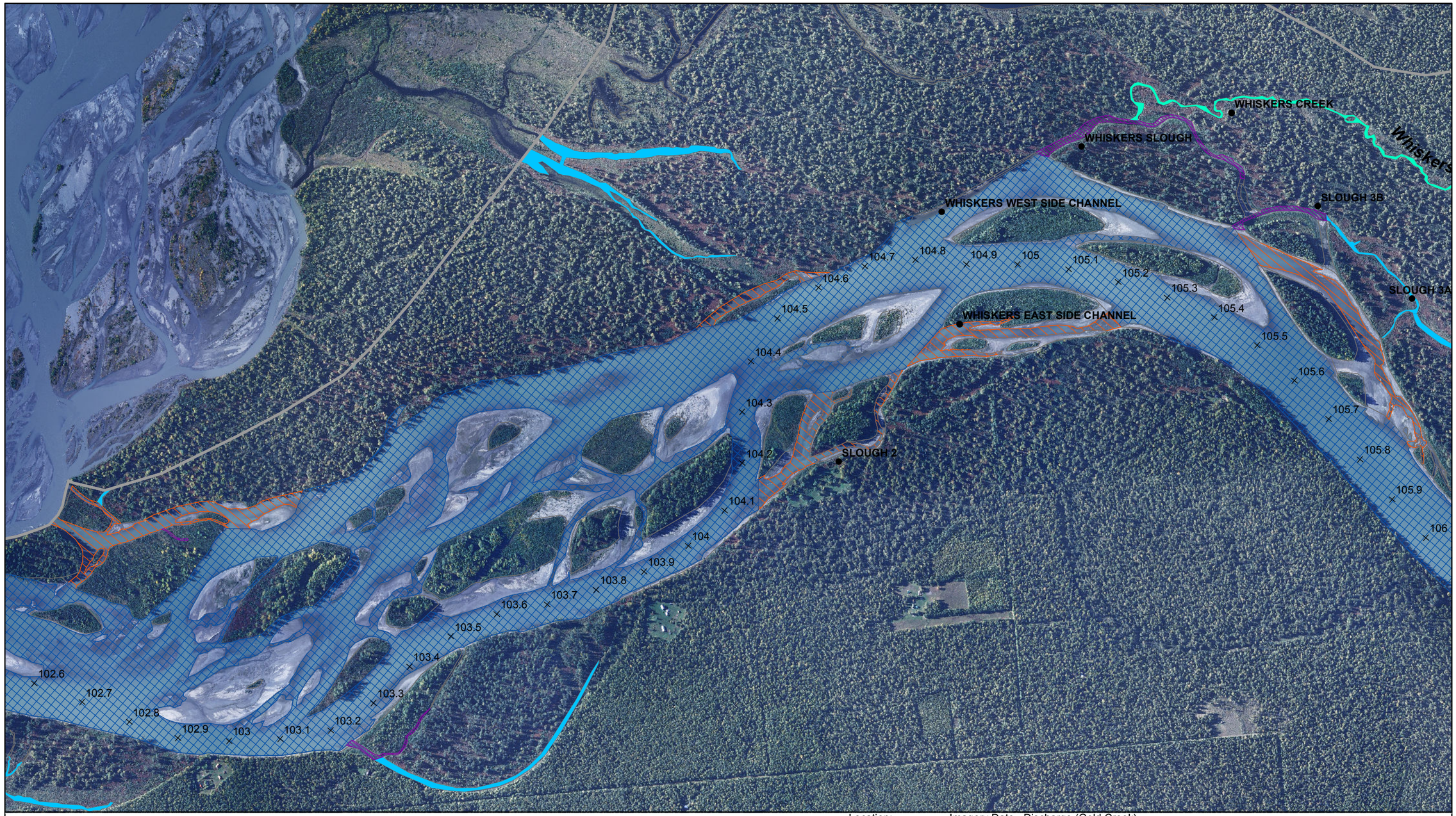
See index page for legend and additional data information.

Sheet 2 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
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1 inch = 1,000 feet

Sheet 3 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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1 inch = 1,000 feet

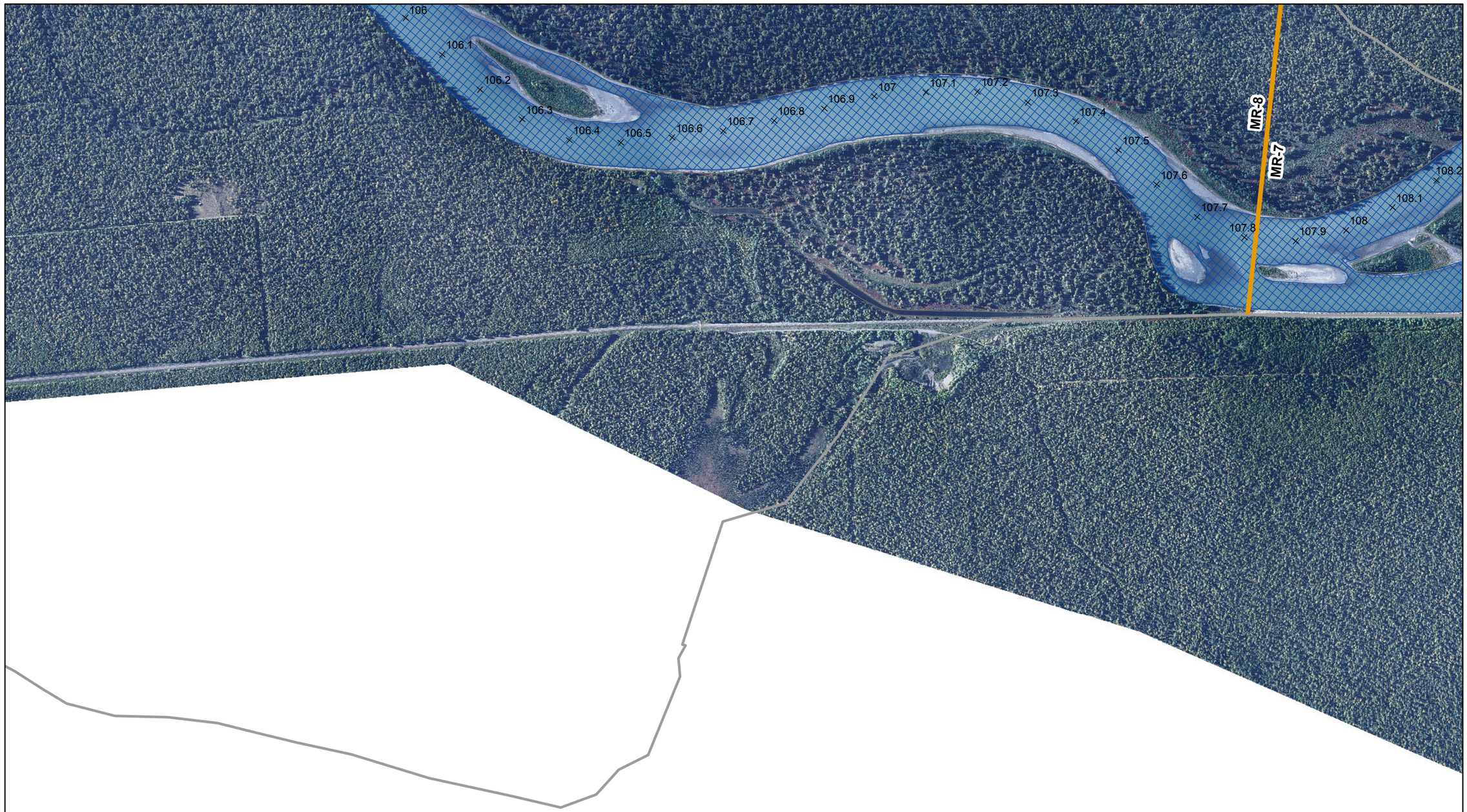
See index page for legend and additional data information.

Sheet 4 of 34

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PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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See index page for legend and additional data information.

Sheet 5 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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1 inch = 1,000 feet

See index page for legend and additional data information.

Sheet 6 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 7 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY



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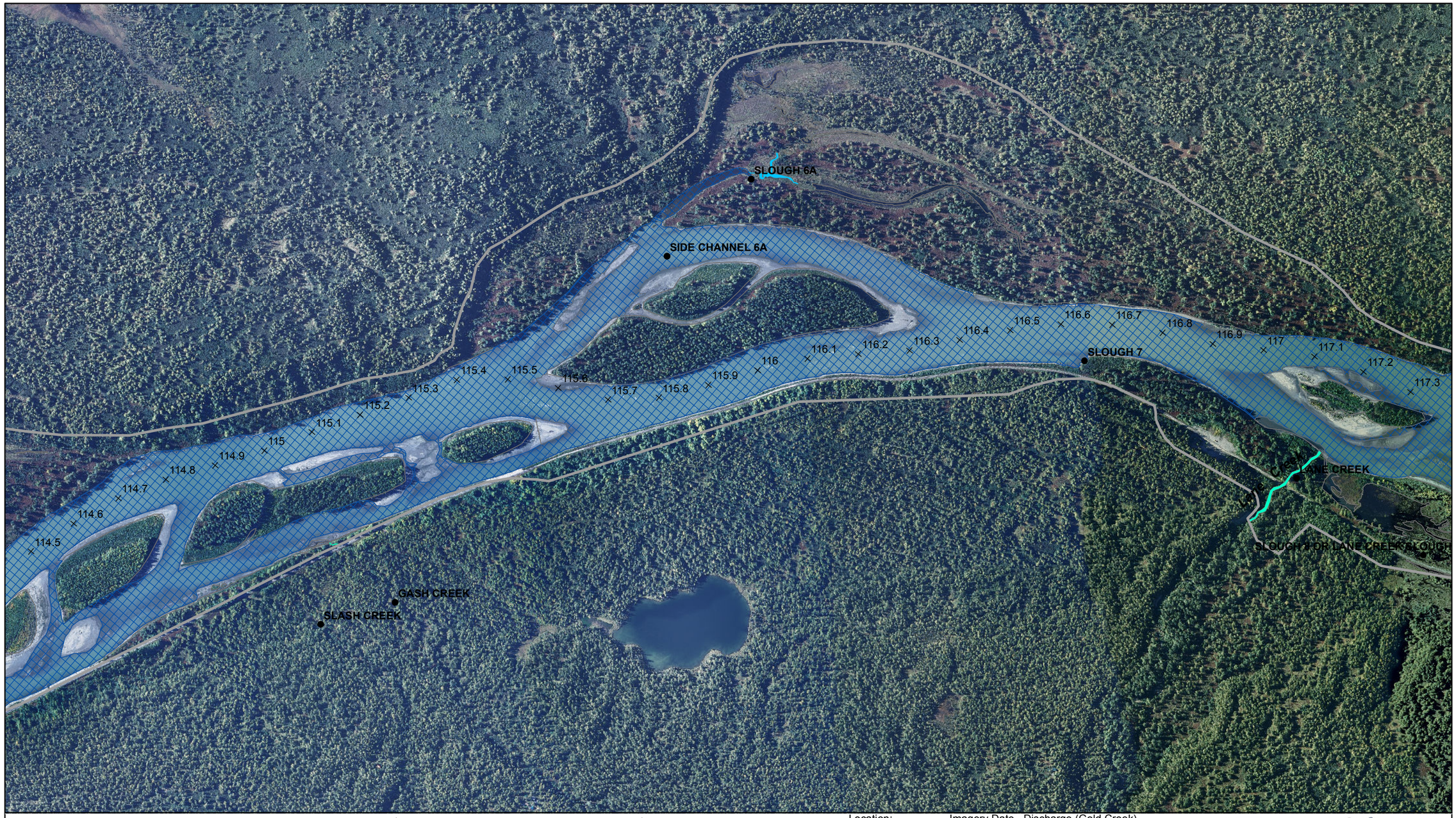
1 inch = 1,000 feet

Sheet 8 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 9 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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1 inch = 1,000 feet

See index page for legend and additional data information.

Sheet 10 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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See index page for legend and additional data information.

Sheet 11 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date.	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 12 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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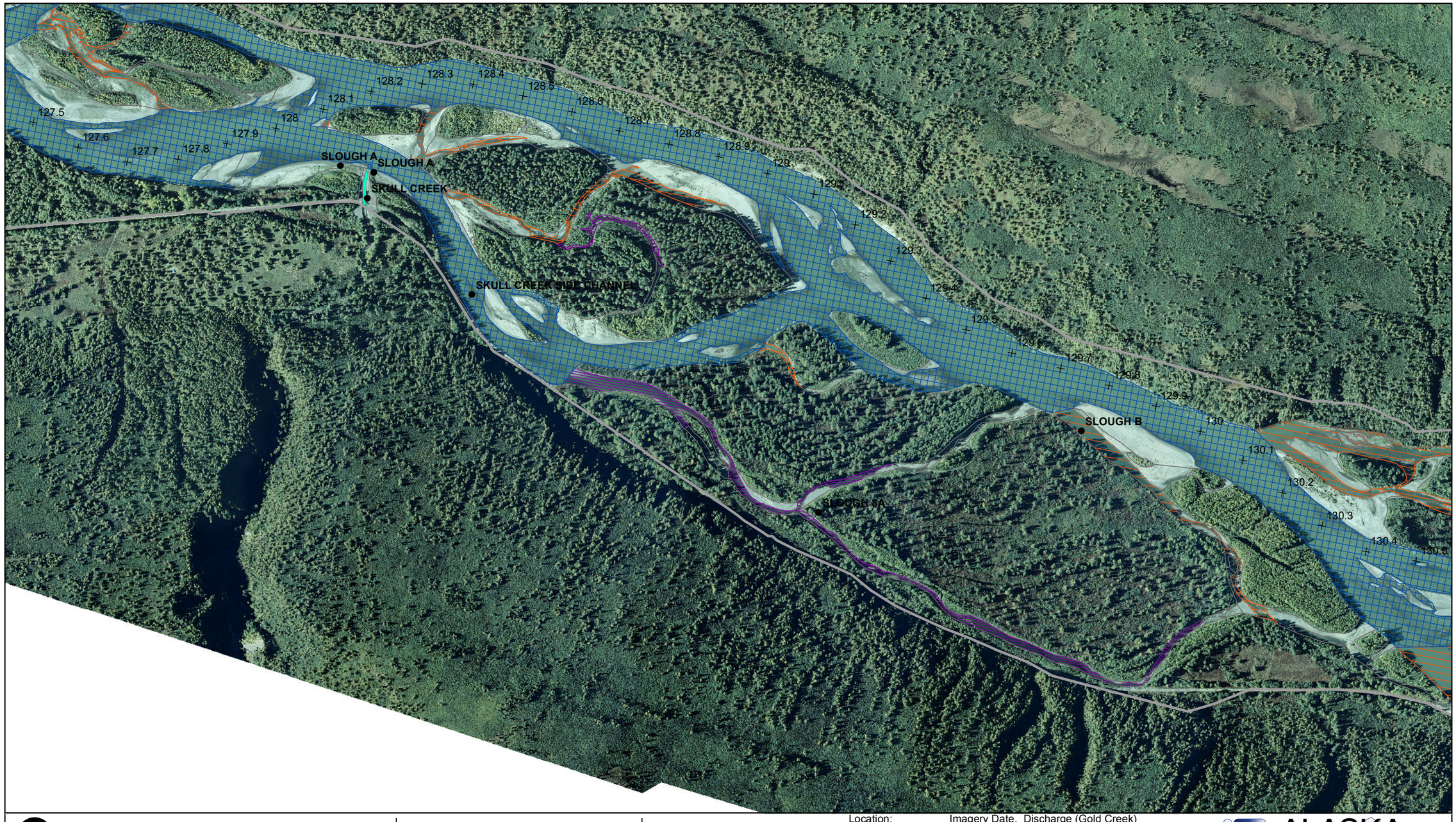
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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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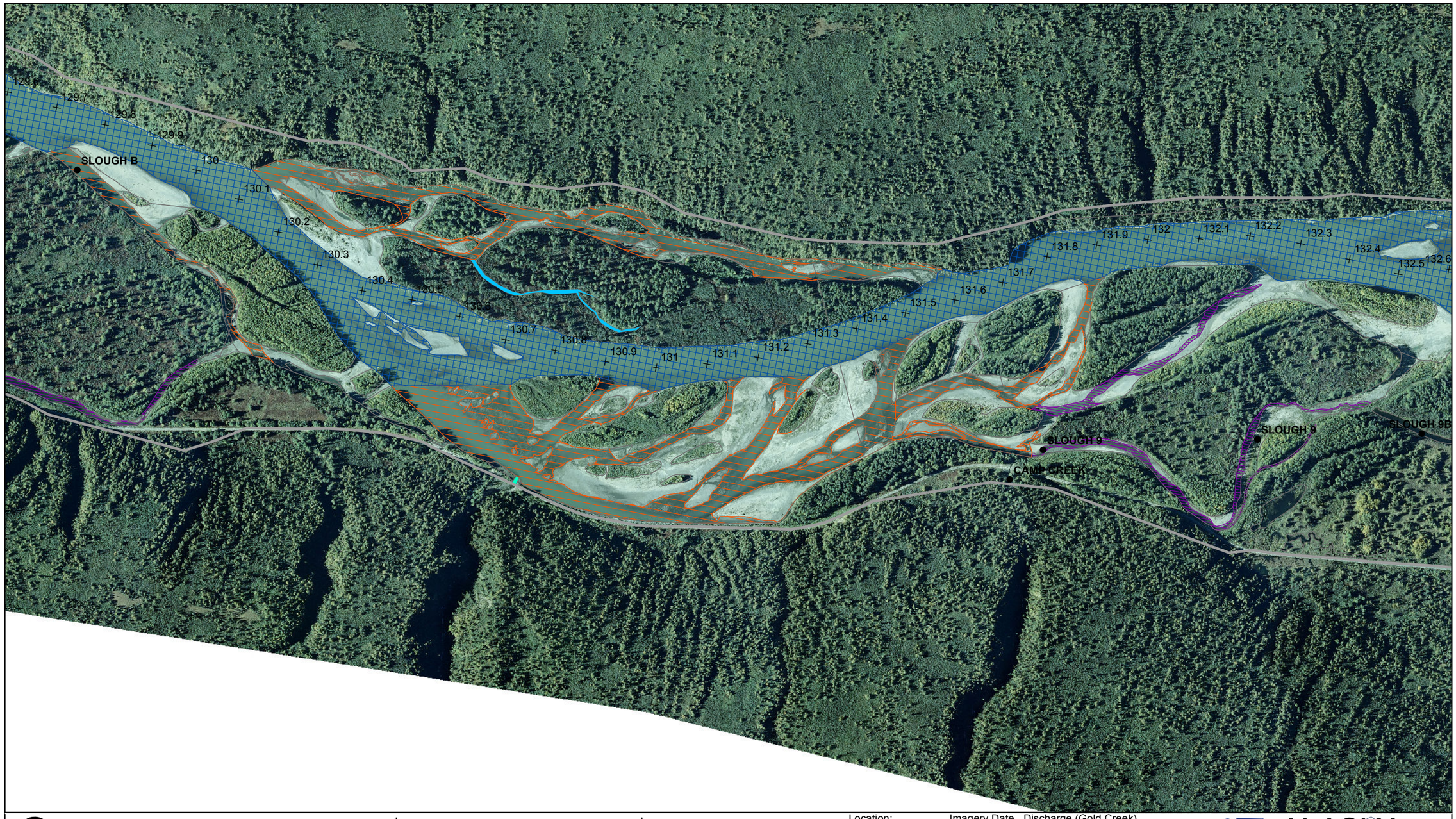
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MIDDLE SUSITNA RIVER SEGMENT
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

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0 1,000 2,000 Feet

1 inch = 1,000 feet

See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
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ALASKA ENERGY AUTHORITY



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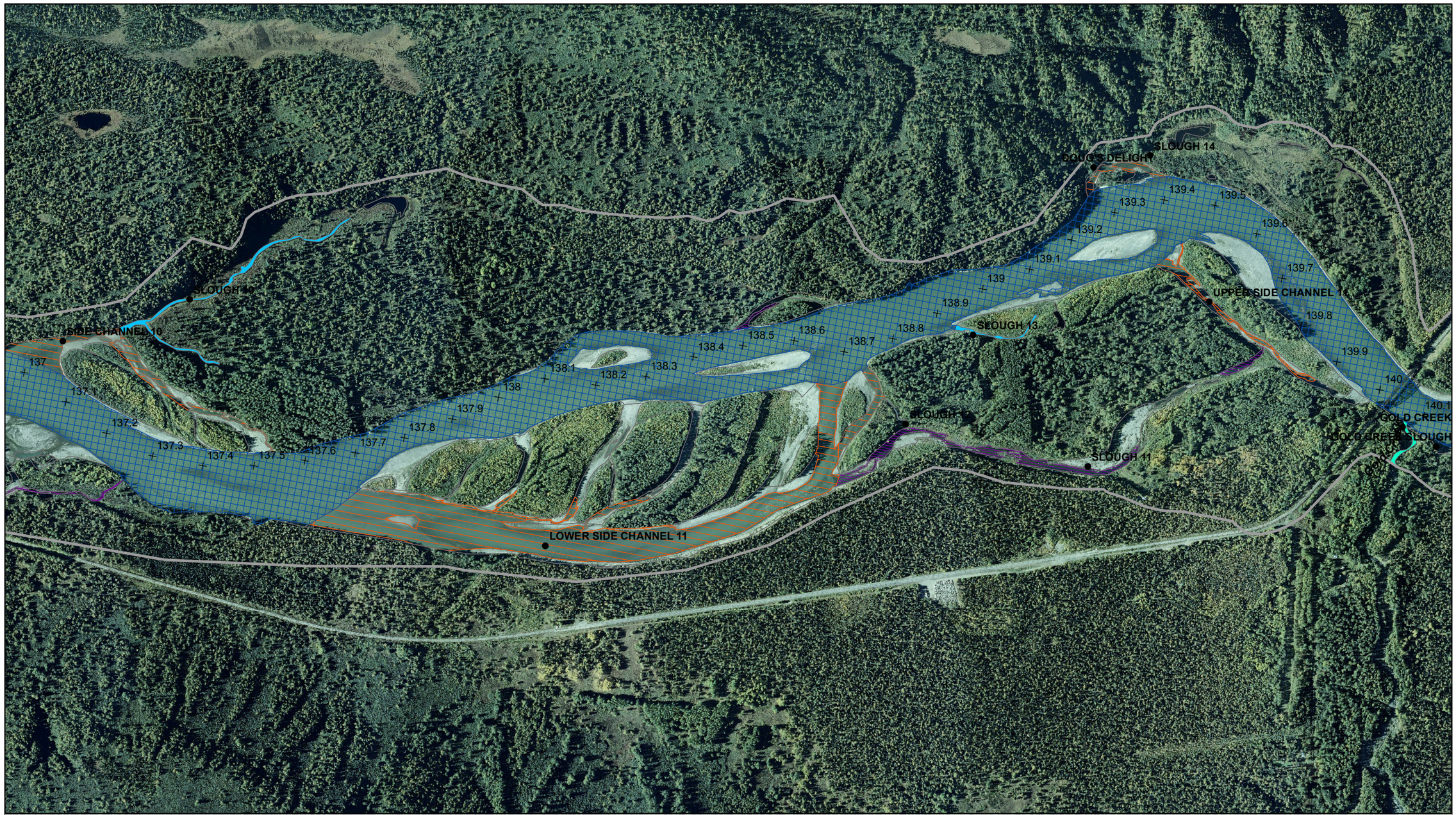
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MIDDLE SUSITNA RIVER SEGMENT
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ALASKA ENERGY AUTHORITY



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1 inch = 1,000 feet

See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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ALASKA ENERGY AUTHORITY



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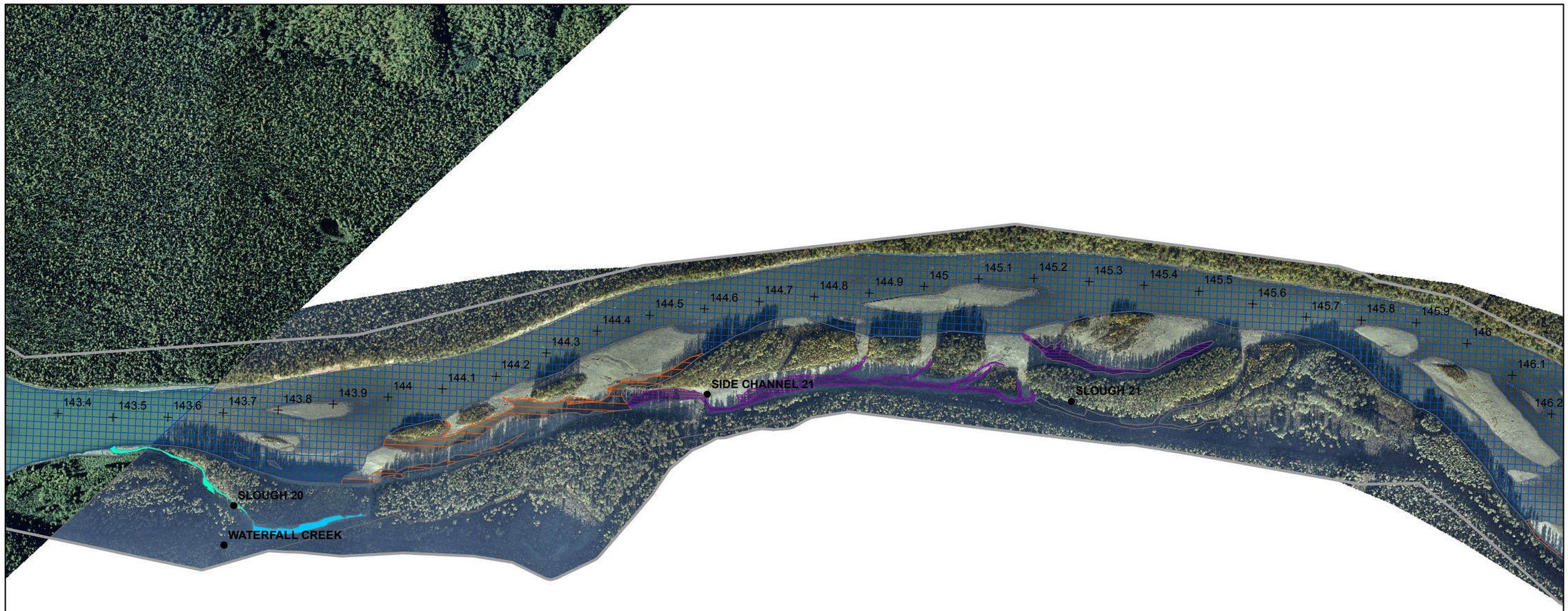
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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
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ALASKA ENERGY AUTHORITY



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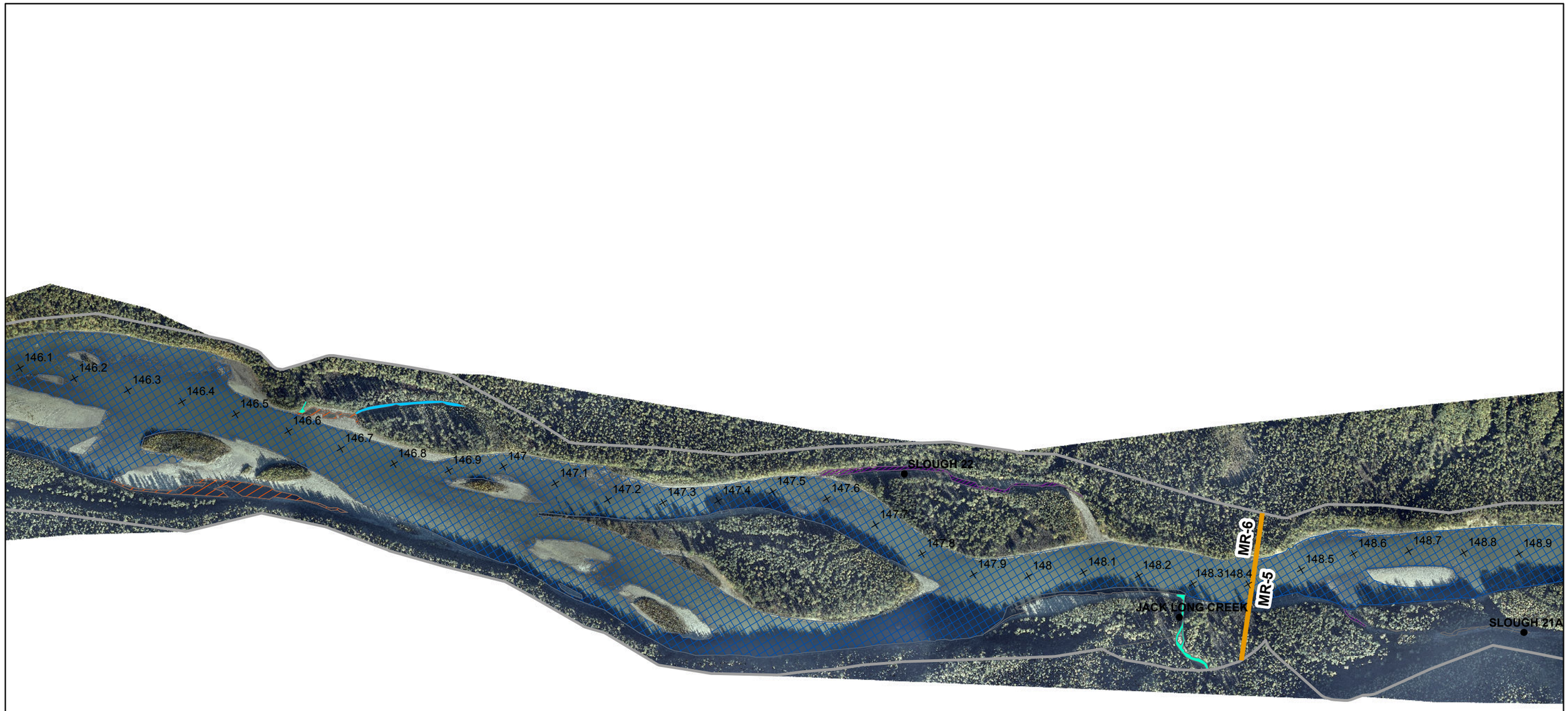
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MIDDLE SUSITNA RIVER SEGMENT
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ALASKA ENERGY AUTHORITY



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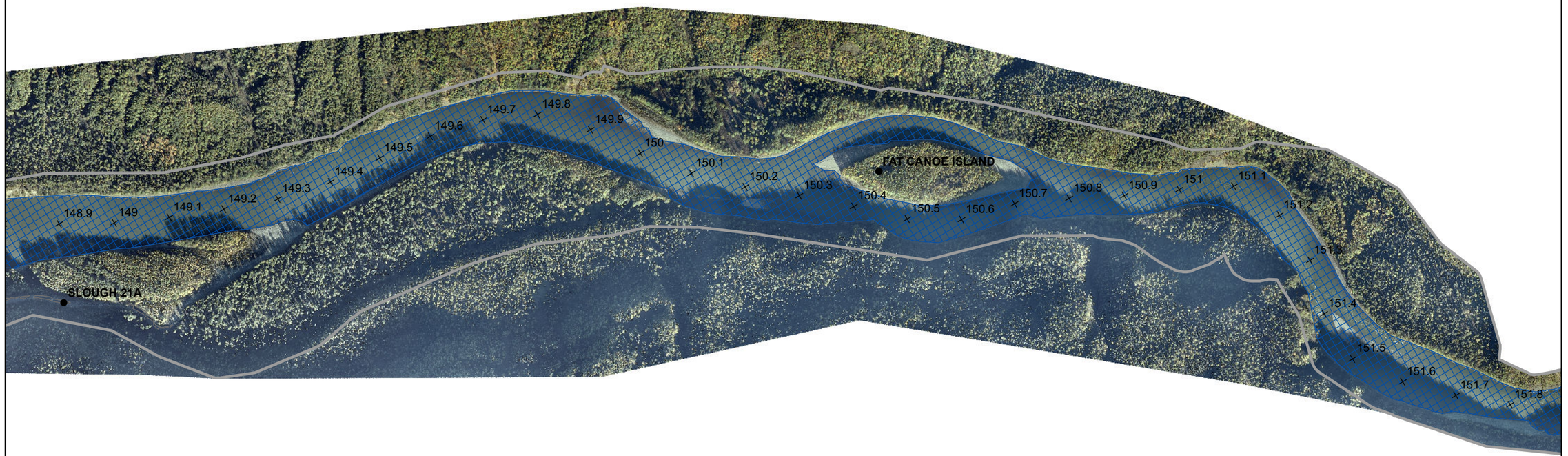
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ALASKA ENERGY AUTHORITY



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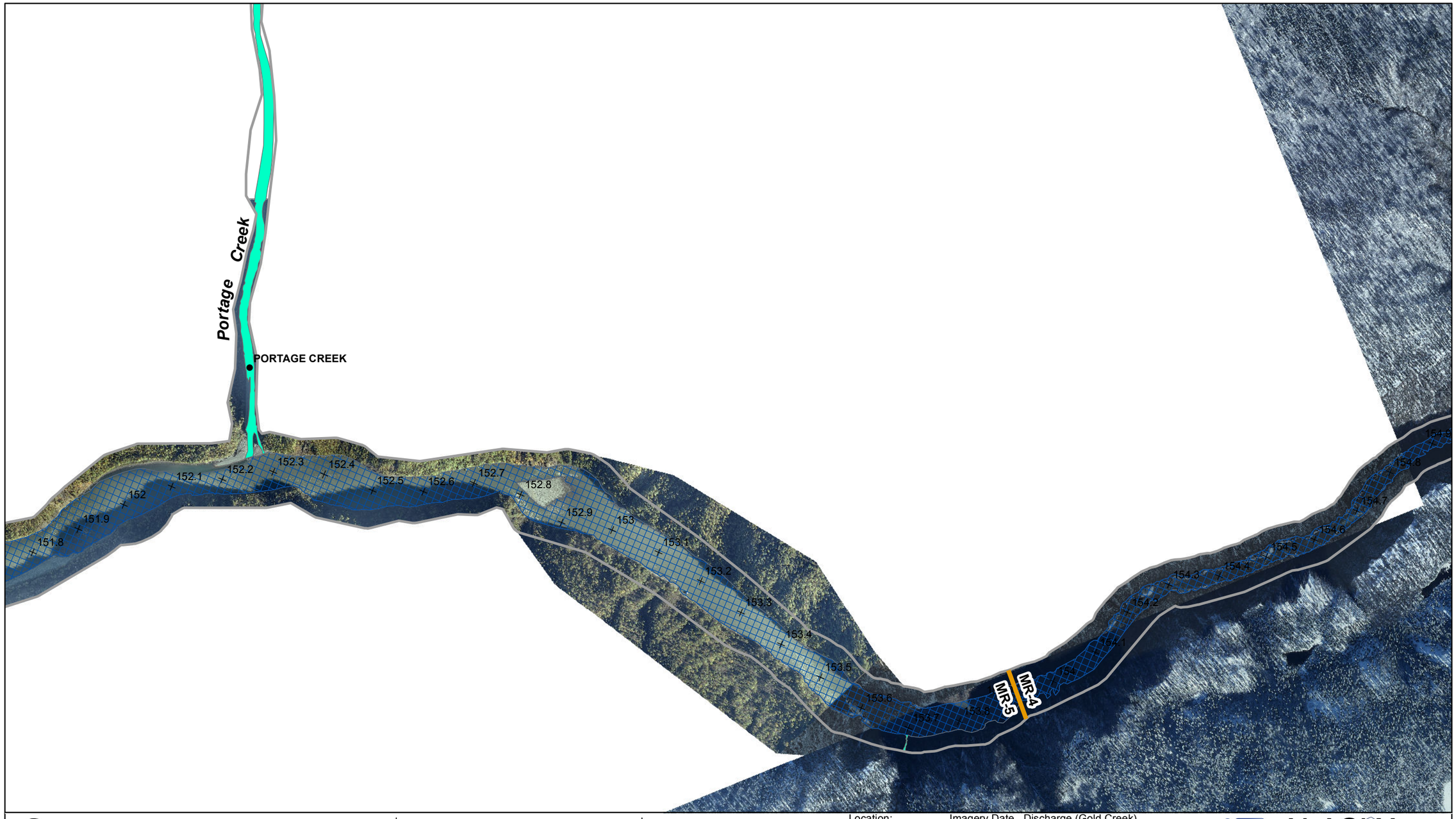
See index page for legend and additional data information.

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CURRENT AQUATIC MACROHABITAT

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ALASKA ENERGY AUTHORITY



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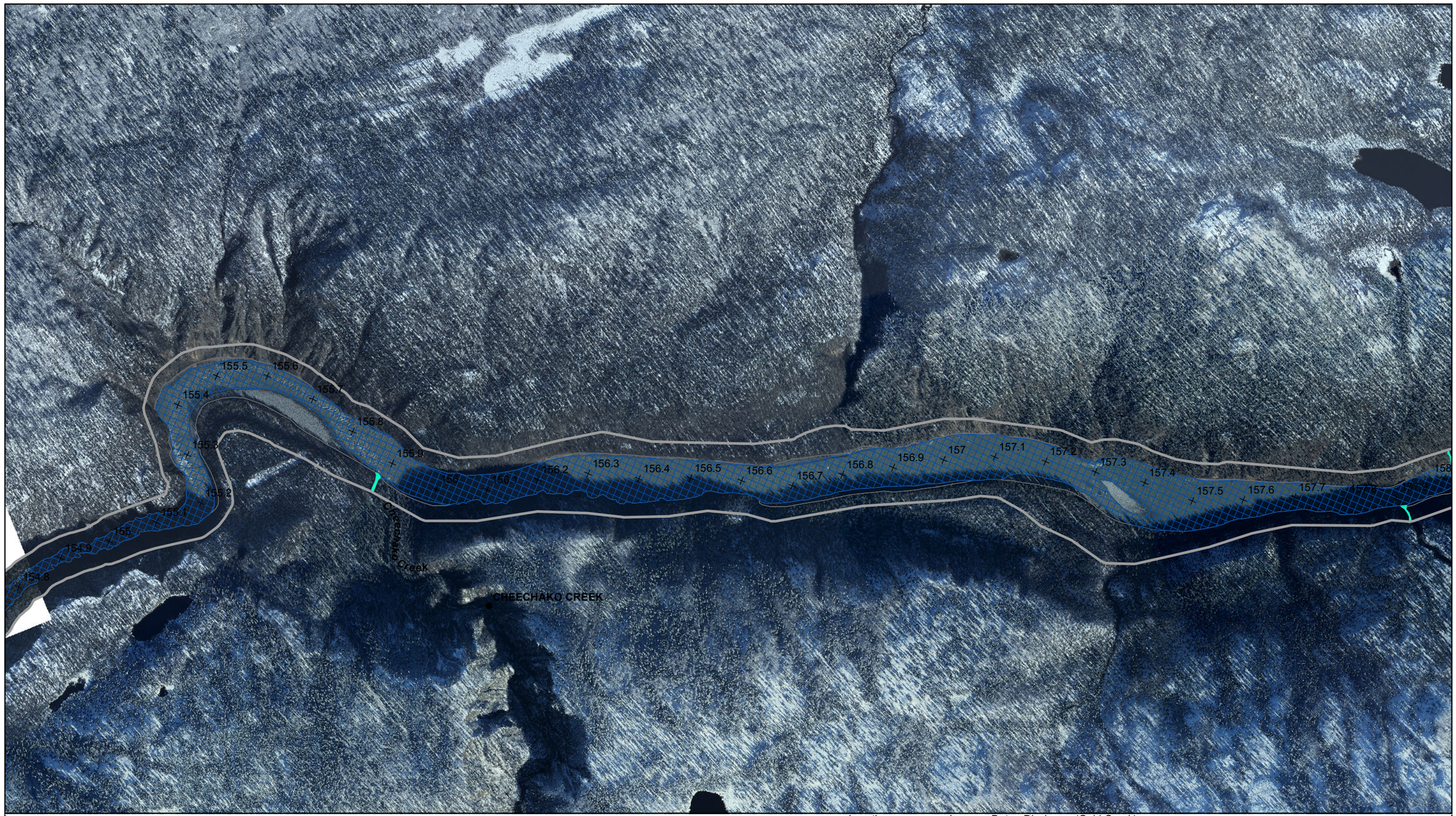
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 24 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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ALASKA ENERGY AUTHORITY



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Sheet 25 of 34

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ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 26 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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ALASKA ENERGY AUTHORITY



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Sheet 27 of 34

MIDDLE SUSITNA RIVER SEGMENT
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ALASKA ENERGY AUTHORITY



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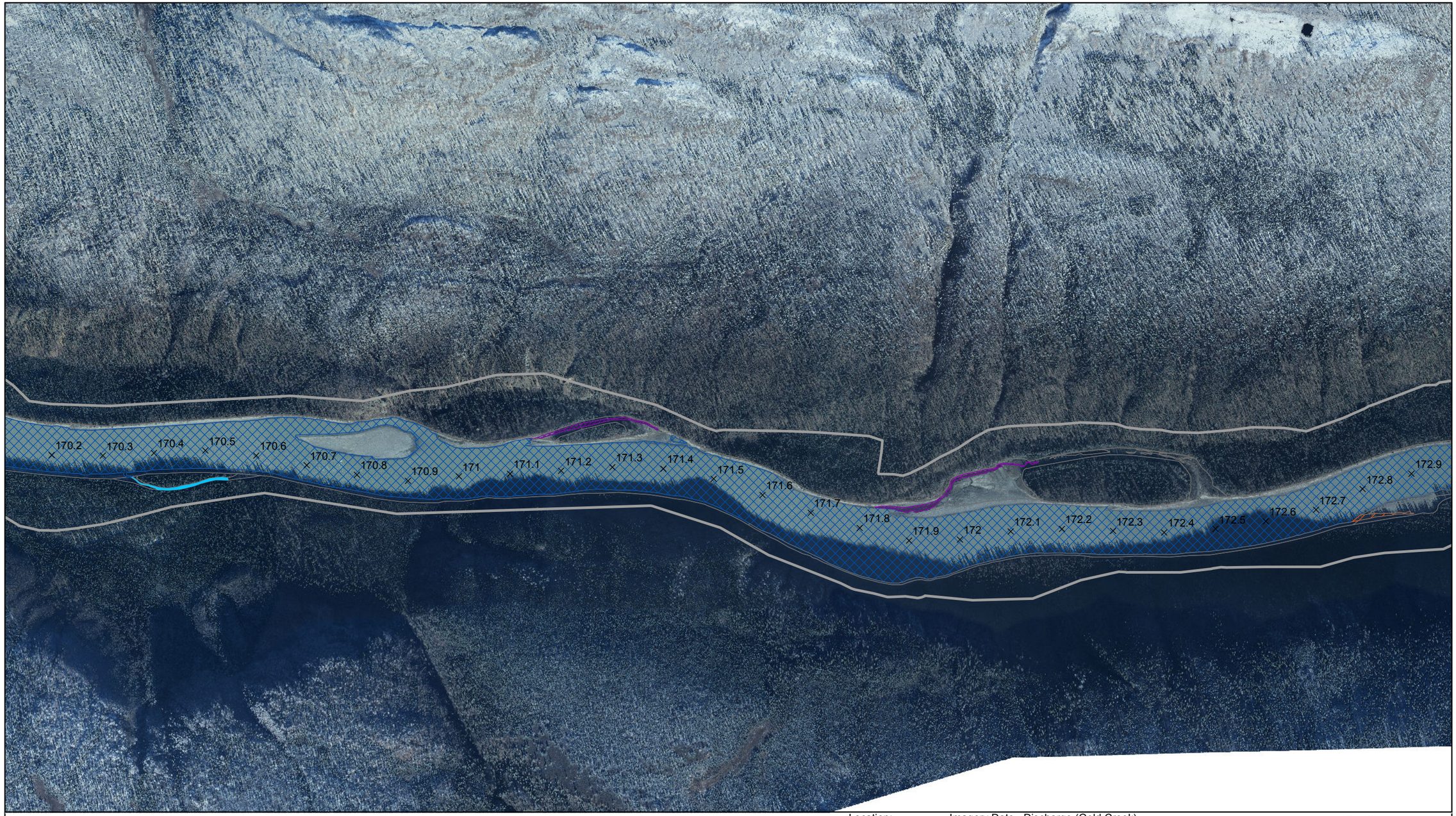
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MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY



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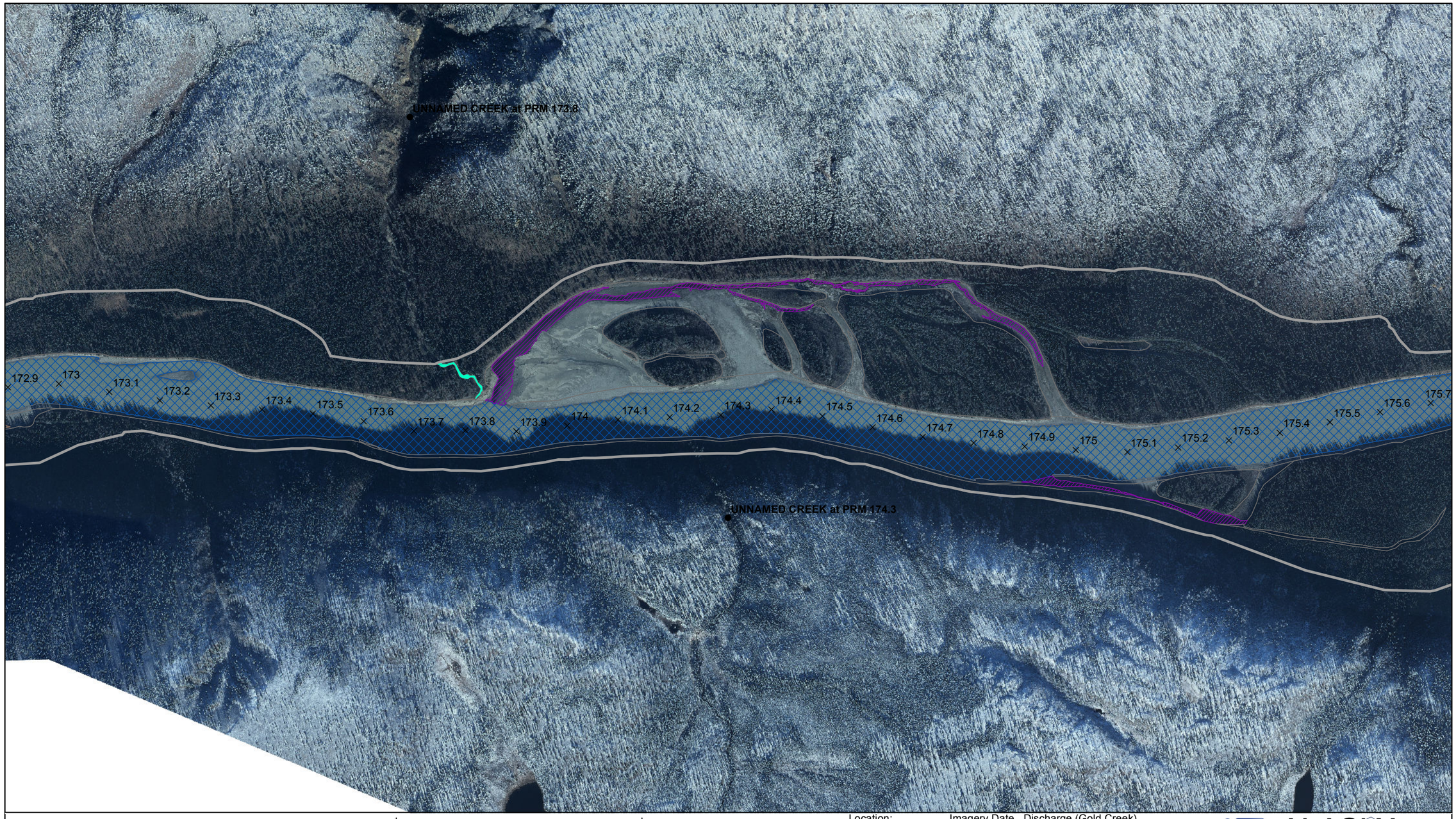
1 inch = 1,000 feet

Sheet 29 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

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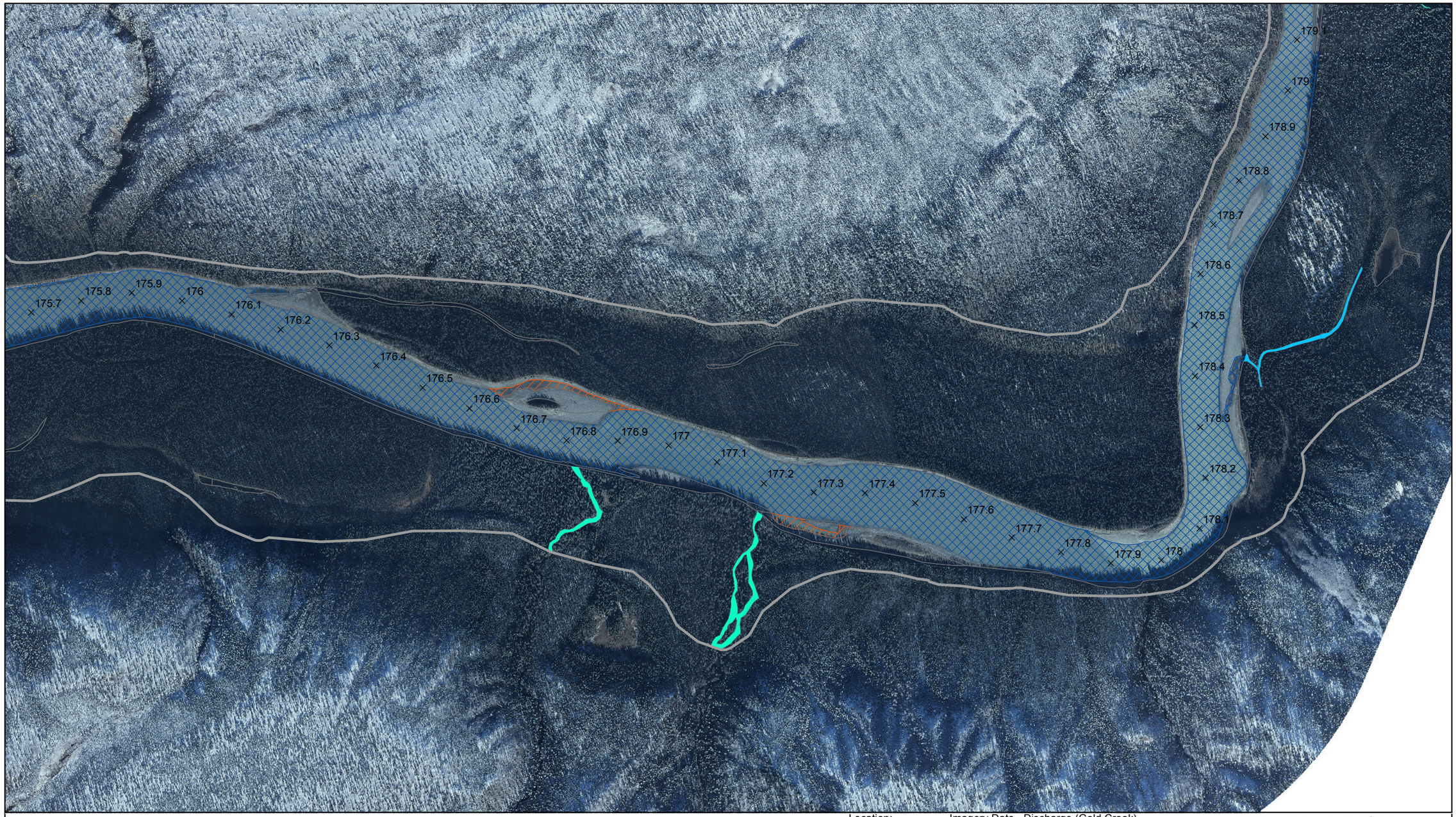
1 inch = 1,000 feet

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0 1,000 2,000 Feet

See index page for legend and additional data information.

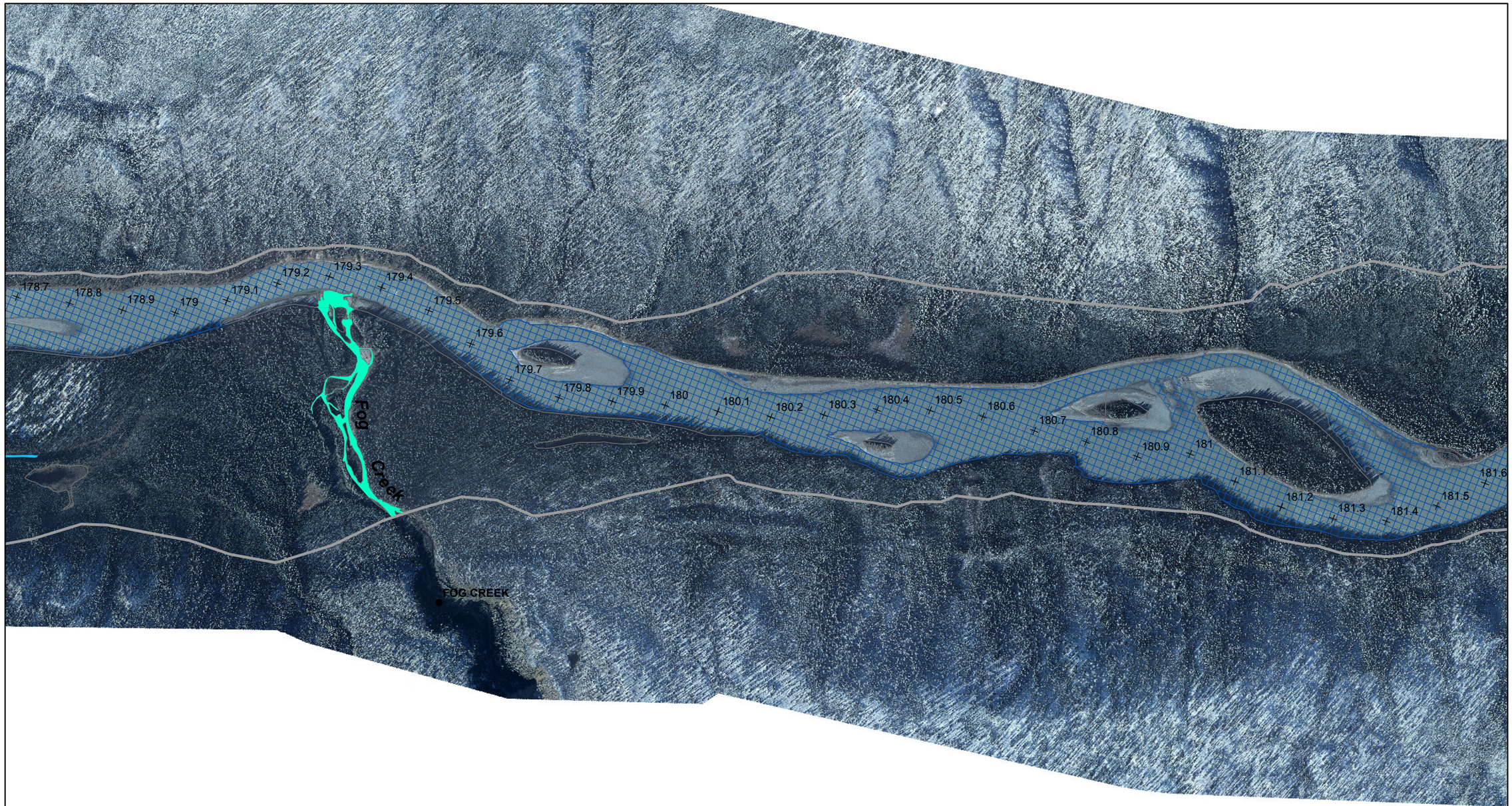
1 inch = 1,000 feet

Sheet 31 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date.	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

1 inch = 1,000 feet

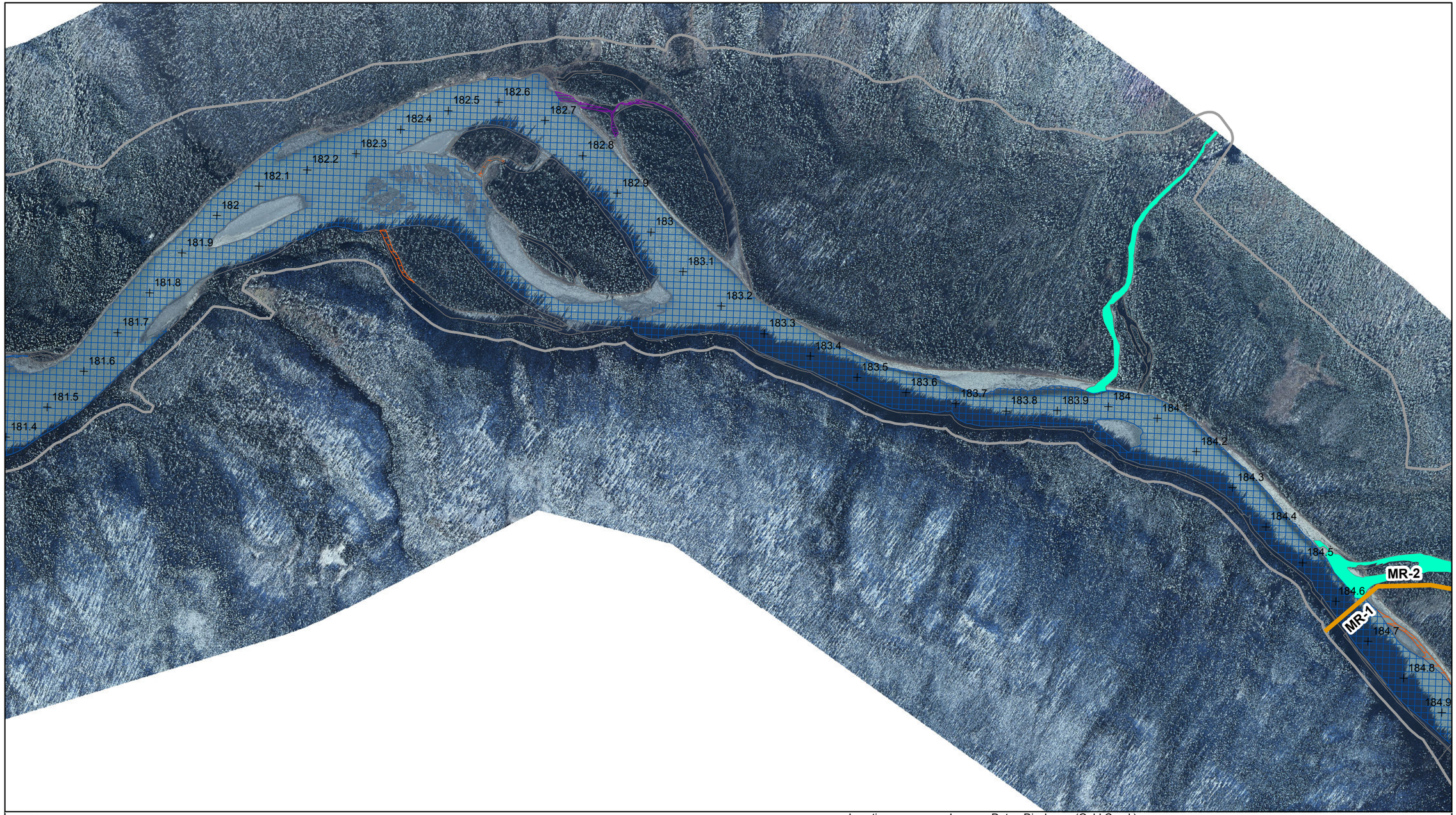
See index page for legend and additional data information.

Sheet 32 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 33 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY

TSUSENA CREEK

Tsusena Creek

MR-2

MR-1

UR-6

184.5 184.6 184.7 184.8 184.9 185 185.1 185.2 185.3 185.4 185.5 185.6 185.7 185.8 185.9 186 186.1 186.2 186.3 186.4 186.5 186.6 186.7 186.8 186.9 187.1 187.2 187.3

0 1,000 2,000 Feet

1 inch = 1,000 feet

See index page for legend and additional data information.

Sheet 34 of 34

MIDDLE SUSITNA RIVER SEGMENT
CURRENT AQUATIC MACROHABITAT

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.4 - 143.6:	09/10/2012	12,900 cfs
PRM 143.6 - 153.6:	09/24/2013	11,300 cfs
PRM 153.6 - 187.1:	09/30/2012	17,000 cfs

ALASKA ENERGY AUTHORITY