

PART A - APPENDIX J: TIR IMAGES

Susitna-Watana Hydroelectric Project (FERC No. 14241)

Baseline Water Quality Study (5.5)

Part A - Appendix J TIR Images

Initial Study Report

Prepared for

Alaska Energy Authority



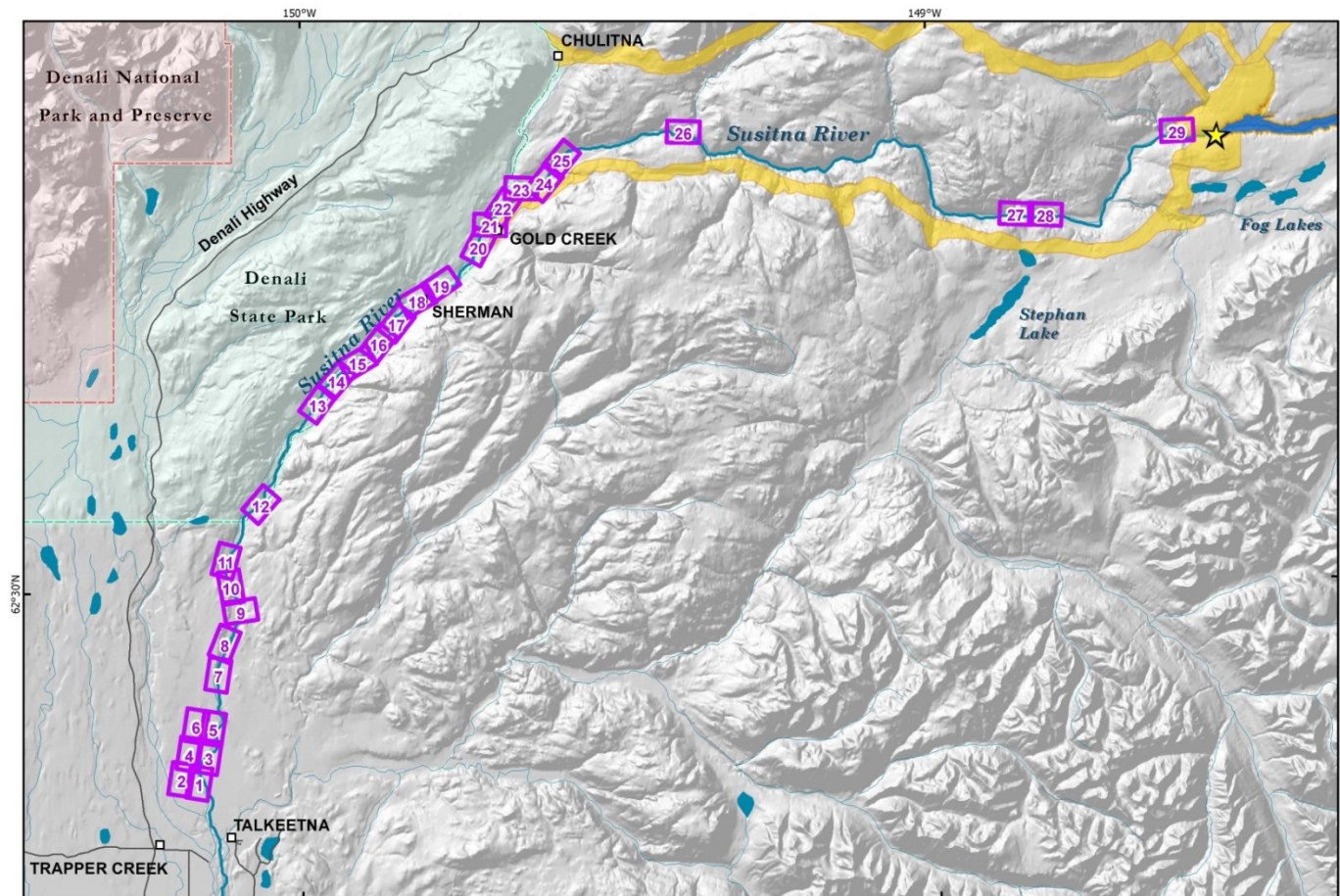
SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

Tetra Tech

June 2014



LEGEND

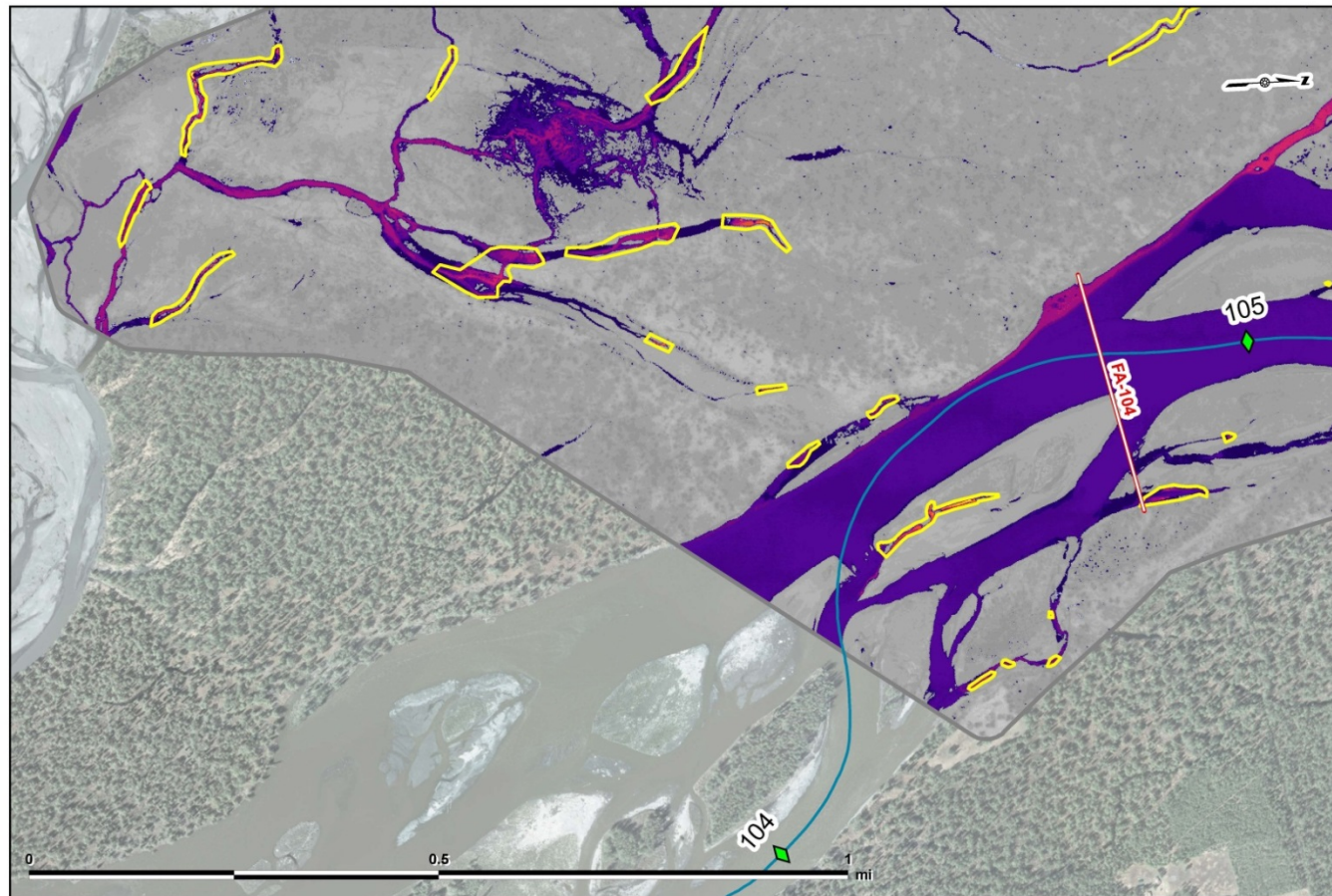
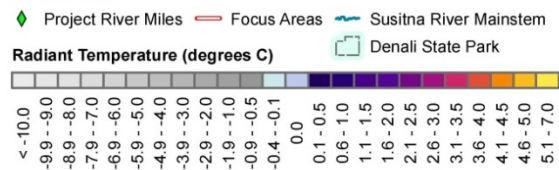
- ★ Proposed Watana Dam Site
- Proposed Watana Reservoir
- Map Pages (with page number)
- Rivers, Streams, and Lakes
- Proposed Study Area



Data Sources: See Map References

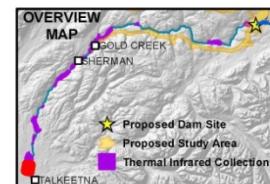
Overview Map

Projection: Alaska Albers NAD 1983
 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_OverviewMap_20140110.mxd

**LEGEND**

Increased Groundwater Activity (by date flown)

2013-Oct-23
 2013-Oct-24
 2013-Oct-31

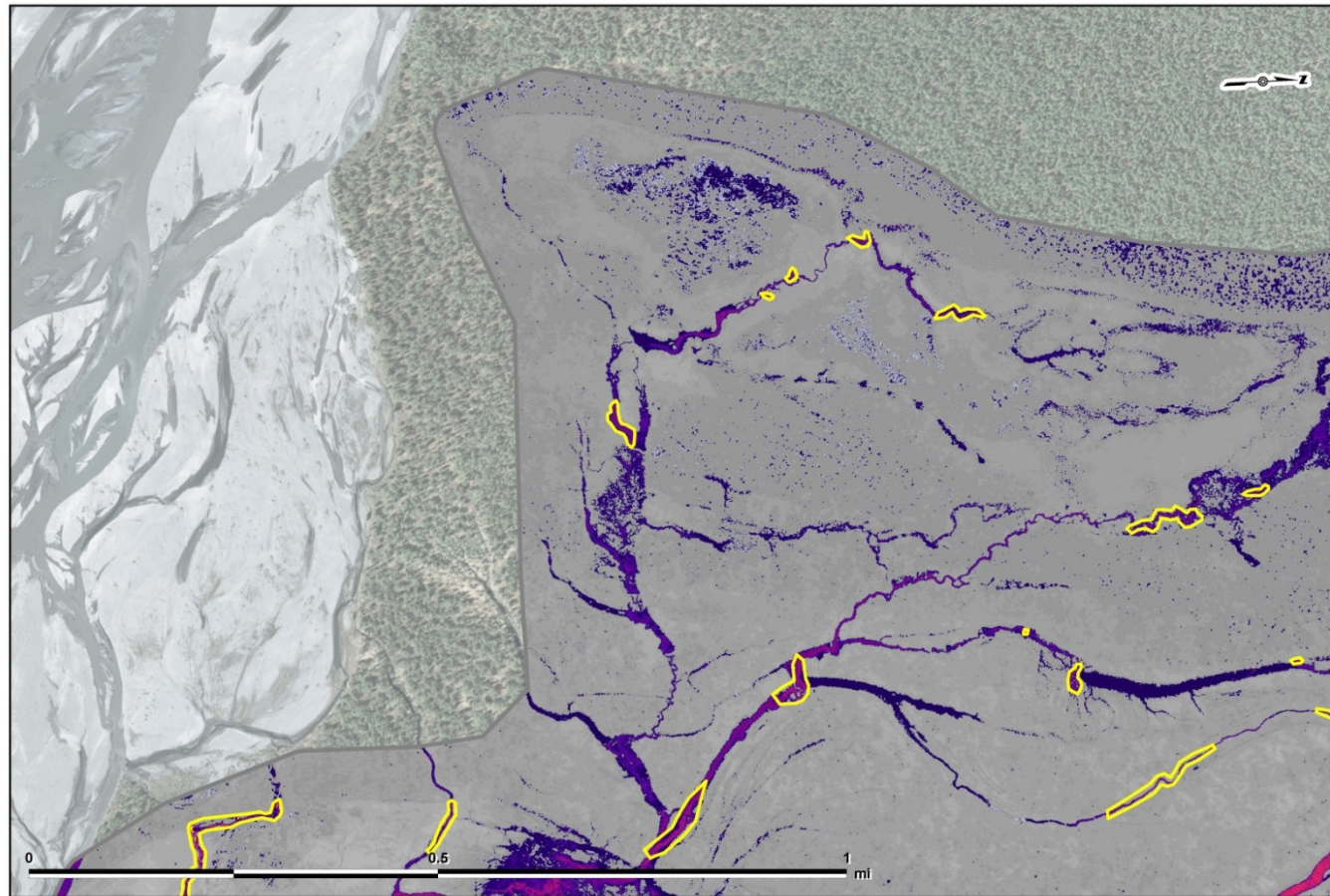
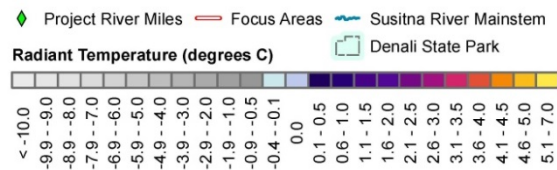
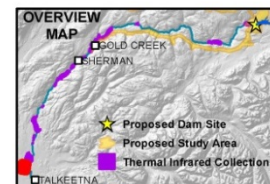
Focus Area 104/Whiskers Slough, Map 1 of 6

ALASKA ENERGY AUTHORITY

Data Sources: See Map References

Map Page 1 of 29

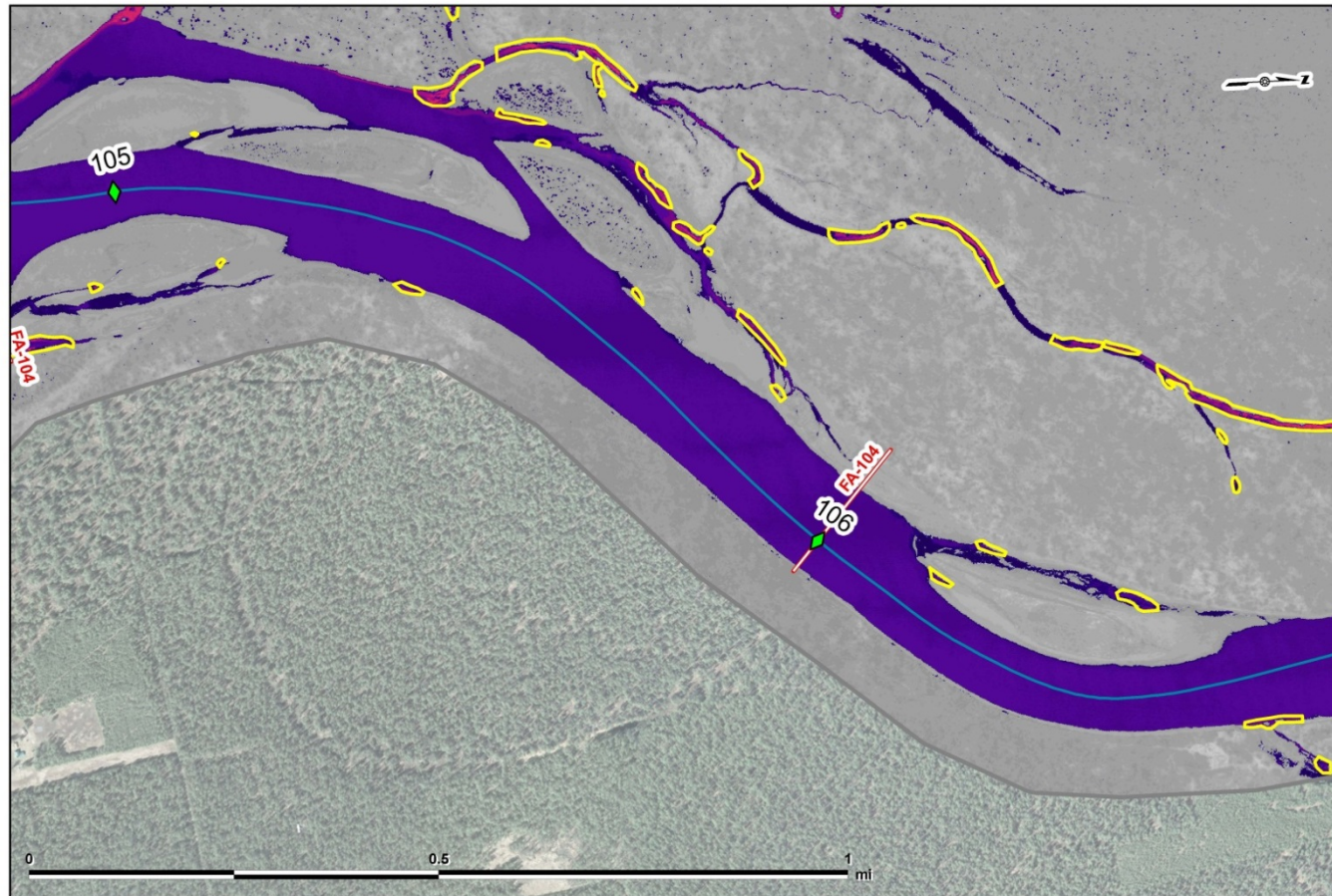
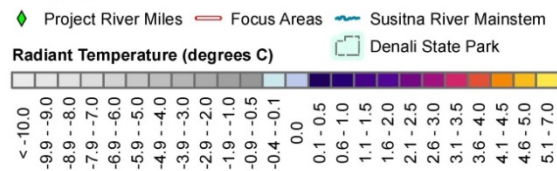
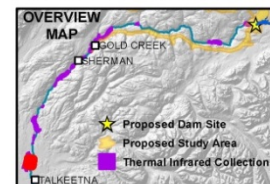
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 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd

**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 104/Whiskers Slough, Map 2 of 6**

Data Sources: See Map References

Map Page 2 of 29

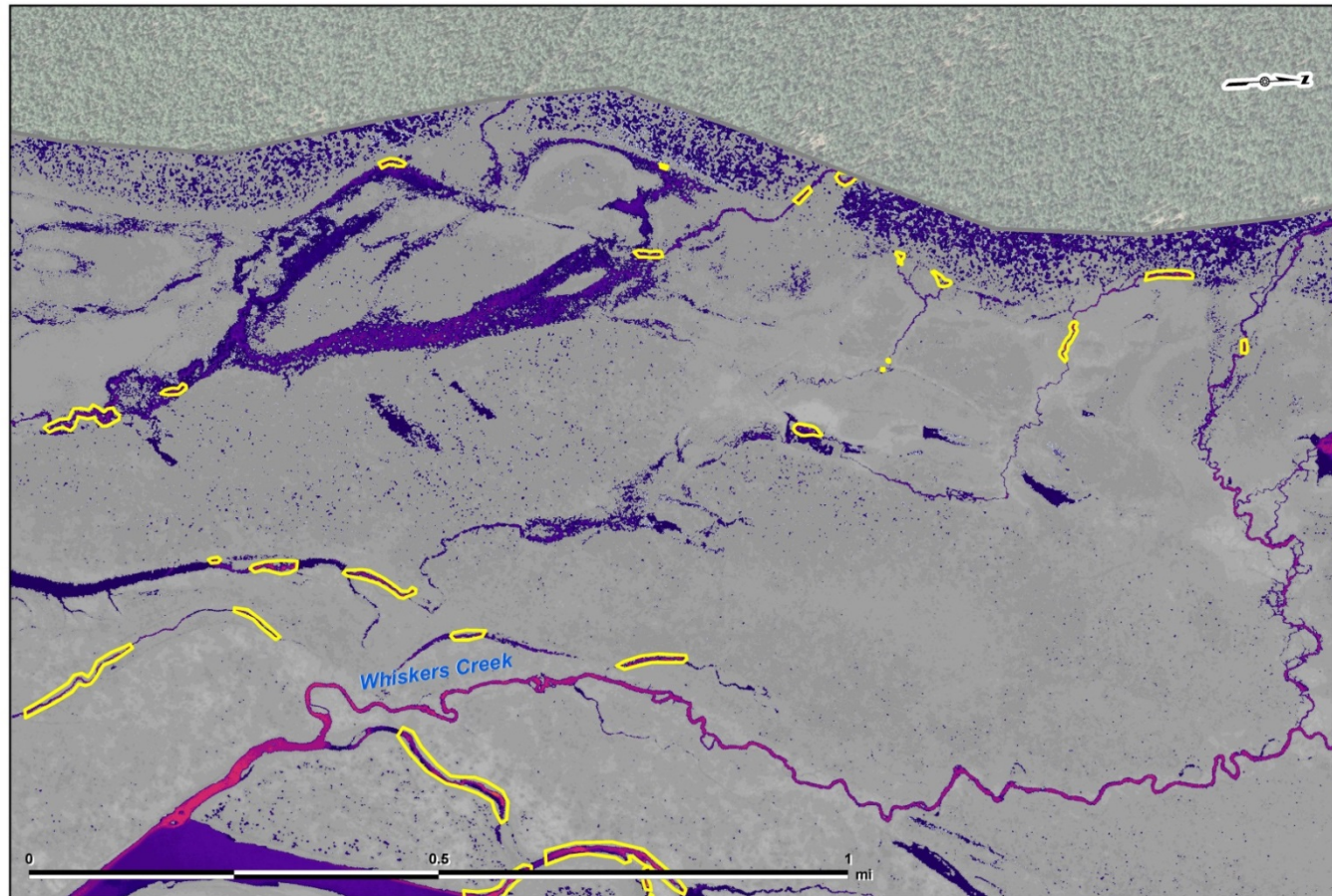
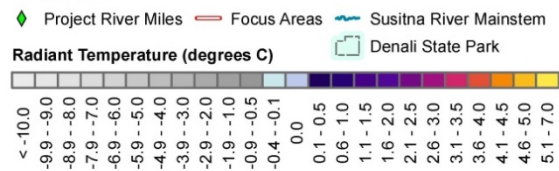
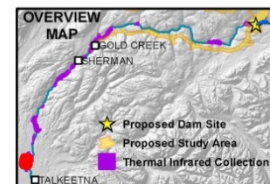
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 File: ThermalDataOctober2013_20140110.mxd

**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 104/Whiskers Slough, Map 3 of 6**

Data Sources: See Map References

Map Page 3 of 29

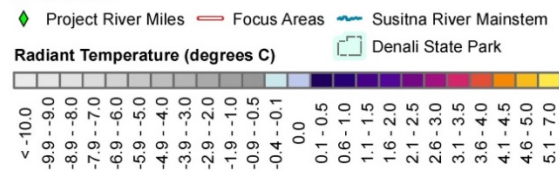
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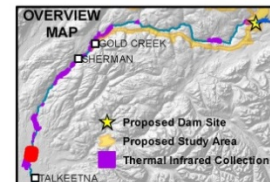
Data Sources: See Map References

Map Page 4 of 29

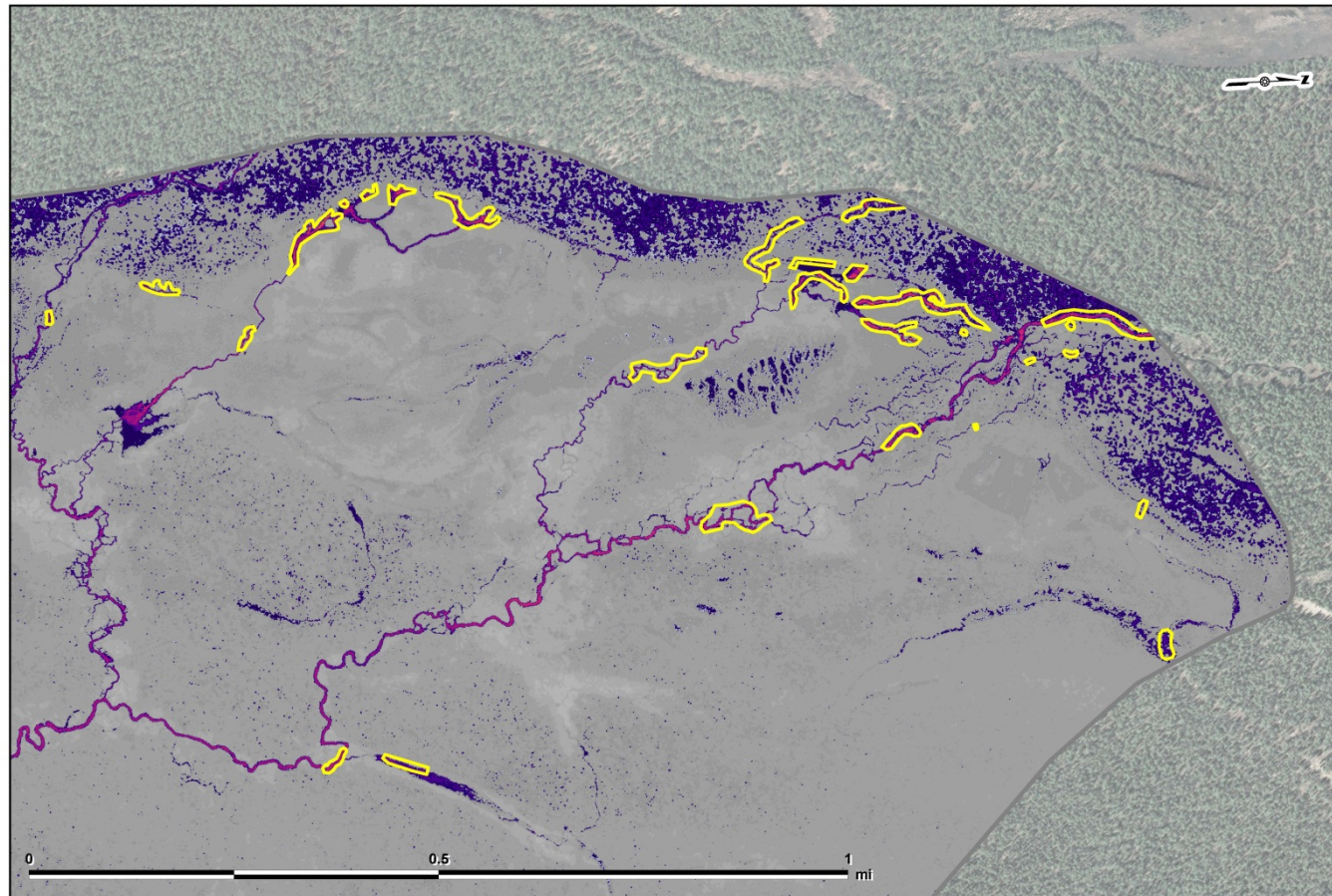
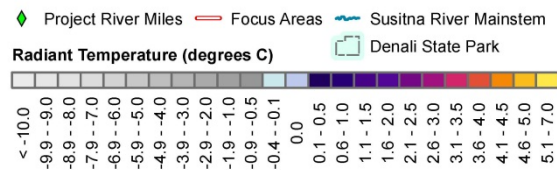
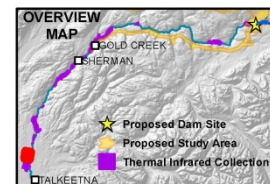
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☐ 2013-Oct-23
☐ 2013-Oct-24
☐ 2013-Oct-31



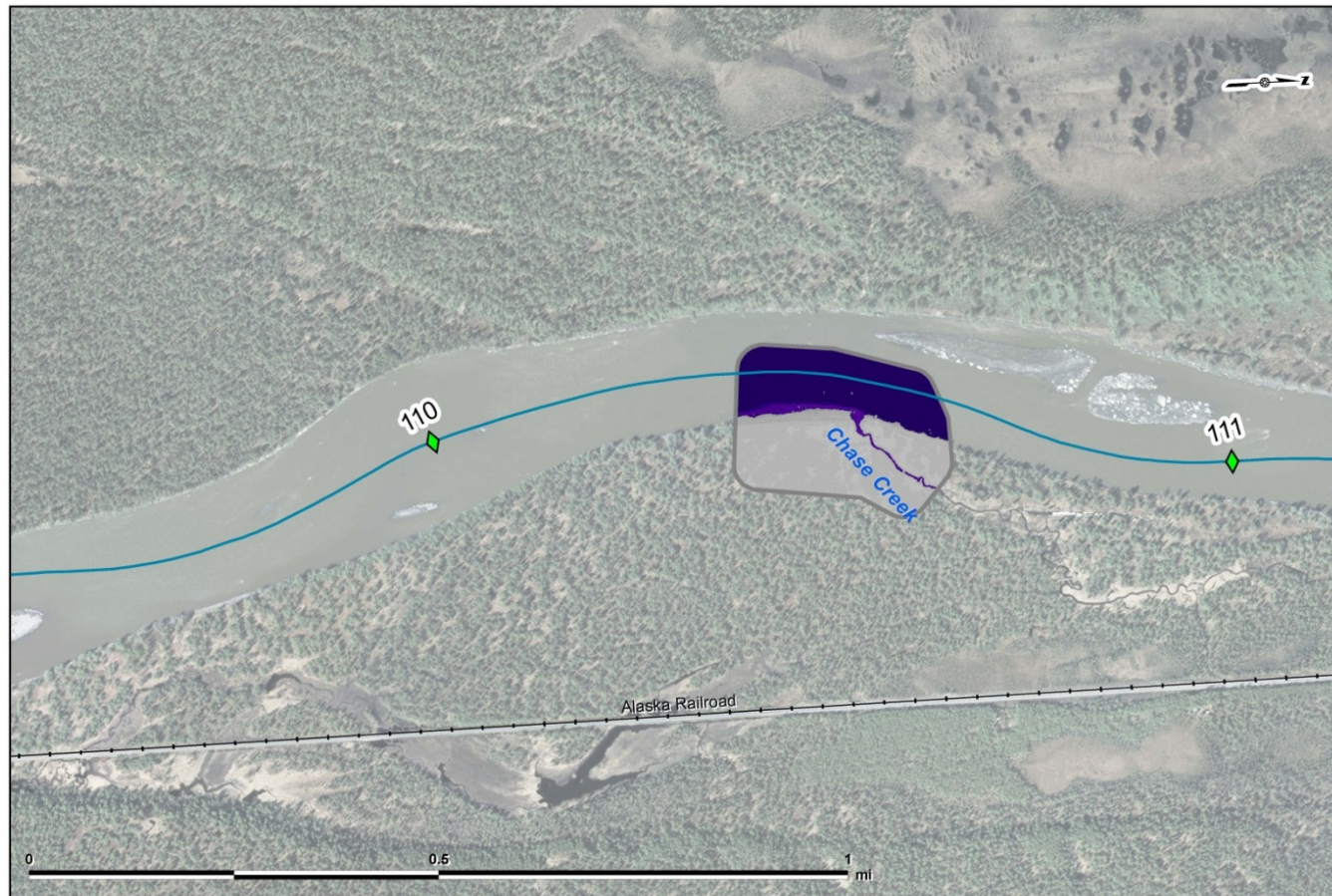
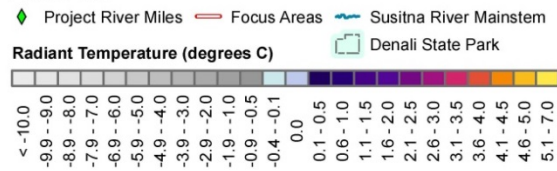
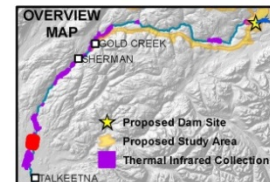
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Date Created: 1/10/2014
Map Author: URS Alaska, Cynthia Kirkham
File: ThermalDataOctober2013_20140110.mxd

**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 104/Whiskers Slough, Map 6 of 6**

Data Sources: See Map References

Map Page 6 of 29

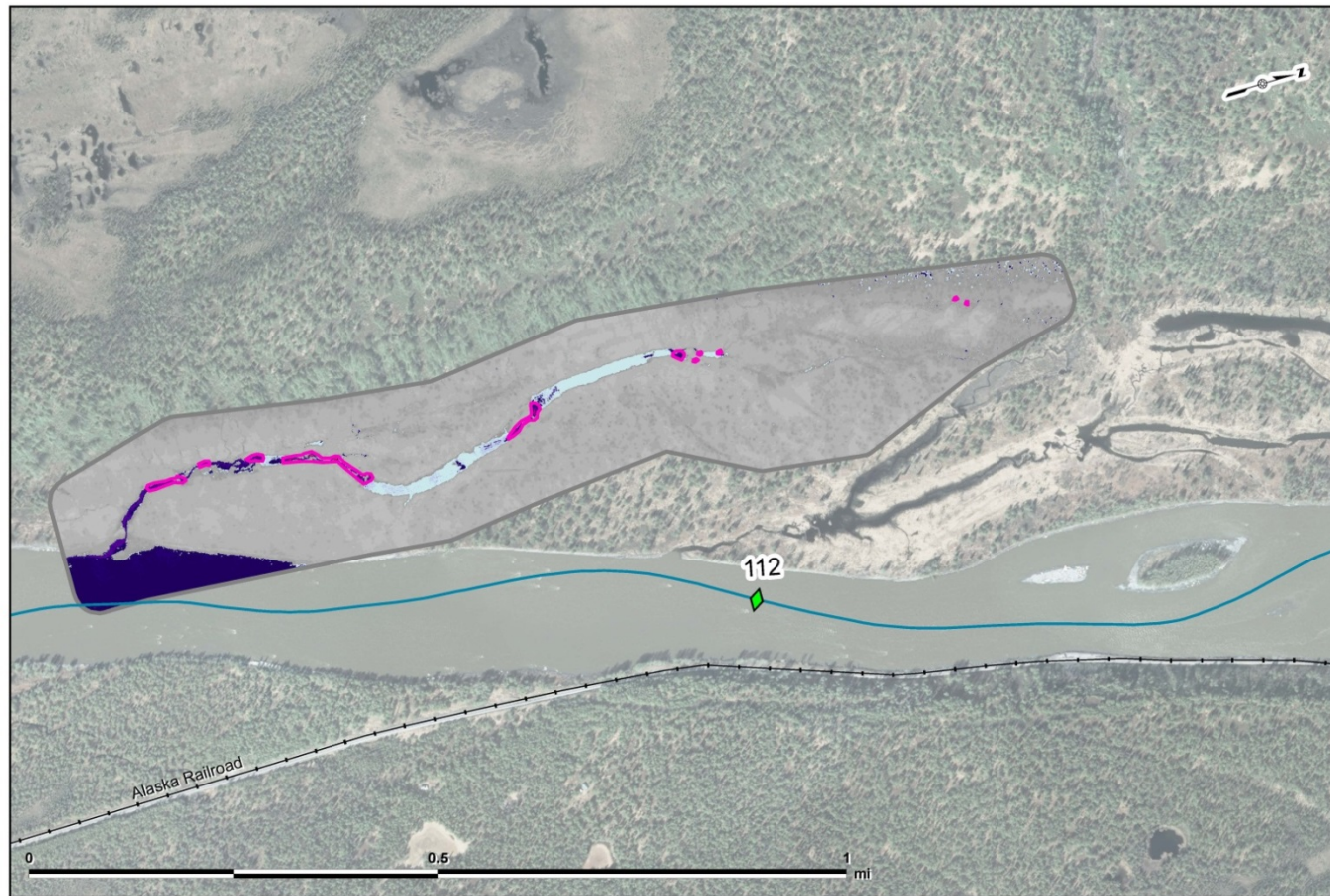
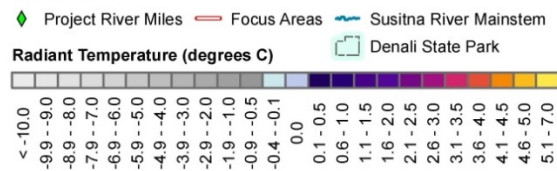
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 Map Author: URS Alaska, Cynthia Kirkham
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Data Sources: See Map References

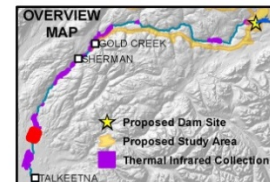
Map Page 7 of 29

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Increased Groundwater Activity (by date flown)

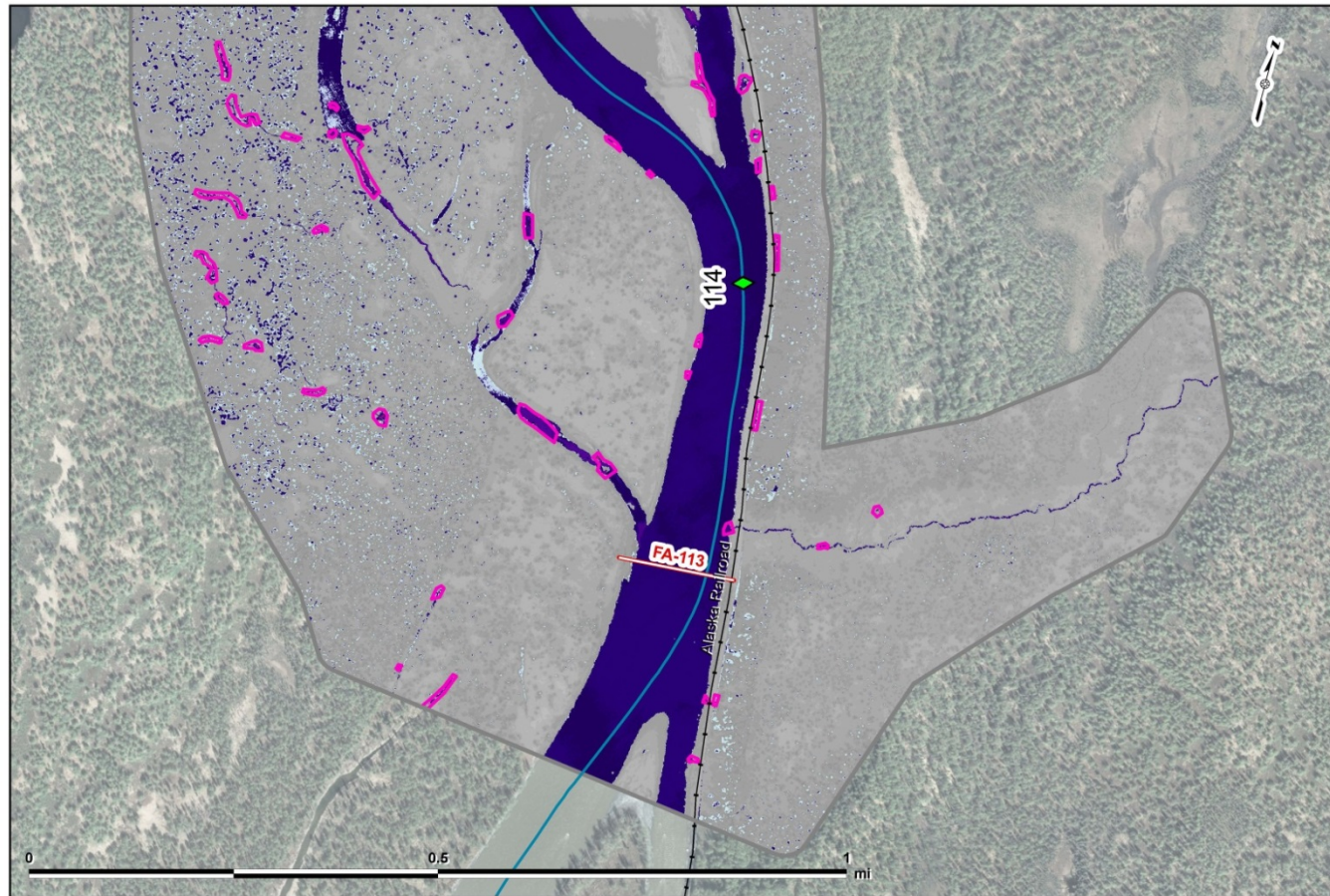
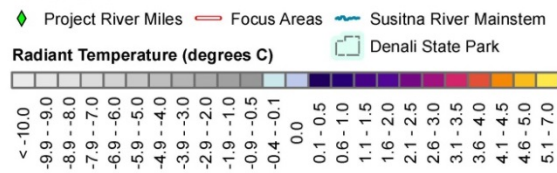
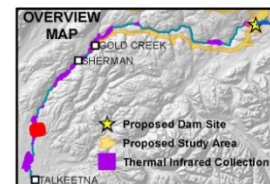
2013-Oct-23
 2013-Oct-24
 2013-Oct-31

**Slough 5**

Data Sources: See Map References

Map Page 8 of 29

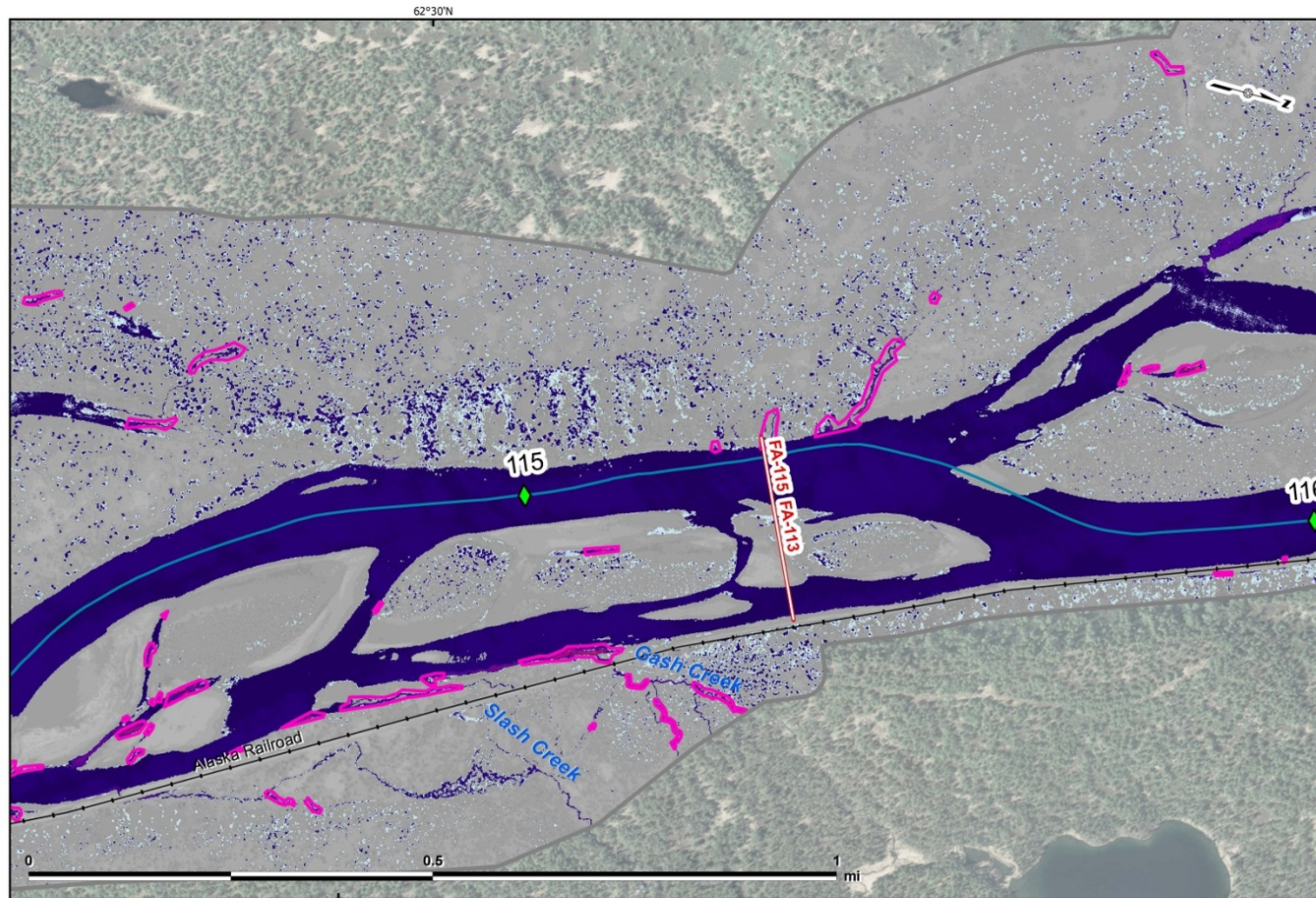
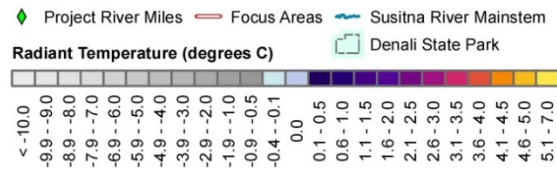
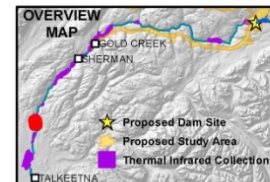
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 Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND****Increased Groundwater Activity (by date flown)****Focus Areas 113 and 115, Map 1 of 3**

Data Sources: See Map References

Map Page 9 of 29

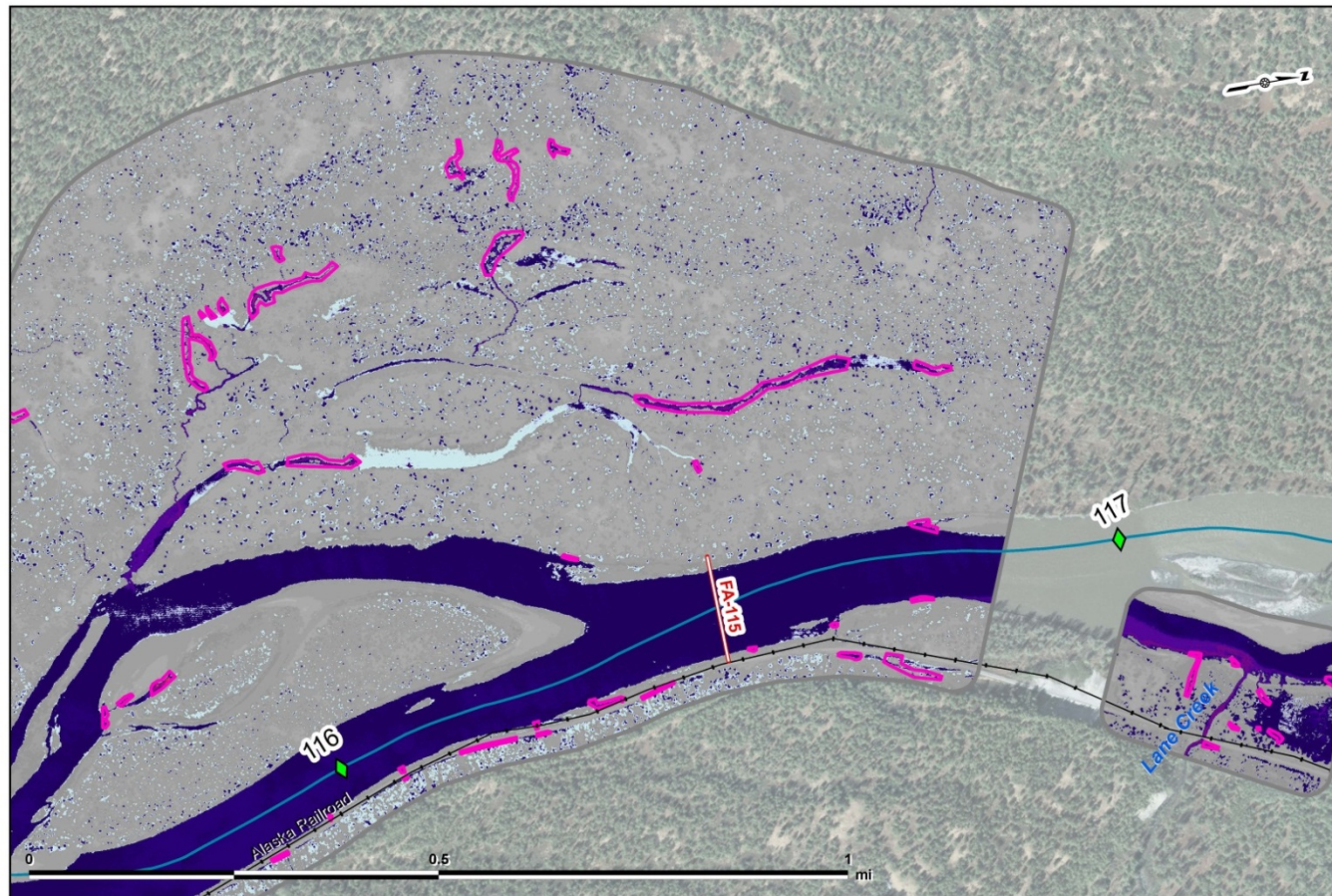
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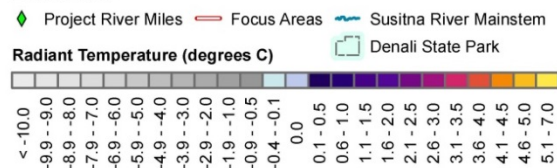
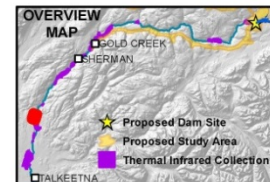
Data Sources: See Map References

Map Page 10 of 29

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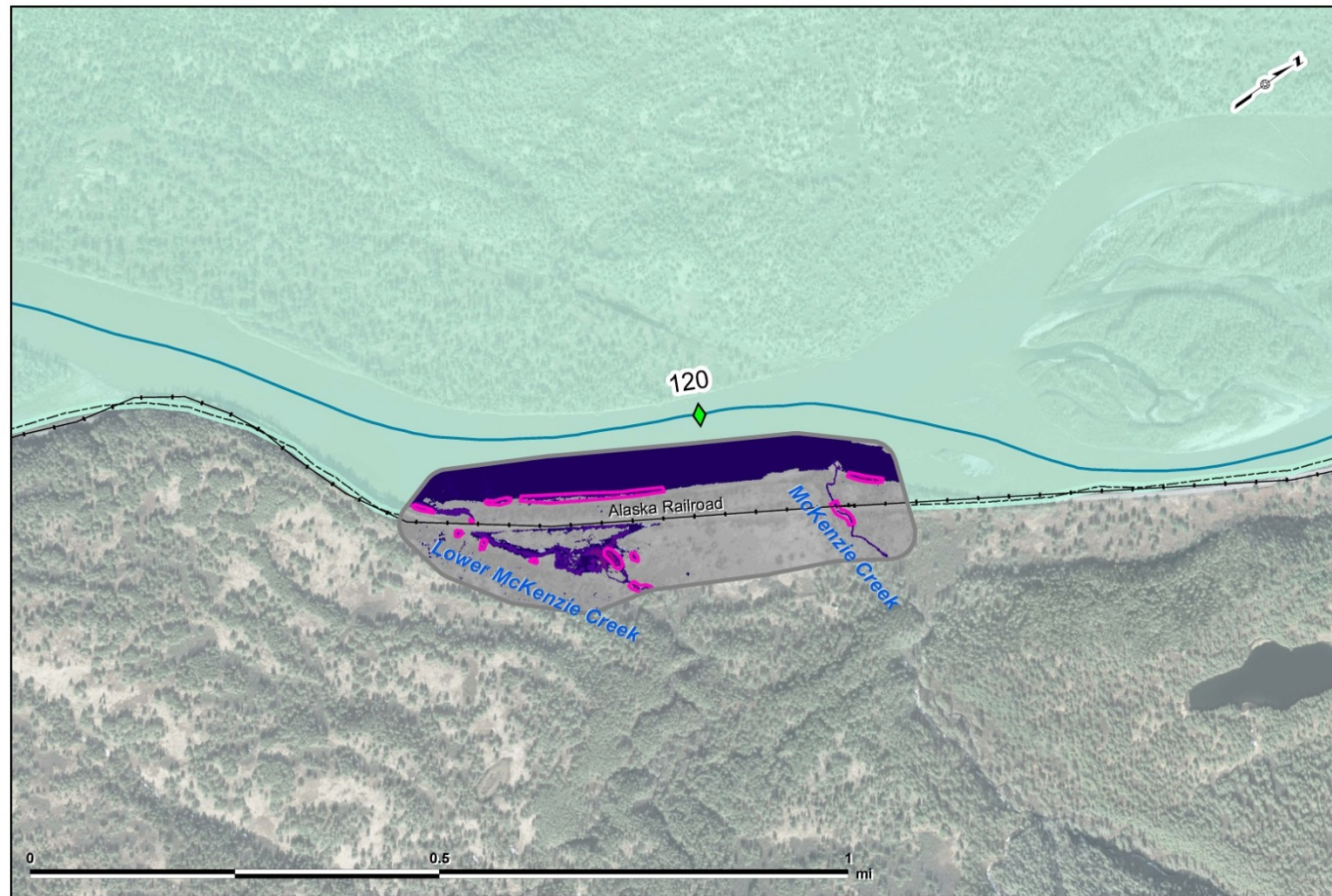
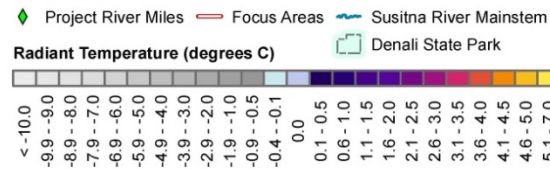
Focus Area 115 and Lane Creek Mouth, Map 3 of 3

LEGEND**Increased Groundwater Activity (by date flown)**

Data Sources: See Map References

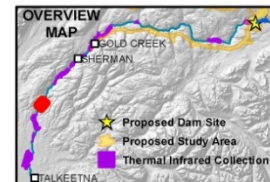
Map Page 11 of 29

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Increased Groundwater Activity (by date flown)

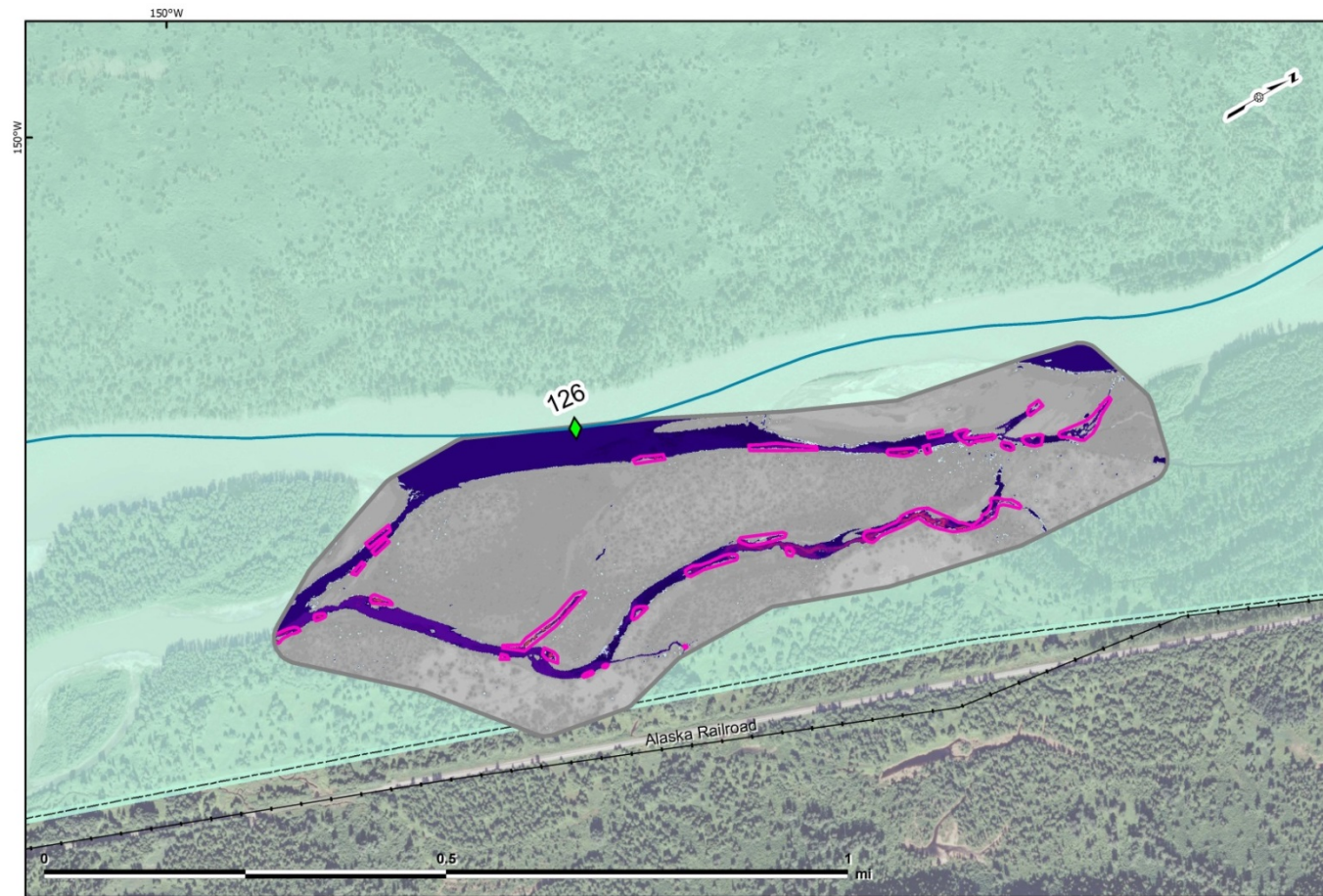
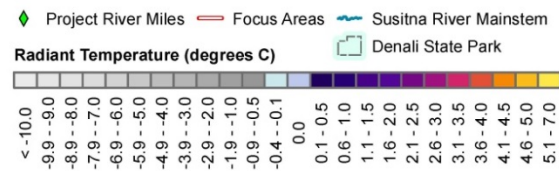
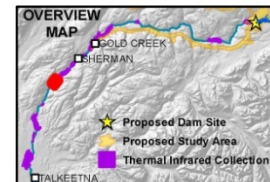
□ 2013-Oct-23
 □ 2013-Oct-24
 □ 2013-Oct-31

**Lower McKenzie Creek Mouth**

Data Sources: See Map References

Map Page 12 of 29

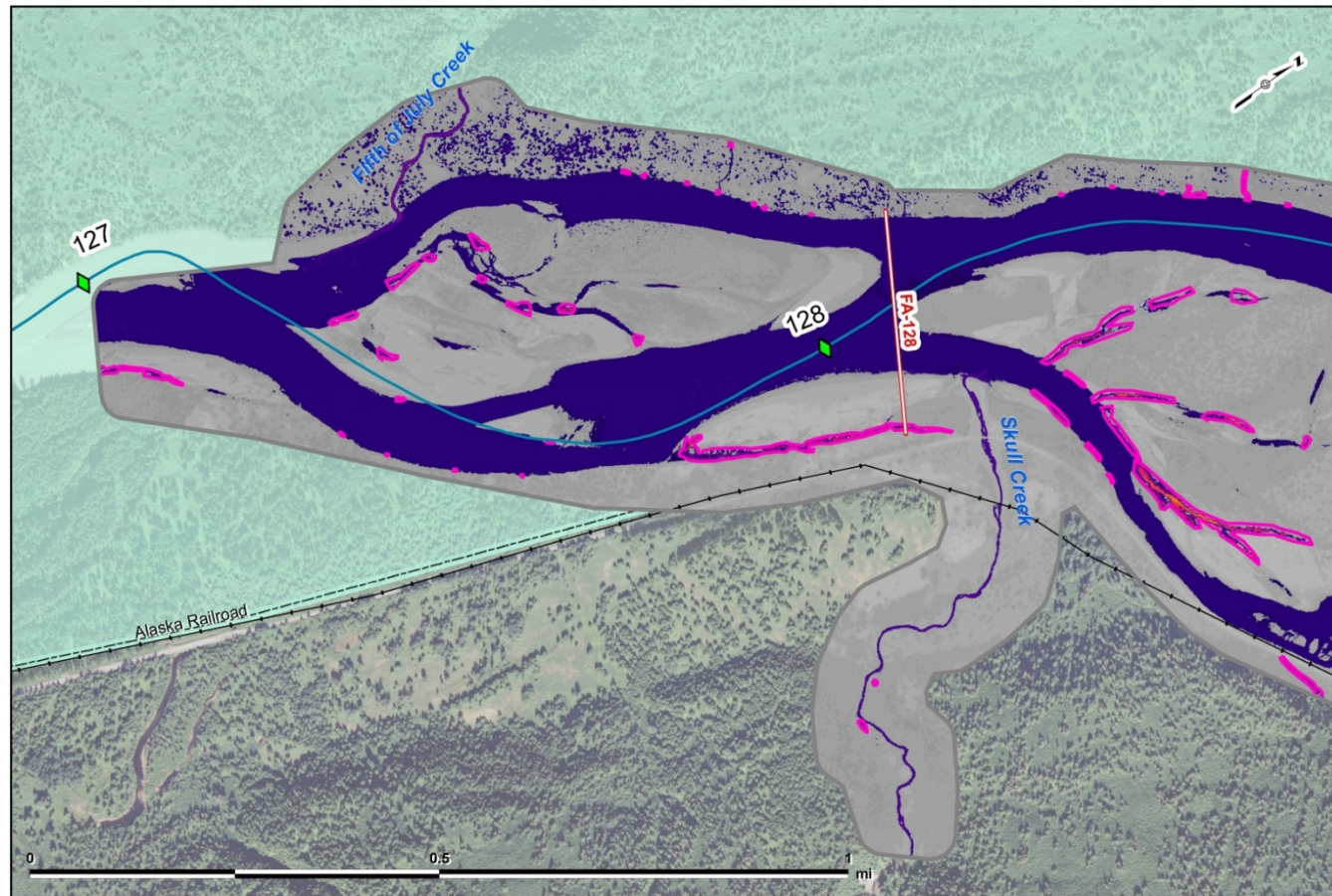
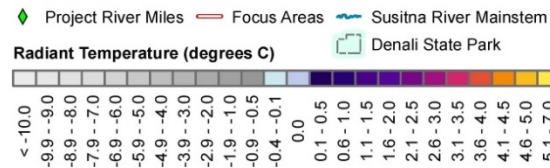
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 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
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Data Sources: See Map References

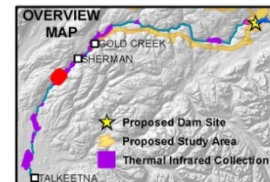
Map Page 13 of 29

Projection: Alaska Albers NAD 1983
 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND**

Increased Groundwater Activity (by date flown)

2013-Oct-23
 2013-Oct-24
 2013-Oct-31

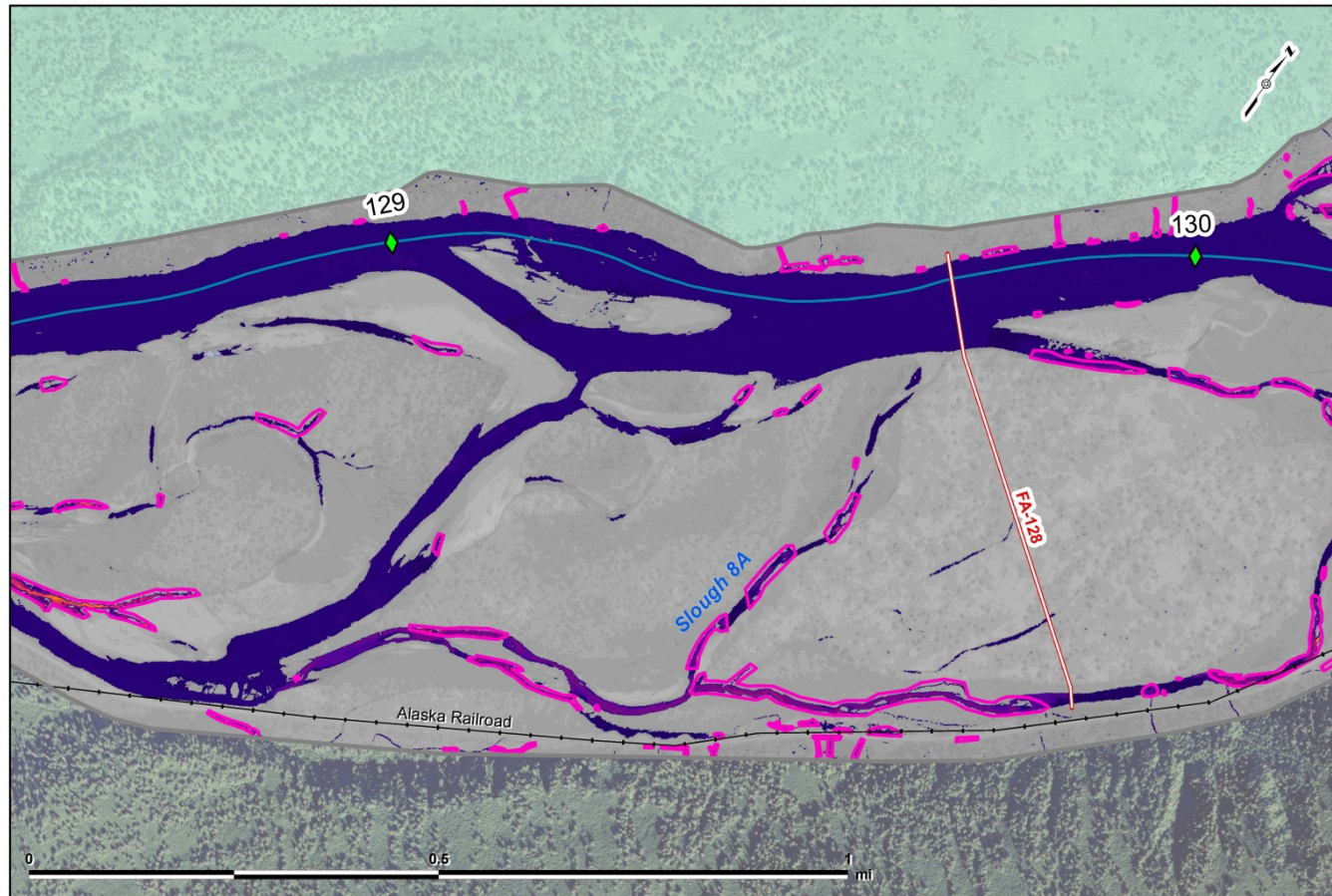
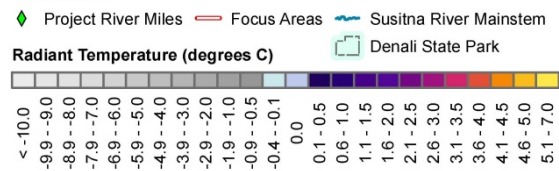
Moose Slough, 5th of July Creek

ALASKA ENERGY AUTHORITY

Data Sources: See Map References

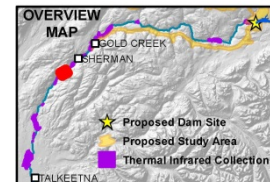
Map Page 14 of 29

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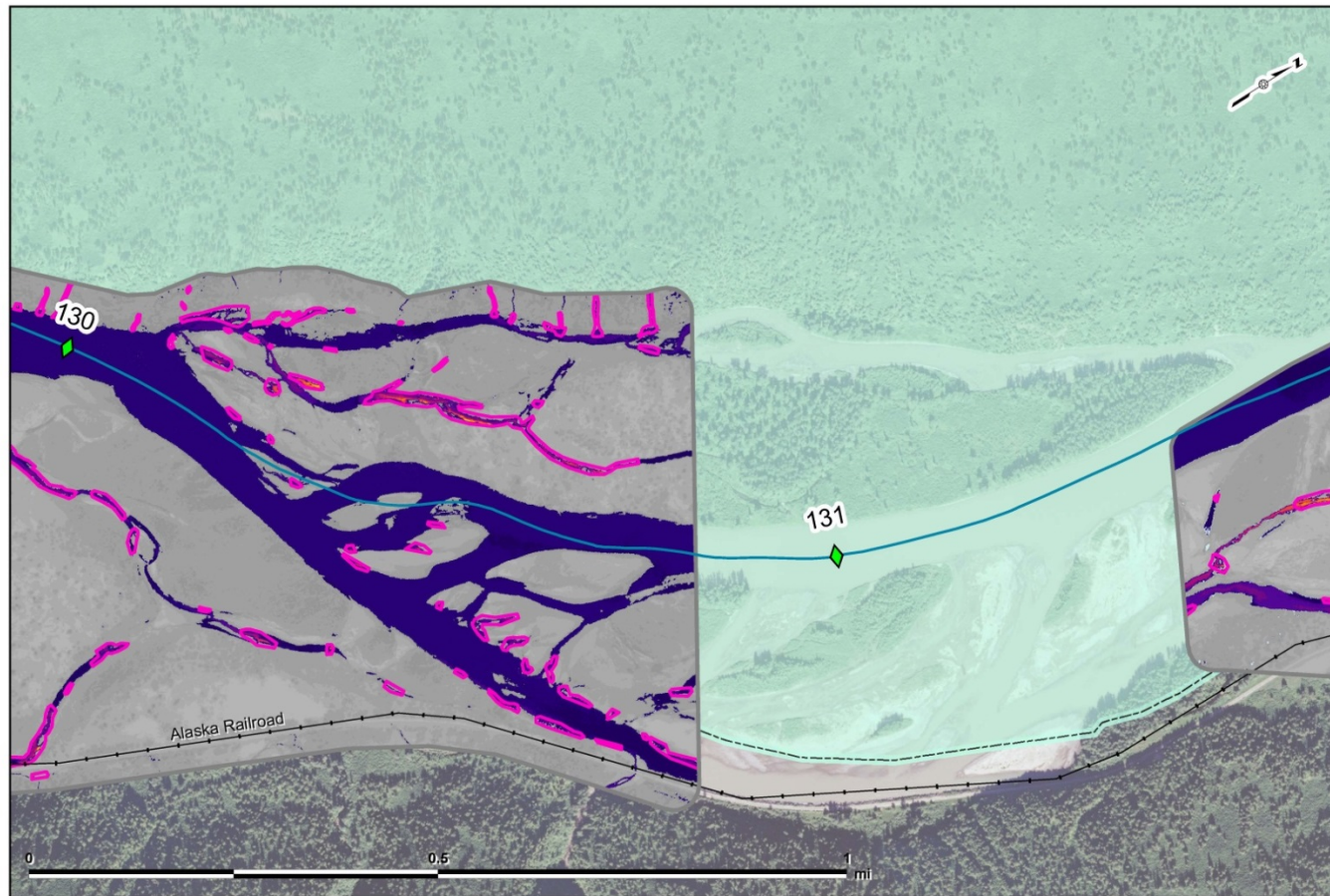
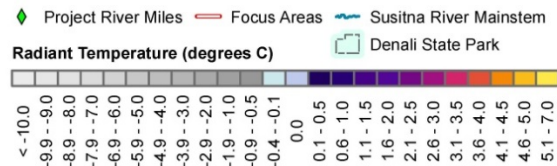
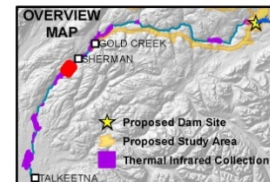
2013-Oct-23
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 2013-Oct-31

Focus Area 128/Skull Creek (Slough 8A), Map 1 of 2

Data Sources: See Map References

Map Page 15 of 29

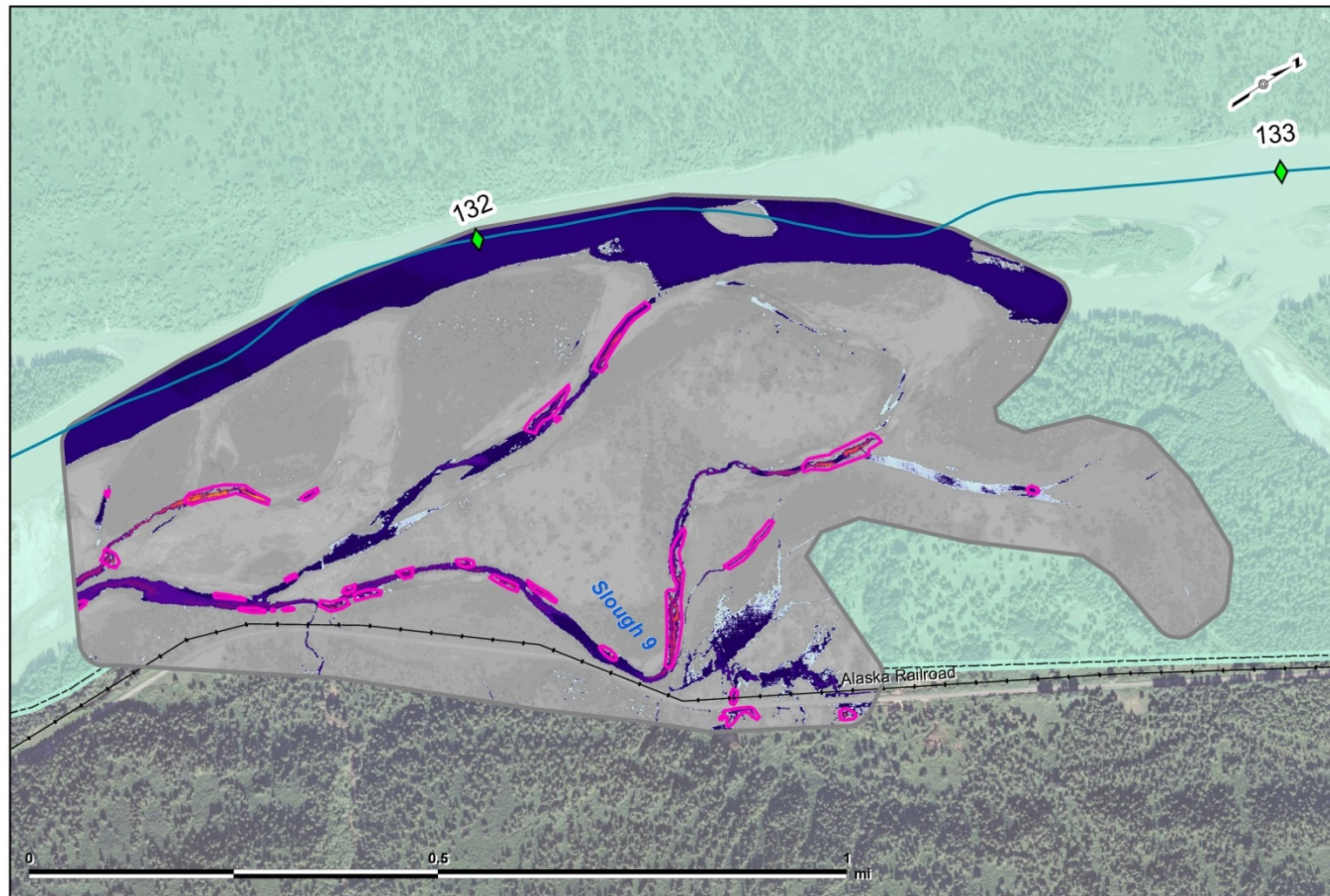
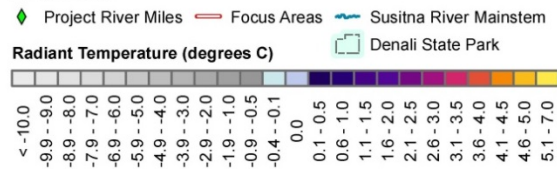
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Data Sources: See Map References

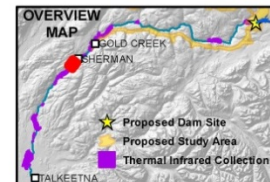
Map Page 16 of 29

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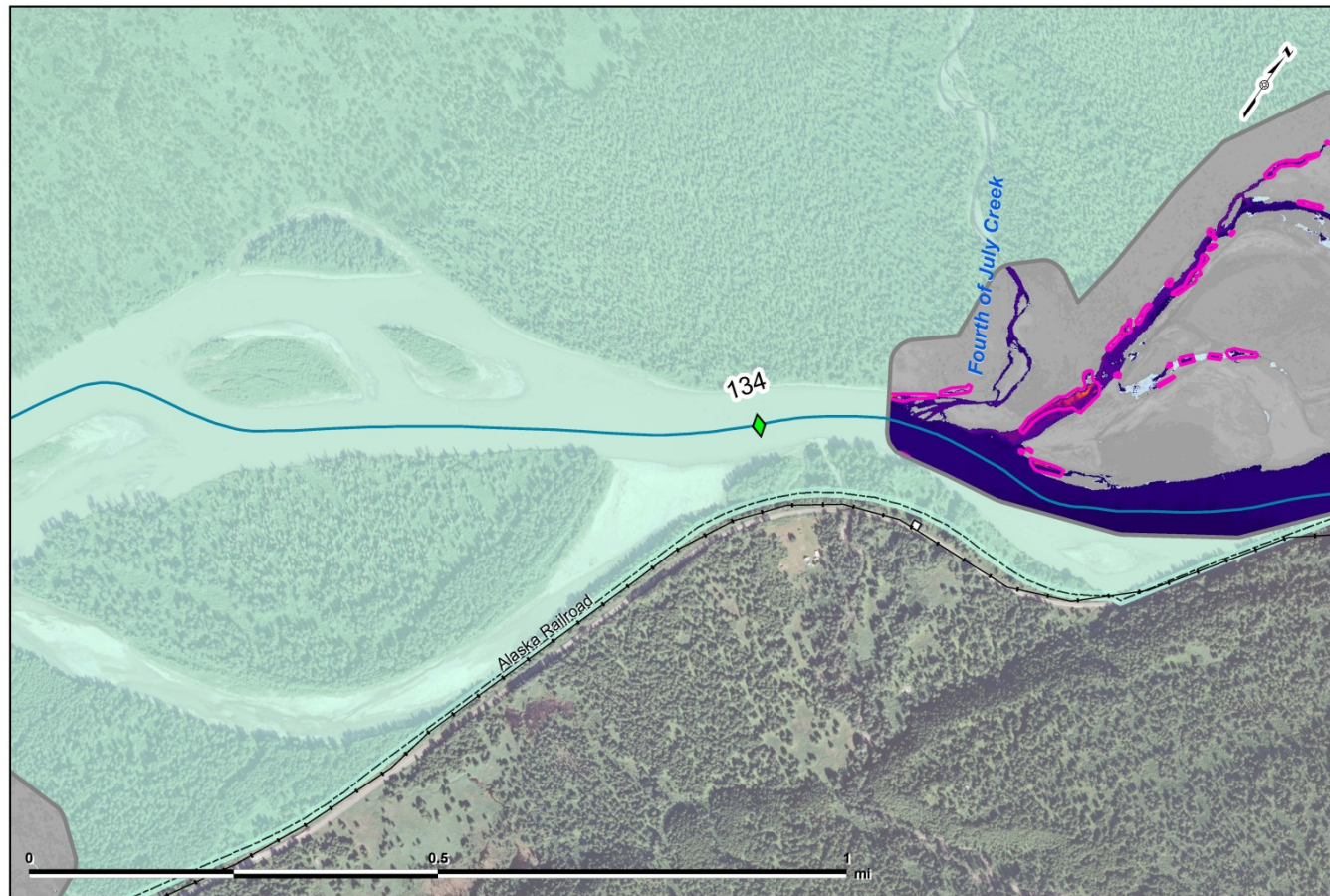
2013-Oct-23
 2013-Oct-24
 2013-Oct-31

**Slough 9 and Slough 9B**

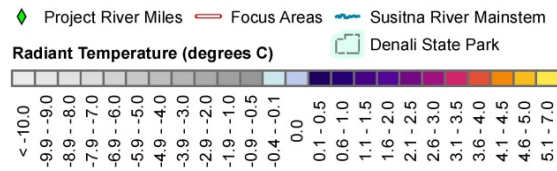
Data Sources: See Map References

Map Page 17 of 29

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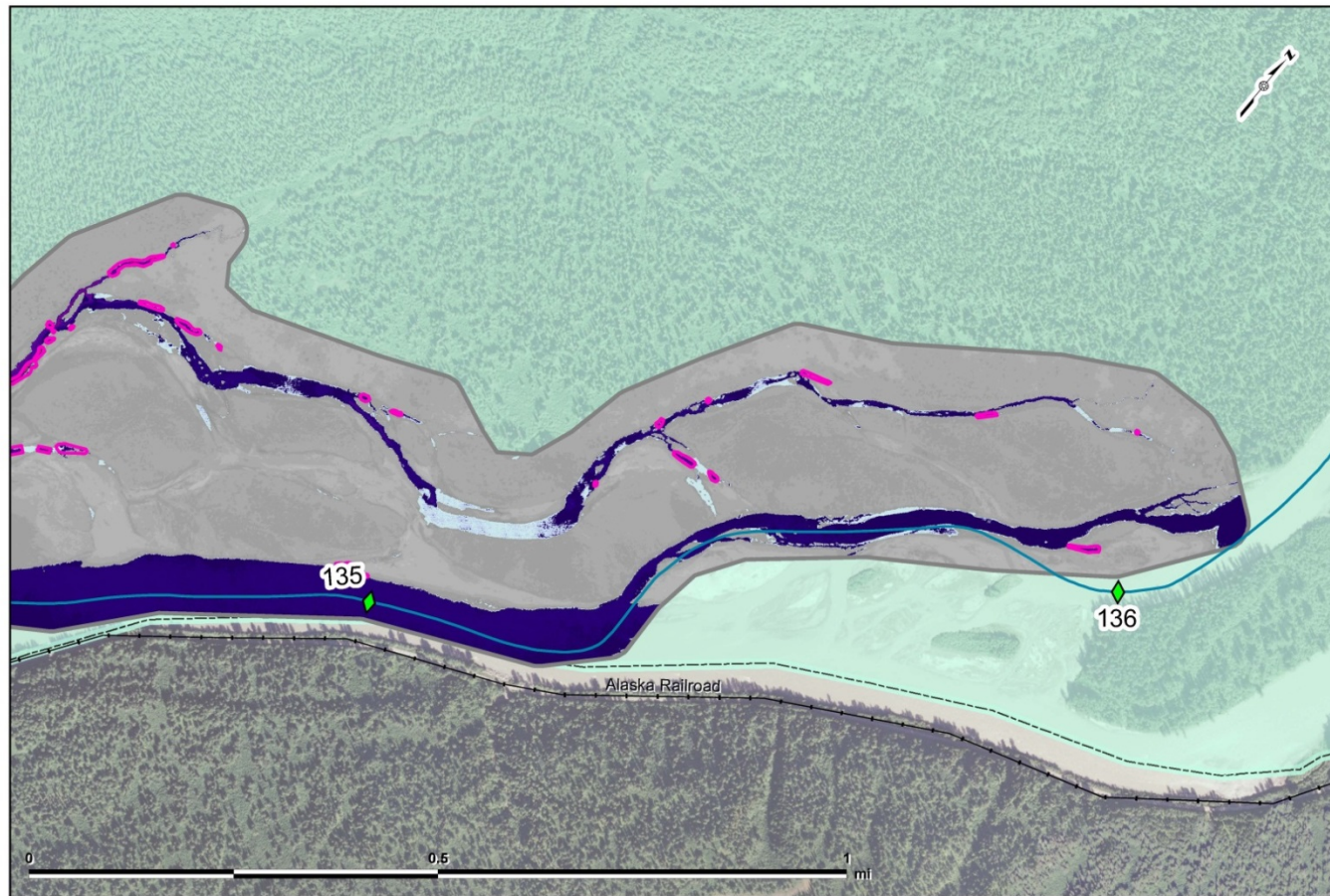
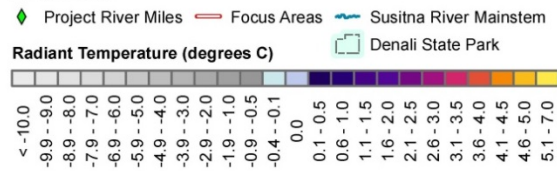
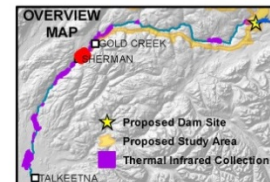
Side Channel 10A, 4th of July Creek, Map 1 of 2

LEGEND**Increased Groundwater Activity (by date flown)**

Data Sources: See Map References

Map Page 18 of 29

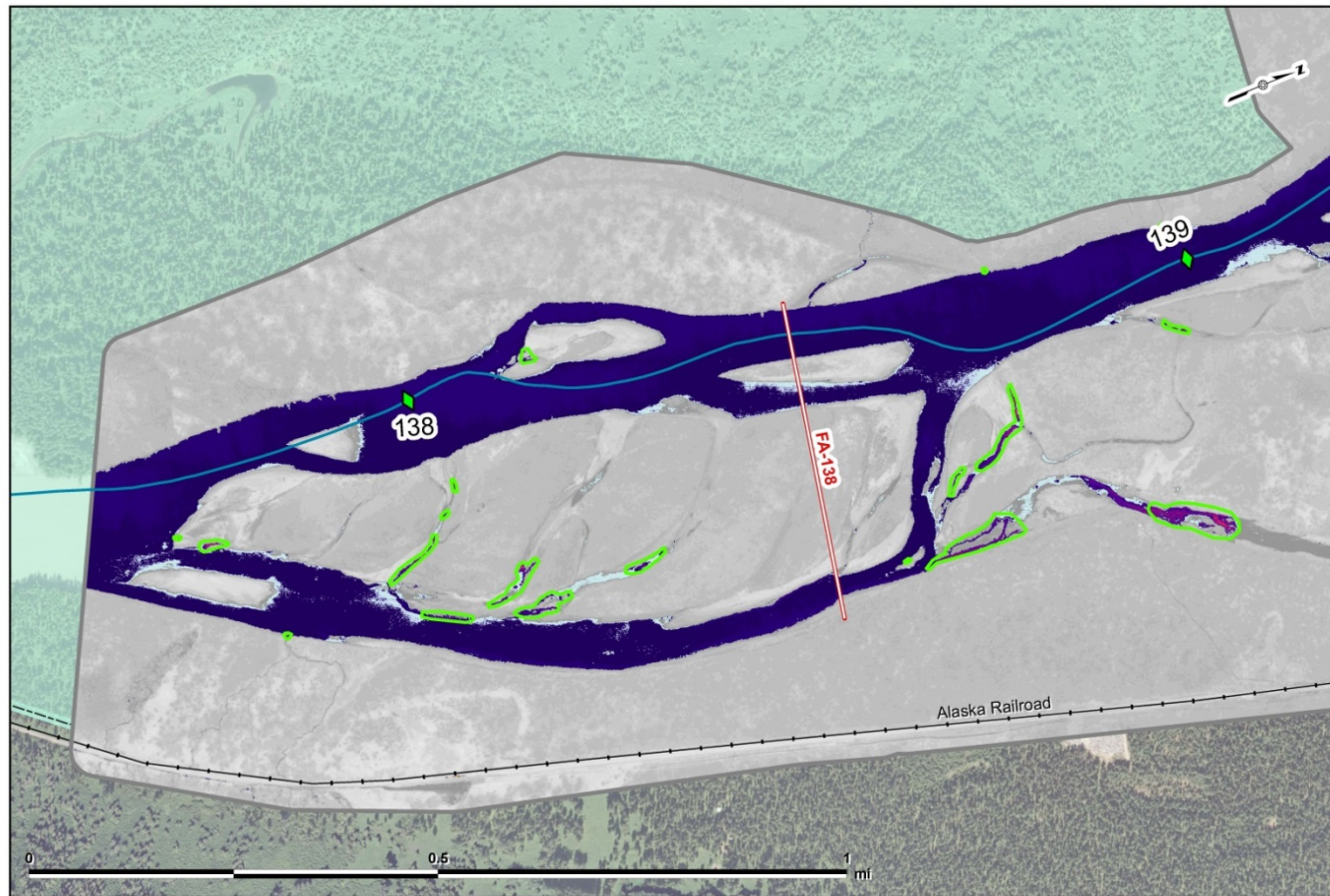
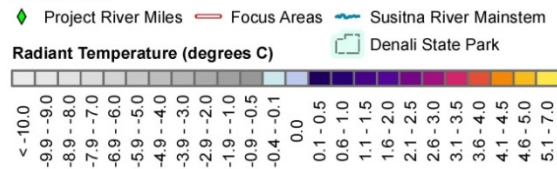
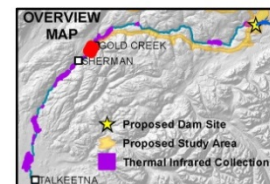
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 Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND****Side Channel 10A, 4th of July Creek, Map 2 of 2**

Data Sources: See Map References

Map Page 19 of 29

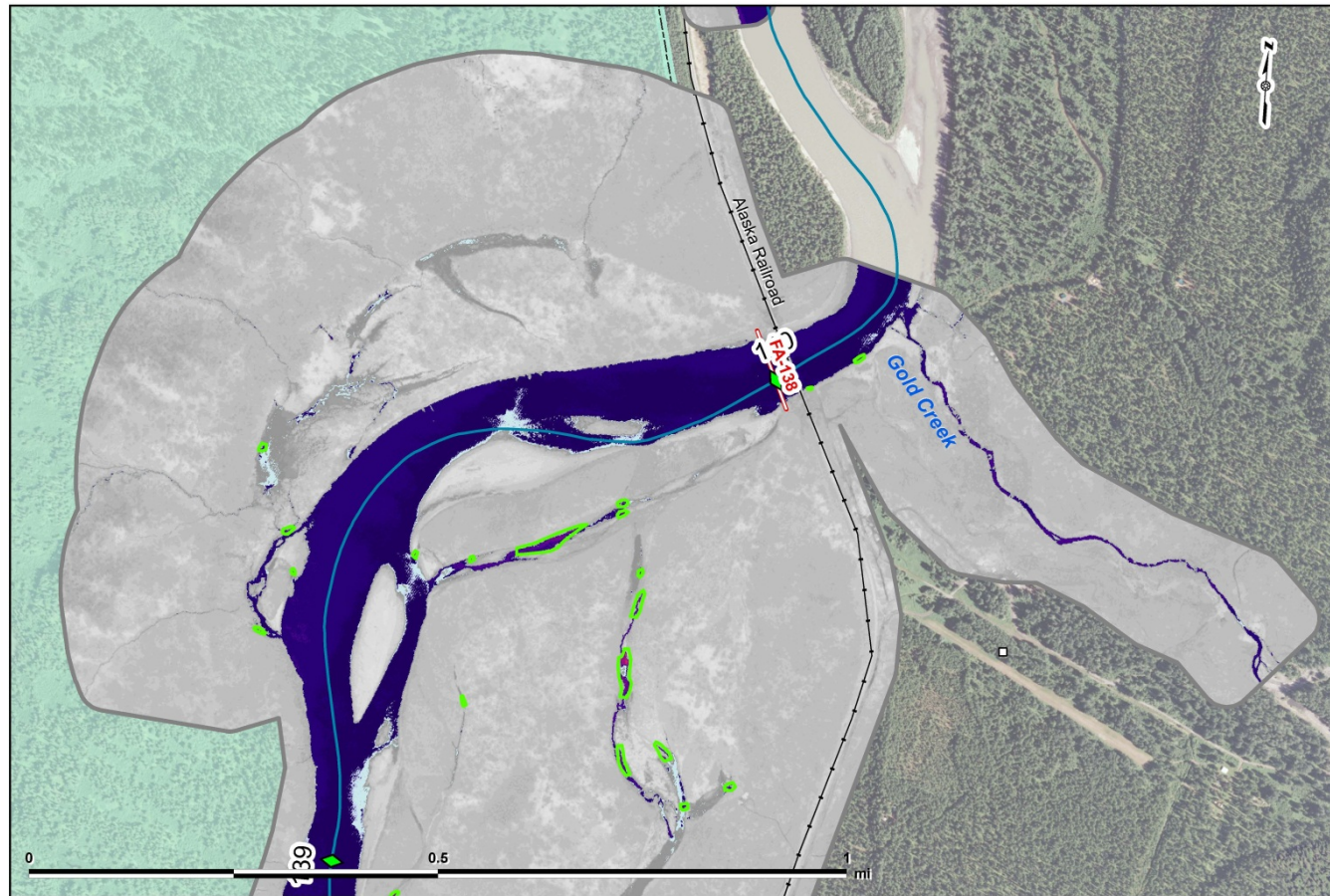
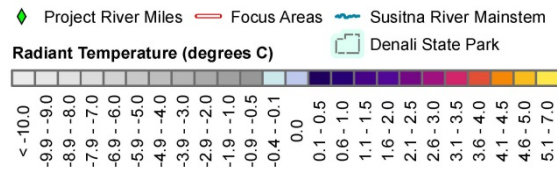
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 Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 138/Gold Creek, Map 1 of 2**

Data Sources: See Map References

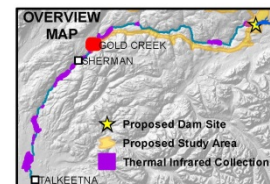
Map Page 20 of 29

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 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd

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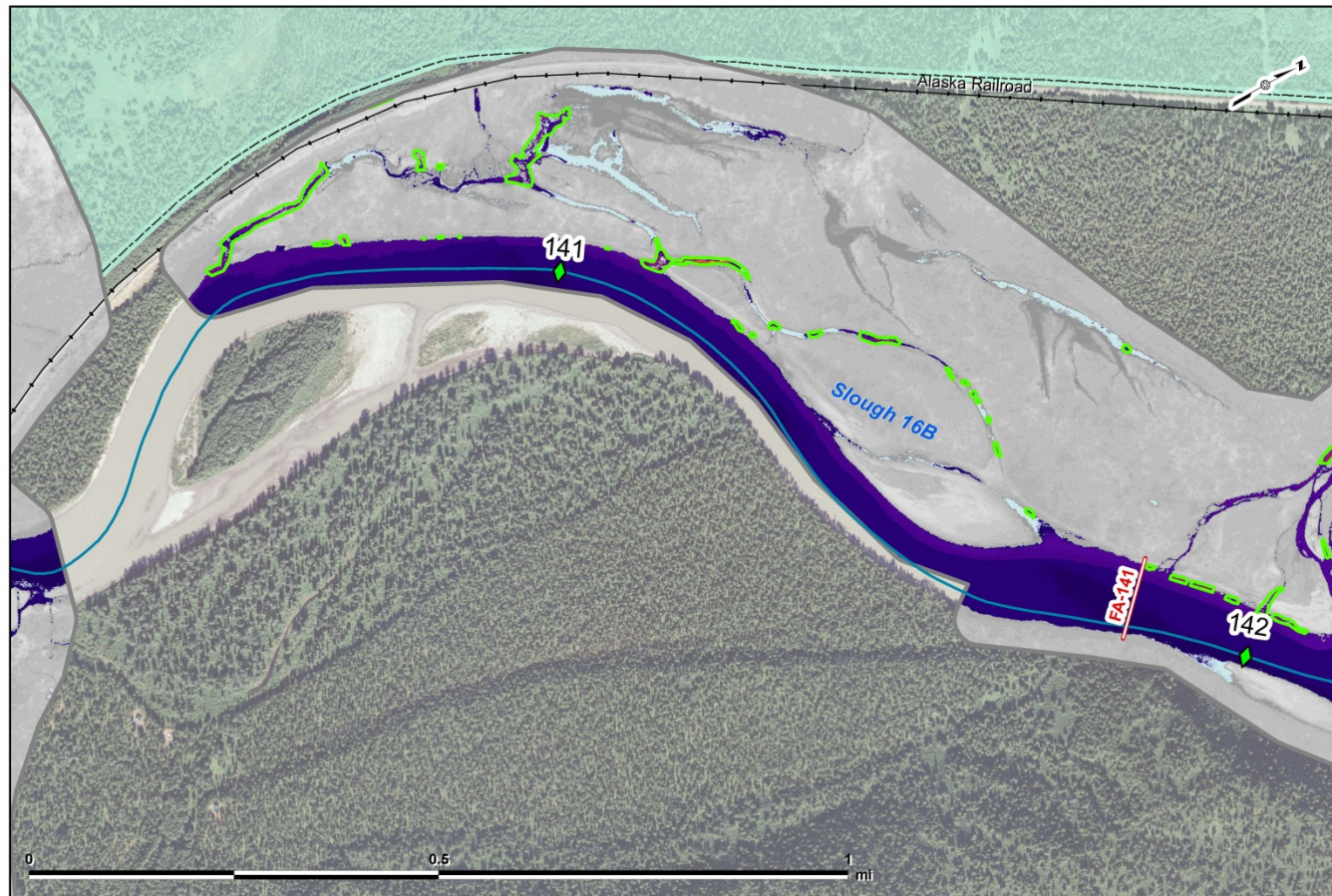
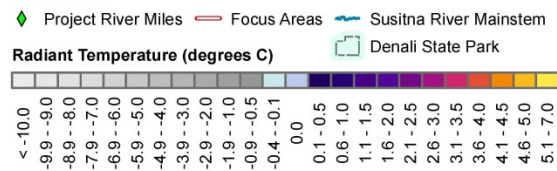
2013-Oct-23
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Focus Area 138/Gold Creek, Map 2 of 2

Data Sources: See Map References

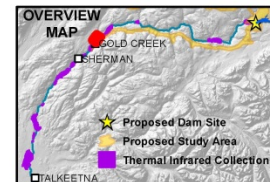
Map Page 21 of 29

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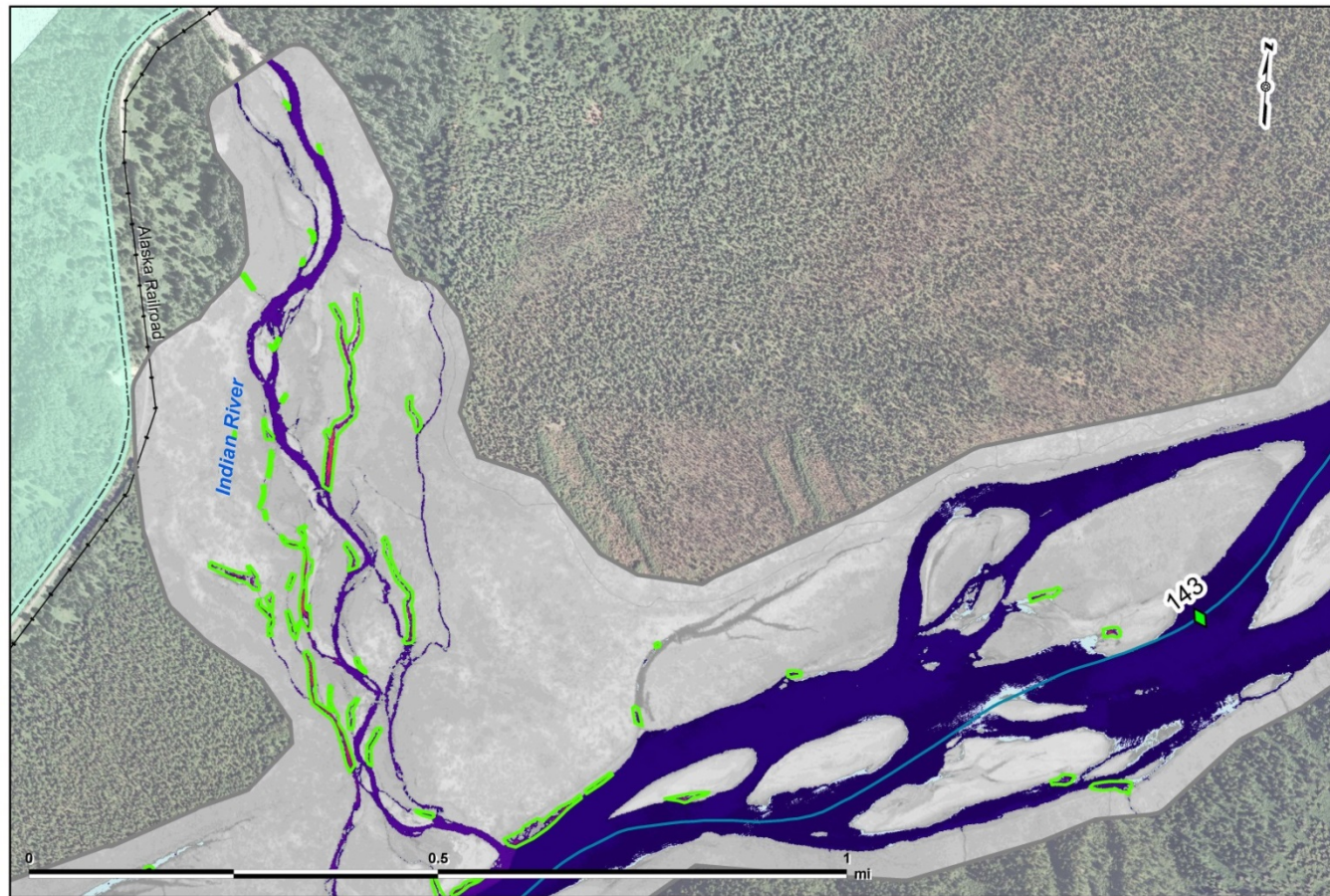
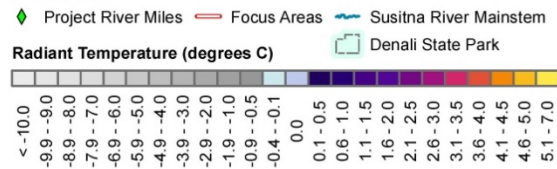
2013-Oct-23
 2013-Oct-24
 2013-Oct-31

**Slough 15**

Data Sources: See Map References

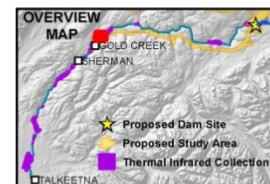
Map Page 22 of 29

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Increased Groundwater Activity (by date flown)

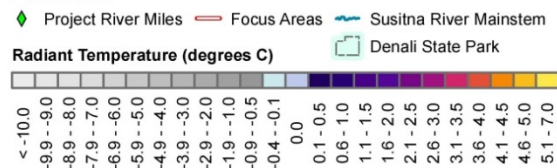
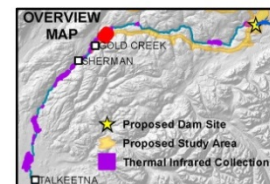
2013-Oct-23
 2013-Oct-24
 2013-Oct-31

Focus Areas 141 and 144, Map 1 of 3

Data Sources: See Map References

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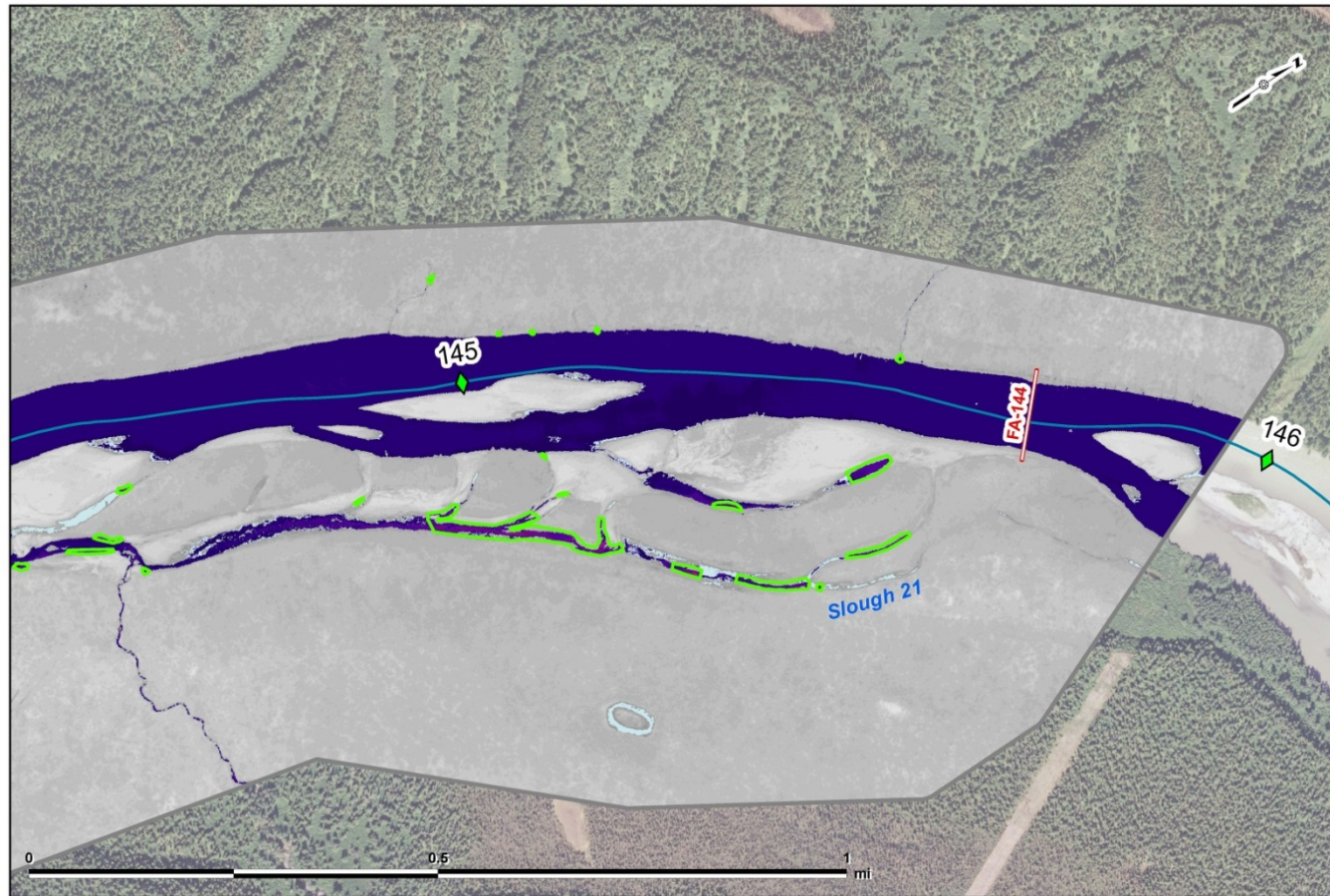
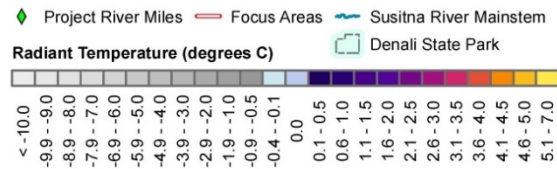
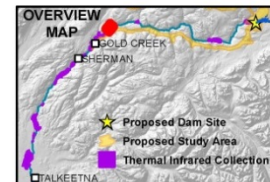
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 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd

**LEGEND****Increased Groundwater Activity (by date flown)****Focus Areas 141 and 144, Map 2 of 3**

Data Sources: See Map References

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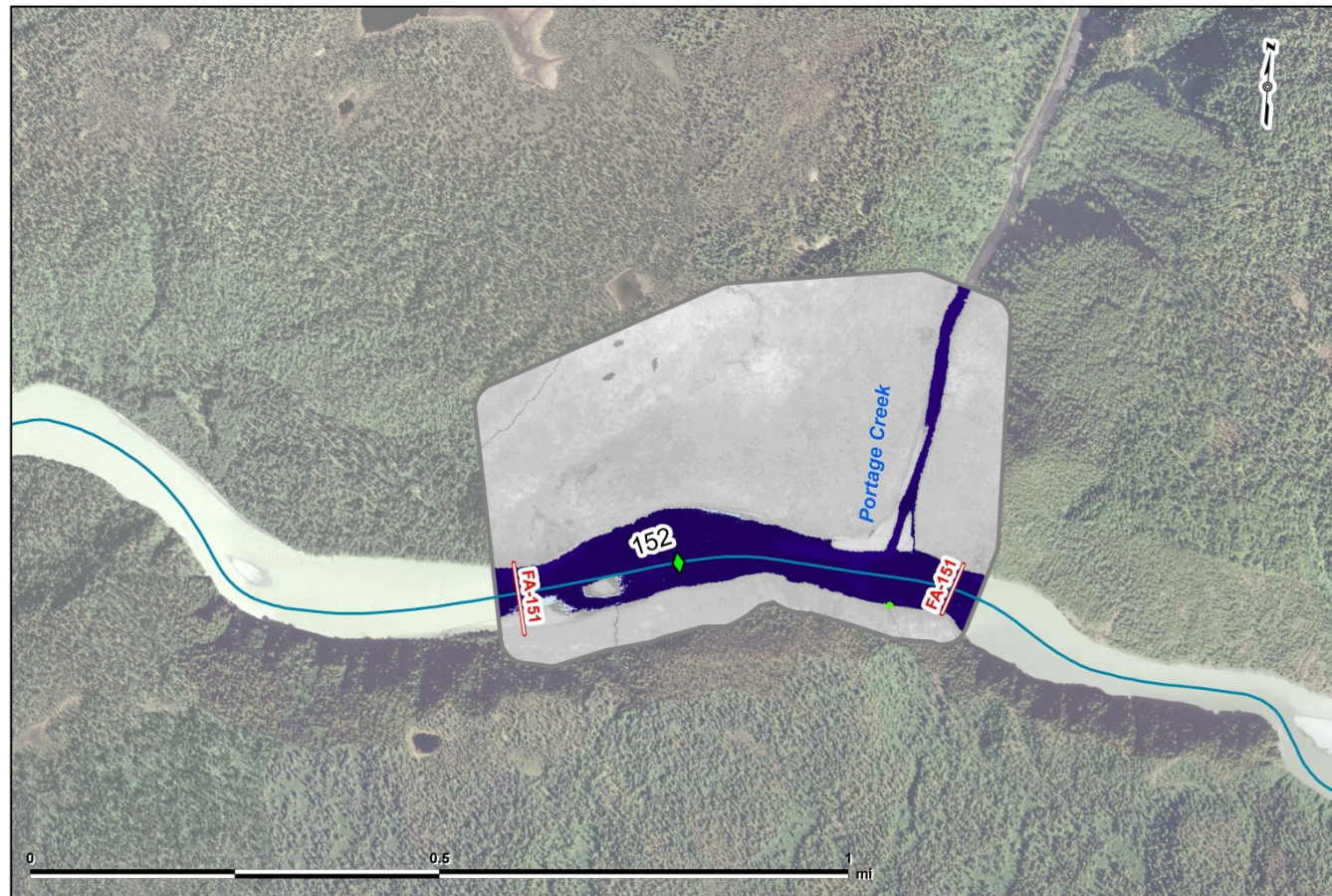
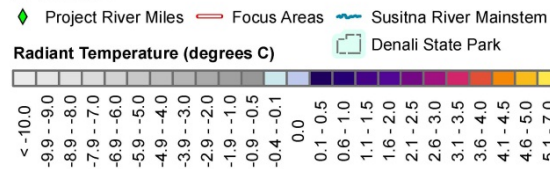
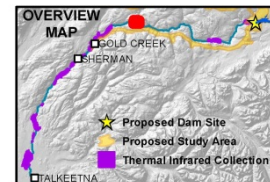
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 Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND****Increased Groundwater Activity (by date flown)****Focus Areas 141 and 144, Map 3 of 3**

Data Sources: See Map References

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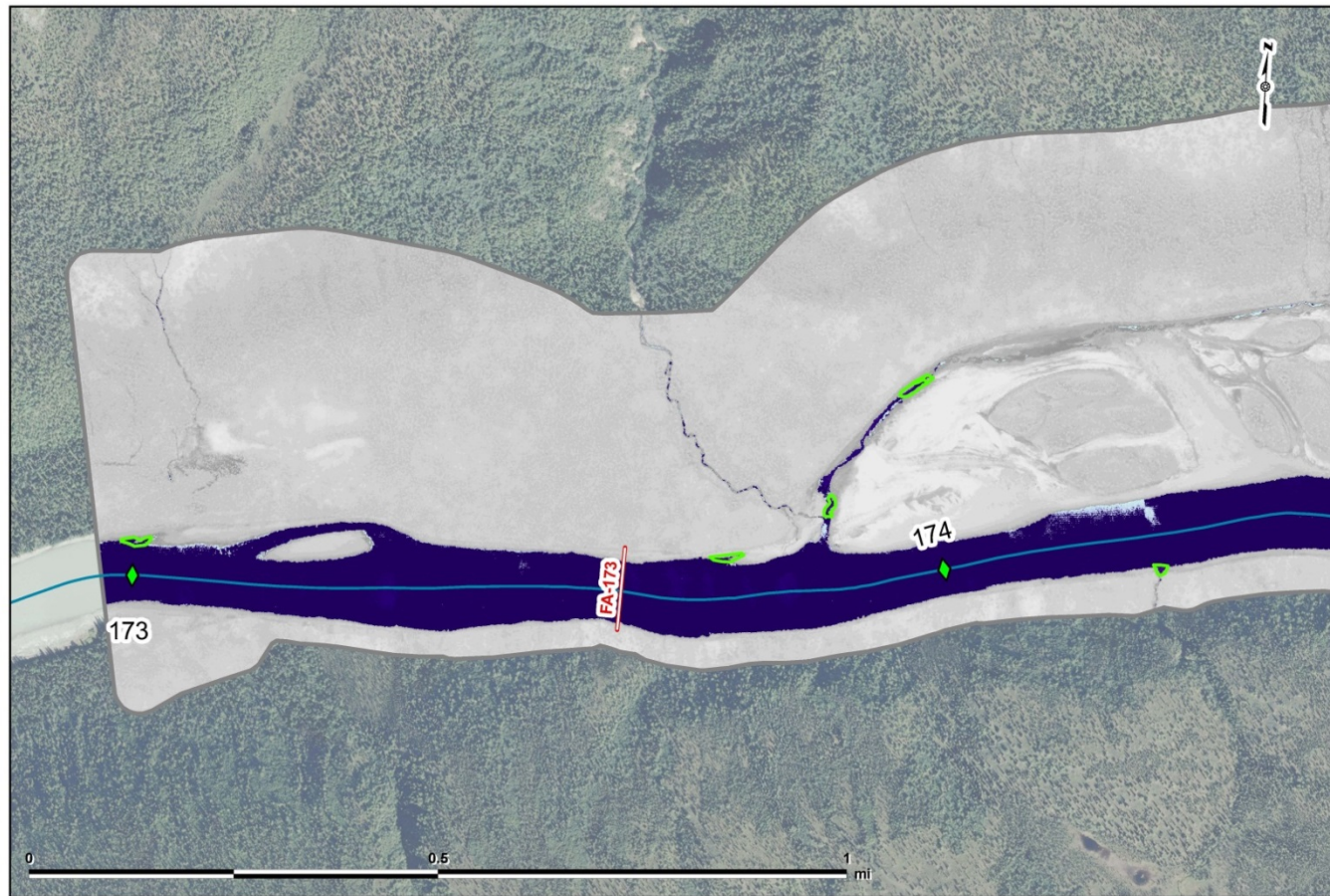
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 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd

**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 151**

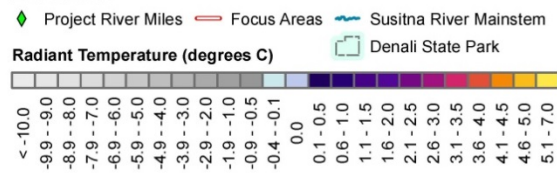
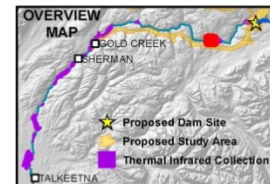
Data Sources: See Map References

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Projection: Alaska Albers NAD 1983
Date Created: 1/10/2014
Map Author: URS Alaska, Cynthia Kirkham
File: ThermalDataOctober2013_20140110.mxd



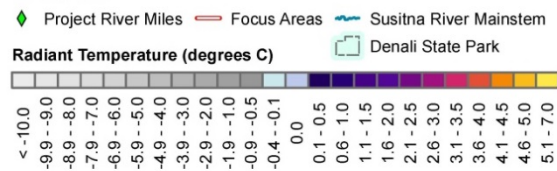
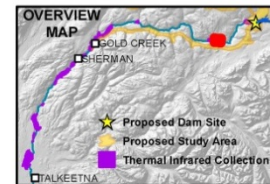
Focus Area 173, Map 1 of 2

LEGEND**Increased Groundwater Activity (by date flown)**

Data Sources: See Map References

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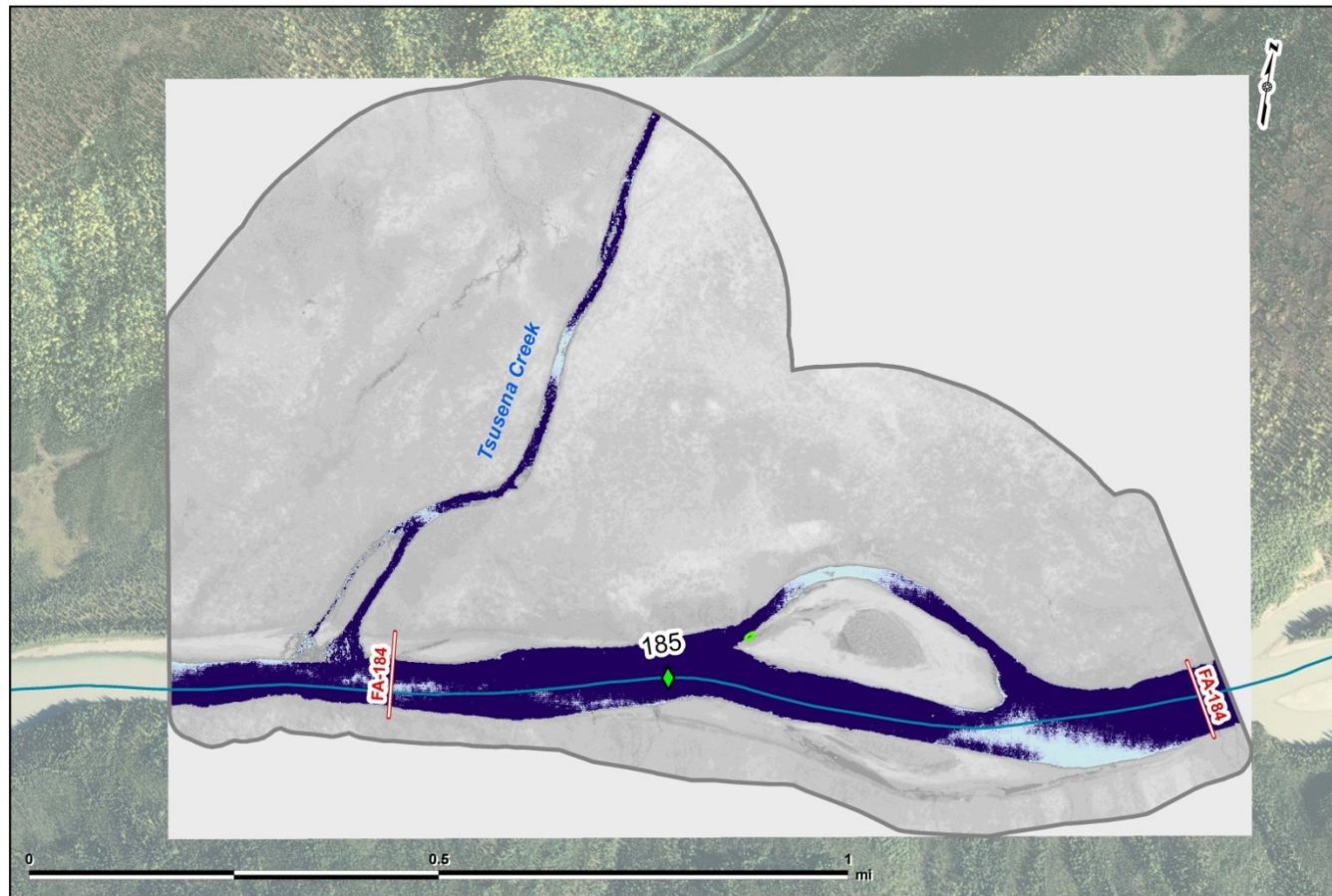
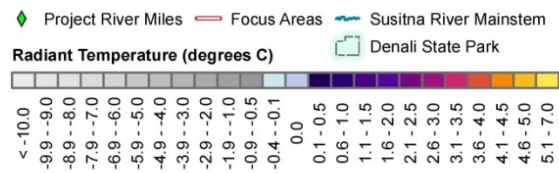
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Date Created: 1/10/2014
Map Author: URS Alaska, Cynthia Kirkham
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**LEGEND****Increased Groundwater Activity (by date flown)****Focus Area 173, Map 2 of 2**

Data Sources: See Map References

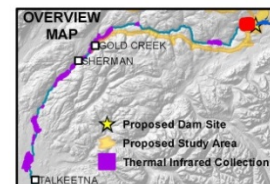
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Projection: Alaska Albers NAD 1983
 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd

**LEGEND**

Increased Groundwater Activity (by date flown)

2013-Oct-23
 2013-Oct-24
 2013-Oct-31

**Focus Area 184**

Data Sources: See Map References

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Projection: Alaska Albers NAD 1983
 Date Created: 1/10/2014
 Map Author: URS Alaska, Cynthia Kirkham
 File: ThermalDataOctober2013_20140110.mxd