

**Susitna-Watana Hydroelectric Project
(FERC No. 14241)**

**Characterization and Mapping of Aquatic
Habitats (9.9)**

**Errata to Initial Study Report
Part A - Appendix A, Remote Line Mapping, 2012**

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants, Inc.

November 2014

ERRATA TO INITIAL STUDY REPORT, PART A – APPENDIX A (June 3, 2014)

Part A Reference	Description
9.8 ISR Appendix A	Corrected version of map book for Remote Line Mapping, 2012. The version filed with the ISR (June 3, 2014) was converted to a PDF from two GIS shapefiles. The first shapefile contained habitat data for MR-1 to UR-5 and the subsequent data query used to build the maps included in the ISR did not include side slough habitat. The second shapefile contained habitat data for UR-4 to UR-1 and the data query used to build maps for these geomorphic reaches had the correct data query and thus included side sloughs. The result was that digitized side sloughs were not depicted on Appendix A maps 1 through 21 but were represented on maps 22 through 27. This version was corrected by converting the same GIS files to PDF with all layers turned on; thus, this version now includes side sloughs.

APPENDIX A: REMOTE LINE MAPPING, 2012

**Susitna-Watana Hydroelectric Project
(FERC No. 14241)**

**Characterization and Mapping of Aquatic
Habitats (9.9)**

**Part A - Appendix A
Remote Line Mapping, 2012**

Initial Study Report

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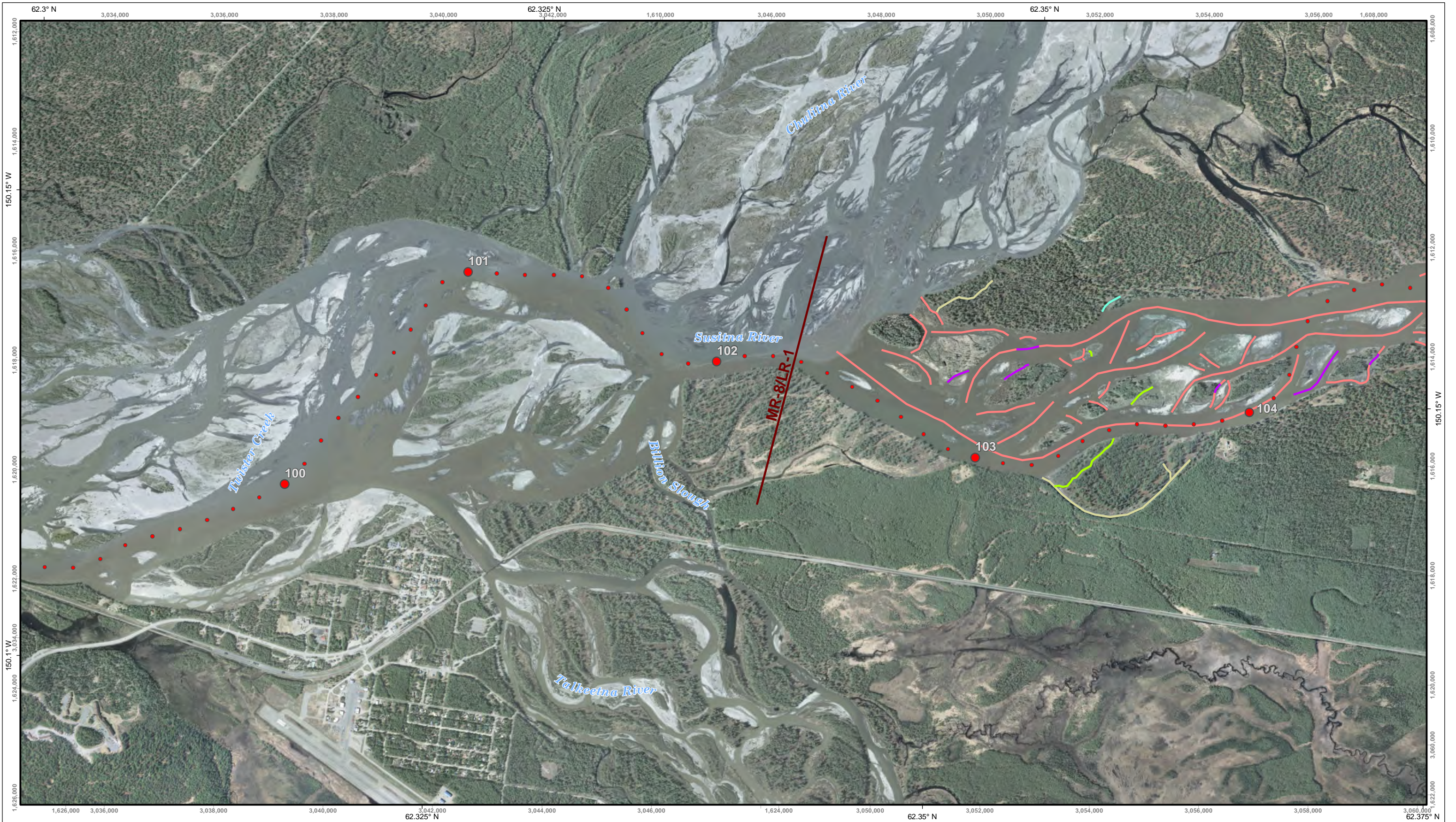
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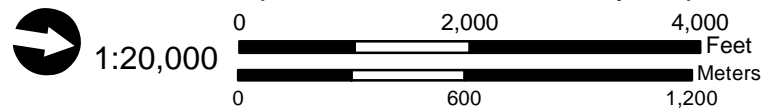
November 2014

INTRODUCTION

The maps contained in this map book were created using several sources of remote imagery in 2012. The habitat typing is consistent with the terminology that was current at that time, but has undergone refinement through 2013. In addition, an exercise to compare remote habitat typing with ground-based surveys conducted in 2013 is ongoing at the time of the publication of this ISR. Once this exercise is complete, final map books will be made that include both refinements of habitat definitions and typing.



Susitna - Watana Hydroelectric Project Fish Barrier and Aquatic Habitat Field Survey Map Book



Map Projection: NAD83 State Plane Zone 4 (Feet)
Grid Interval: 2000'

General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area

Mesohabitats

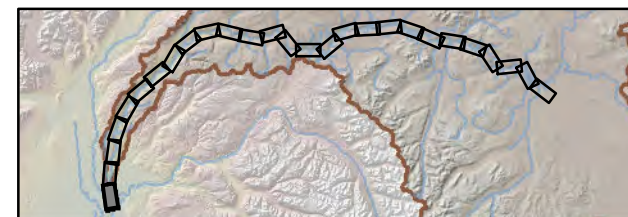
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

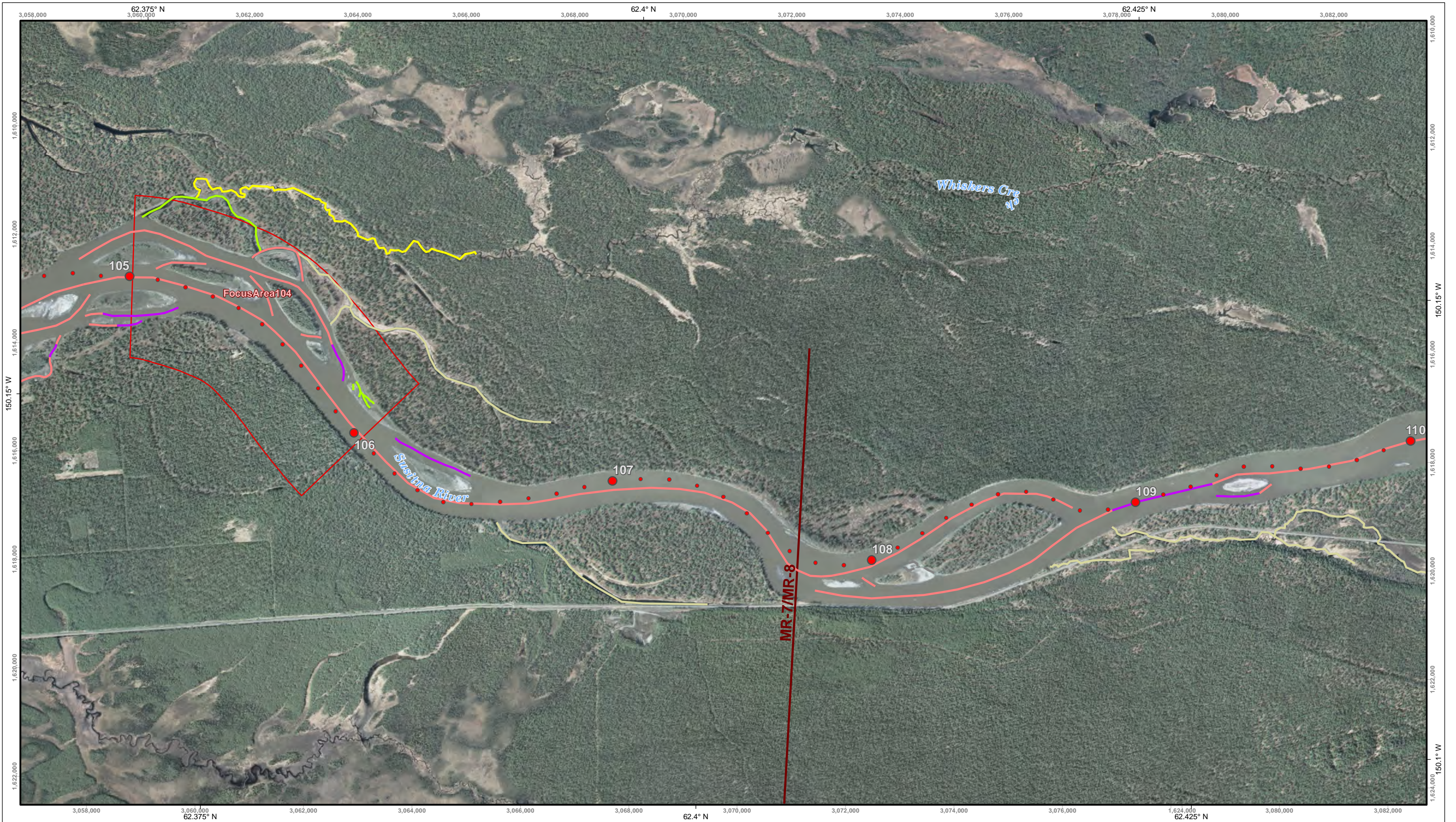
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- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

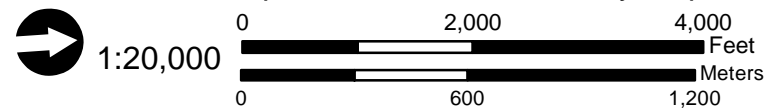
- Backwater
- Beaver Complex



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Map Author: HDR Alaska - MAD
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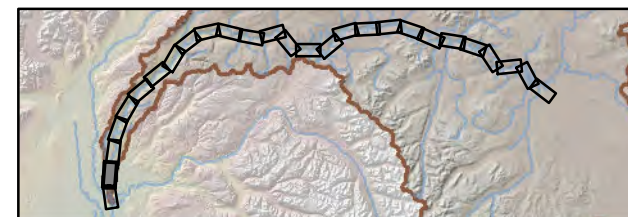


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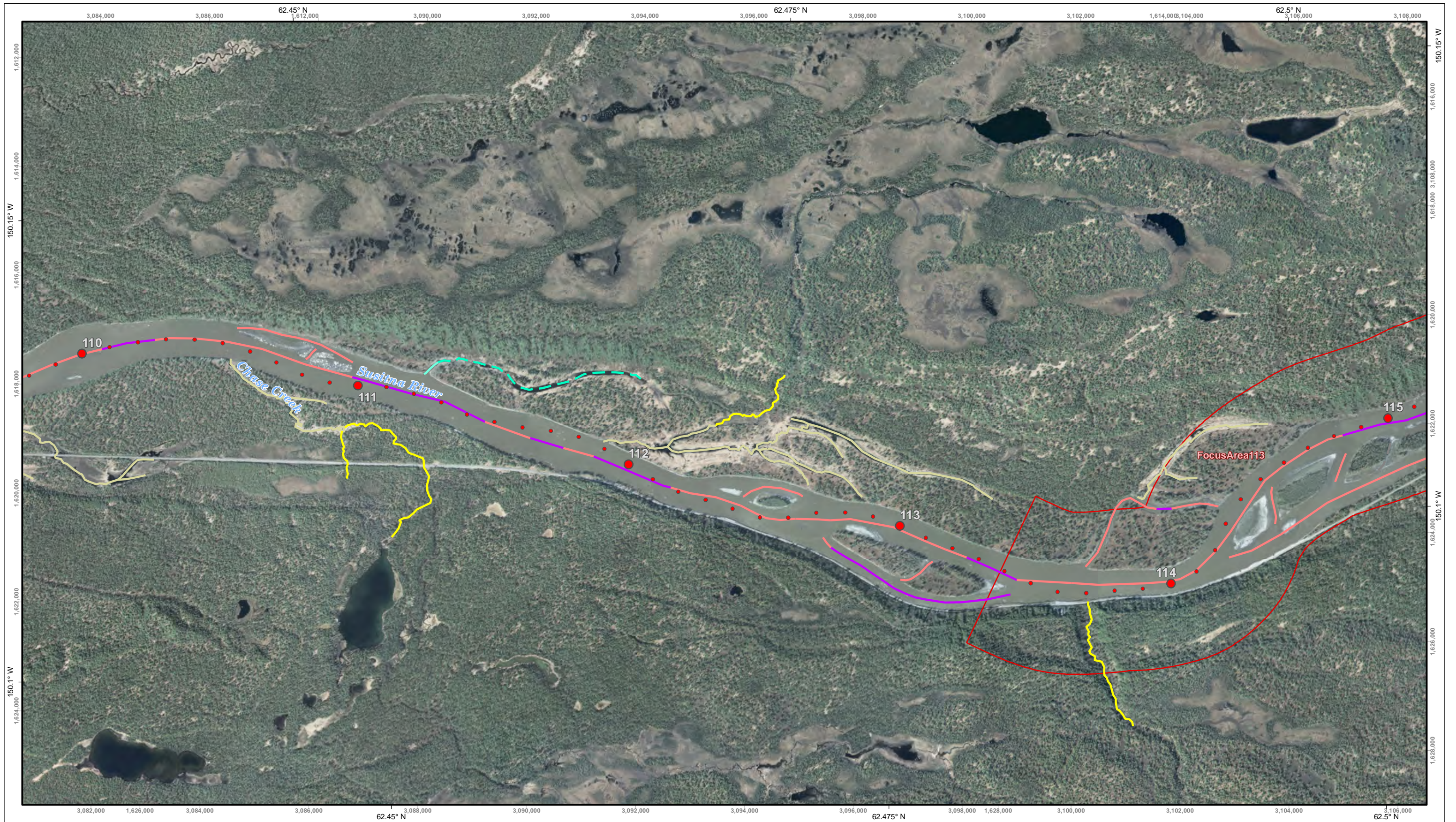


Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features			
●	Susitna Project River Miles	—	Glide or Run
—	Susitna Geomorphic Reach Breaks	—	Pool
□	Focus Area	—	Rapid
		—	Riffle
		—	Side Slough
		—	Tributary
		—	Unidentified
		—	Upland Slough
		—	Backwater
		—	Beaver Complex



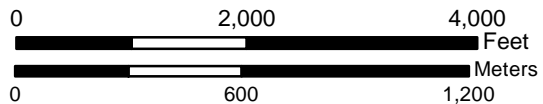
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Map Projection: NAD83 State Plane Zone 4 (Feet)
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General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area

Mesohabitats

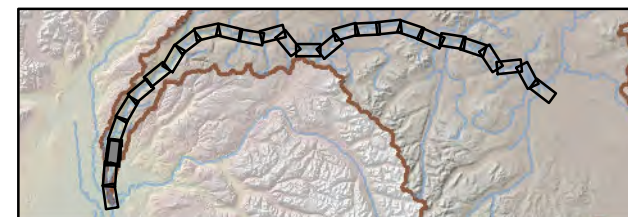
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

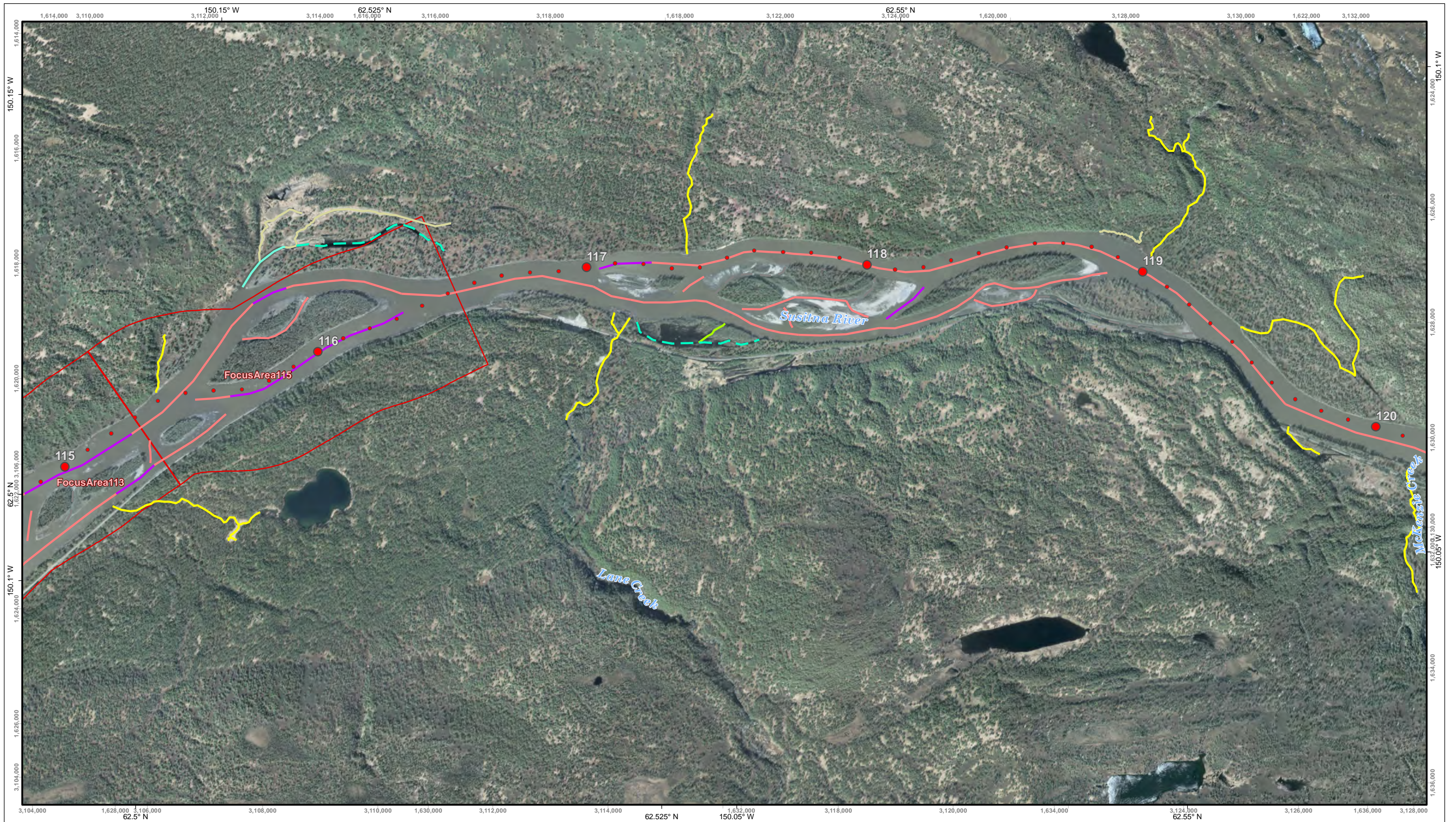
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- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

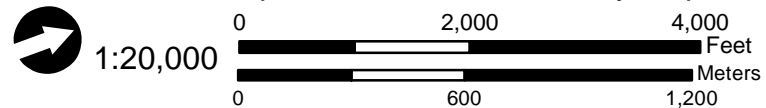
- Backwater
- Beaver Complex



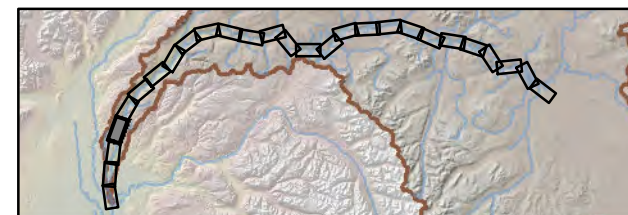
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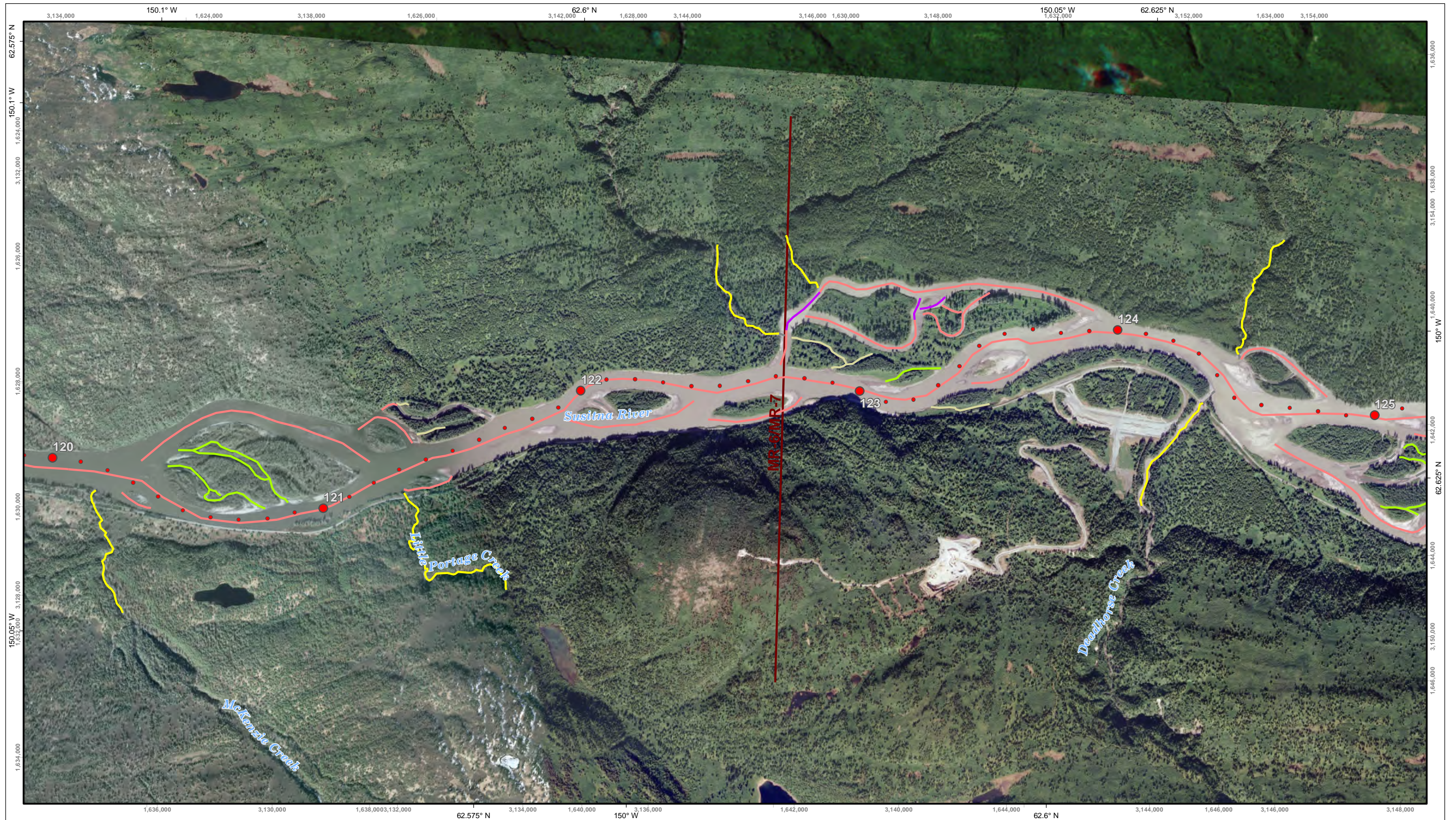
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General Features			
● Susitna Project River Miles	— Susitna Geomorphic Reach Breaks	— Glide or Run	— Backwater
 Focus Area	— Pool	— Tributary	— Beaver Complex
	— Rapid	— Unidentified	
	— Riffle	— Upland Slough	



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 Grid Interval: 2000'

General Features

- Susitna Project River Miles
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Mesohabitats

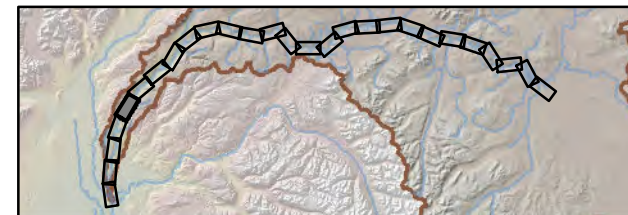
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

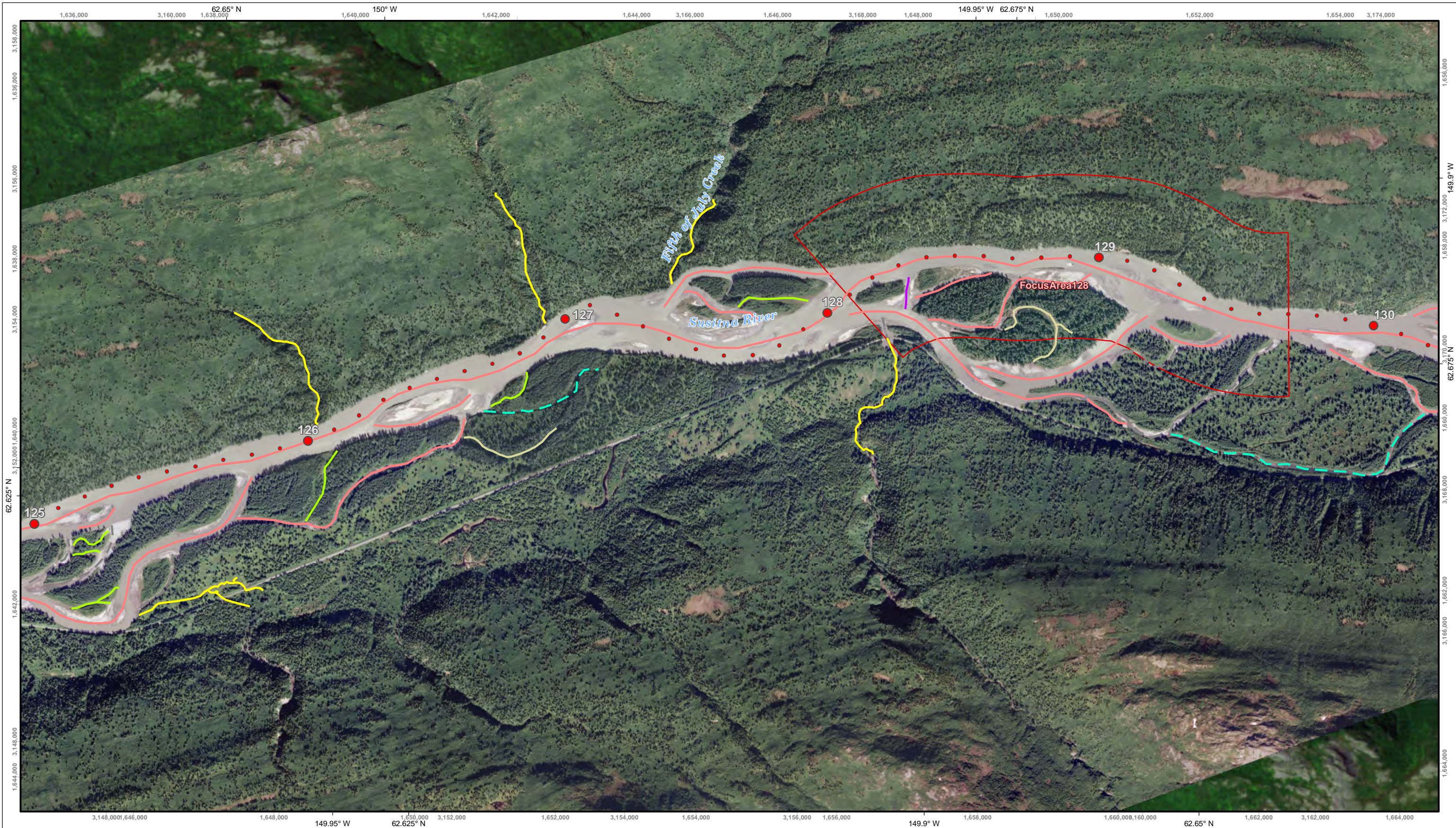
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- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

- Backwater
- Beaver Complex



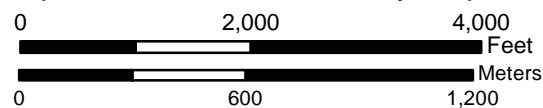
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Mesohabitats

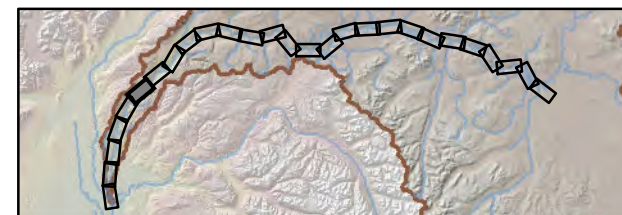
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

- Side Slough
- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

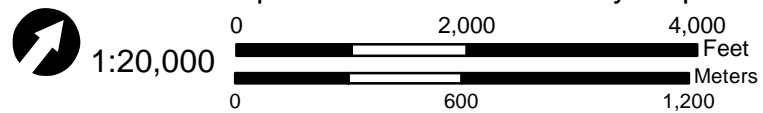
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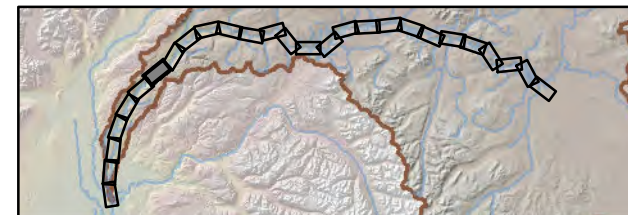
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General Features

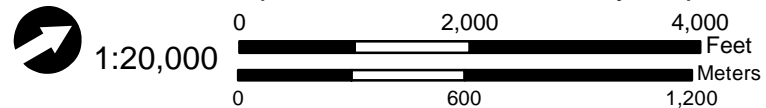
- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|--|
| <p>Mesohabitats</p> <ul style="list-style-type: none"> — Glide or Run — Pool — Rapid — Riffle | <p>Macrohabitats</p> <ul style="list-style-type: none"> — Side Slough — Tributary — Unidentified — Upland Slough | <p>Special Habitat Features</p> <ul style="list-style-type: none"> — Backwater — Beaver Complex |
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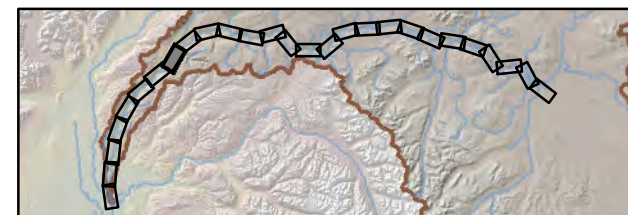


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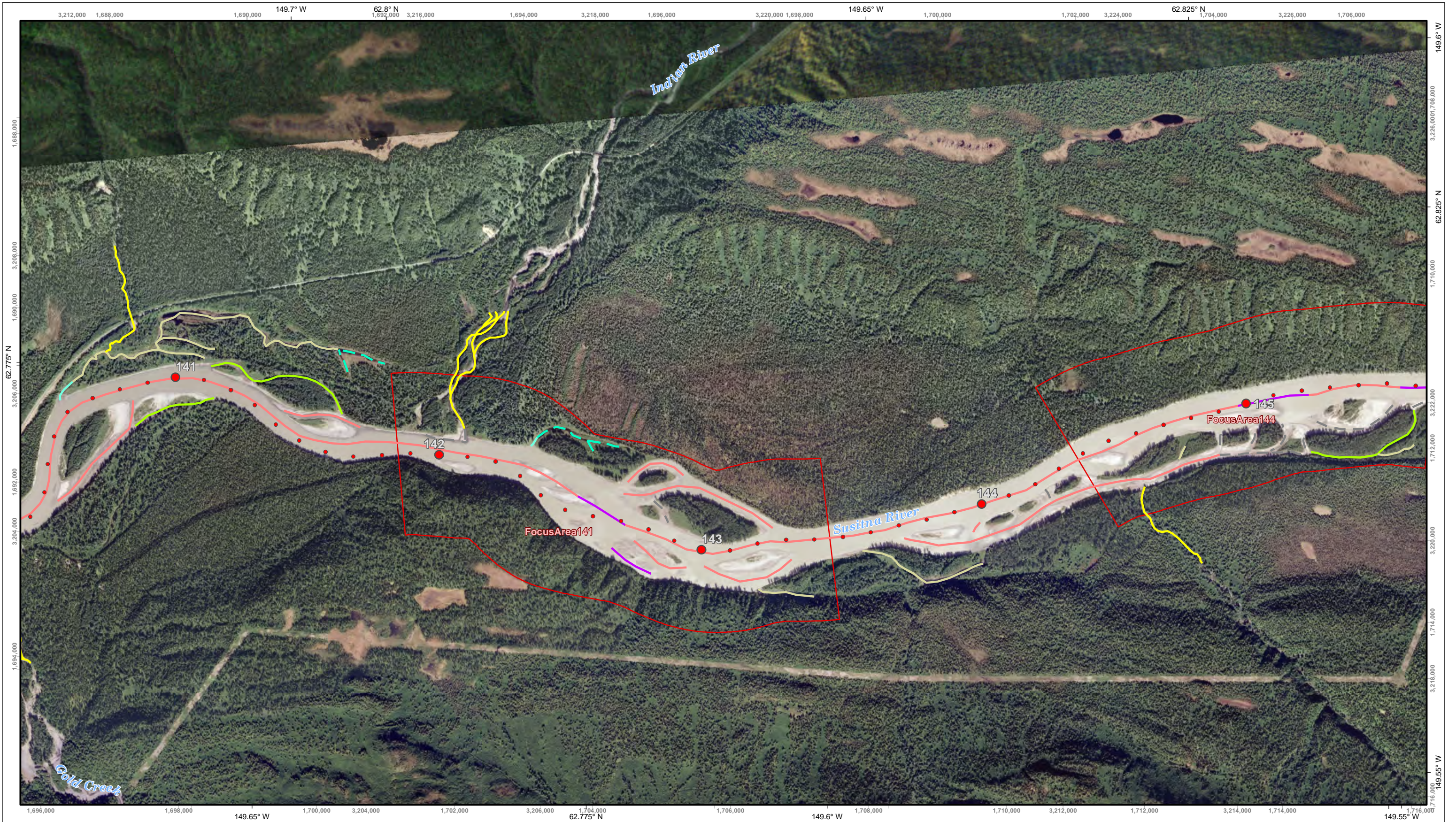


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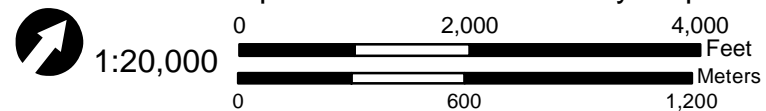
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—	Susitna Geomorphic Reach Breaks	—	Pool
□	Focus Area	—	Rapid
		—	Riffle
		—	Side Slough
		—	Tributary
		—	Unidentified
		—	Upland Slough
		—	Backwater
		—	Beaver Complex



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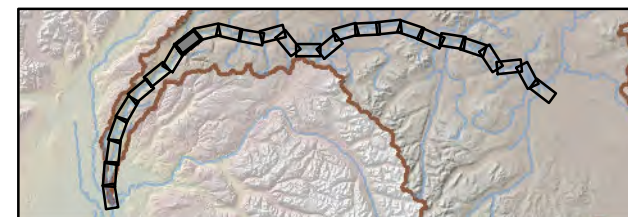


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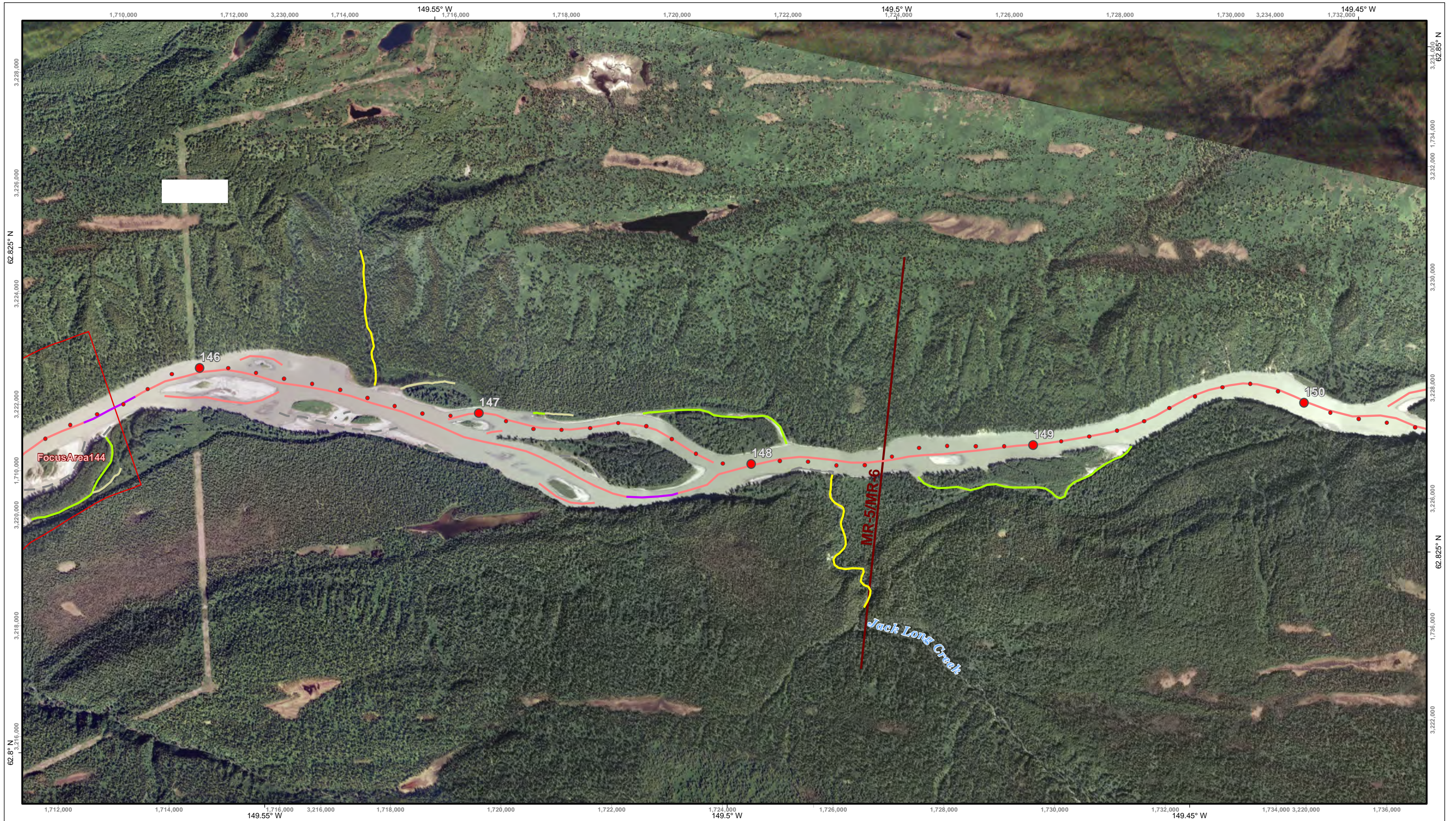


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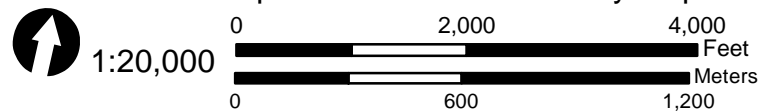
General Features		Mesohabitats		Macrohabitats		Special Habitat Features	
●	Susitna Project River Miles	—	Glide or Run	—	Side Slough	—	Backwater
—	Susitna Geomorphic Reach Breaks	—	Pool	—	Tributary	—	Beaver Complex
□	Focus Area	—	Rapid	—	Unidentified		
		—	Riffle	—	Upland Slough		



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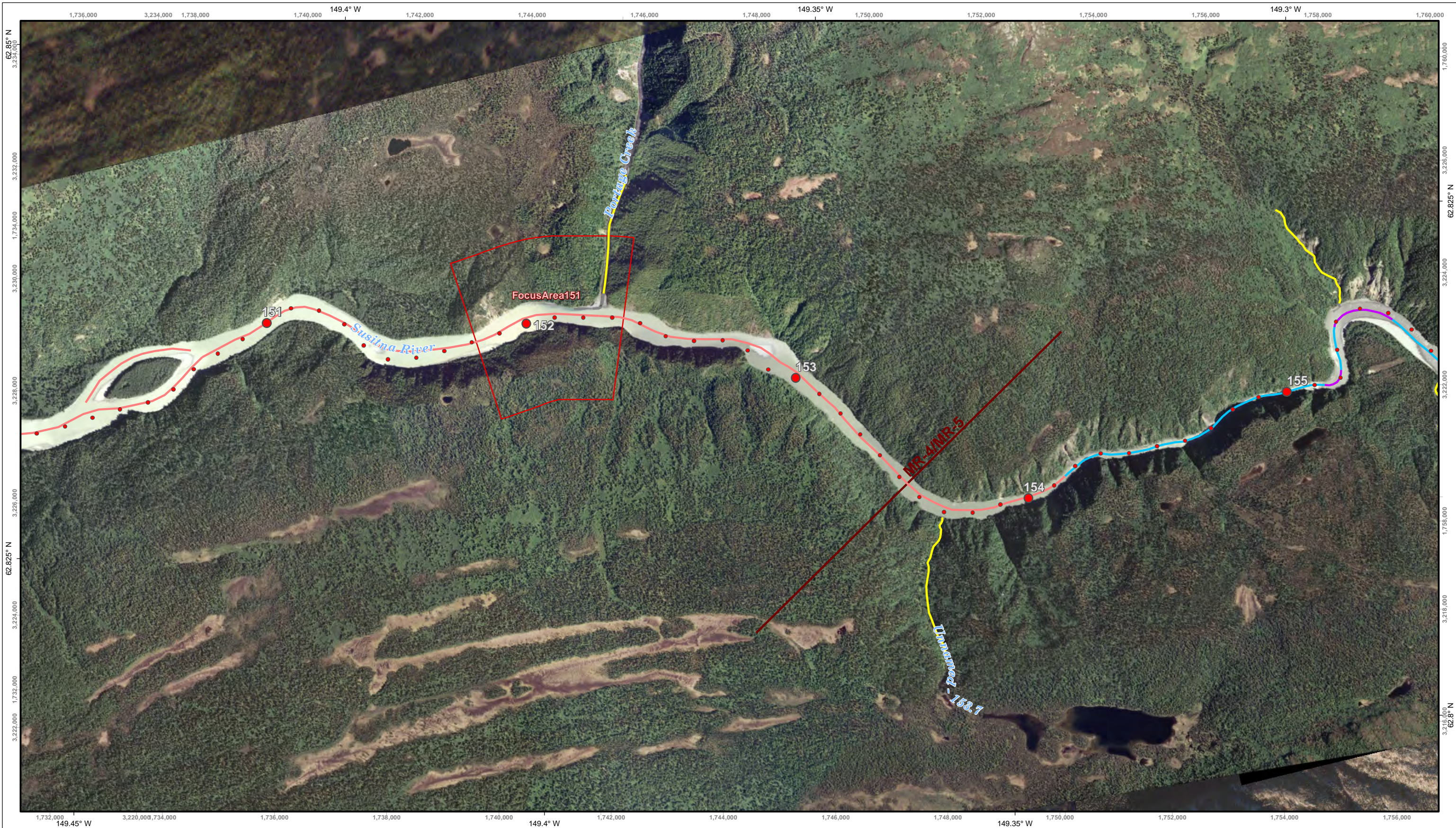


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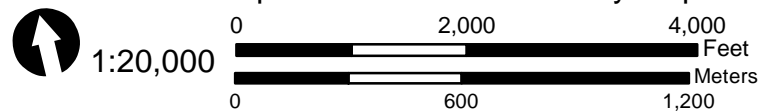
General Features			
●	Susitna Project River Miles	—	Glide or Run
—	Susitna Geomorphic Reach Breaks	—	Side Slough
	Focus Area	—	Tributary
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		—	Upland Slough
		—	
Special Habitat Features			
—	Backwater		
—	Beaver Complex		



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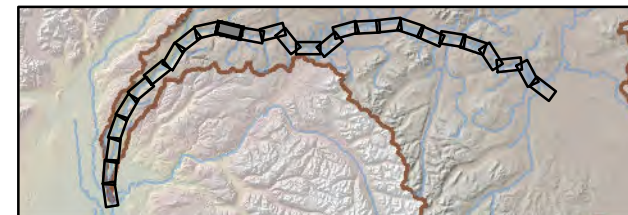
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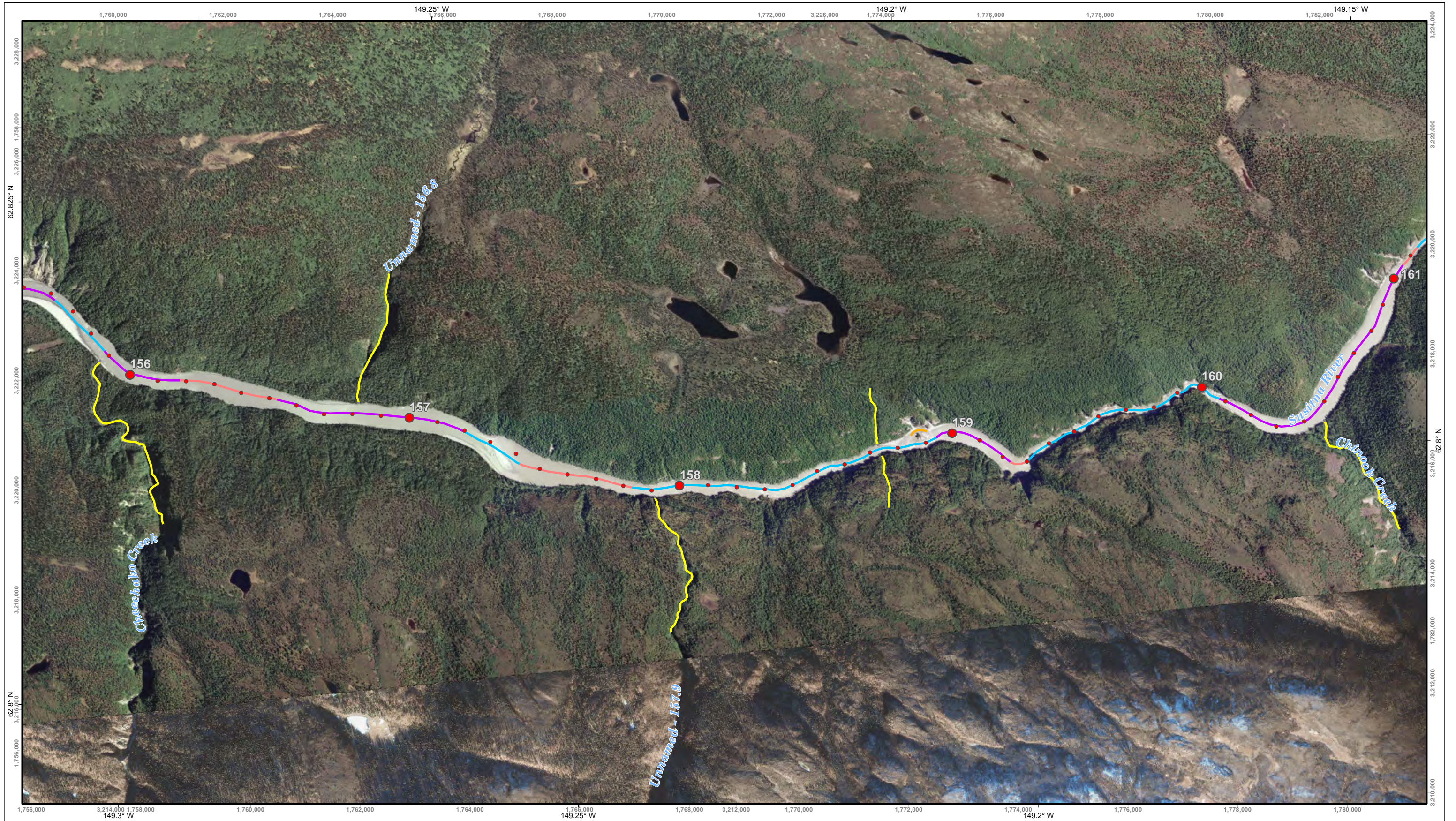
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General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area
- Glide or Run
- Pool
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Map Projection: NAD83 State Plane Zone 4 (Feet)
Grid Interval: 2000'

General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area

Mesohabitats

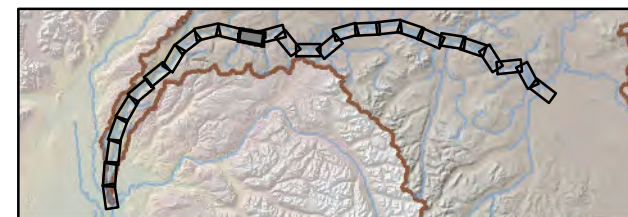
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

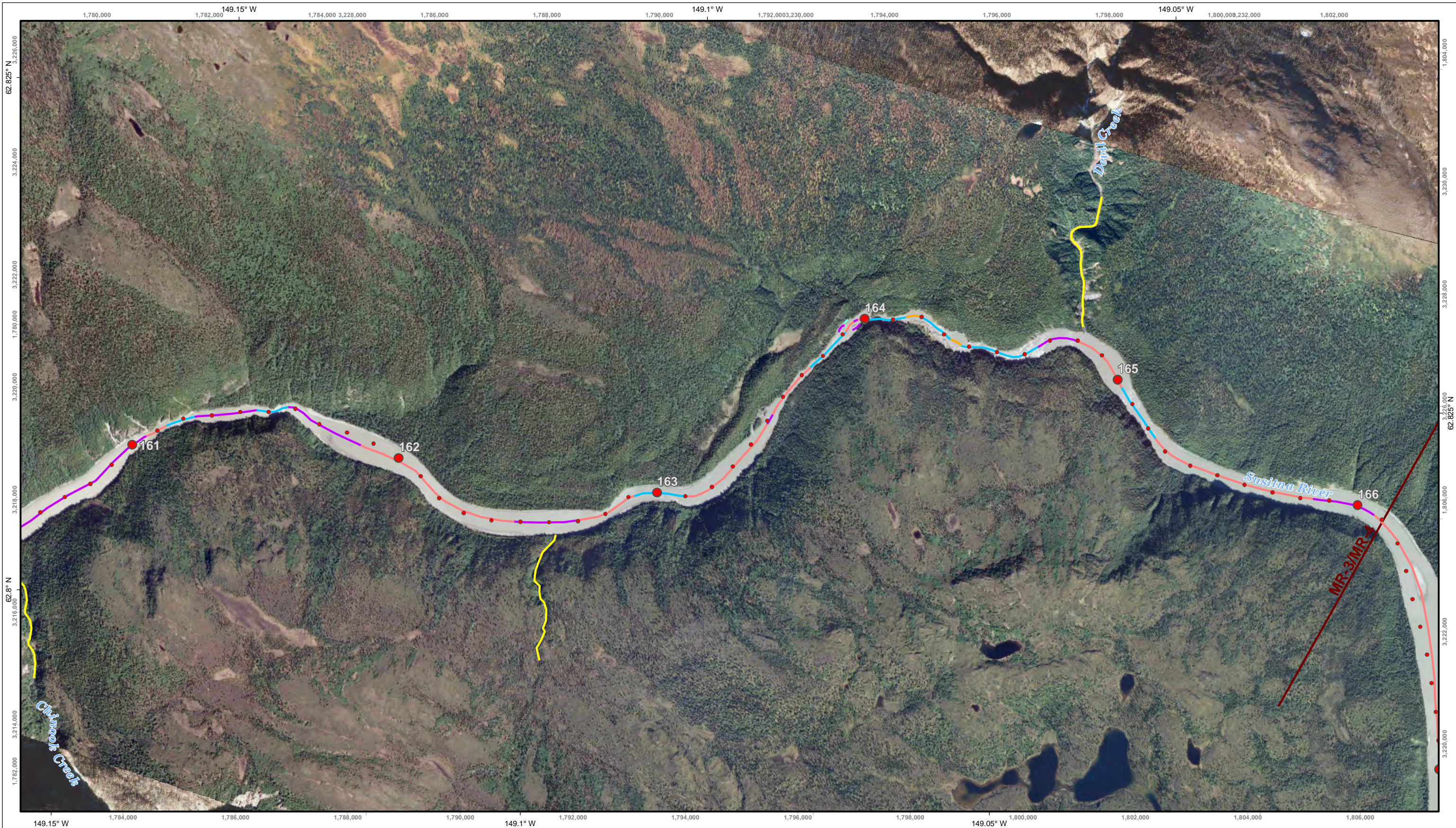
- Side Slough
- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

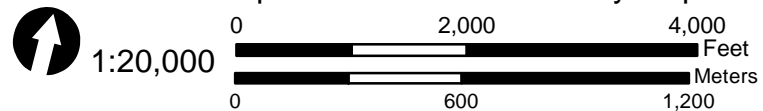
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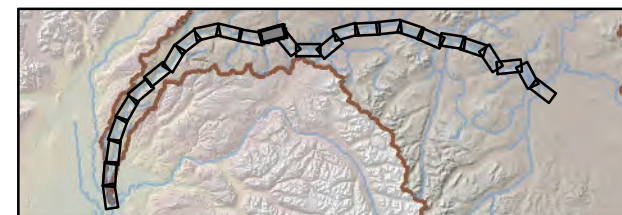


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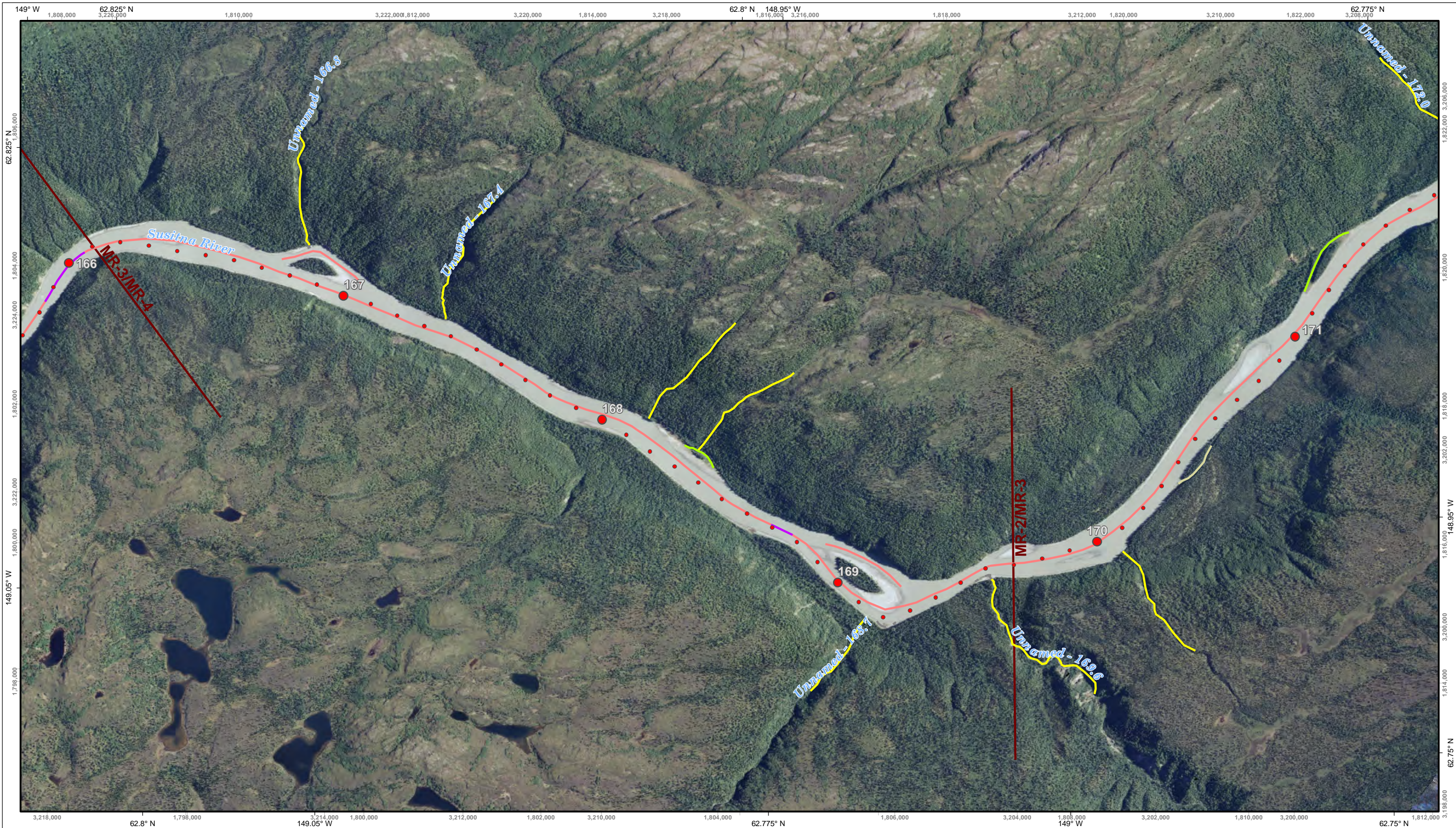


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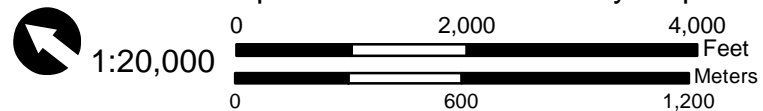
General Features			
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—	Susitna Geomorphic Reach Breaks	—	Pool
	Focus Area	—	Rapid
		—	Riffle
		—	Side Slough
		—	Tributary
		—	Unidentified
		—	Upland Slough
		—	Backwater
		—	Beaver Complex



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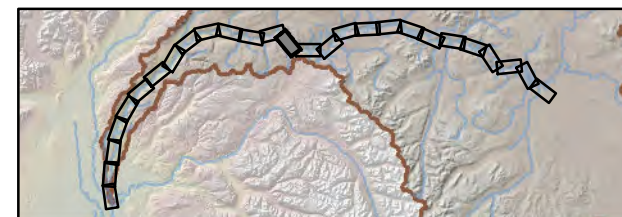
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General Features

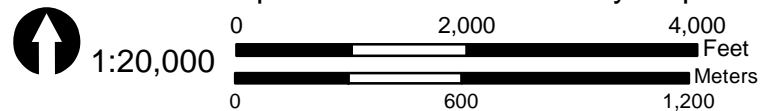
- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|--|
| <p>Mesohabitats</p> <ul style="list-style-type: none"> — Glide or Run — Pool — Rapid — Riffle | <p>Macrohabitats</p> <ul style="list-style-type: none"> — Side Slough — Tributary — Unidentified — Upland Slough | <p>Special Habitat Features</p> <ul style="list-style-type: none"> — Backwater — Beaver Complex |
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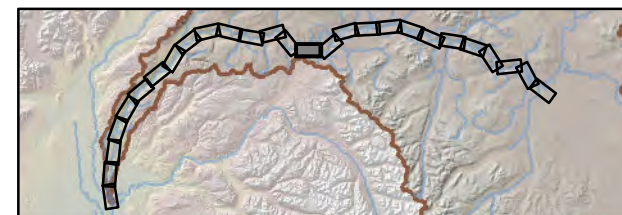
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General Features

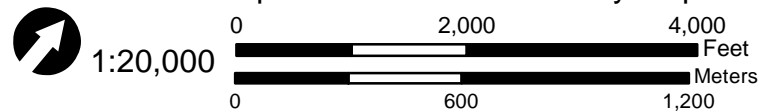
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- Focus Area
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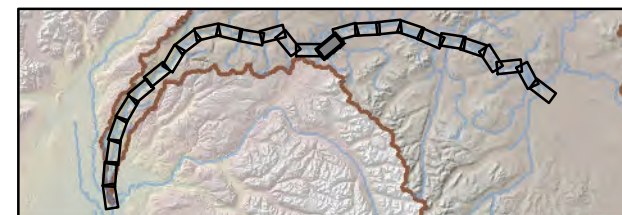
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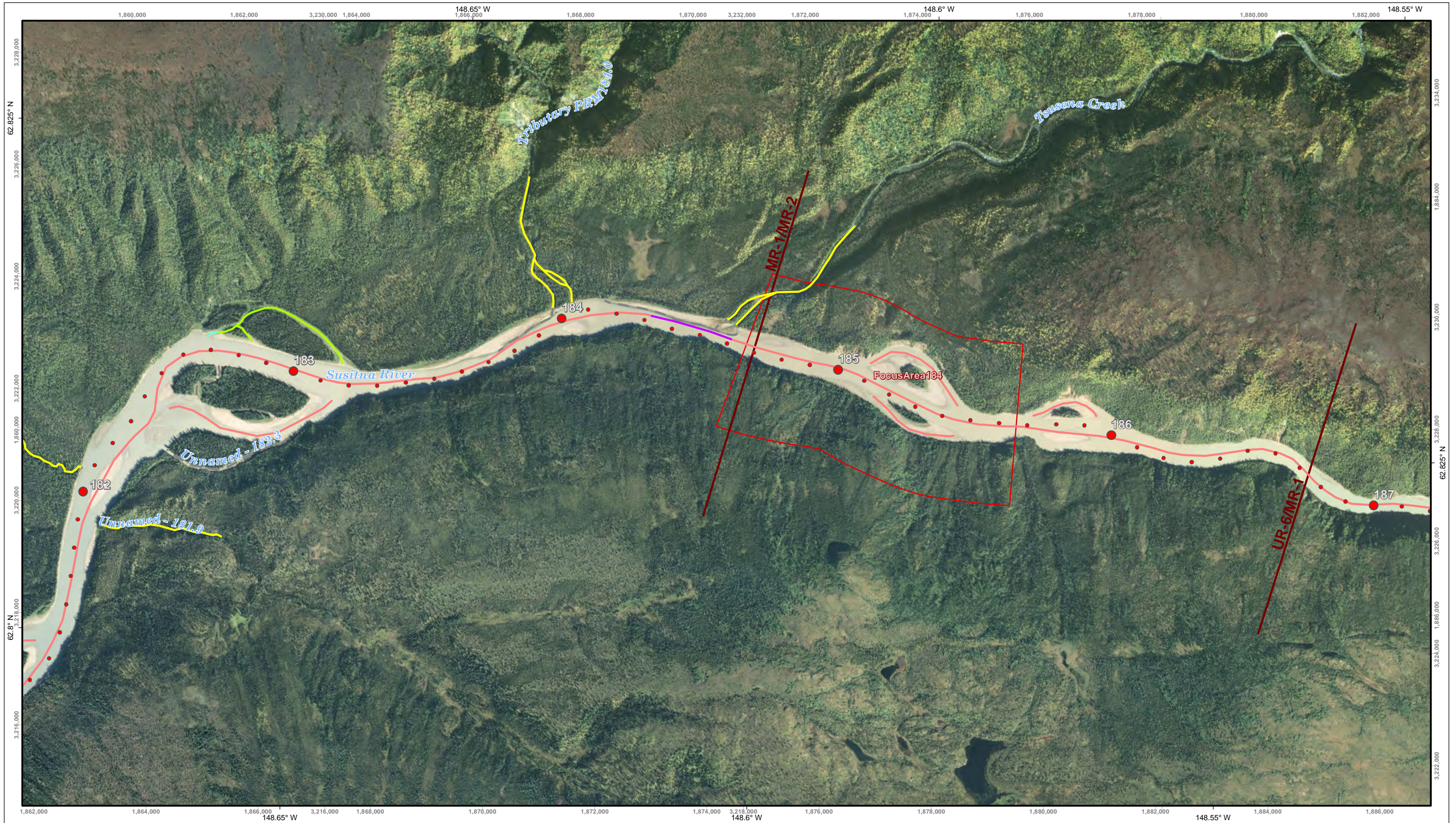
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 Grid Interval: 2000'

General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area
- Mesohabitats
- Pool
- Rapid
- Riffle
- Macrohabitats
- Tributary
- Unidentified
- Upland Slough
- Special Habitat Features
- Backwater
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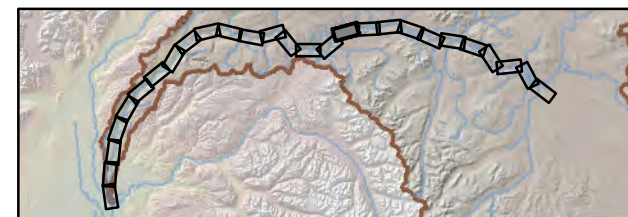


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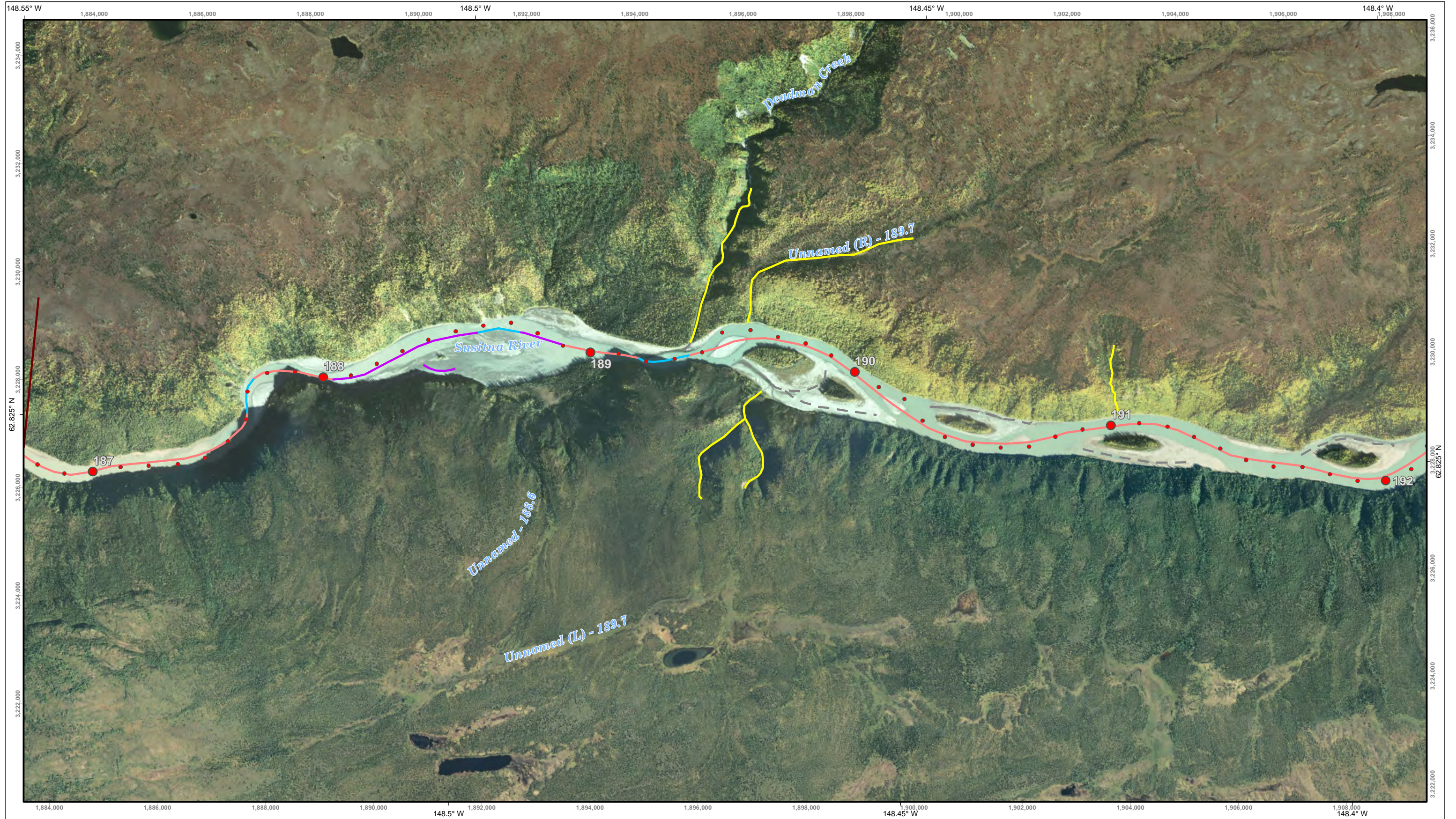


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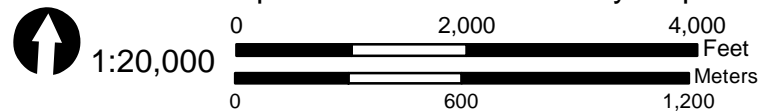
General Features			
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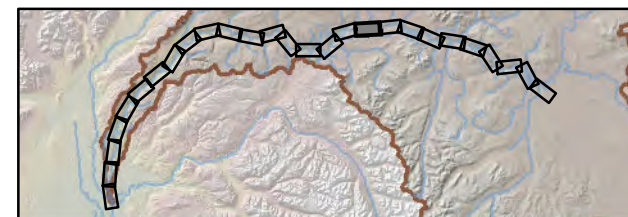


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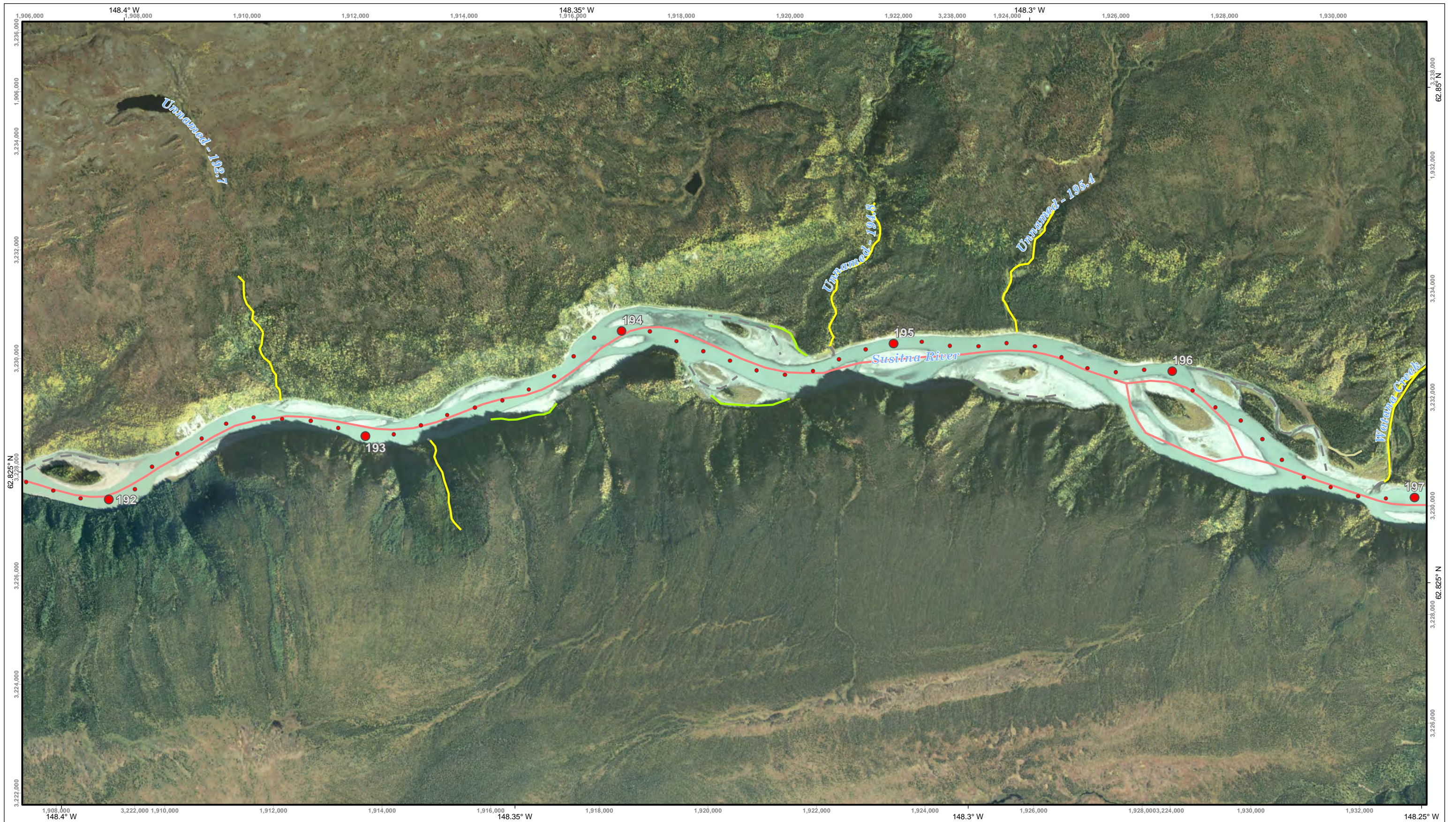


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General Features		Mesohabitats		Macrohabitats		Special Habitat Features	
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□	Focus Area	—	Rapid	—	Unidentified	—	
		—	Riffle	—	Upland Slough		



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- Focus Area

Mesohabitats

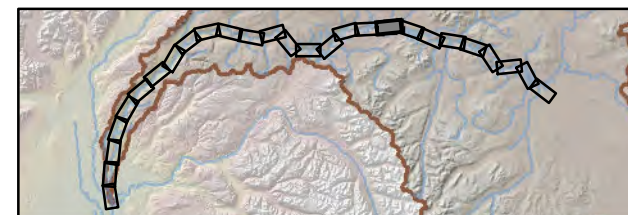
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

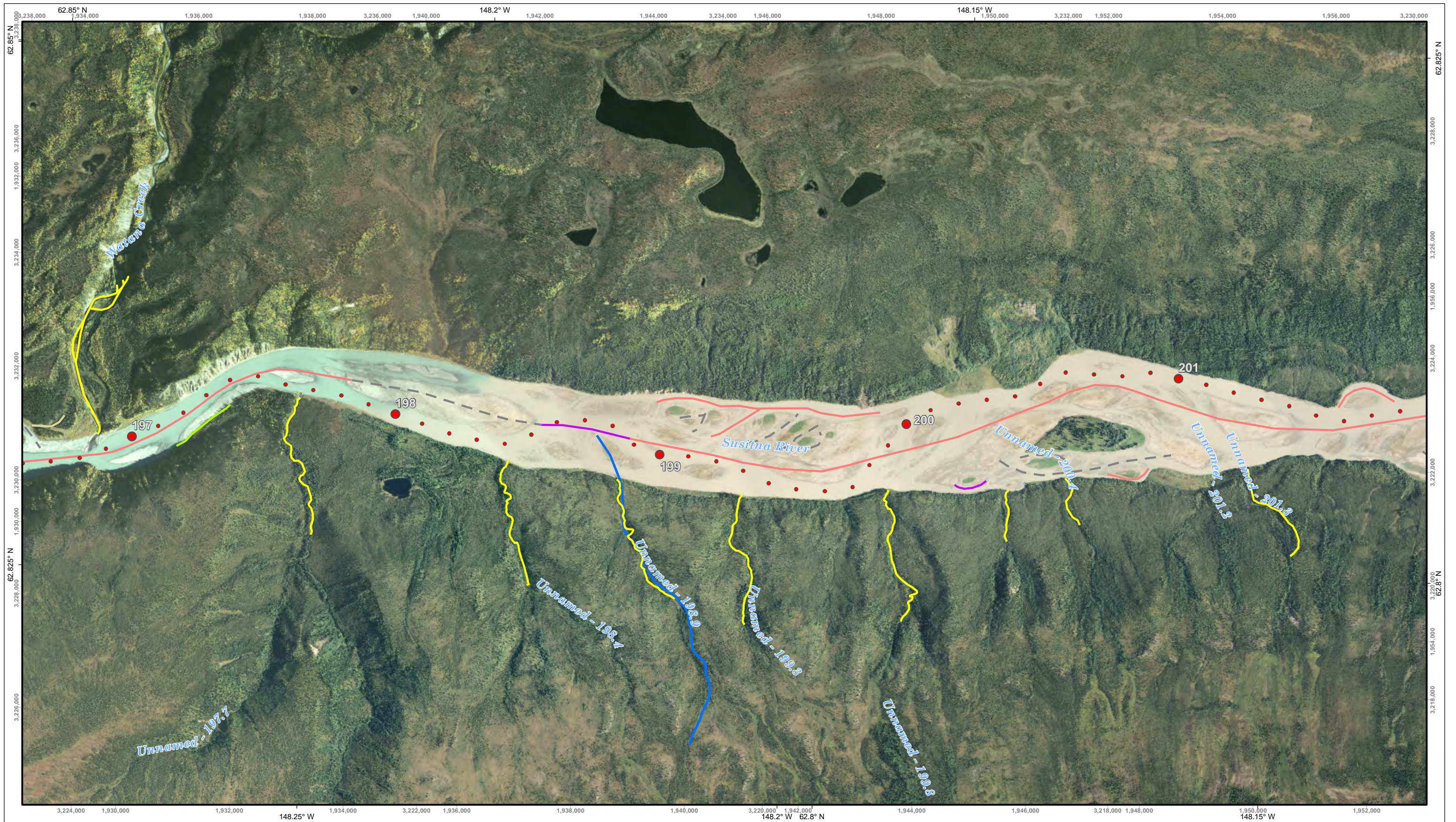
- Side Slough
- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

- Backwater
- Beaver Complex



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 Fish Barrier and Aquatic Habitat Field Survey Map Book



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Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area

Mesohabitats

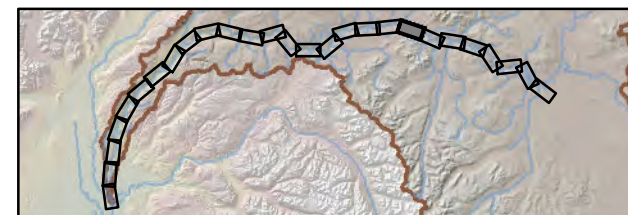
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

- Side Slough
- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

- Backwater
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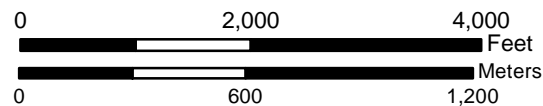


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Map Projection: NAD83 State Plane Zone 4 (Feet)
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General Features

- Susitna Project River Miles
- Susitna Geomorphic Reach Breaks
- Focus Area

Mesohabitats

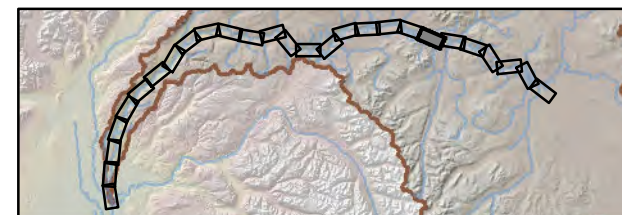
- Glide or Run
- Pool
- Rapid
- Riffle

Macrohabitats

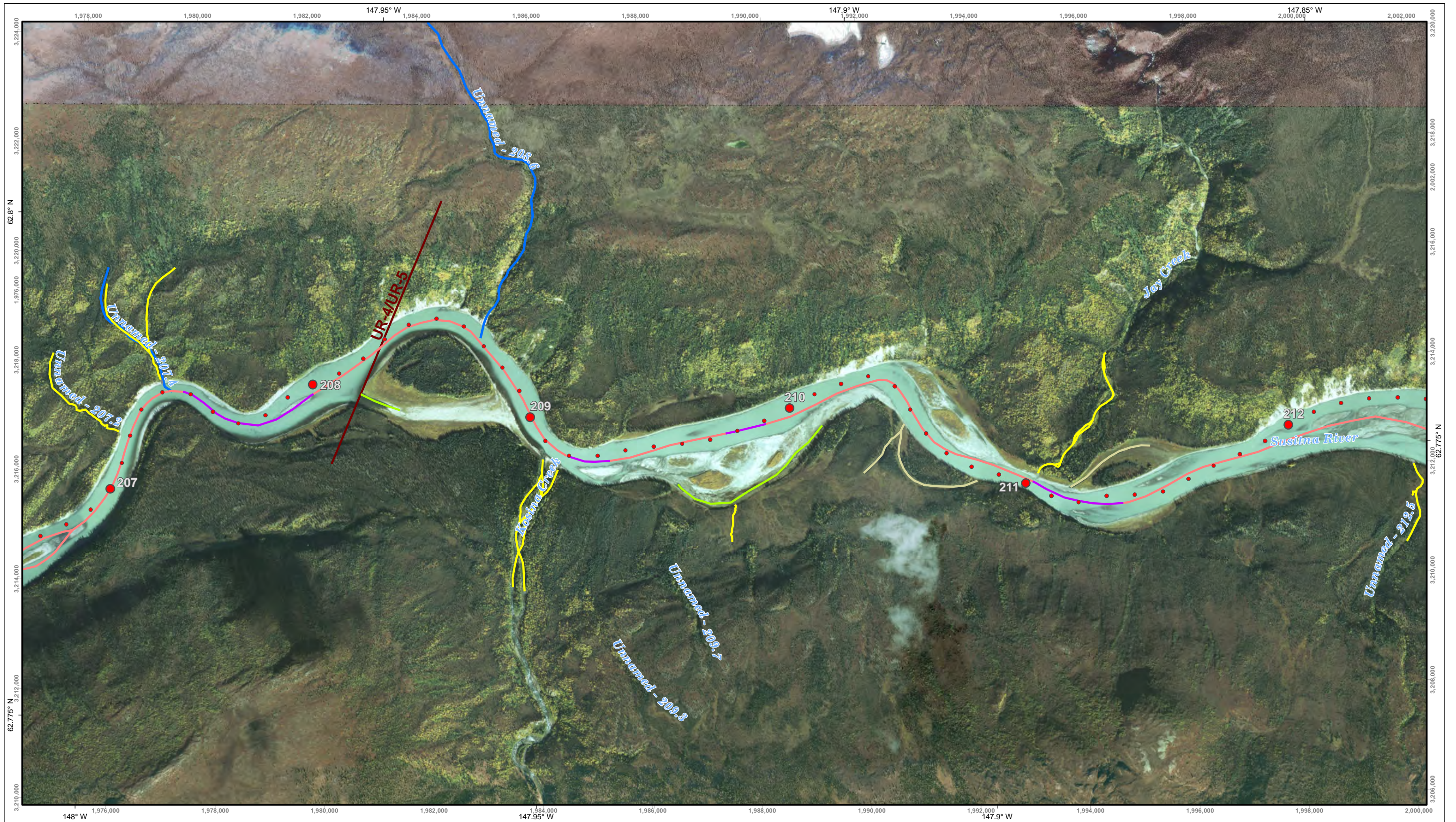
- Side Slough
- Tributary
- Unidentified
- Upland Slough

Special Habitat Features

- Backwater
- Beaver Complex



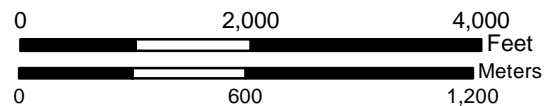
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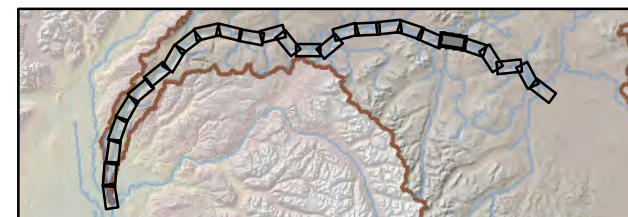
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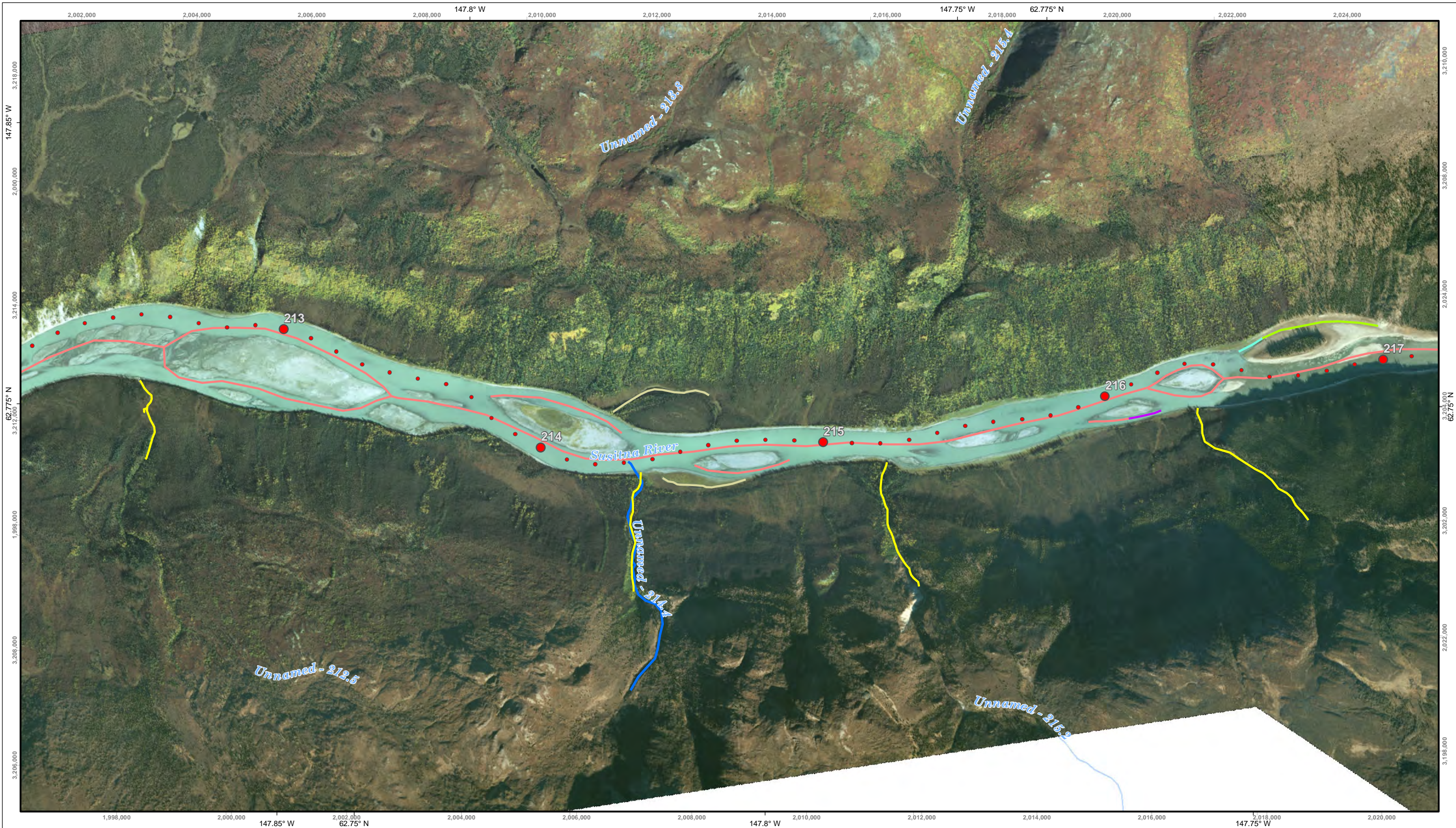
Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features

- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|--|
| <p>Mesohabitats</p> <ul style="list-style-type: none"> — Glide or Run — Pool — Rapid — Riffle | <p>Macrohabitats</p> <ul style="list-style-type: none"> — Side Slough — Tributary — Unidentified — Upland Slough | <p>Special Habitat Features</p> <ul style="list-style-type: none"> — Backwater — Beaver Complex |
|---|--|--|



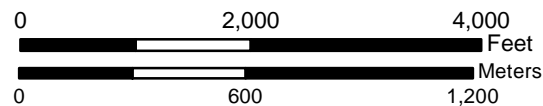
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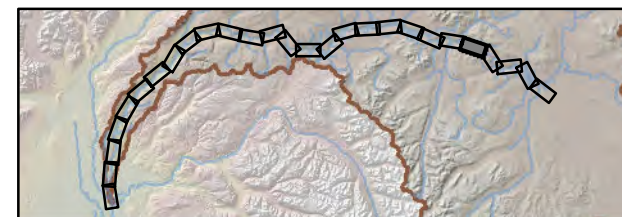
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Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features

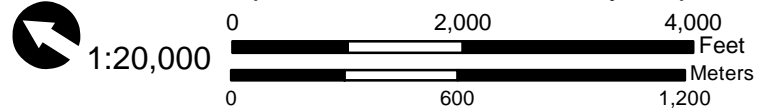
- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|--|
| <p>Mesohabitats</p> <ul style="list-style-type: none"> — Glide or Run — Pool — Rapid — Riffle | <p>Macrohabitats</p> <ul style="list-style-type: none"> — Side Slough — Tributary — Unidentified — Upland Slough | <p>Special Habitat Features</p> <ul style="list-style-type: none"> — Backwater — Beaver Complex |
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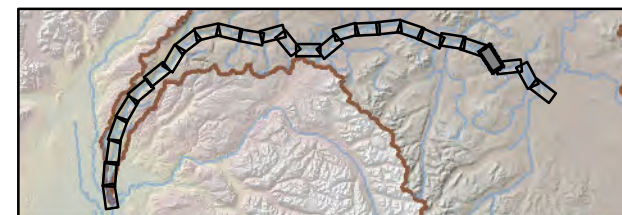


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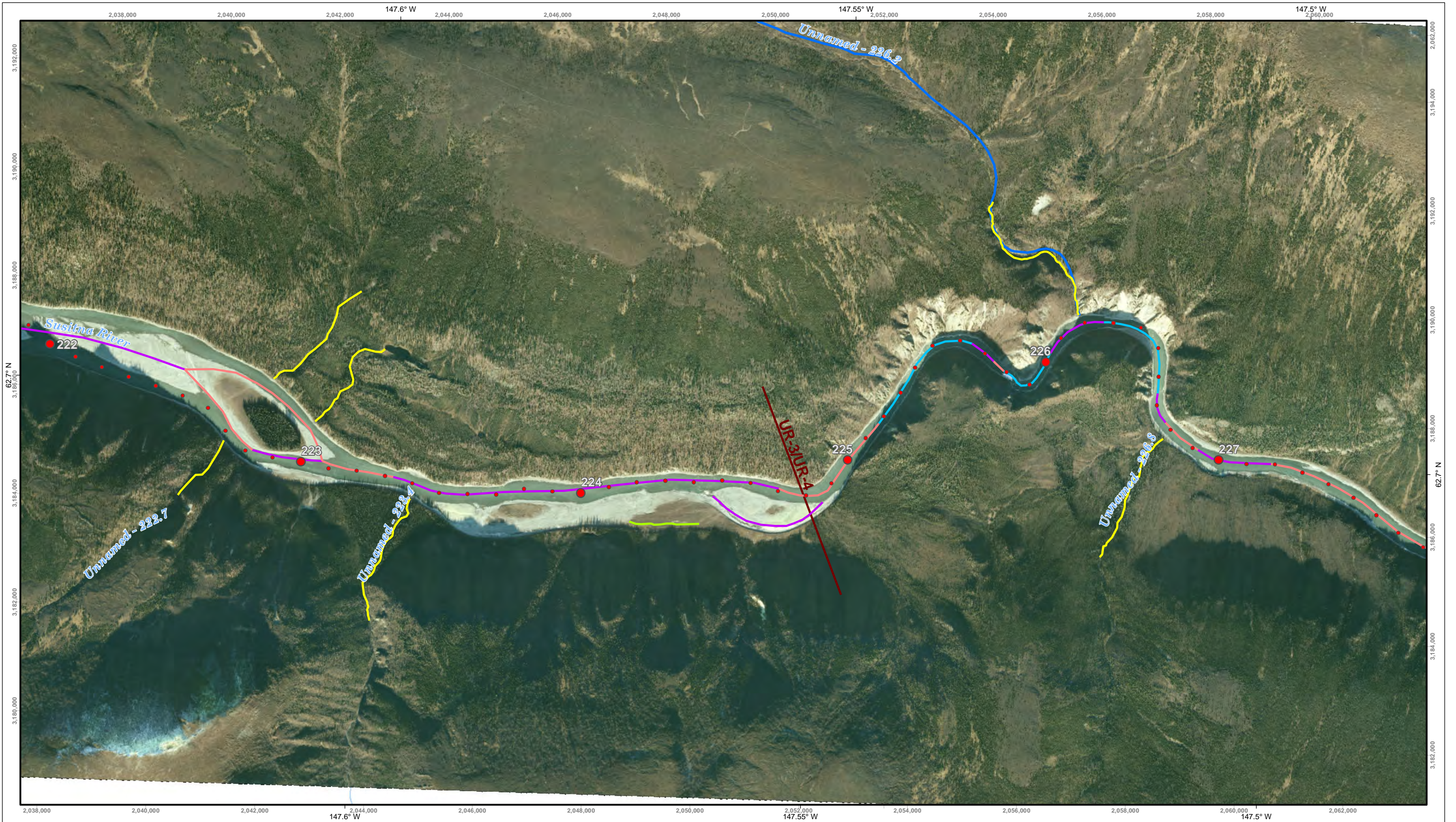


Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features		Mesohabitats		Macrohabitats		Special Habitat Features	
●	Susitna Project River Miles	—	Glide or Run	—	Side Slough	—	Backwater
—	Susitna Geomorphic Reach Breaks	—	Pool	—	Tributary	—	Beaver Complex
□	Focus Area	—	Rapid	—	Unidentified		
		—	Riffle	—	Upland Slough		



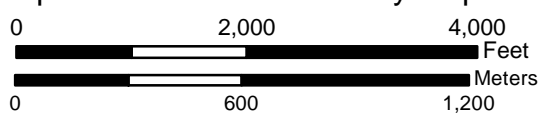
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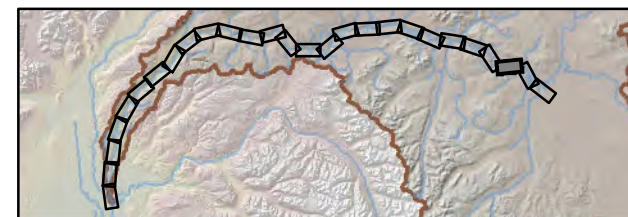
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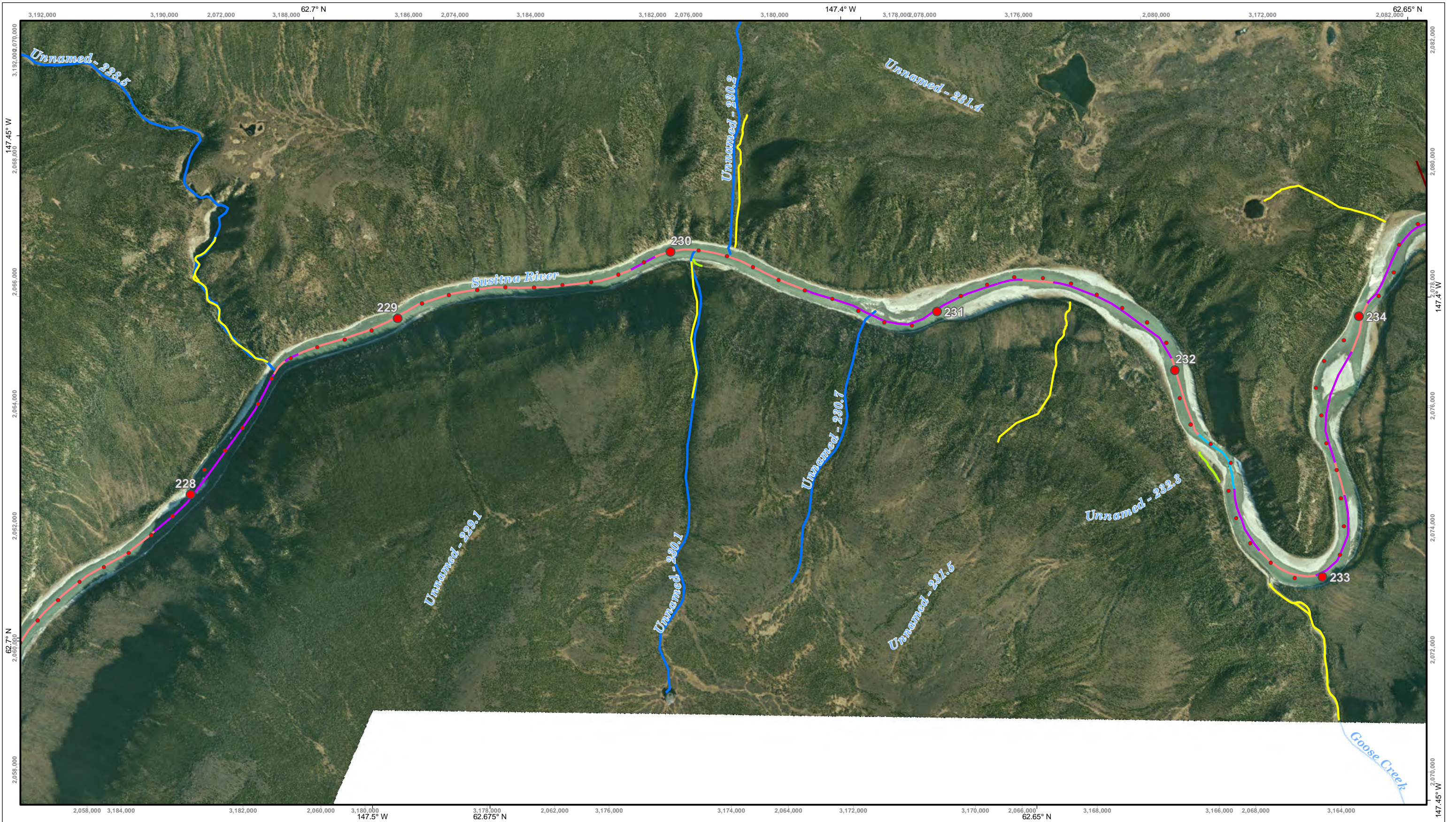
Map Projection: NAD83 State Plane Zone 4 (Feet)
 Grid Interval: 2000'

General Features

- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|---|
| <p>Mesohabitats</p> <ul style="list-style-type: none"> — Glide or Run — Pool — Rapid — Riffle | <p>Macrohabitats</p> <ul style="list-style-type: none"> — Side Slough — Tributary — Unidentified — Upland Slough | <p>Special Habitat Features</p> <ul style="list-style-type: none"> — Backwater — Beaver Complex |
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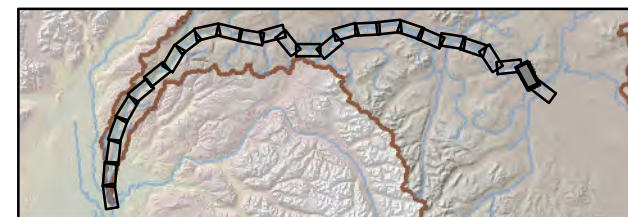
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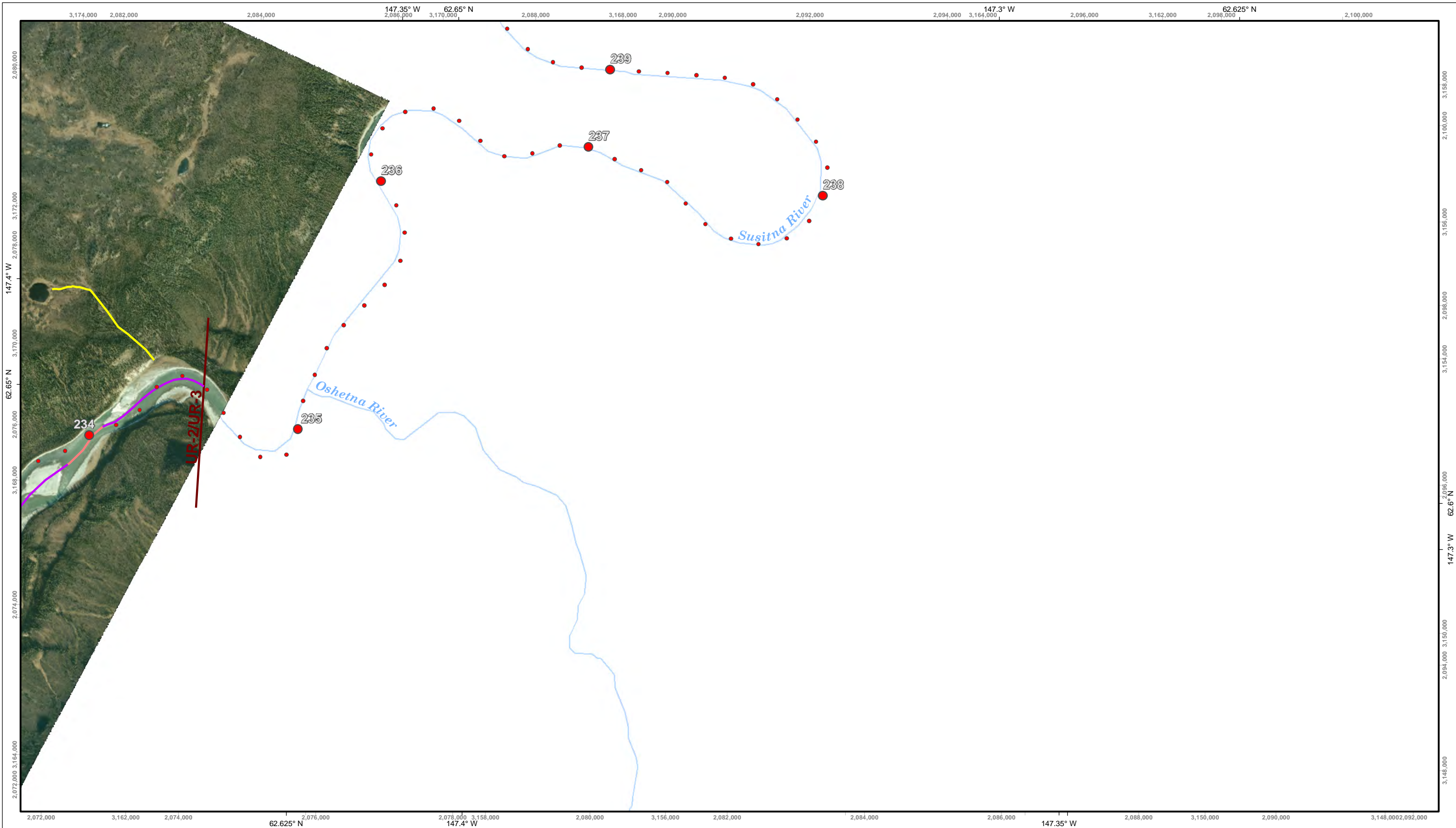
Map Projection: NAD83 State Plane Zone 4 (Feet)
Grid Interval: 2000'

General Features

- Susitna Project River Miles
 - Susitna Geomorphic Reach Breaks
 - Focus Area
- | | | |
|---|--|--|
| Mesohabitats
 Pool
 Rapid
 Riffle | Macrohabitats
 Tributary
 Unidentified
 Upland Slough | Special Habitat Features
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 Beaver Complex |
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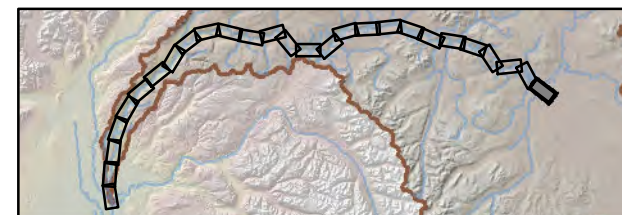


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General Features		Mesohabitats		Macrohabitats		Special Habitat Features	
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—	Susitna Geomorphic Reach Breaks	—	Pool	—	Tributary	—	Beaver Complex
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