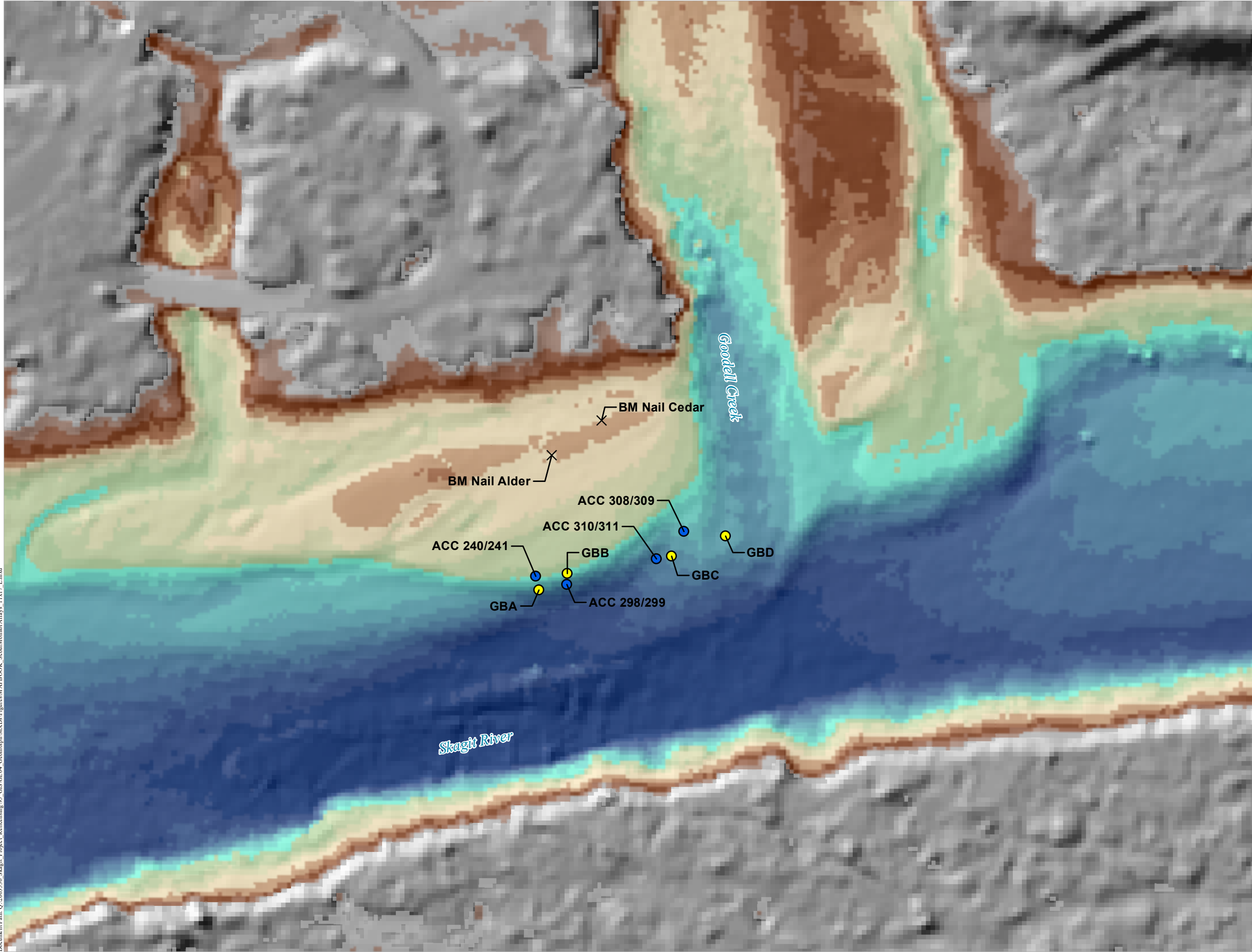


**SKAGIT RIVER GEOMORPHOLOGY BETWEEN GORGE DAM AND  
THE SAUK RIVER STUDY INTERIM REPORT**

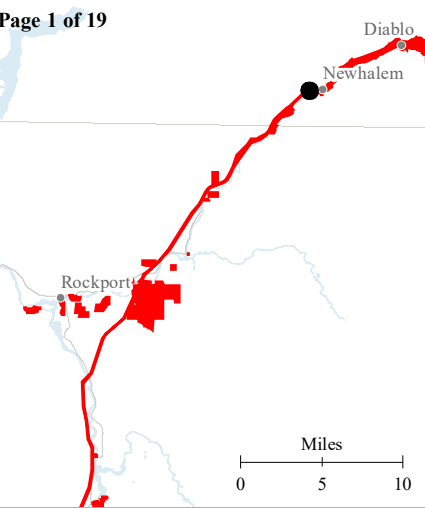
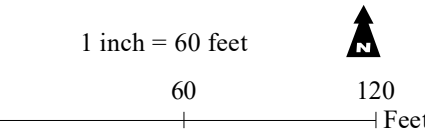
**ATTACHMENT B**

**SCOUR MONITOR INSTALLATION LOCATION MAPBOOK**



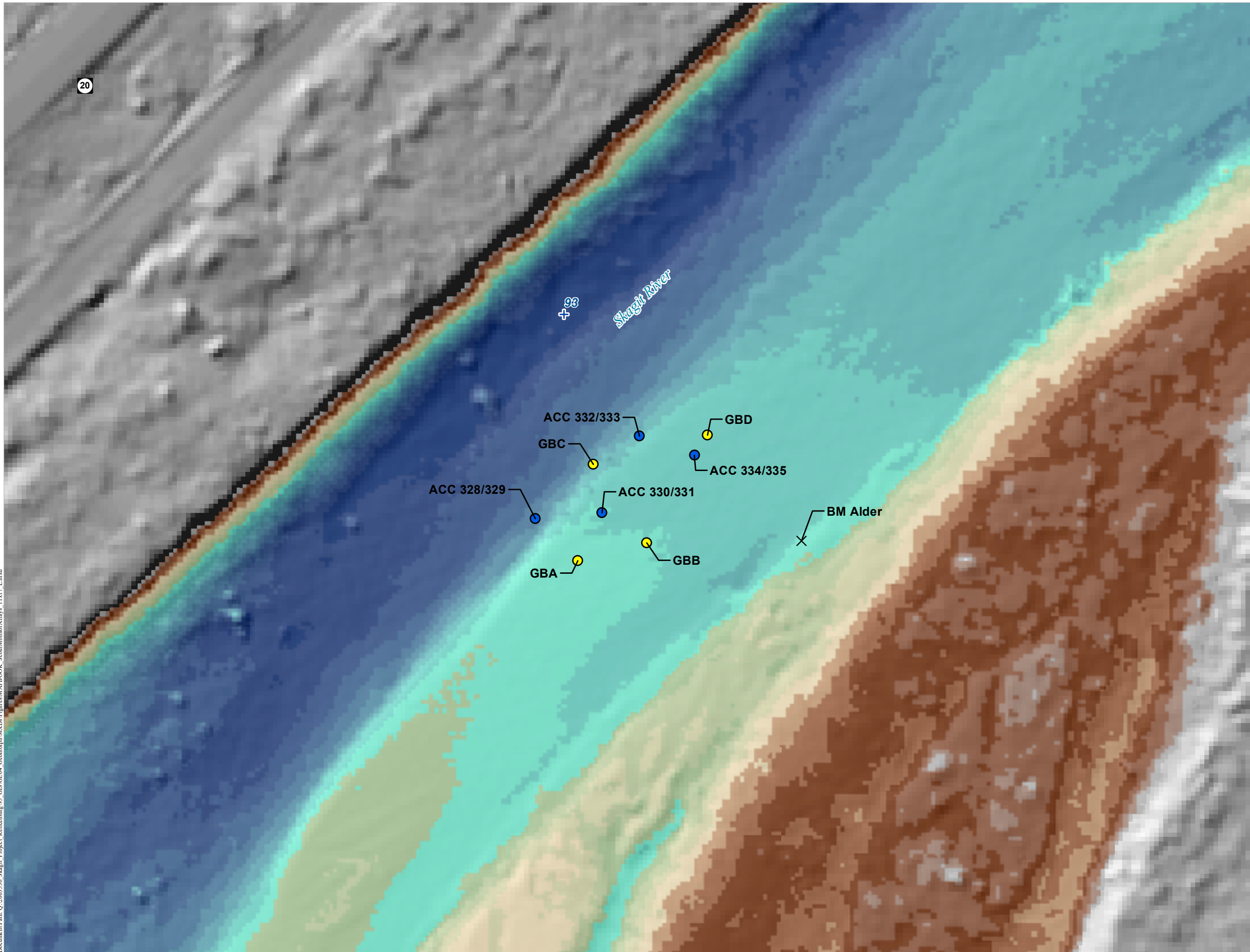
**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: GOODELL CK FAN**

- + Project River Mile
- Scour Monitoring Array
  - × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



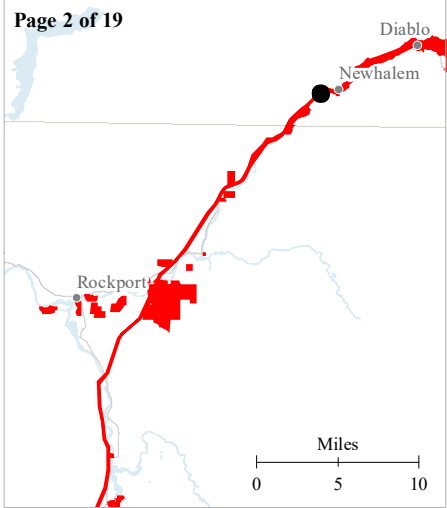
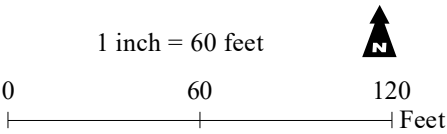


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC93.0**

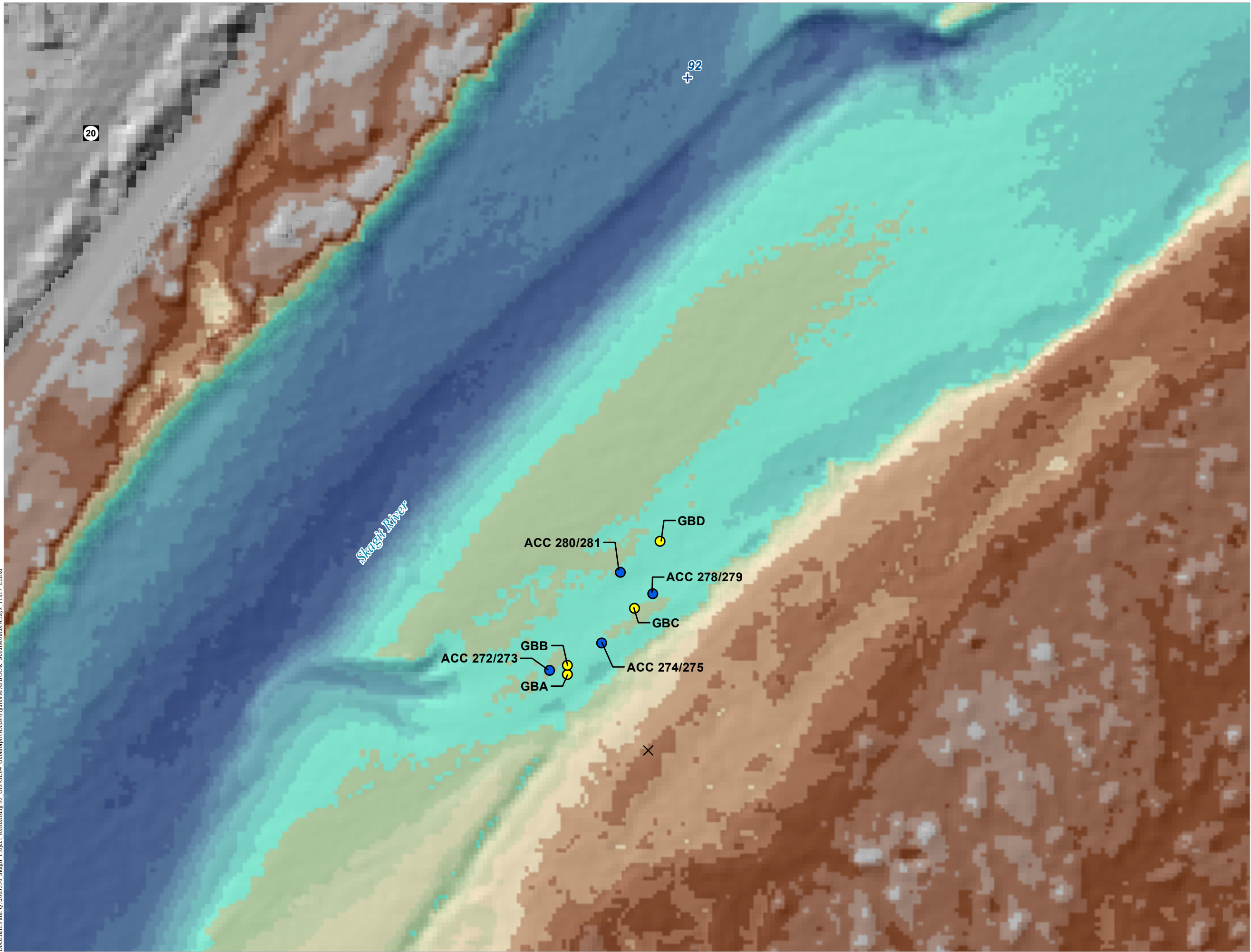
- + Project River Mile
- Scour Monitoring Array
  - × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

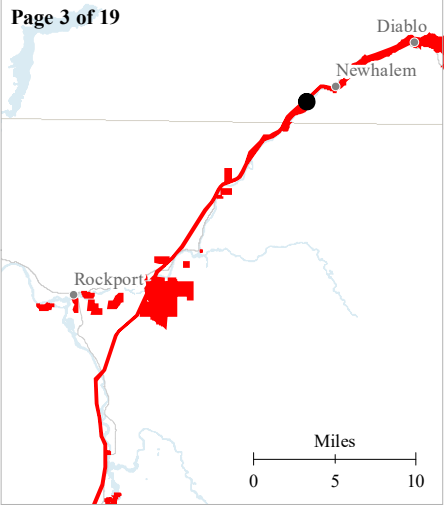
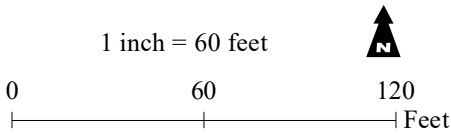
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: ABSS1**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)

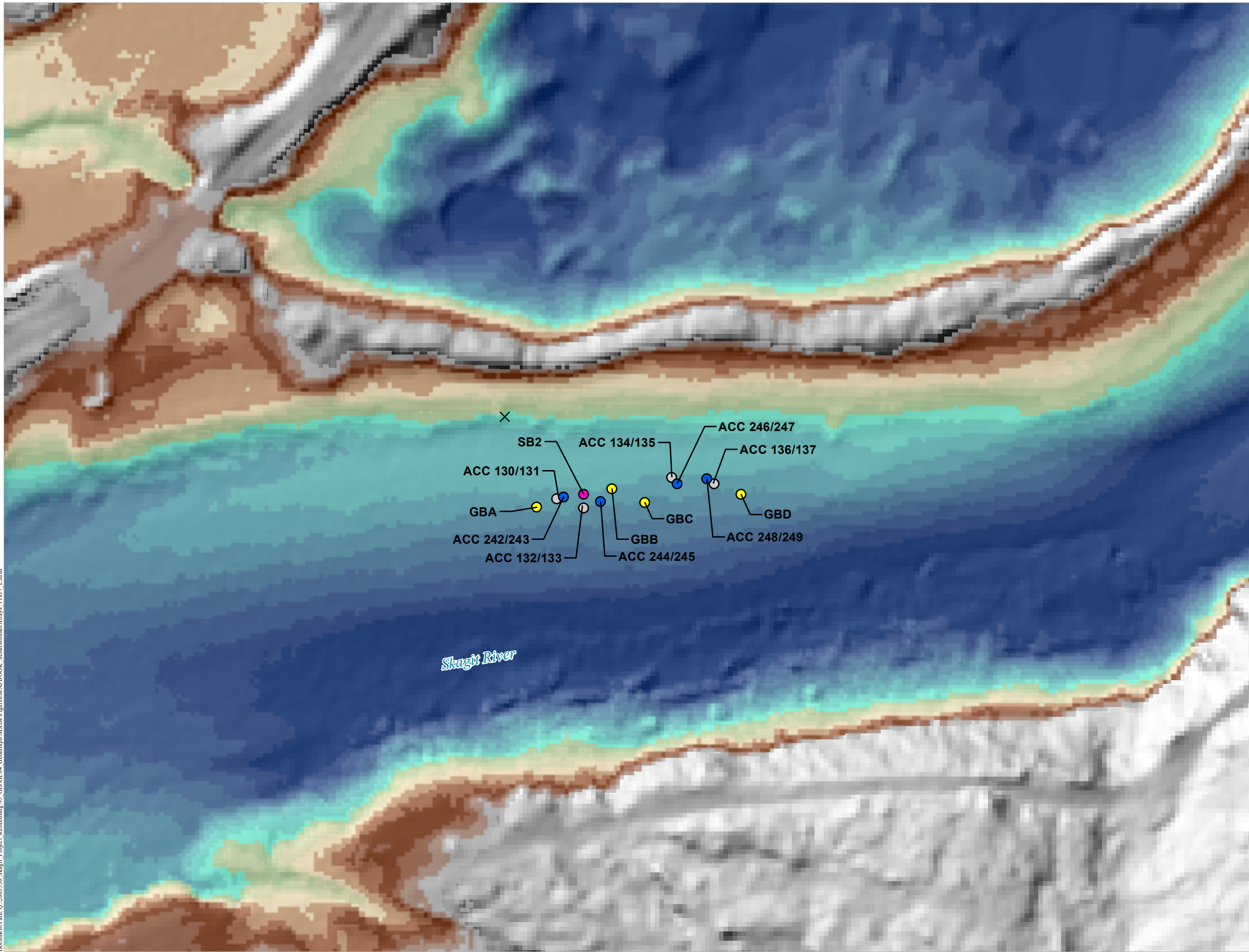


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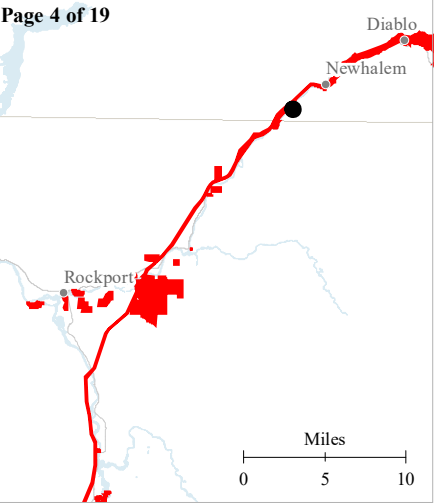
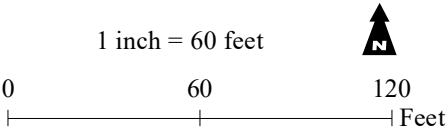


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: ABSS2**

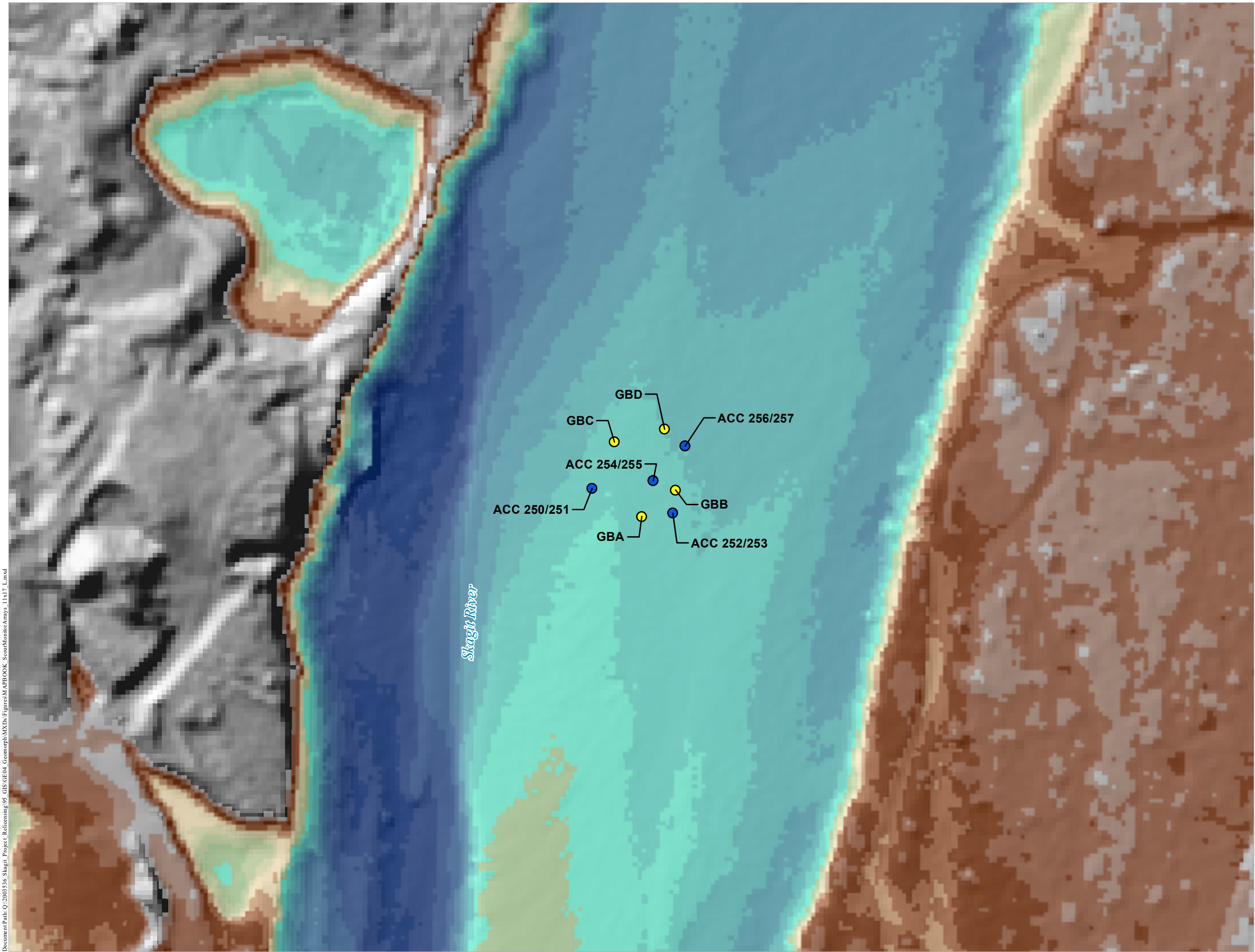
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

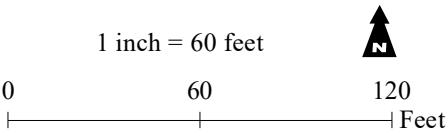
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Data Source: Northwest Hydraulic Consultants (2021)

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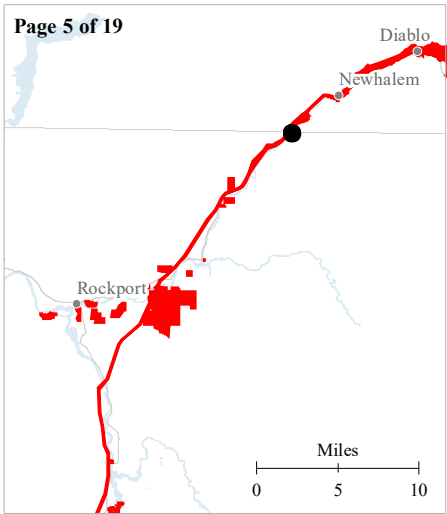


**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC89.8**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



Page 5 of 19



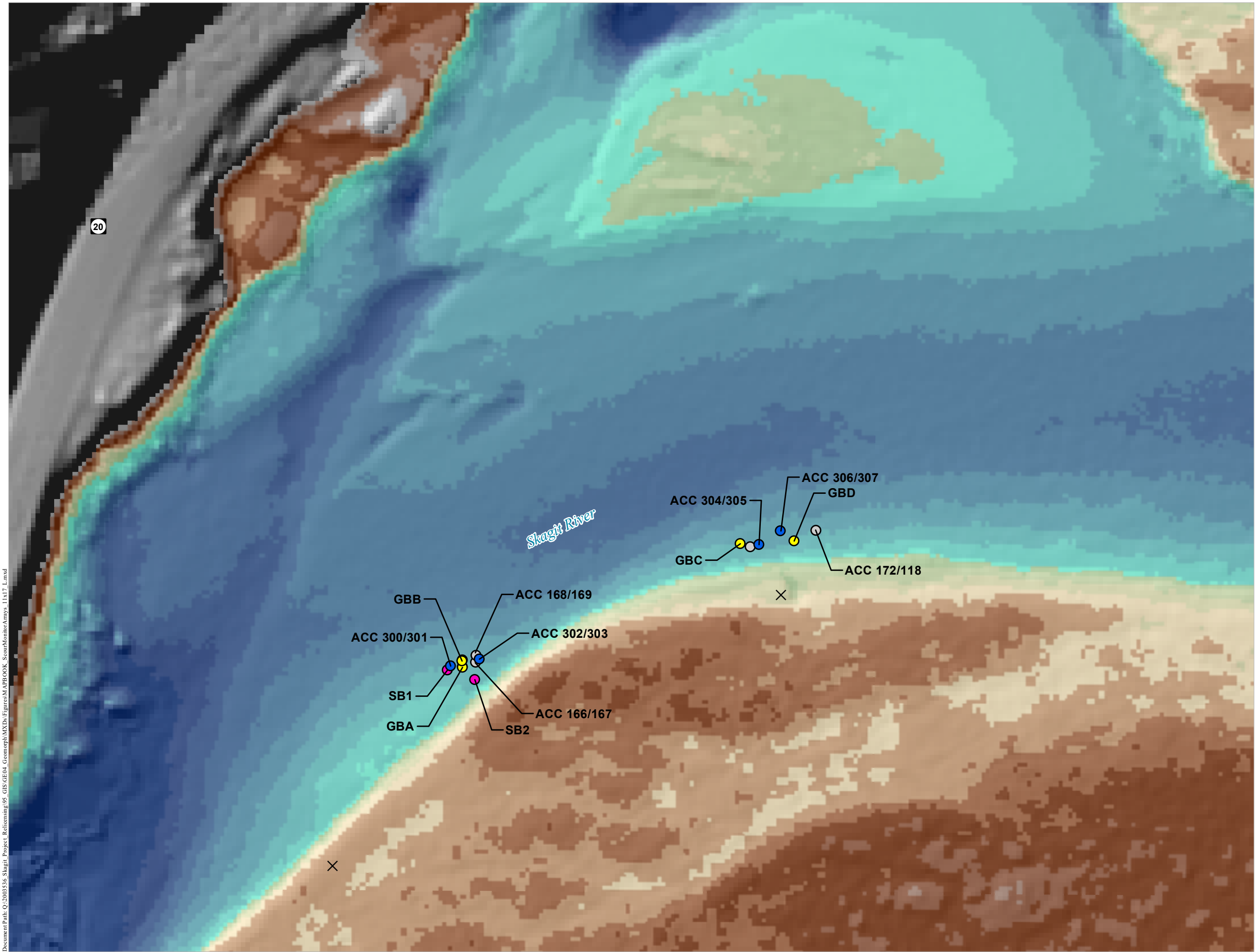
Seattle City Light

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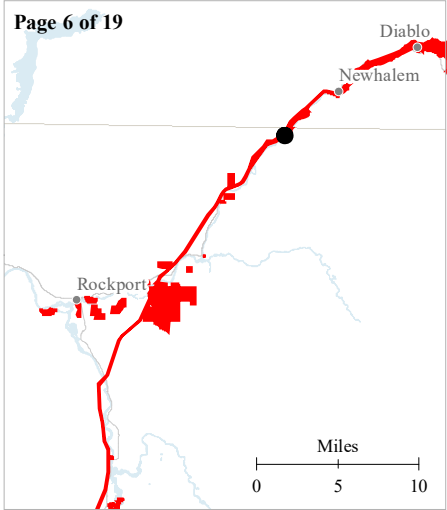
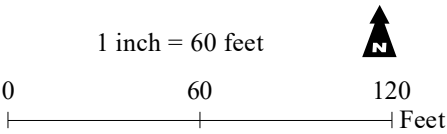


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: ABSS3 DOWNSTREAM  
CLUSTER & ABSS3  
UPSTREAM CLUSTER**

- + Project River Mile
- Scour Monitoring Array
  - × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)

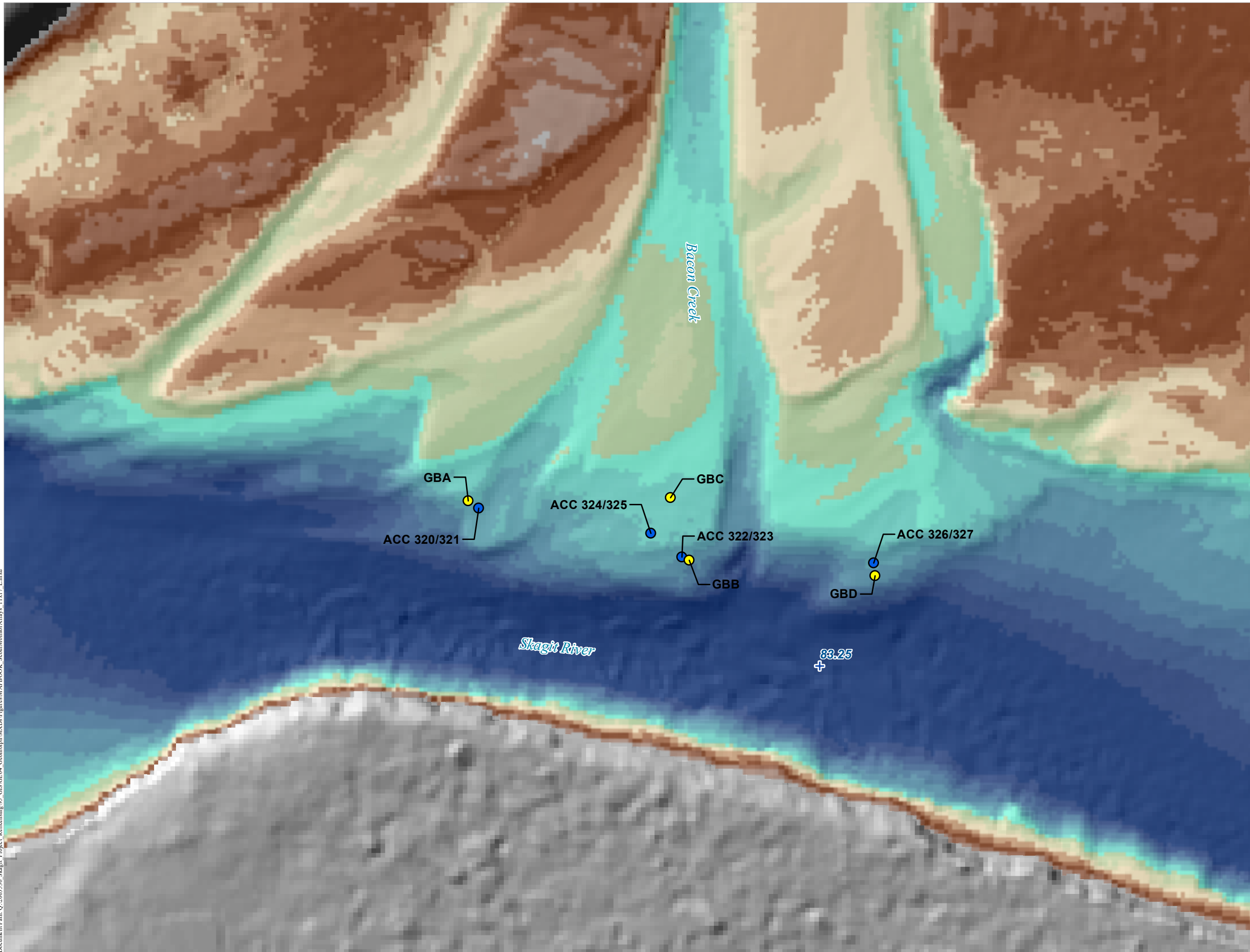


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Data Source: Northwest Hydraulic Consultants (2021)

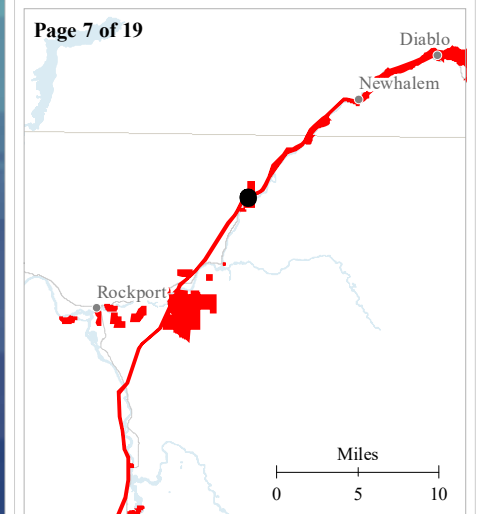
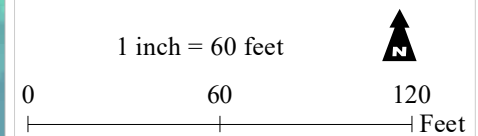


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: BACON CREEK FAN**

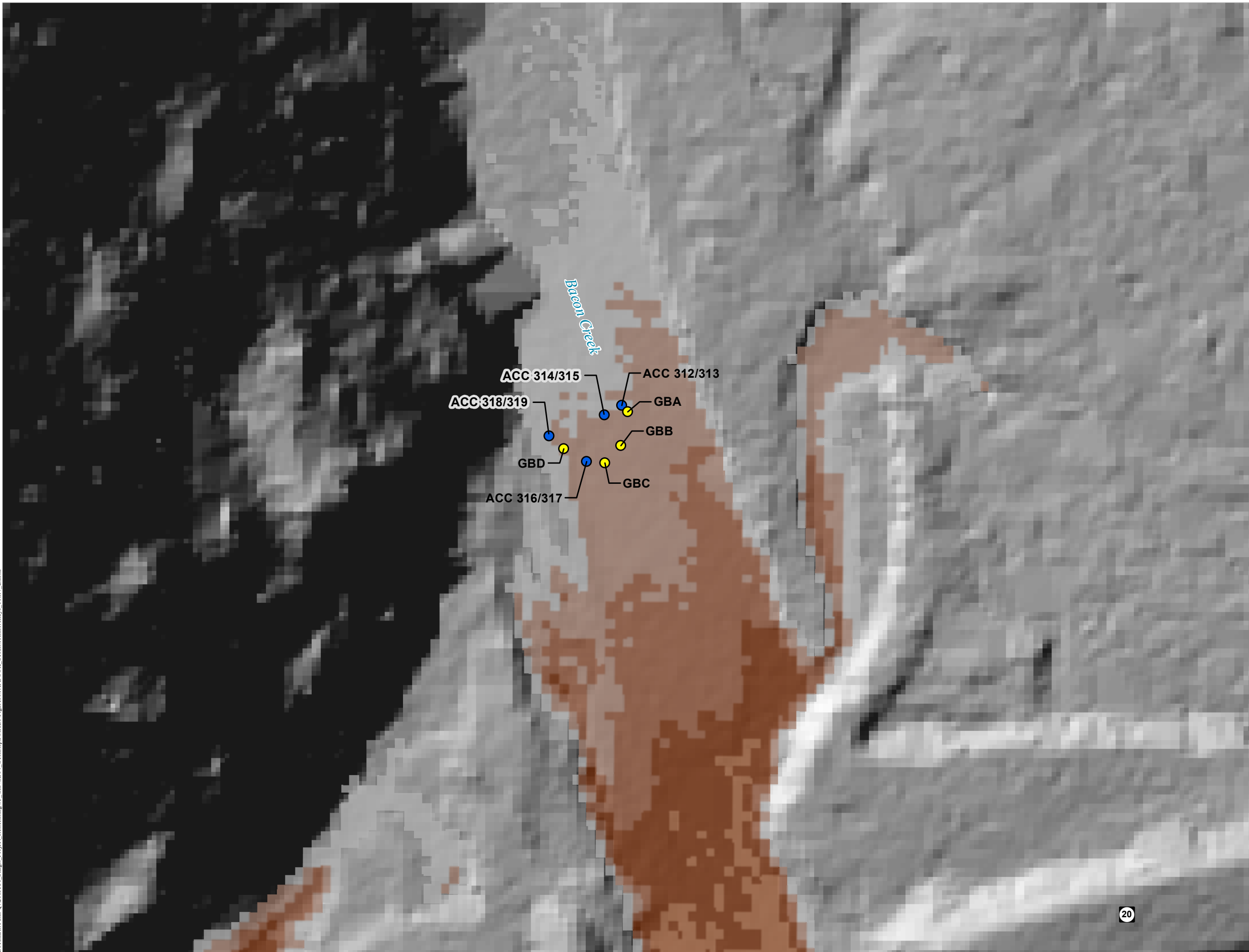
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

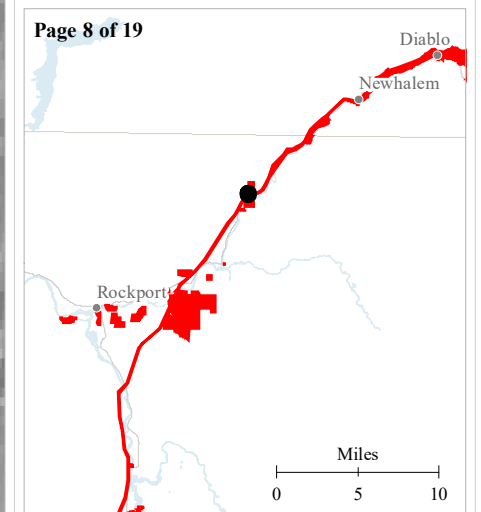
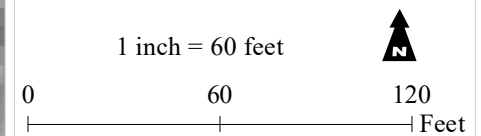
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC BACON CK**

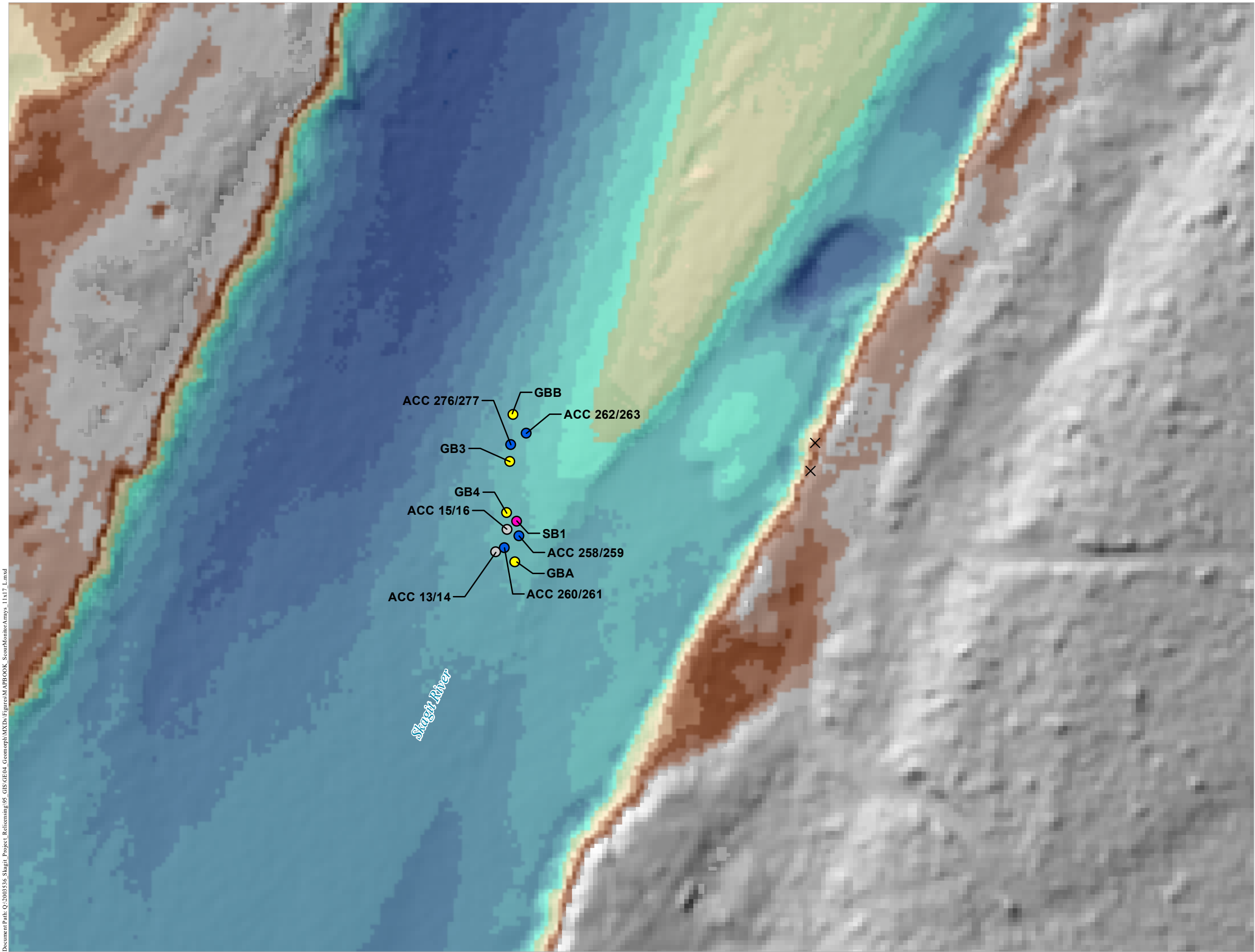
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

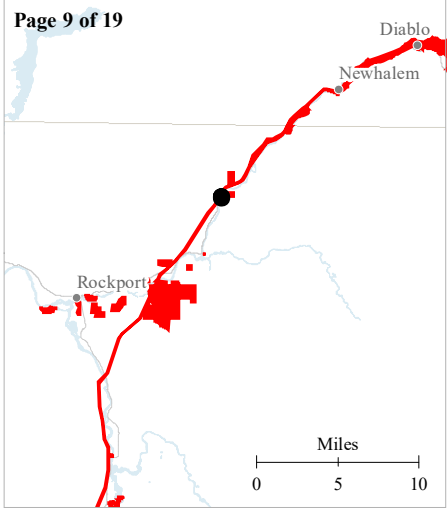
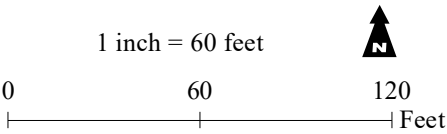
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: SITE2 (MOSES BAR)**

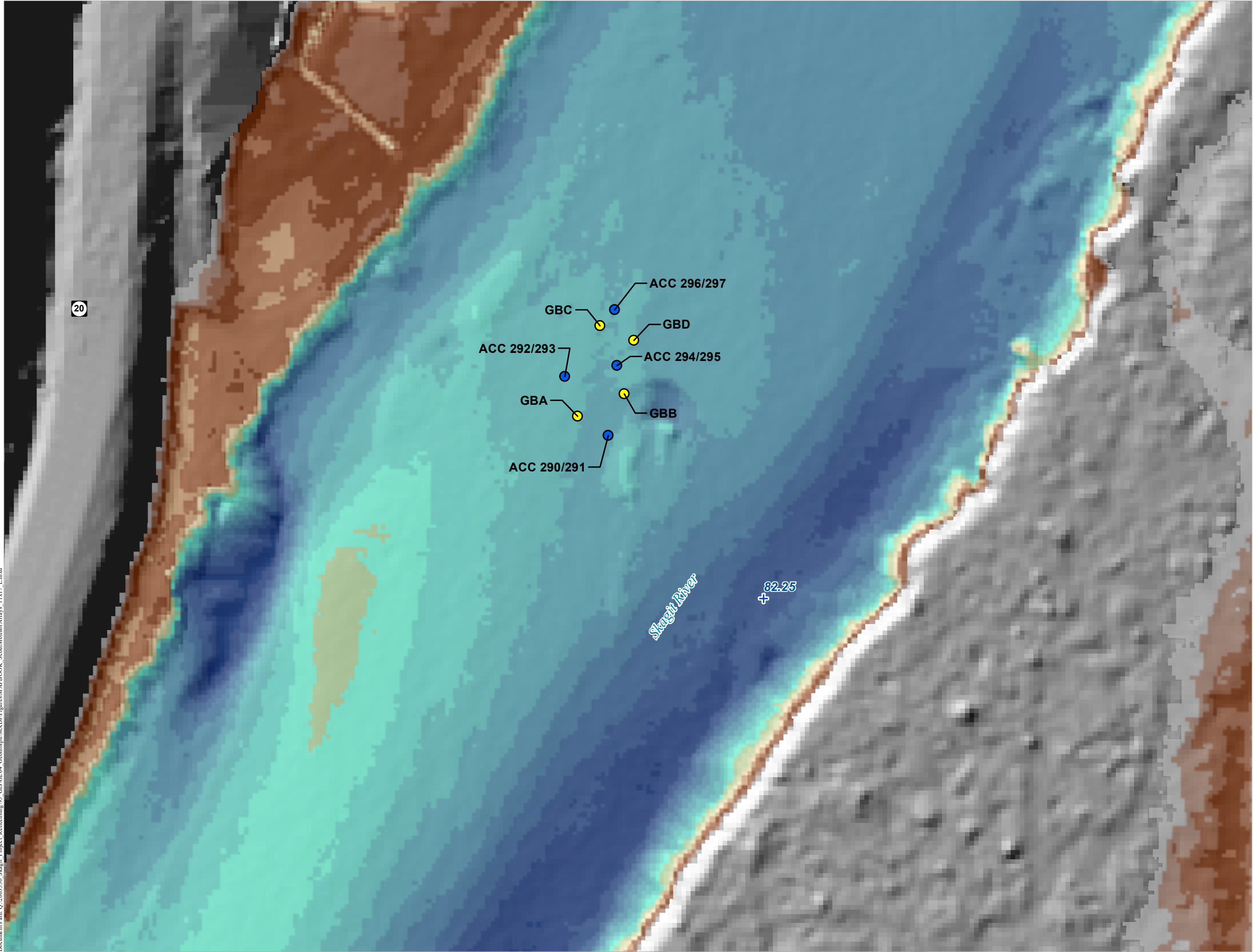
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

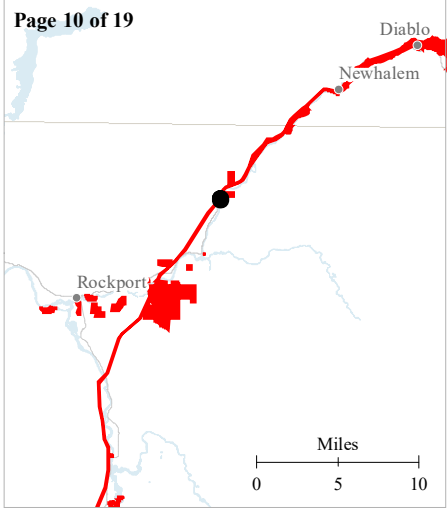
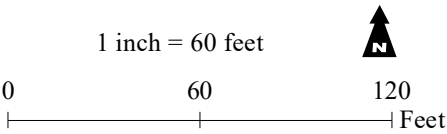
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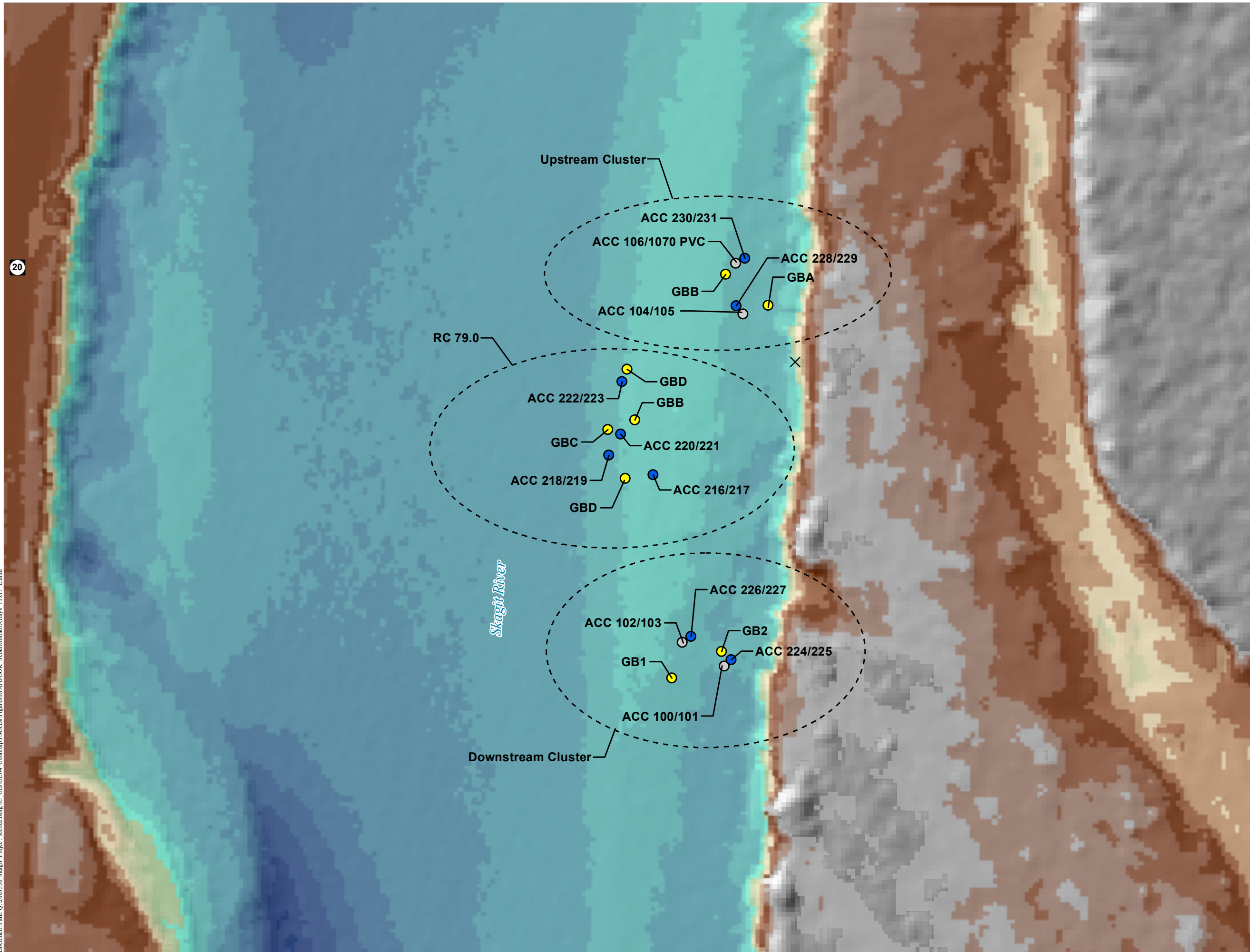
**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC82.3**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



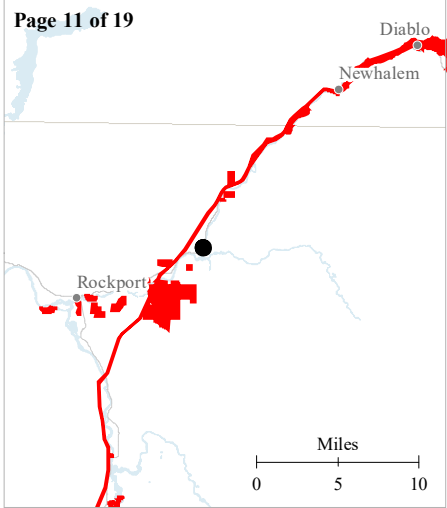
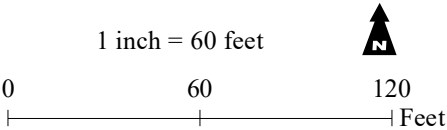
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: SITE 1 DOWNSTREAM  
CLUSTER, SITE 1  
UPSTREAM CLUSTER &  
RC79.0**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)

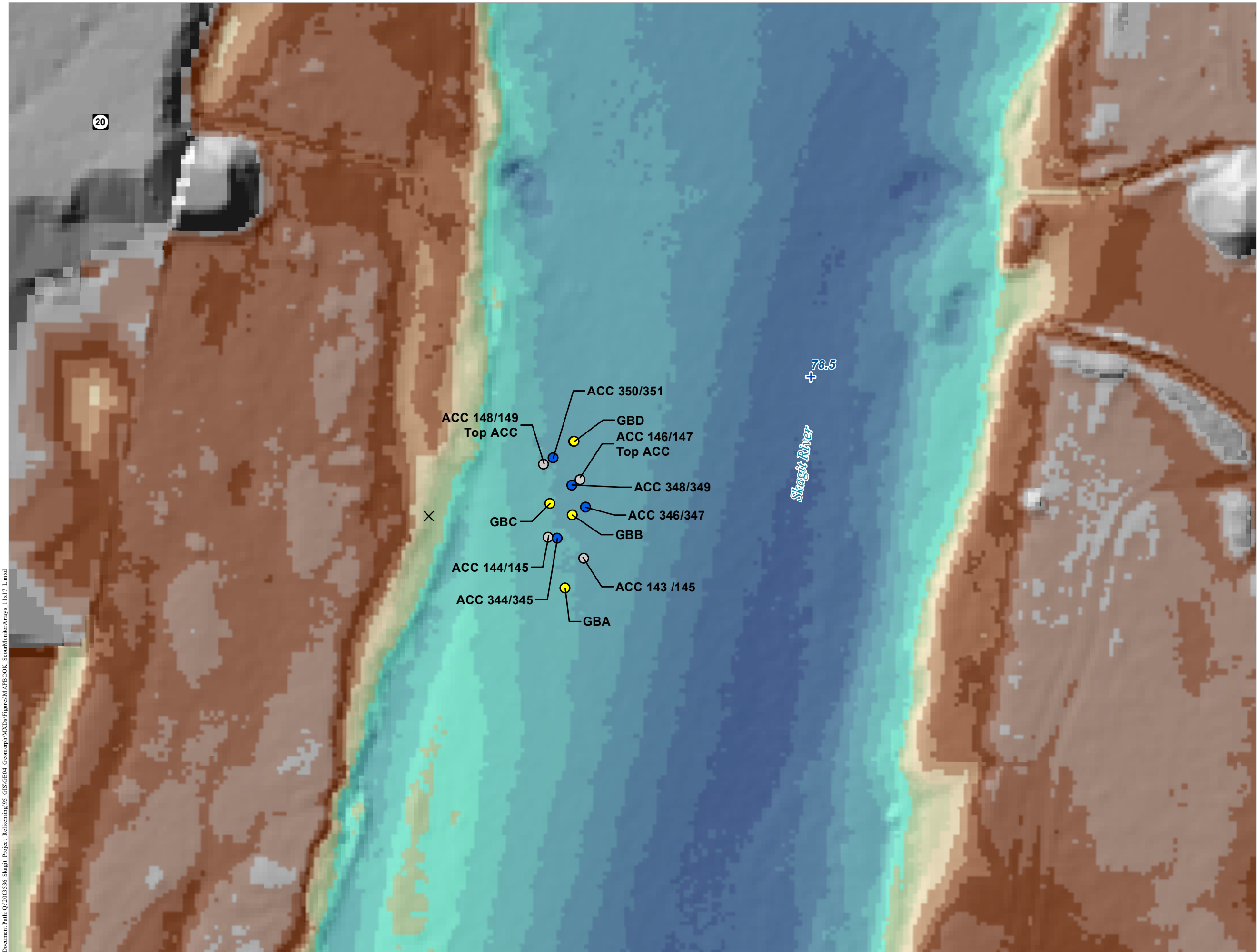


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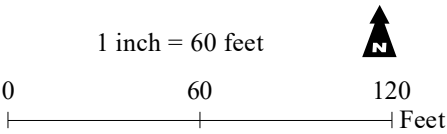


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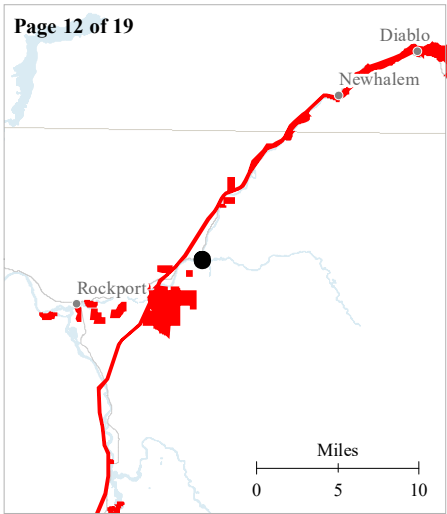


**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: BMM7**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



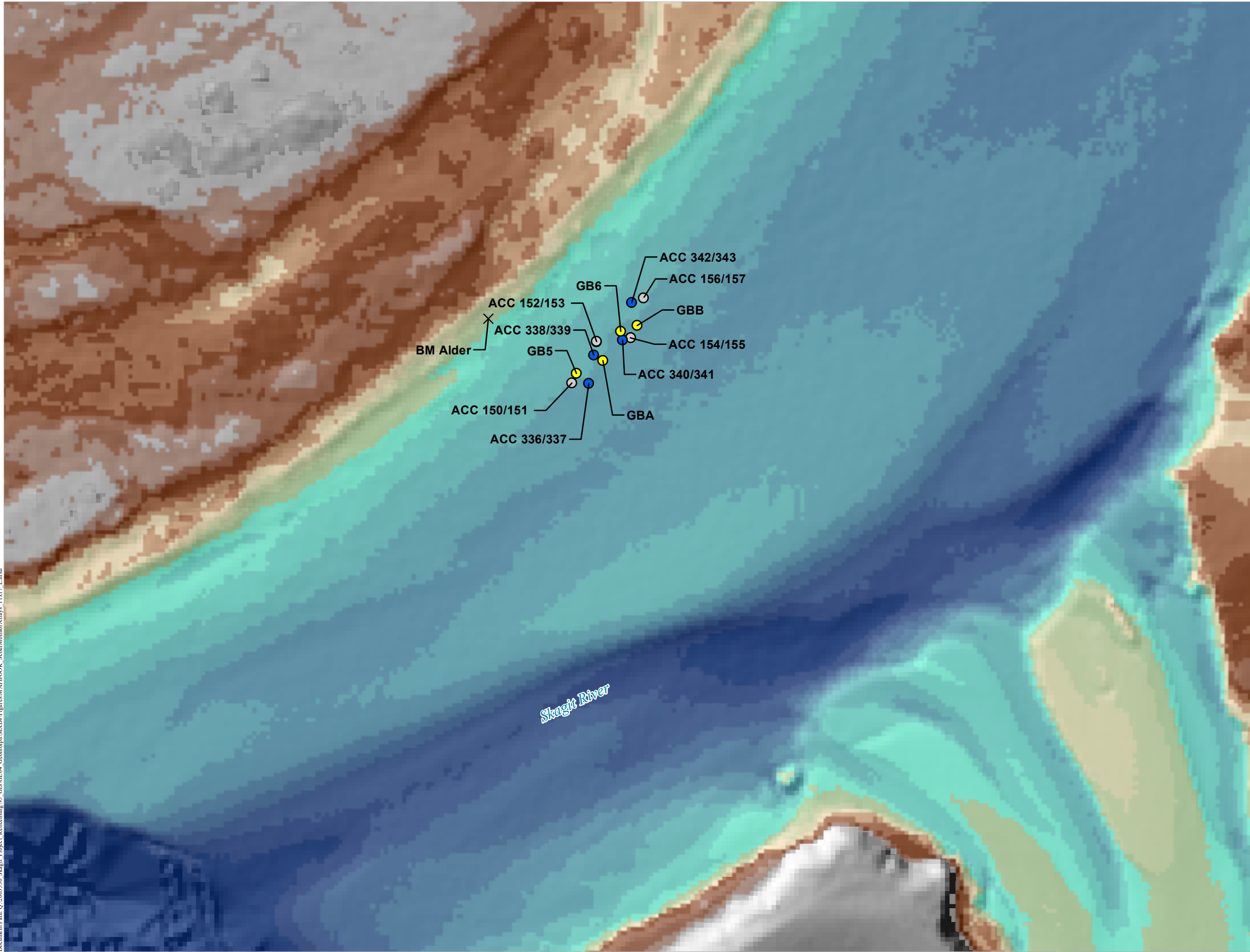
Page 12 of 19



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

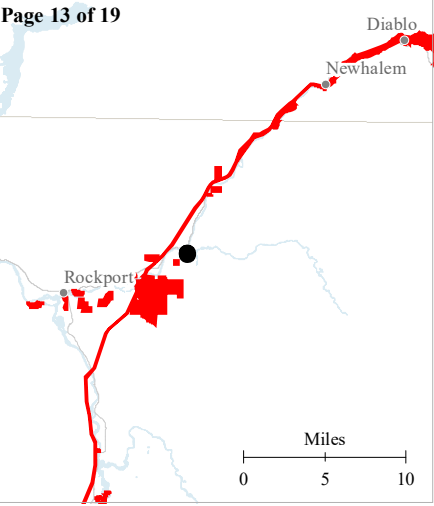
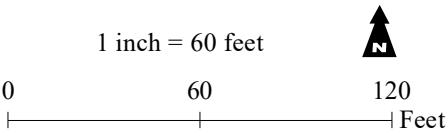
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: SITE3**

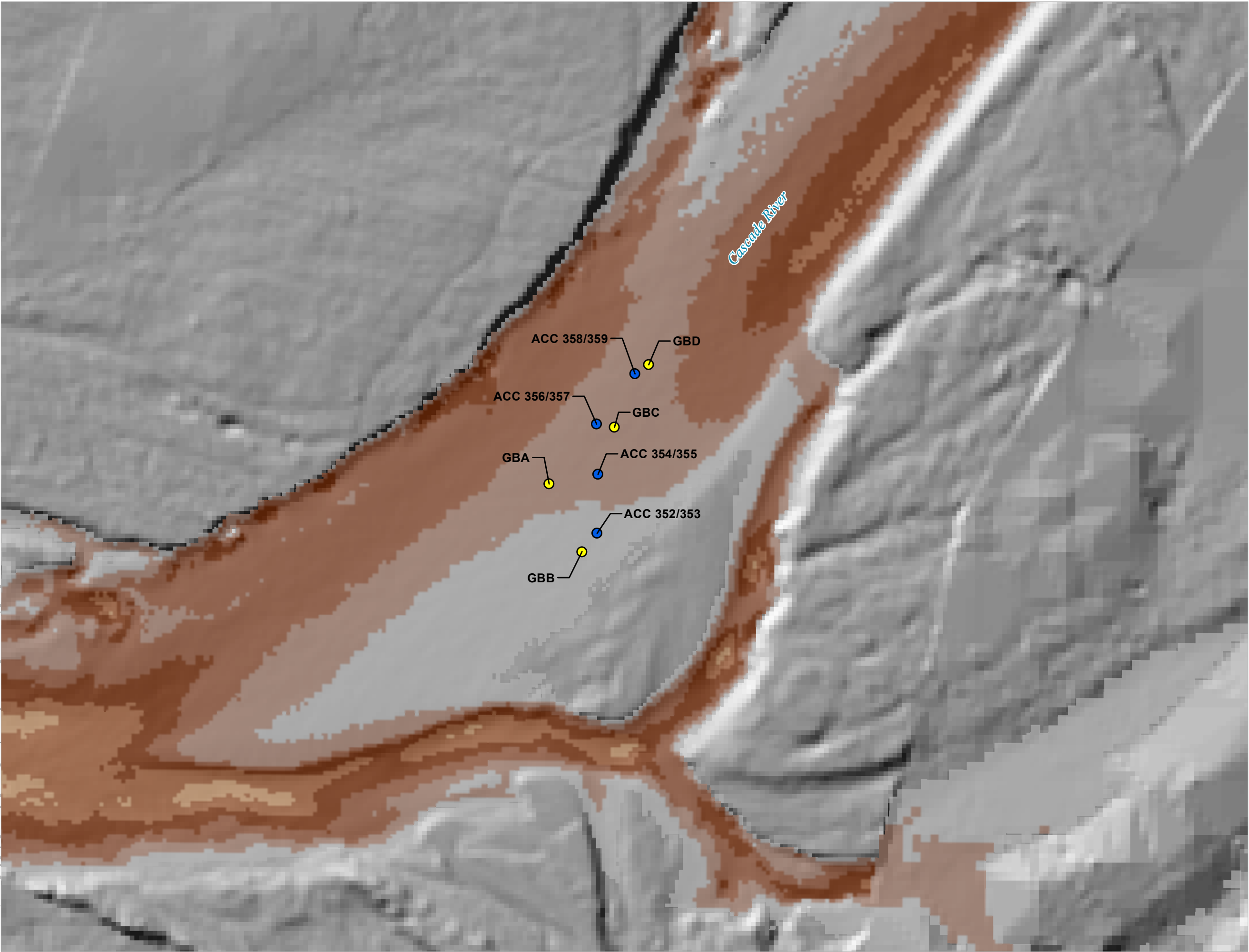
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

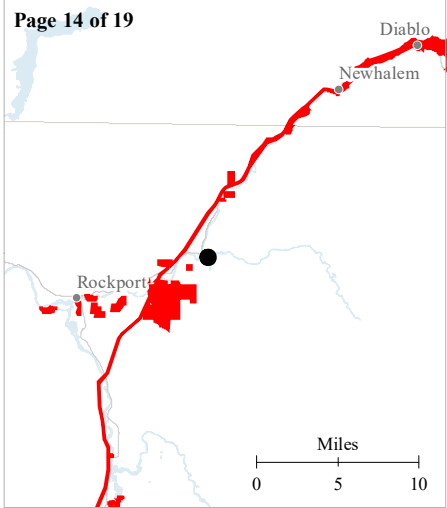
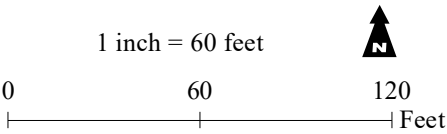
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC CASCADE R.**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)

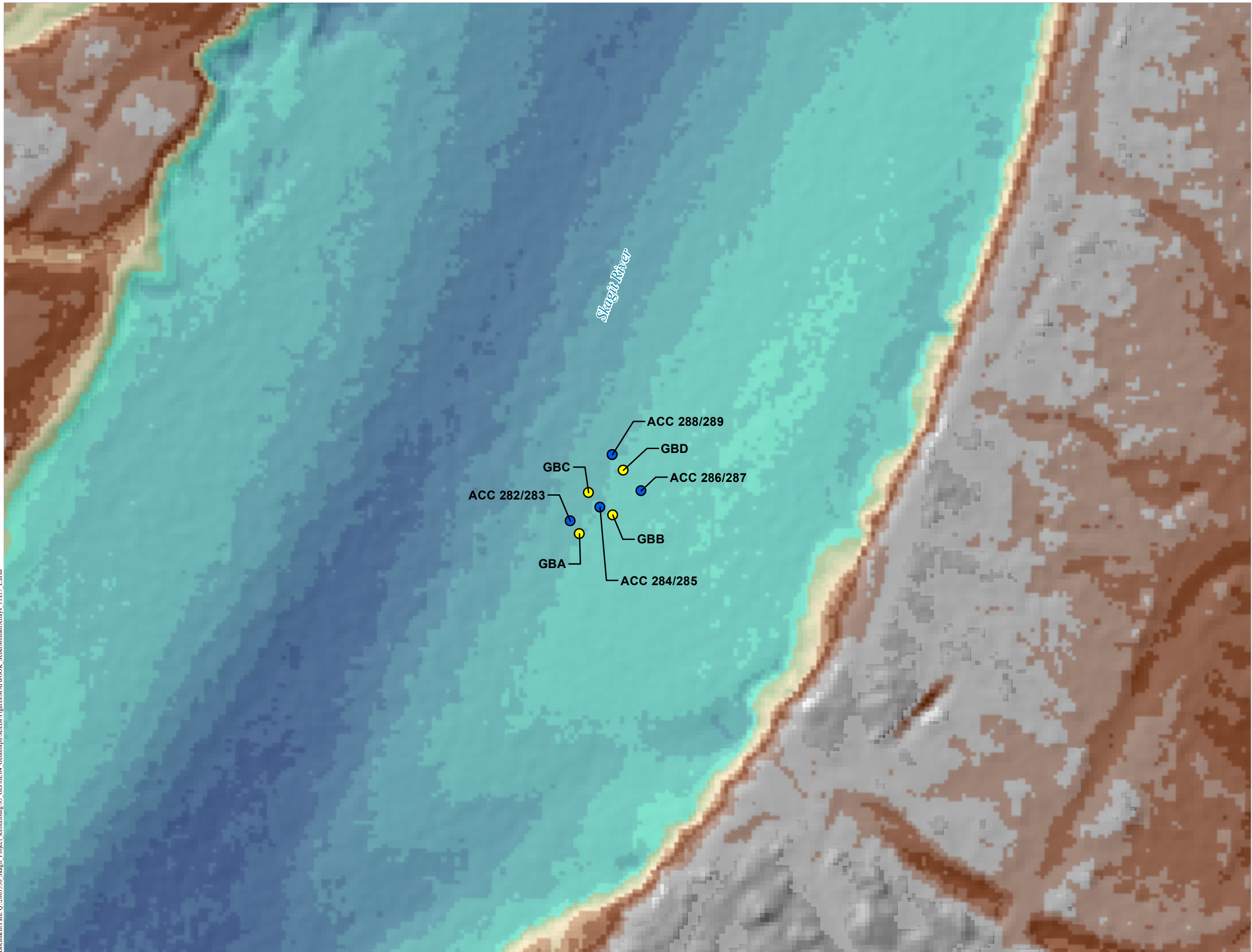


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PROJECT (FERC NO. 553)**

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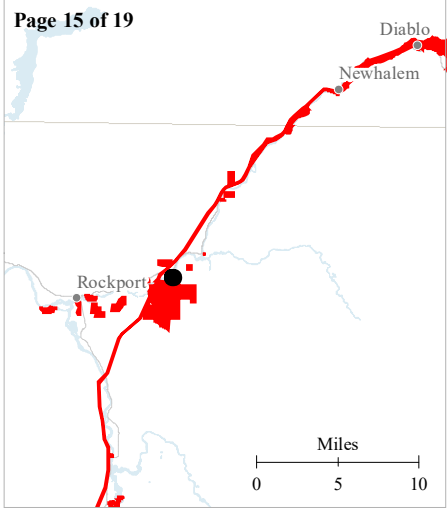
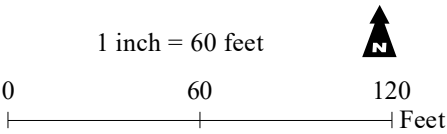


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC75.2**

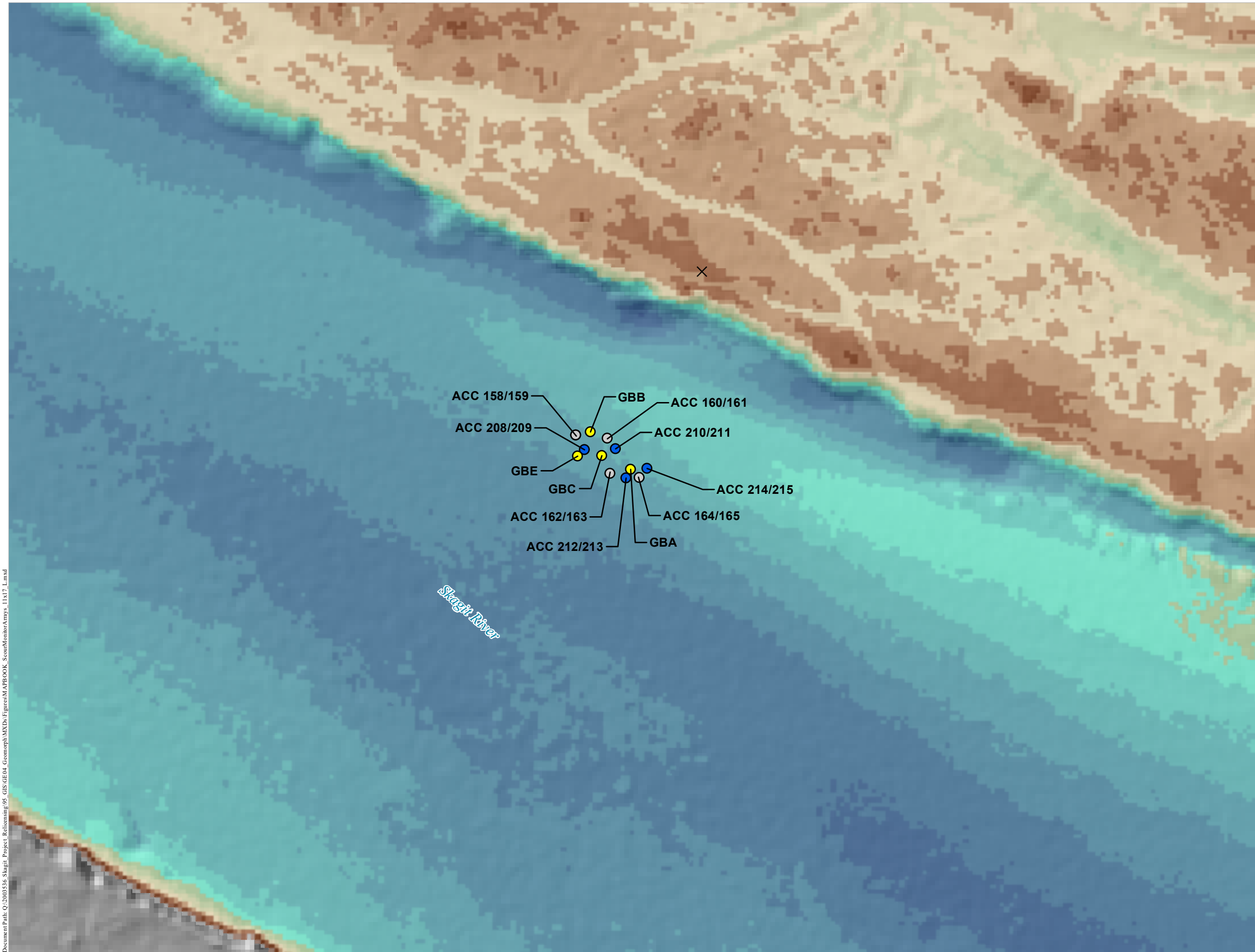
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

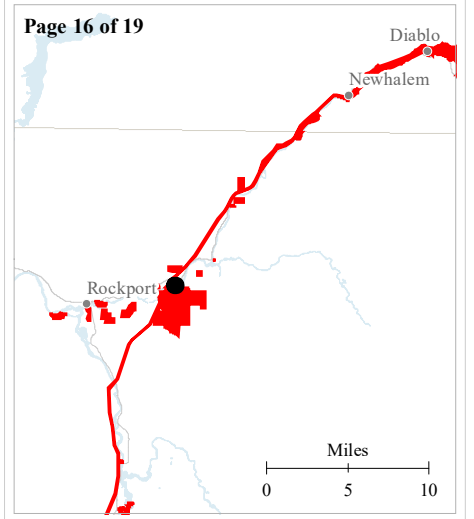
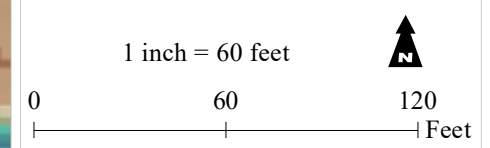
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: BMM1**

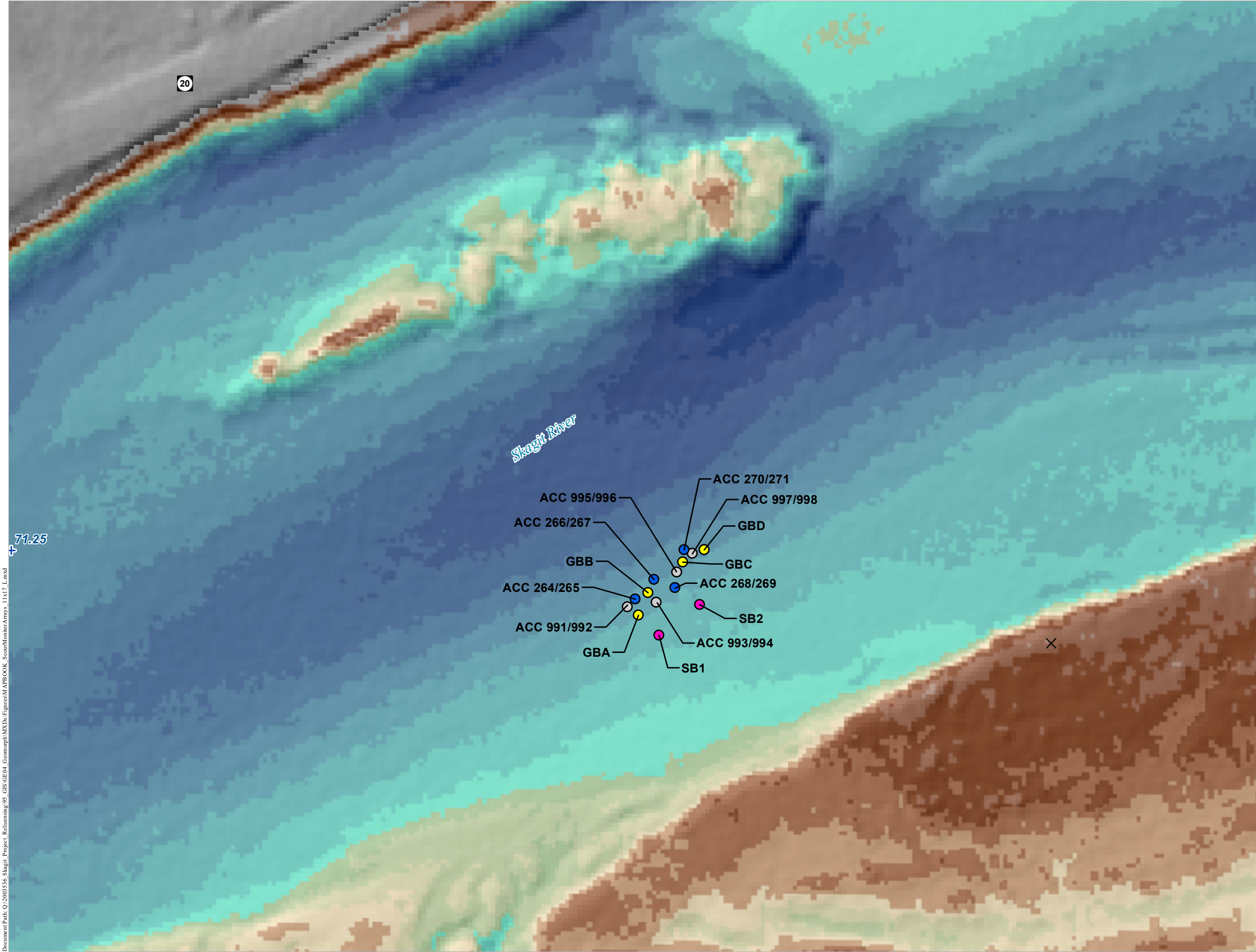
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

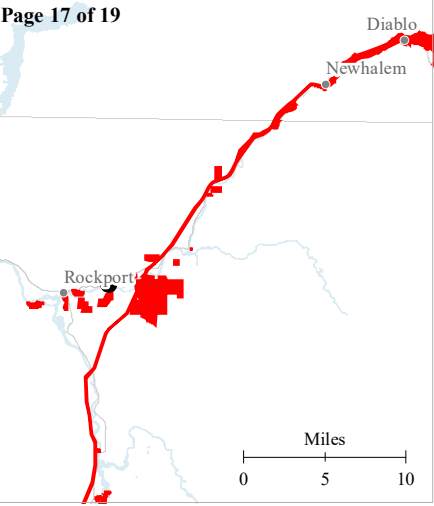
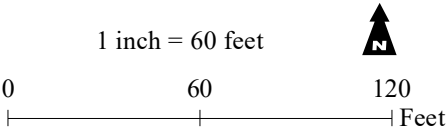
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: BMM4**

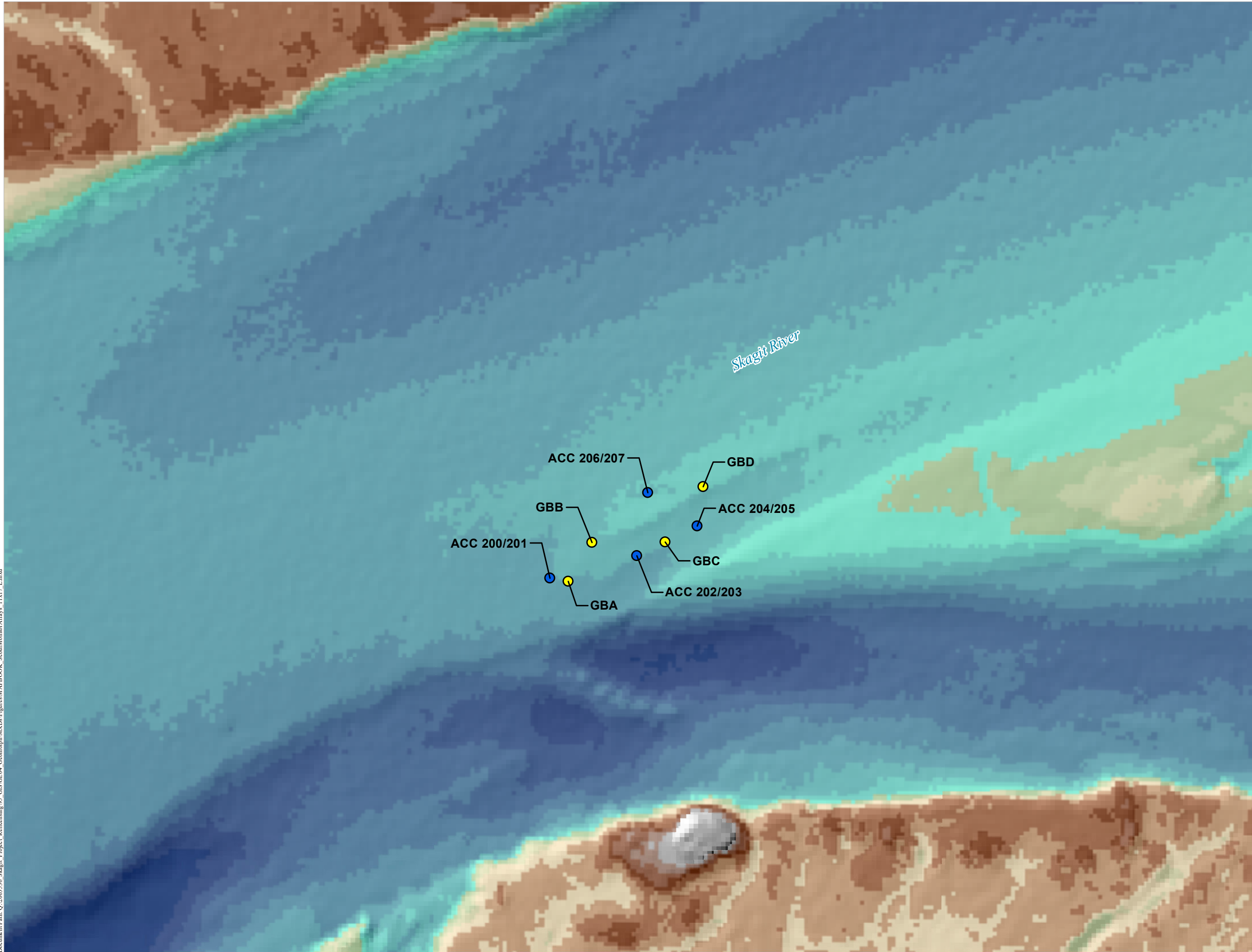
- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)



**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

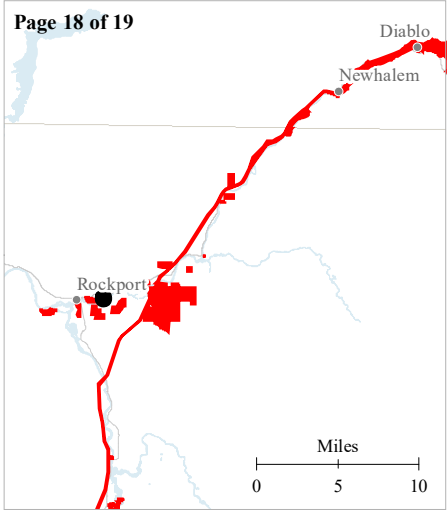
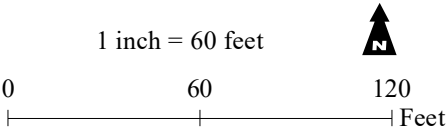
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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: RC70.1**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
- Accelerometer
- Golf Ball
- Small Bead
- Past Accelerometer (2019/2020)

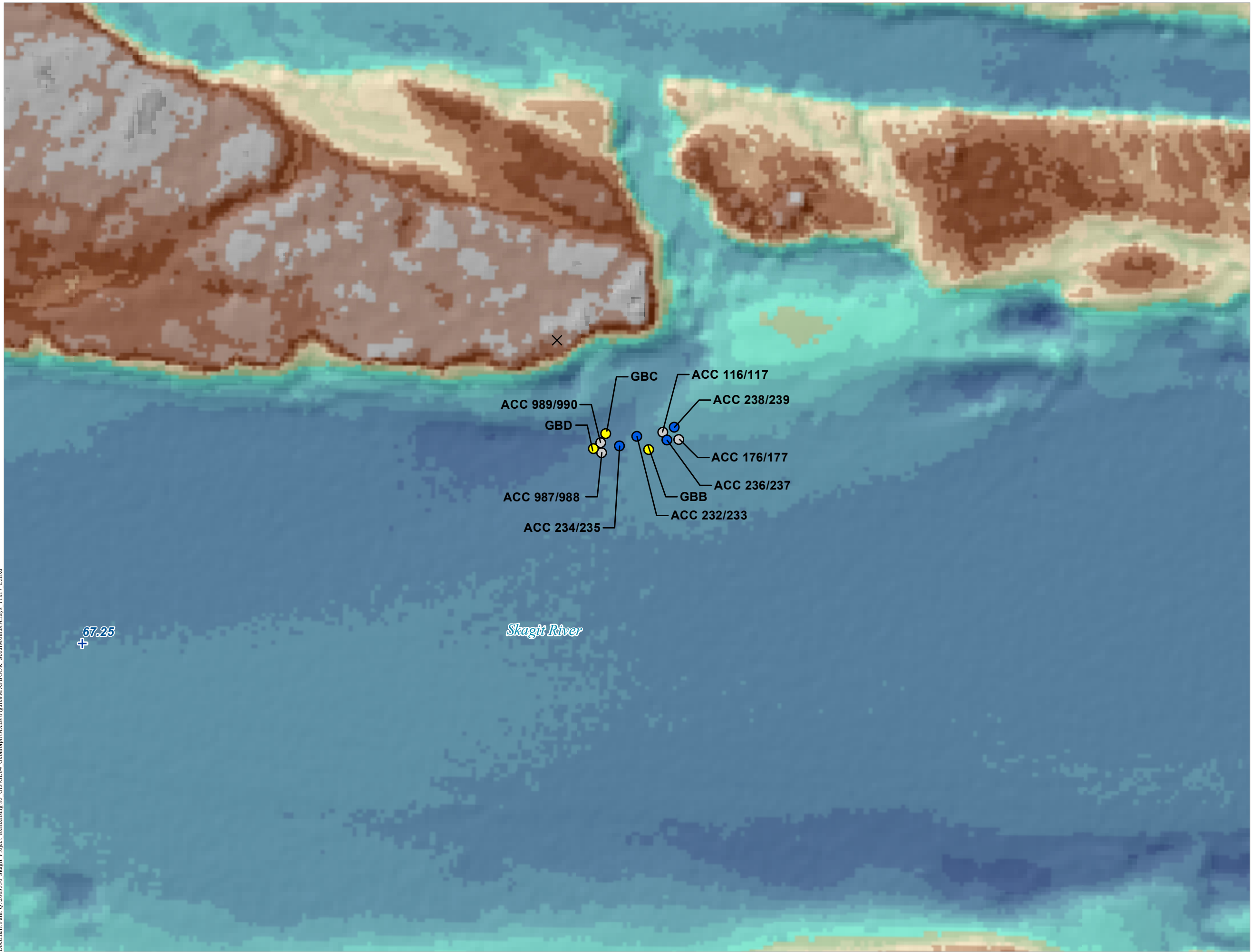


**SKAGIT RIVER HYDROELECTRIC  
PROJECT (FERC NO. 553)**

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Data Source: Northwest Hydraulic Consultants (2021)

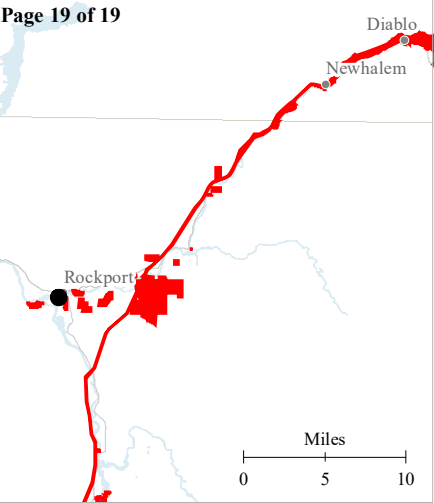
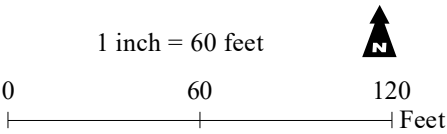


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**GE-04 GEOMORPHOLOGY  
STUDY  
SCOUR MONITORING SITE  
ID: BMM6**

- + Project River Mile
- Scour Monitoring Array**
- × Benchmark
  - Accelerometer
  - Golf Ball
  - Small Bead
  - Past Accelerometer (2019/2020)



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Data Source: Northwest Hydraulic Consultants (2021)

**SKAGIT RIVER GEOMORPHOLOGY BETWEEN GORGE DAM AND  
THE SAUK RIVER STUDY INTERIM REPORT**

**ATTACHMENT C**

**LARGE WOOD INVENTORY DETAILED AREAS MAPBOOK**



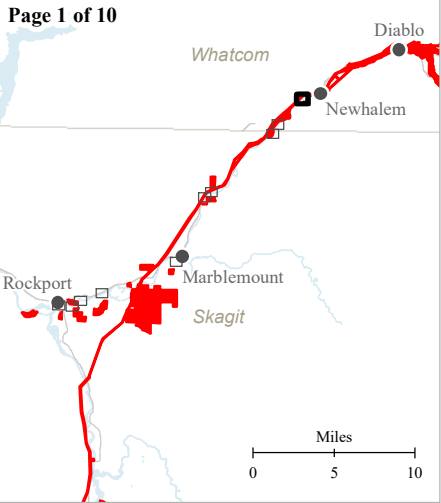
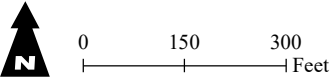
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**GE-04 GEOMORPHOLOGY STUDY**

Large Wood Inventory  
Detailed Areas - Goodell

- FERC Project Boundary
- National Park / National Recreation Area Boundary
- Project River Miles (PRM)
- Large Wood Detailed Area



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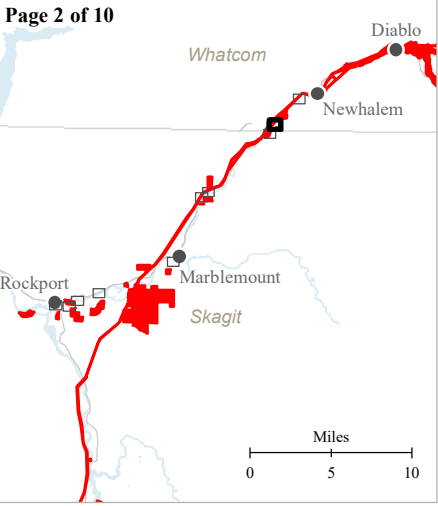
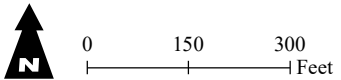
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**GE-04 GEOMORPHOLOGY  
STUDY**

Large Wood Inventory  
Detailed Areas - Thorton

- FERC Project Boundary
- Mitigation Parcel
- National Park / National Recreation Area Boundary
- Large Wood Detailed Area

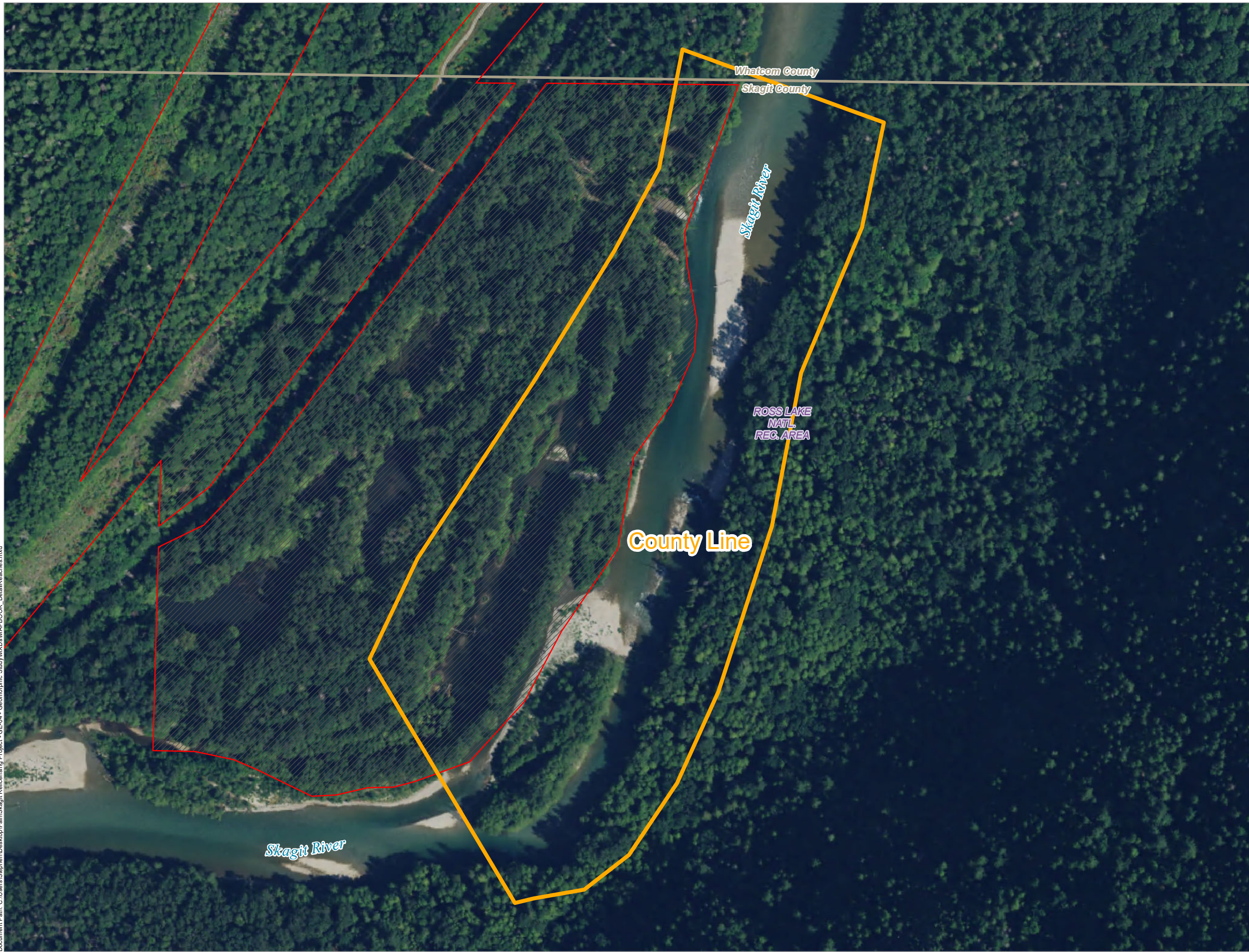


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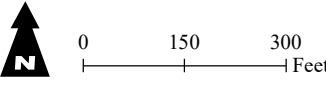
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**GE-04 GEOMORPHOLOGY STUDY**

**Large Wood Inventory  
Detailed Areas - County Line**

- FERC Project Boundary
- Mitigation Parcel
- National Park / National Recreation Area Boundary
- Large Wood Detailed Area

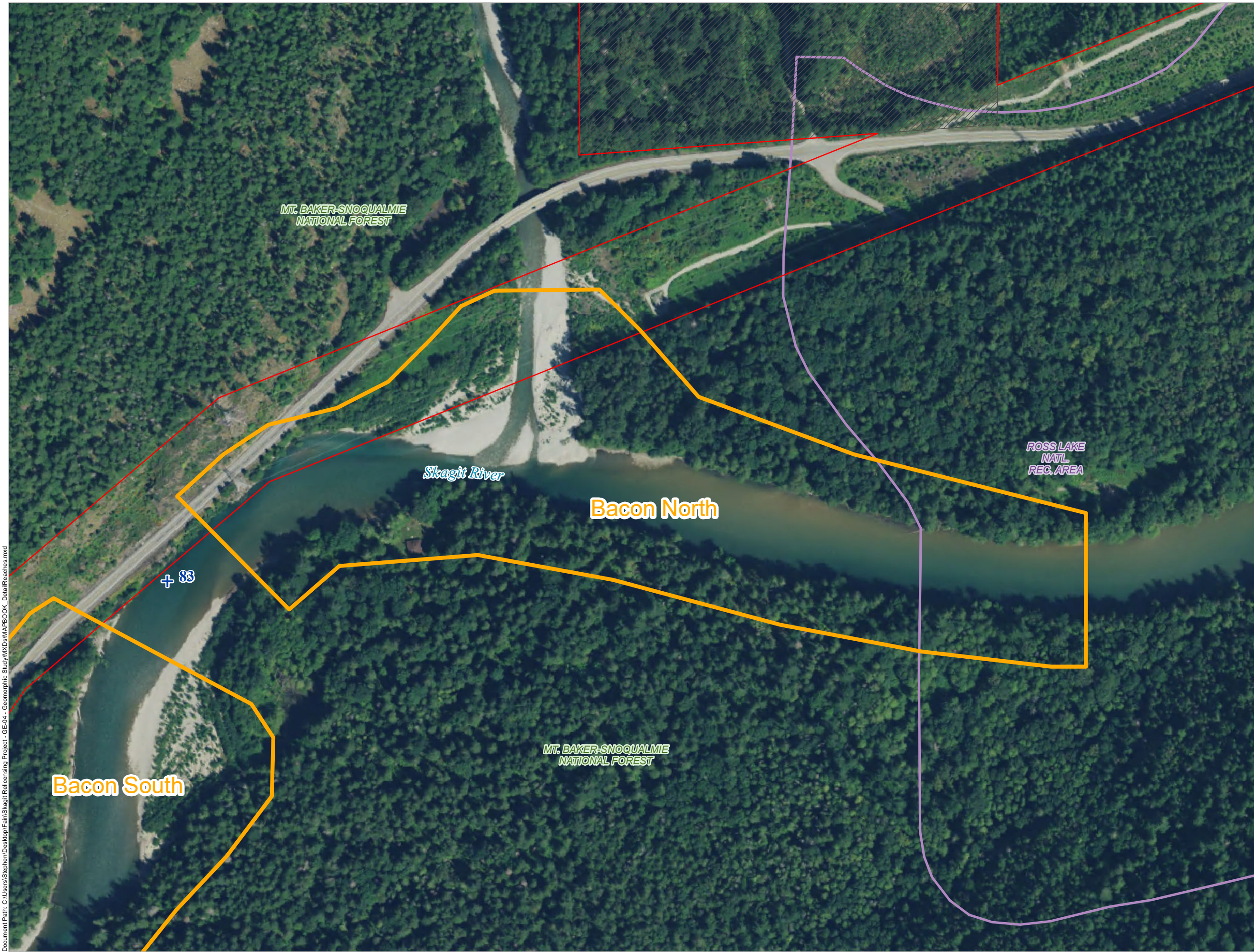


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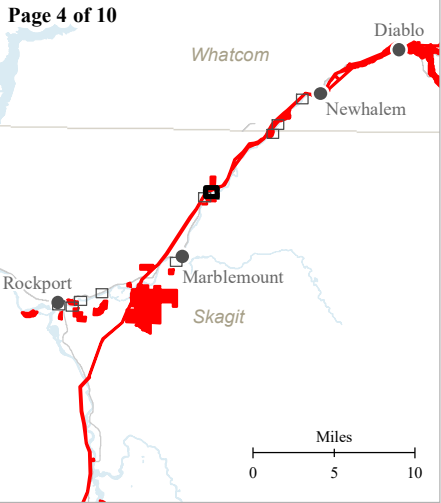
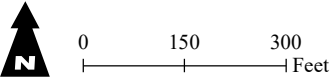
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GE-04 GEOMORPHOLOGY STUDY

Large Wood Inventory  
Detailed Areas - Bacon North

- FERC Project Boundary
- Mitigation Parcel
- National Park / National Recreation Area Boundary
- Project River Miles (PRM)
- Large Wood Detailed Area



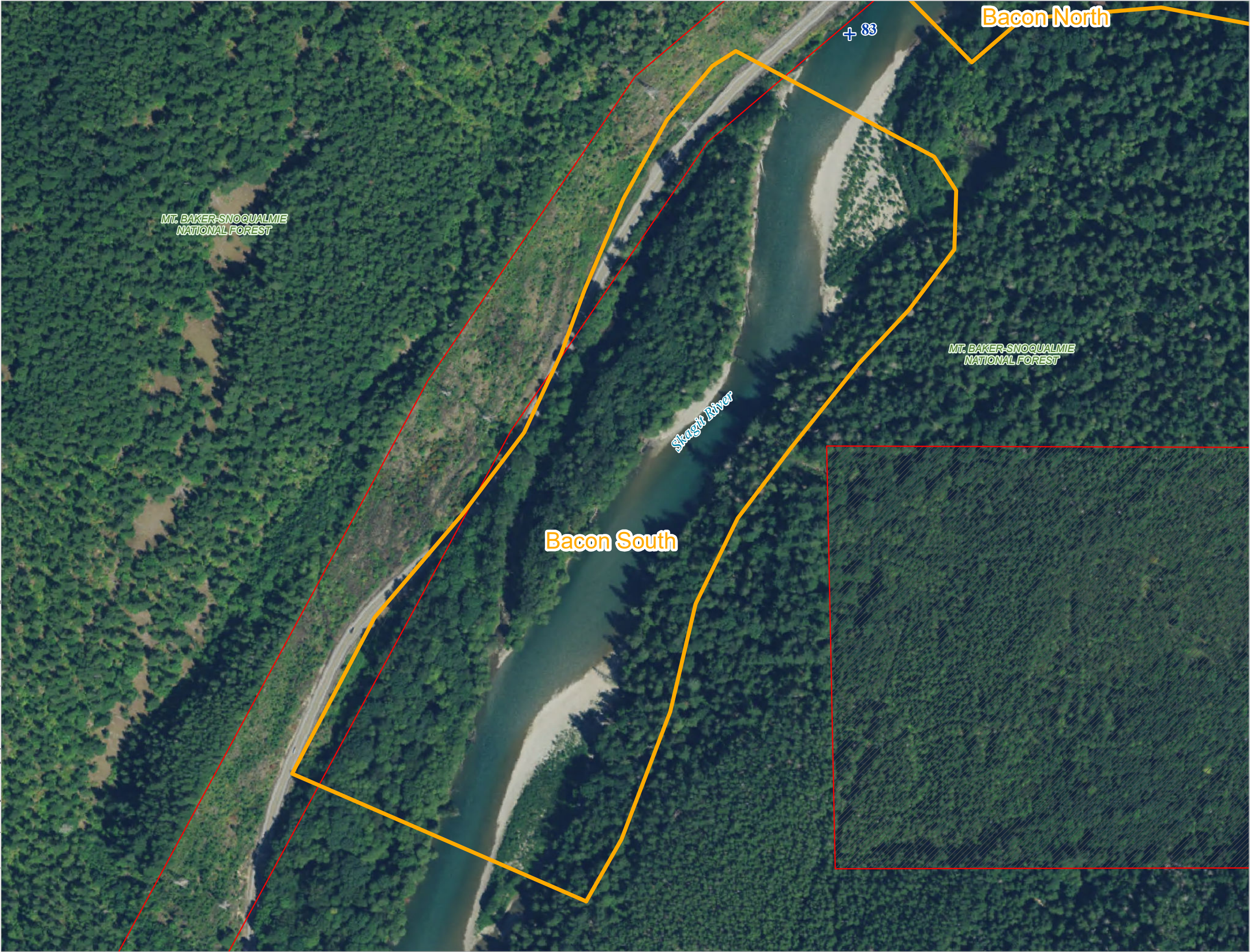
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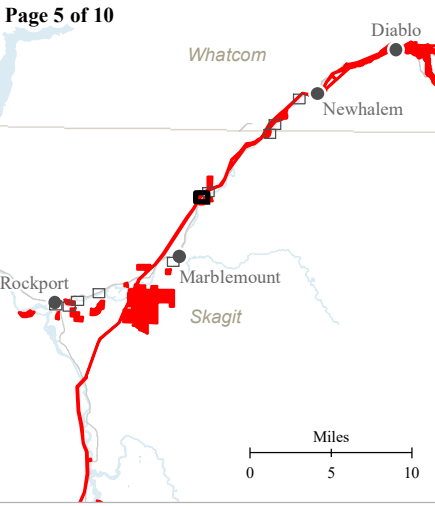
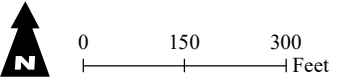
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**GE-04 GEOMORPHOLOGY  
STUDY**

Large Wood Inventory  
Detailed Areas - Bacon South

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Large Wood Detailed



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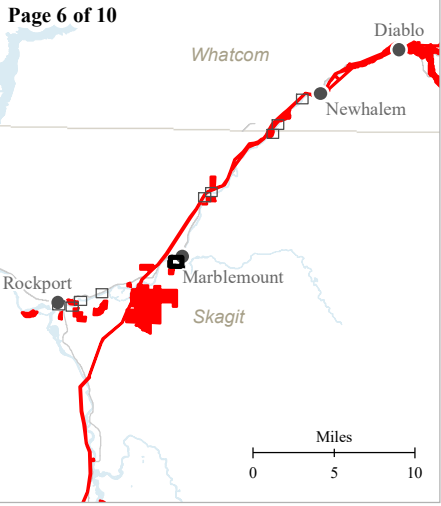
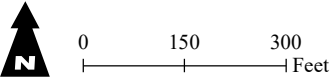
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**GE-04 GEOMORPHOLOGY  
STUDY**

Large Wood Inventory  
Detailed Areas - Cascade

- + Project River Miles (PRM)
- Large Wood Detailed Area

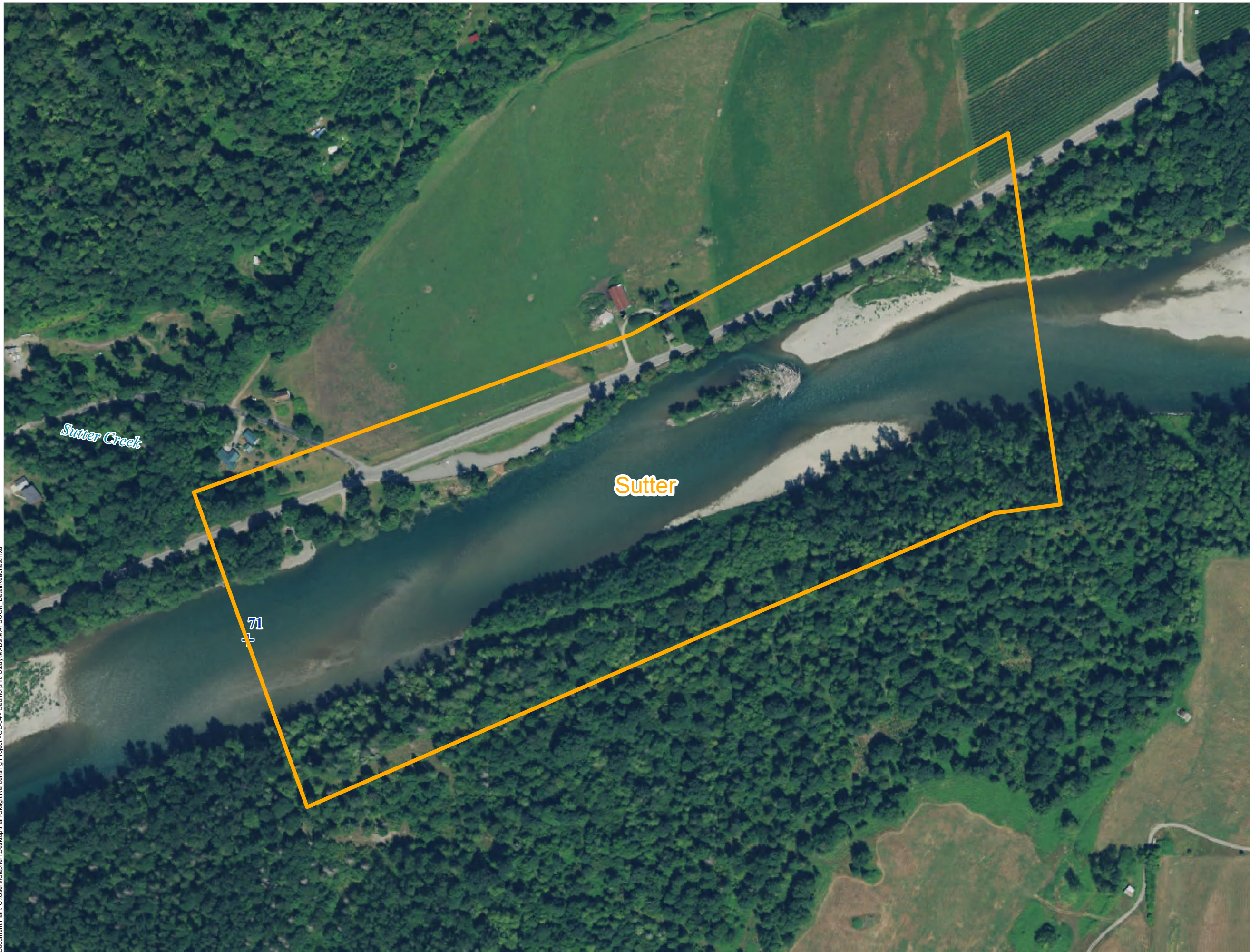


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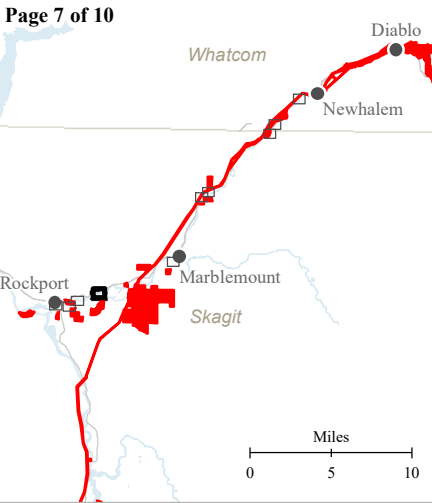
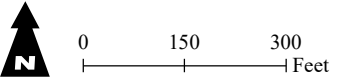
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**GE-04 GEOMORPHOLOGY  
STUDY**

Large Wood Inventory  
Detailed Areas - Sutter

- + Project River Miles (PRM)
- Large Wood Detailed Area



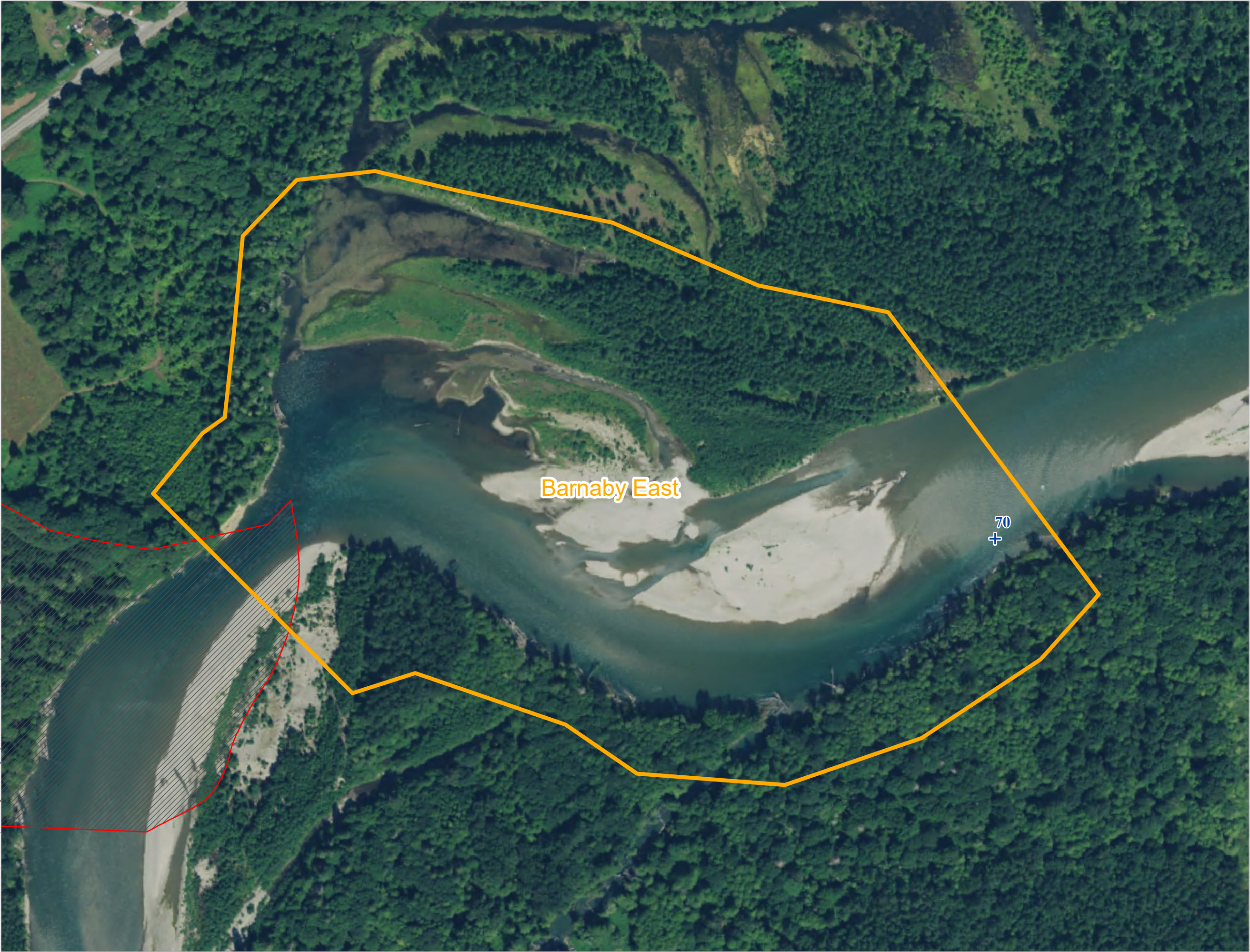
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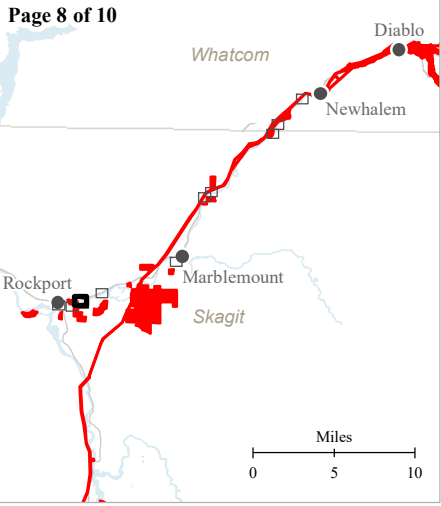
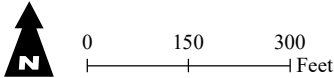
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GE-04 GEOMORPHOLOGY  
STUDY

Large Wood Inventory  
Detailed Areas - Barnaby East

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Large Wood Detailed Area

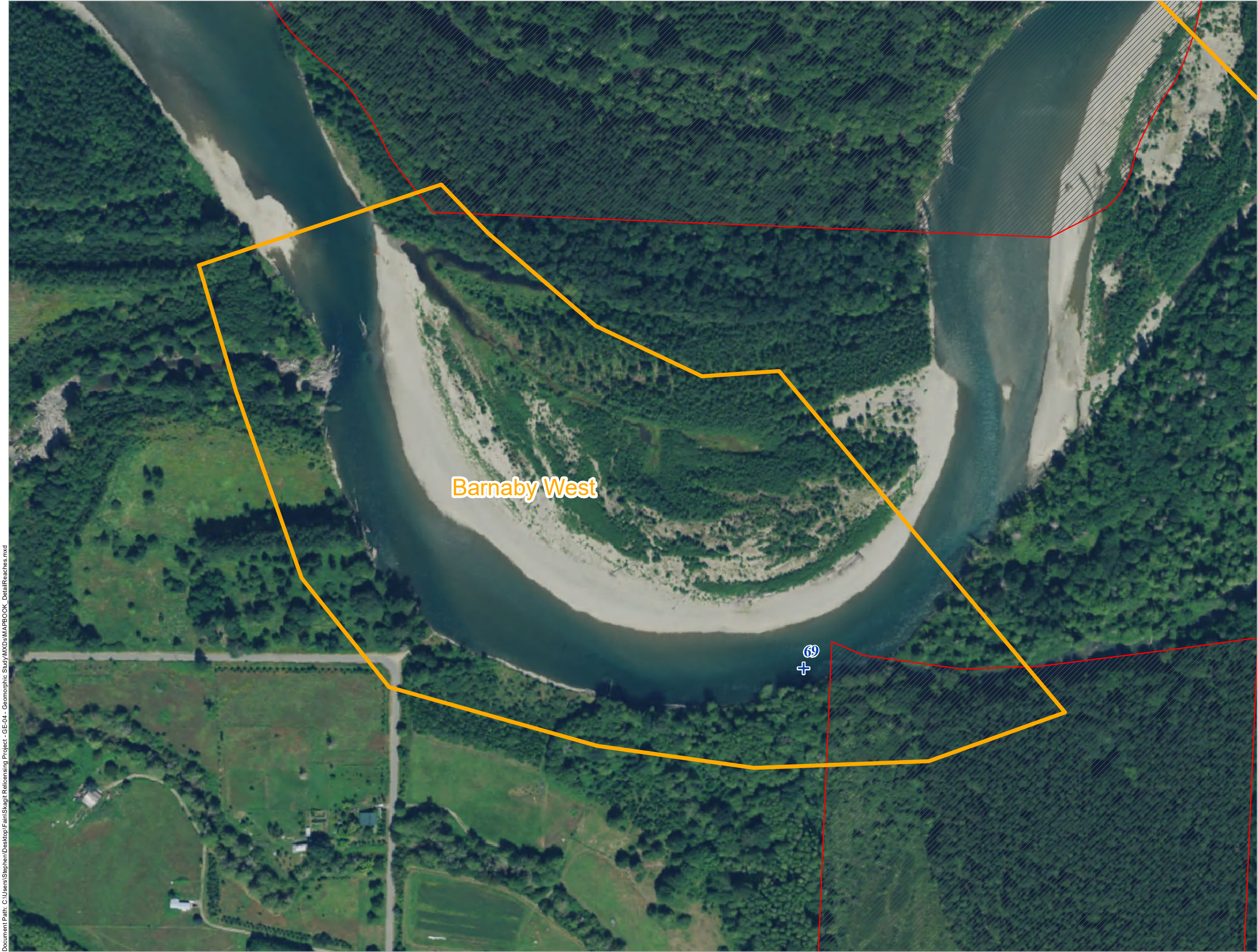


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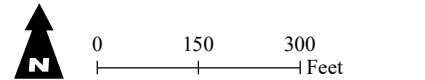
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**GE-04 GEOMORPHOLOGY  
STUDY**

Large Wood Inventory  
Detailed Areas - Barnaby West

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Large Wood Detailed Area



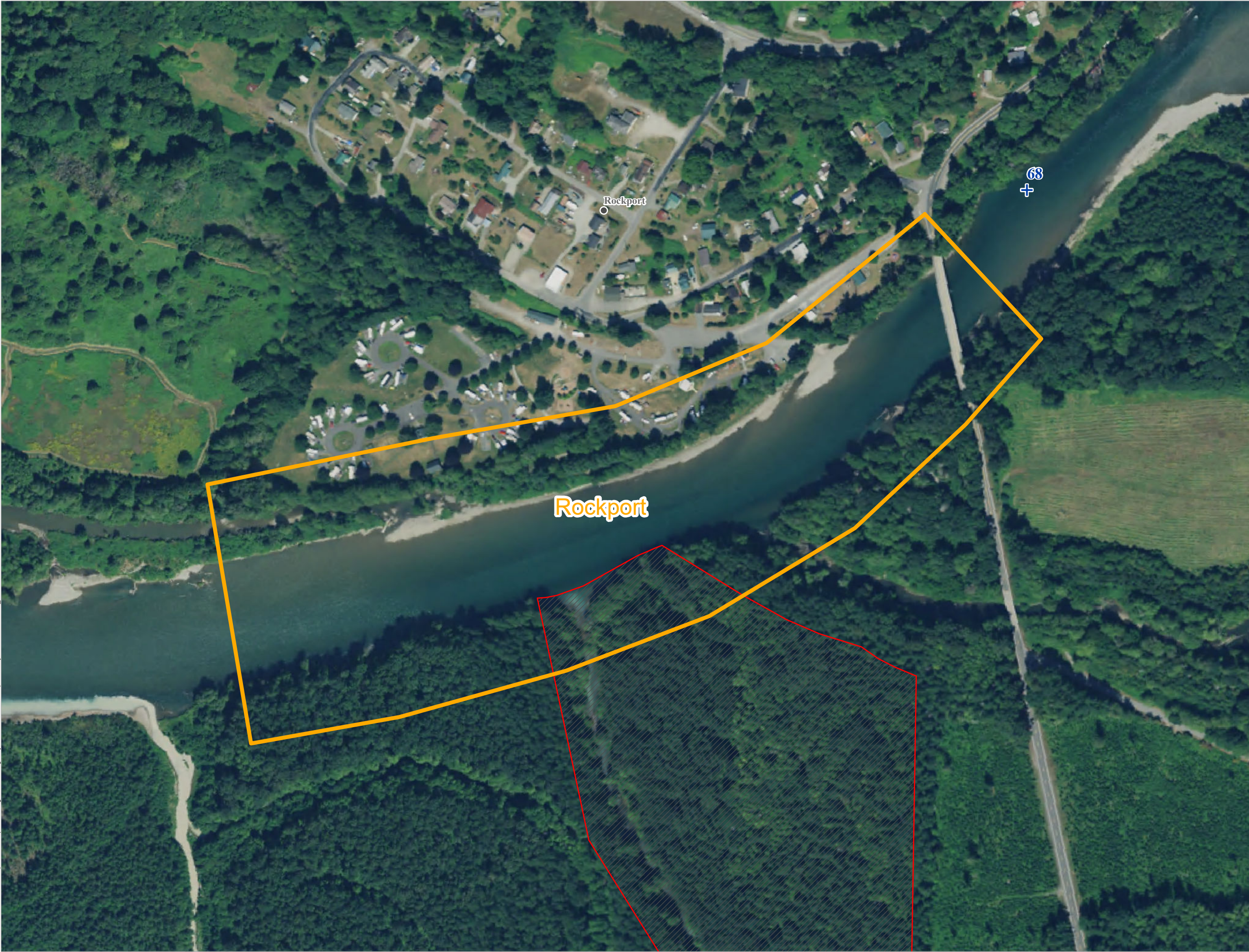
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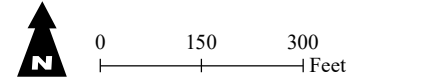
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GE-04 GEOMORPHOLOGY STUDY

Large Wood Inventory  
Detailed Areas - Rockport

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Large Wood Detailed Area



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Data Source: Fain Environmental, 2021



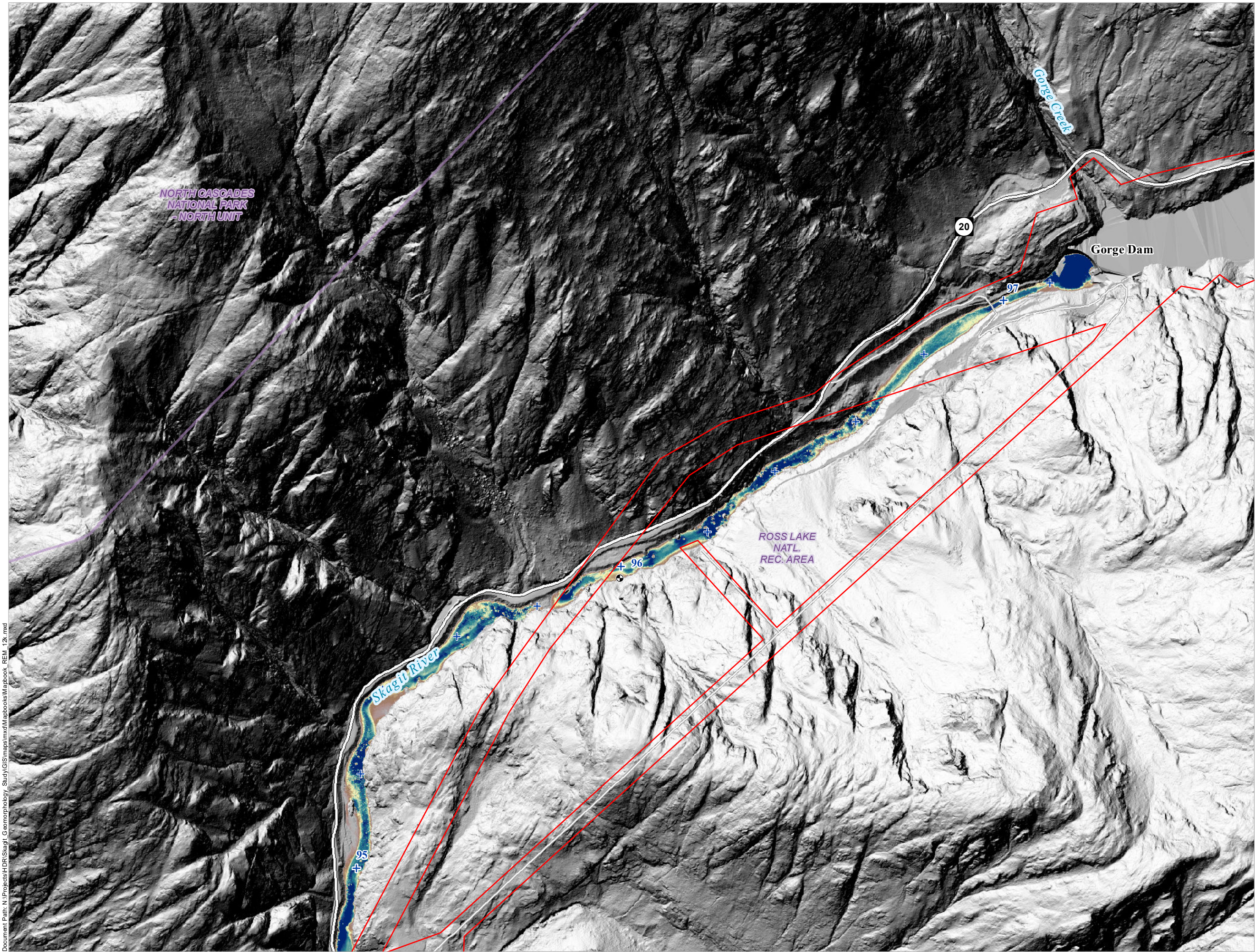
**SKAGIT RIVER GEOMORPHOLOGY BETWEEN GORGE DAM AND  
THE SAUK RIVER STUDY INTERIM REPORT**

**ATTACHMENT D**

**LIDAR REM MAPBOOK**

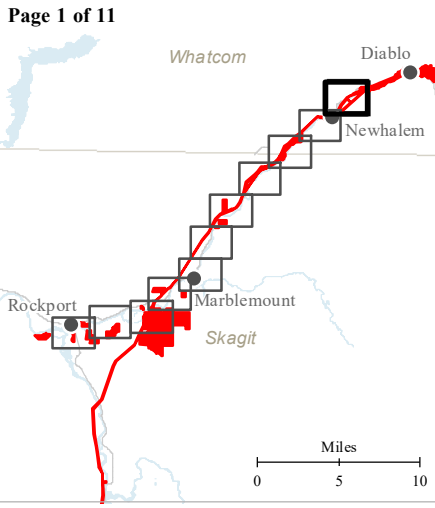
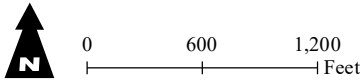
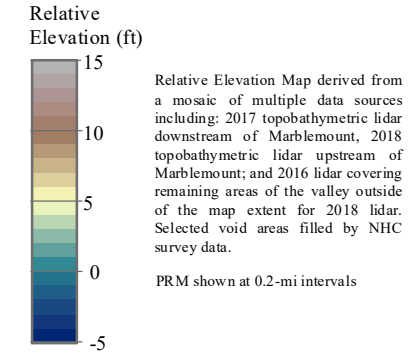


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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 1**

- FERC Project Boundary
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary



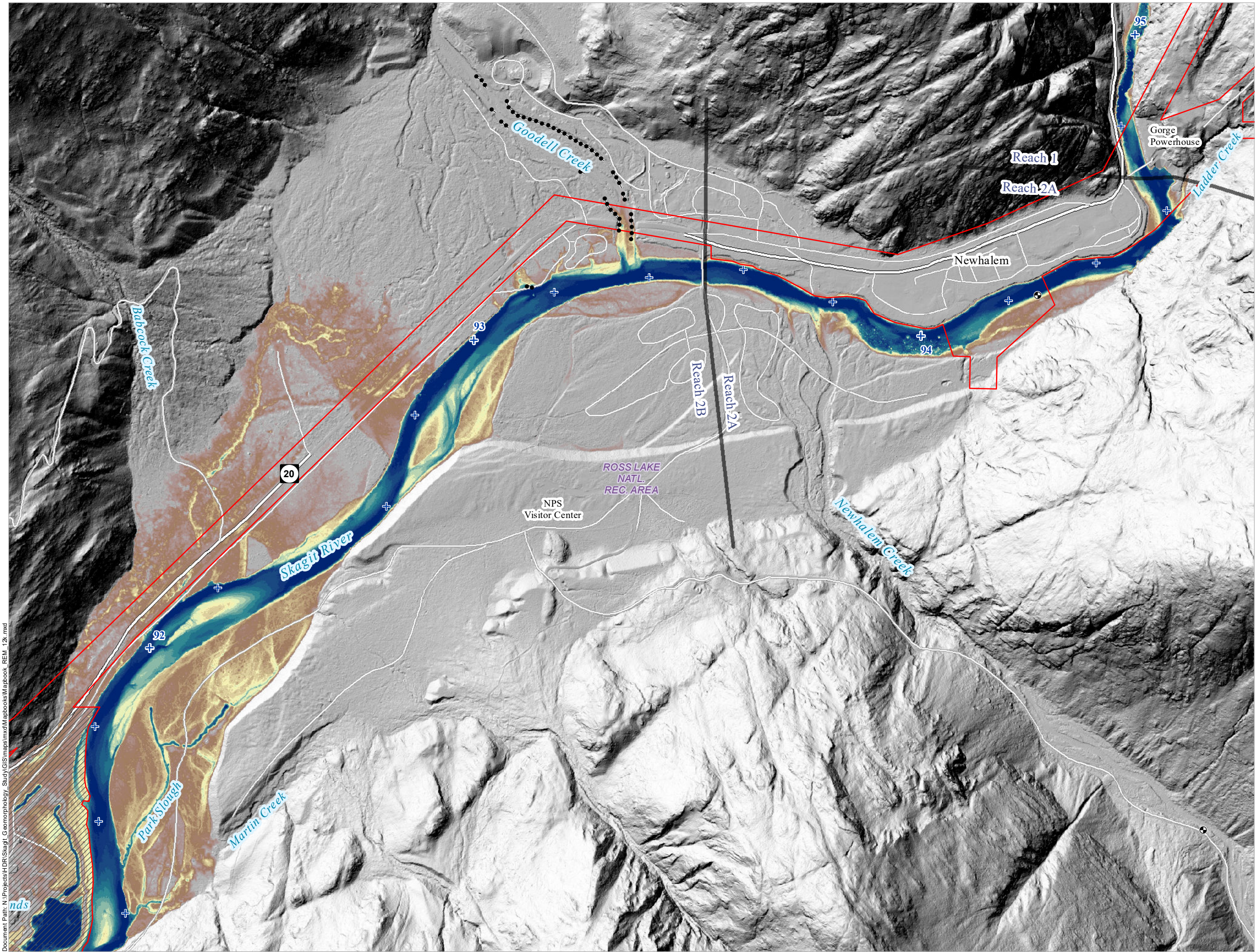
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PROJECT (FERC NO. 553)**

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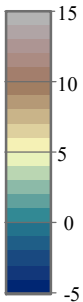
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 2**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



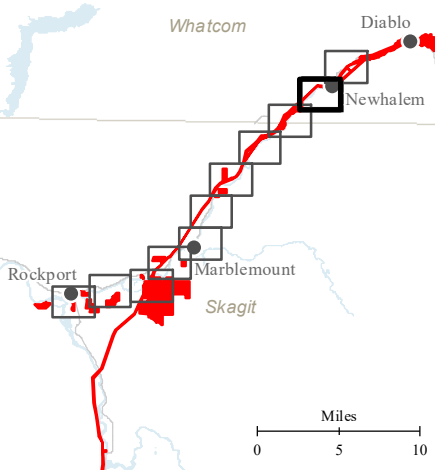
Relative Elevation Map derived from a mosaic of multiple data sources including: 2017 topobathymetric lidar downstream of Marblemount, 2018 topobathymetric lidar upstream of Marblemount; and 2016 lidar covering remaining areas of the valley outside of the map extent for 2018 lidar. Selected void areas filled by NHC survey data.

PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 2 of 11



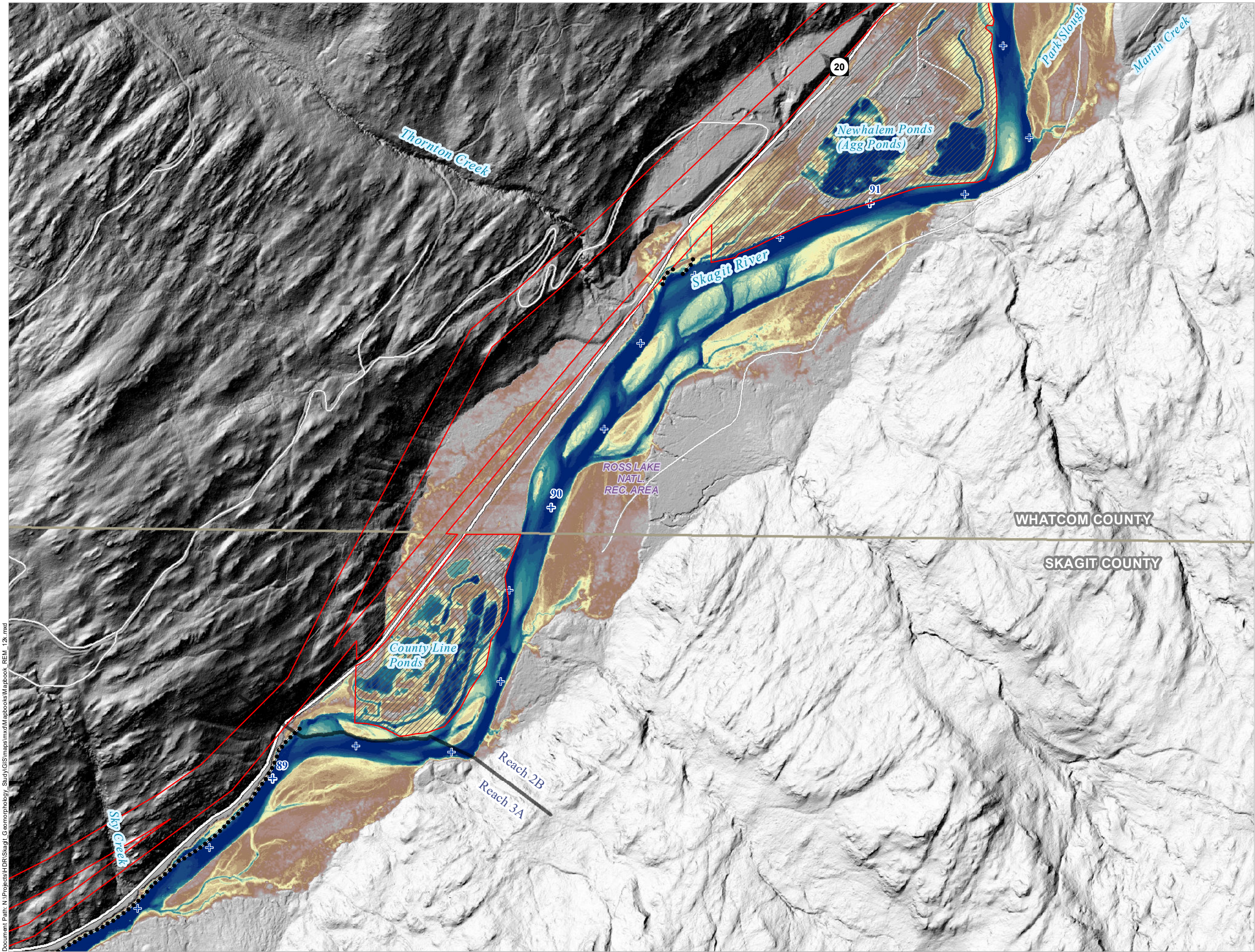
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 3**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



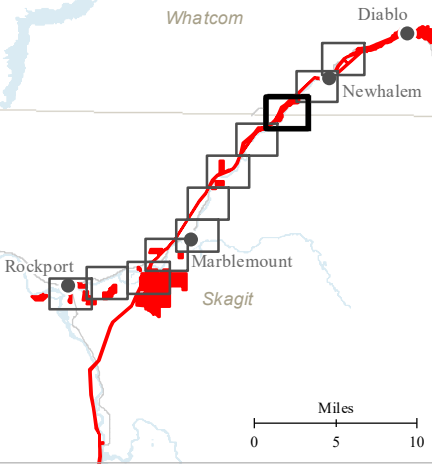
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PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 3 of 11



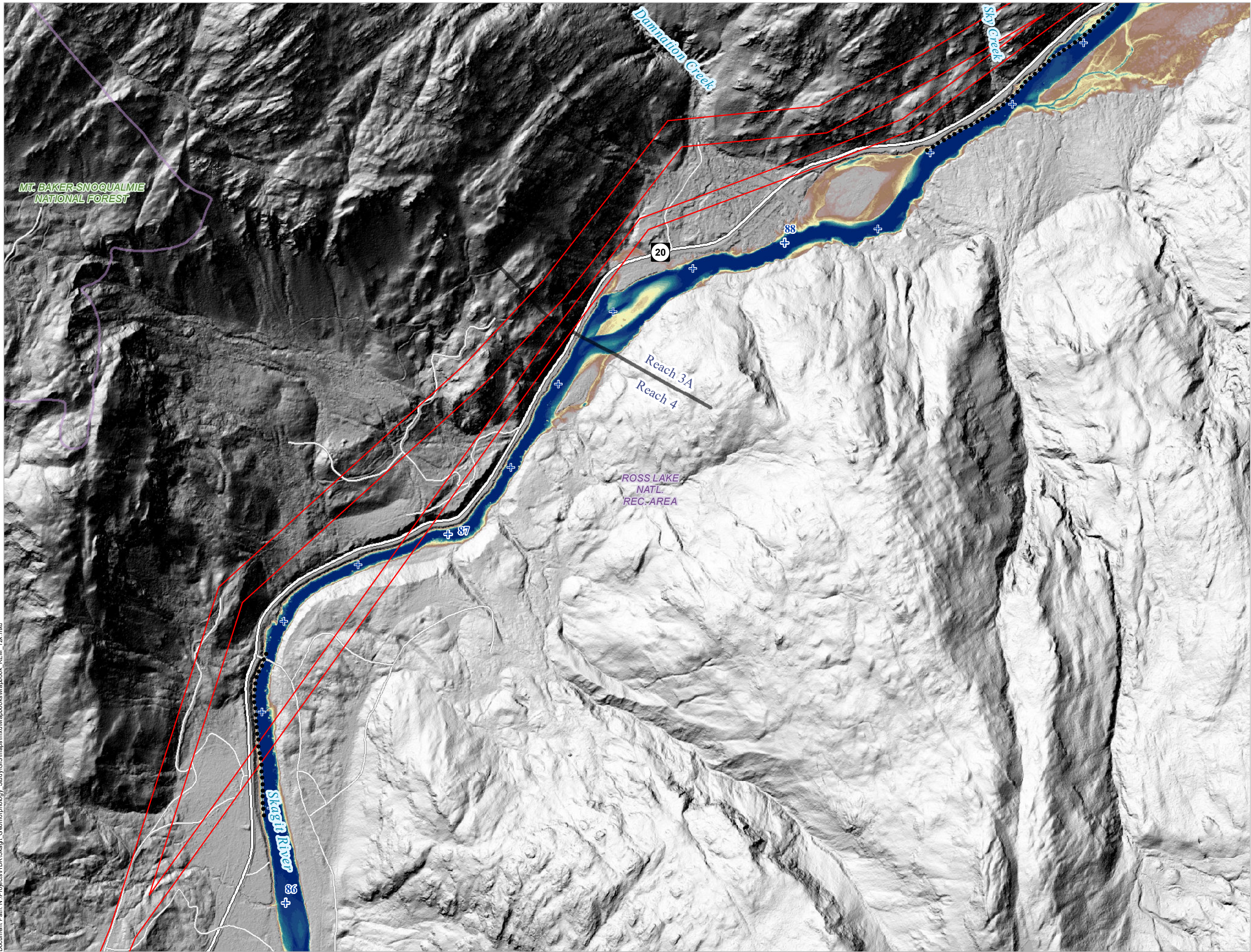
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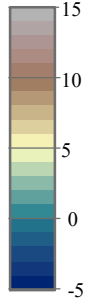
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GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 4

- FERC Project Boundary
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



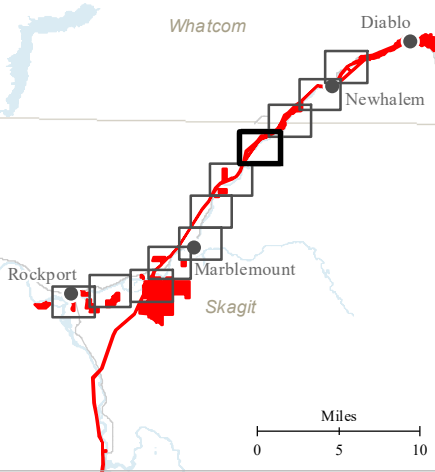
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PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 4 of 11



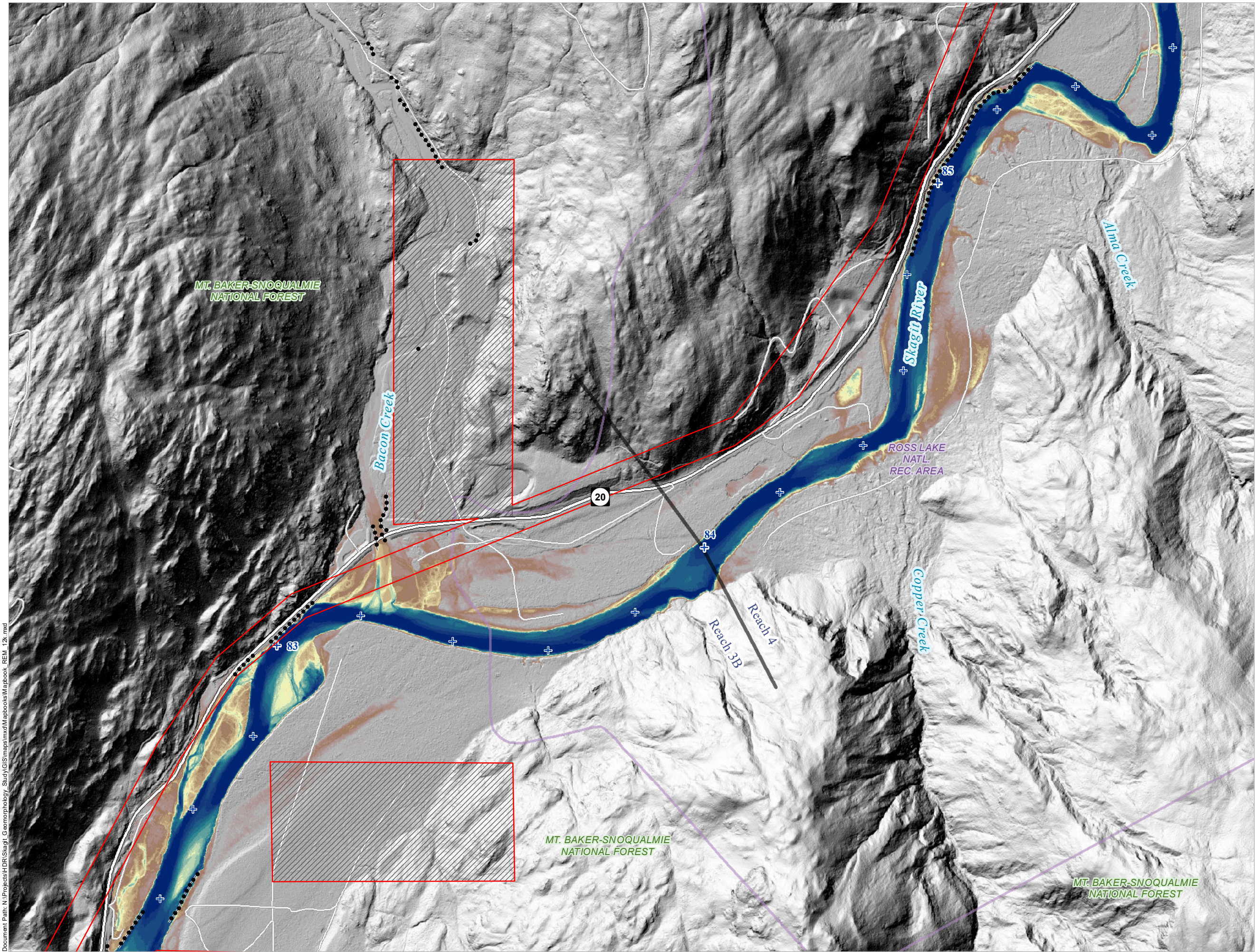
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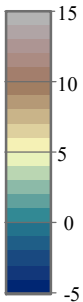
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 5**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- National Park / National Recreation Area Boundary
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



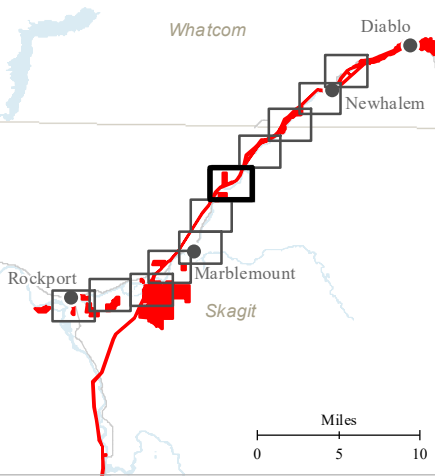
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PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 5 of 11



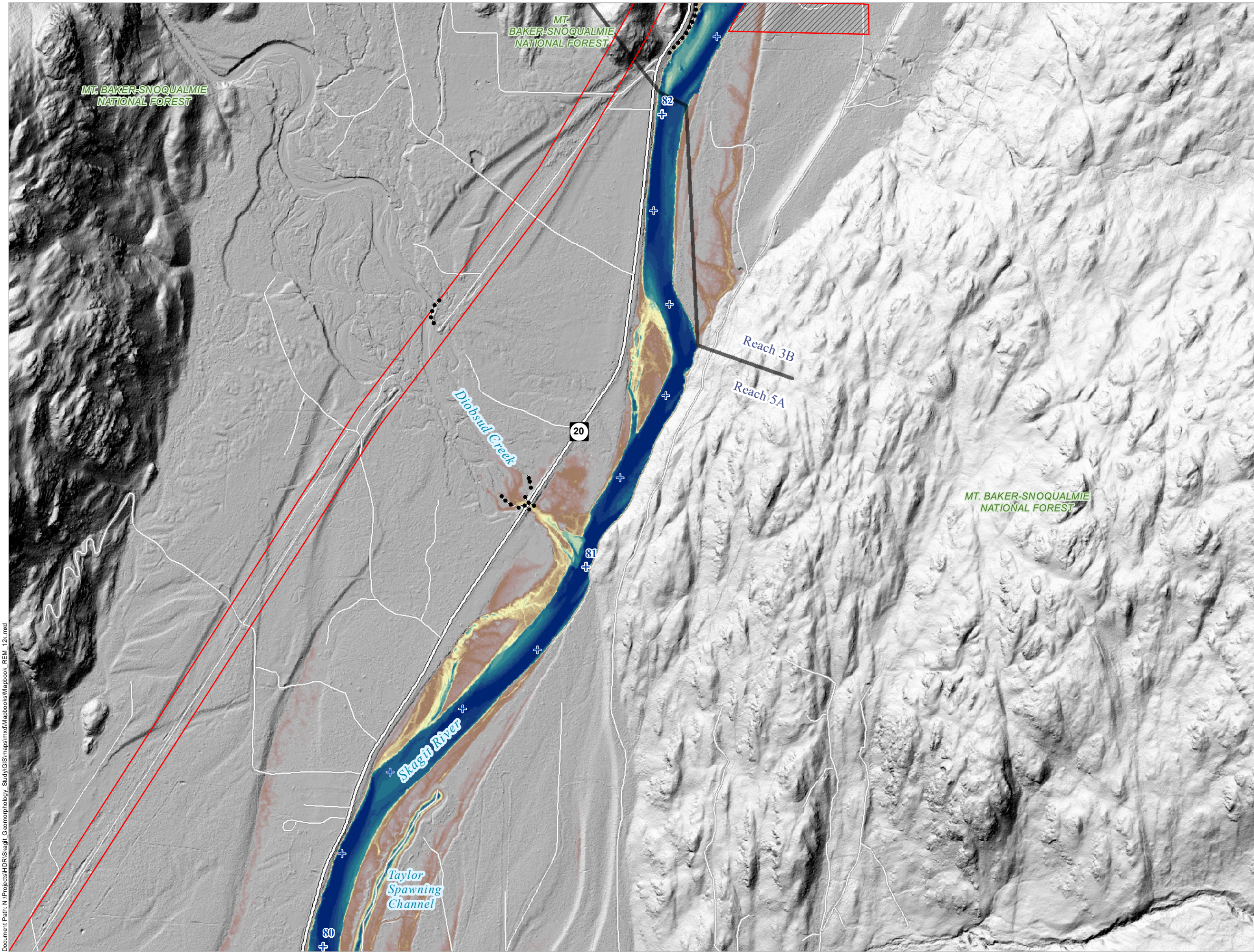
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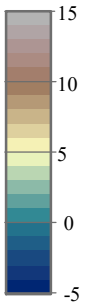
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 6**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



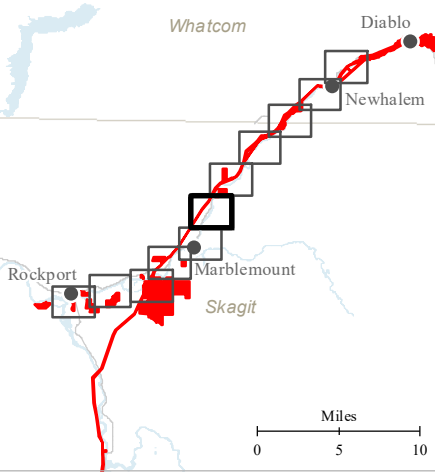
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PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 6 of 11

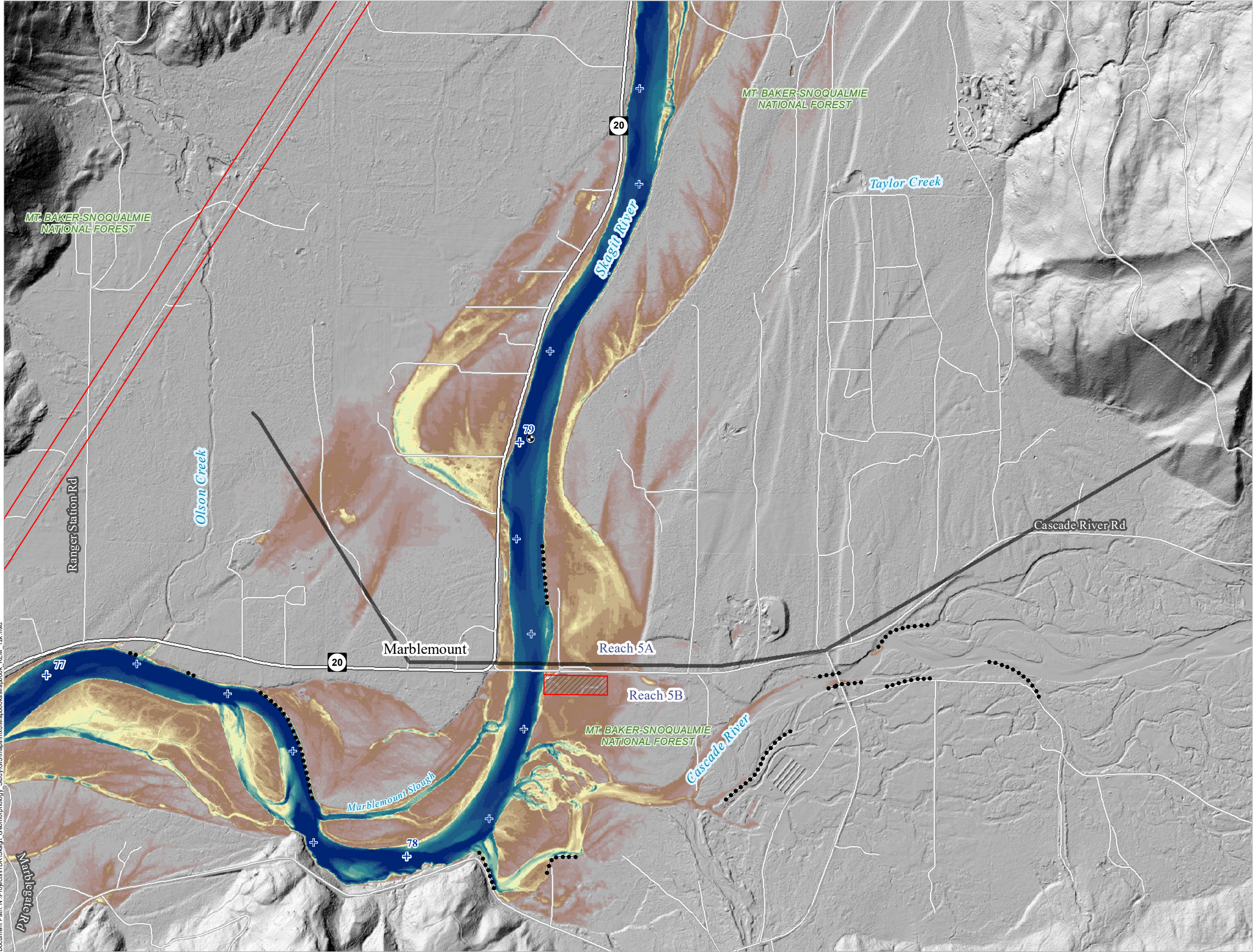


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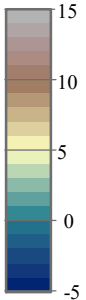




**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 7**

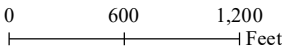
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gauge (USGS)
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)

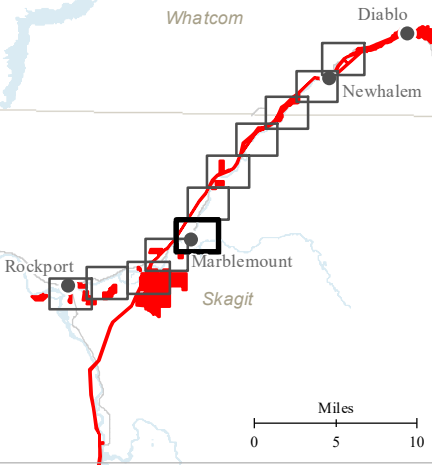


Relative Elevation Map derived from a mosaic of multiple data sources including: 2017 topobathymetric lidar downstream of Marblemount, 2018 topobathymetric lidar upstream of Marblemount; and 2016 lidar covering remaining areas of the valley outside of the map extent for 2018 lidar. Selected void areas filled by NHC survey data.

PRM shown at 0.2-mi intervals



Page 7 of 11



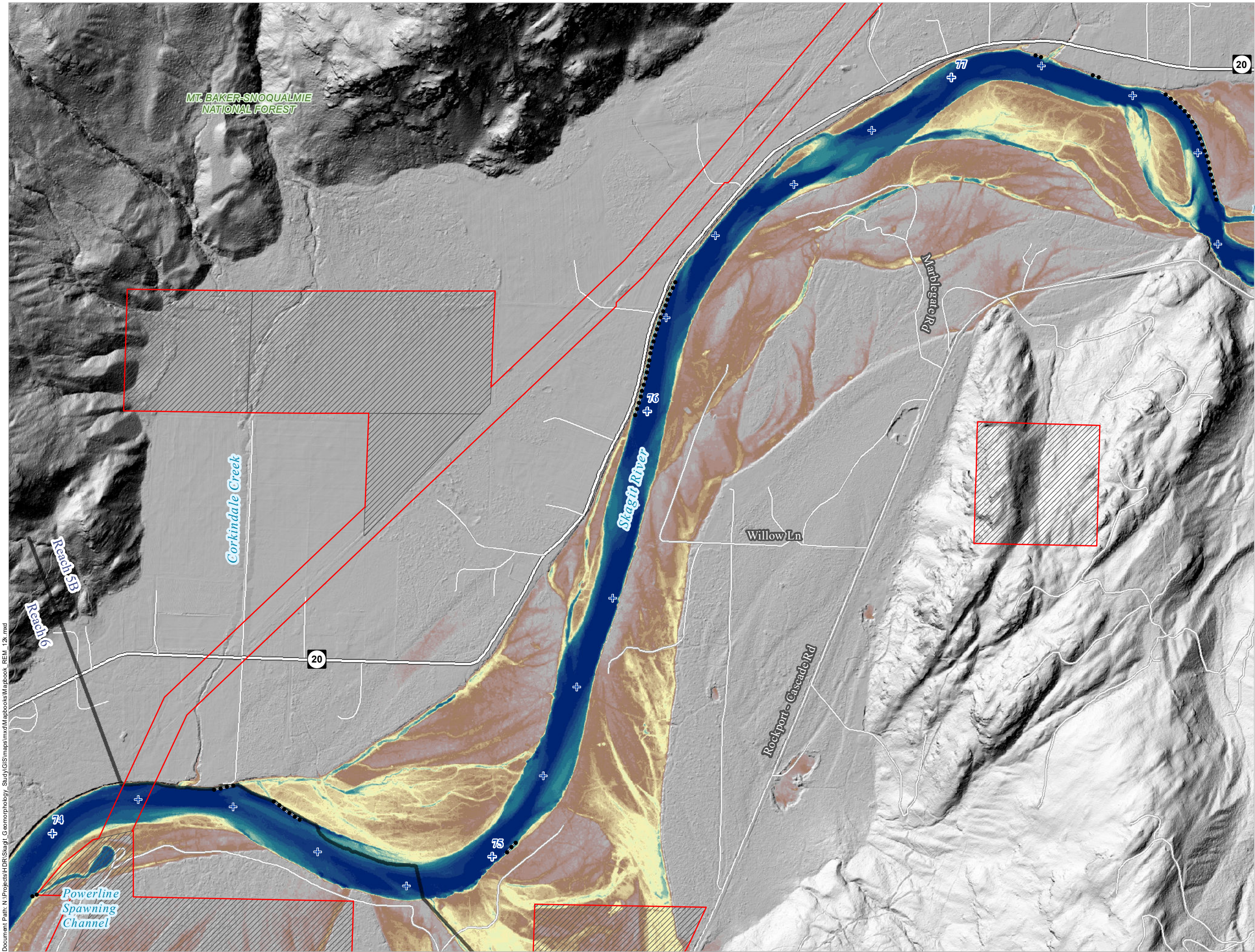
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PROJECT (FERC NO. 553)**

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Data Sources: City Light, Upper Skagit Indian Tribe, National Park Service, USDA Forest Service, USGS



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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 8**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



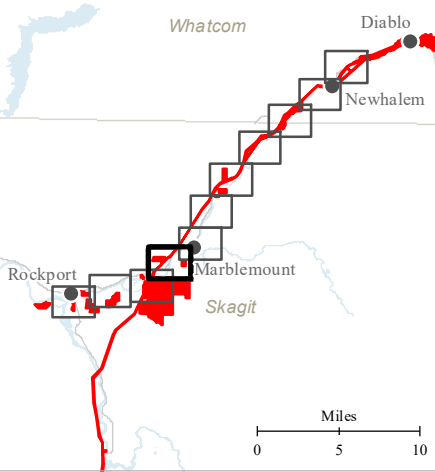
Relative Elevation Map derived from a mosaic of multiple data sources including: 2017 topobathymetric lidar downstream of Marblemount, 2018 topobathymetric lidar upstream of Marblemount; and 2016 lidar covering remaining areas of the valley outside of the map extent for 2018 lidar. Selected void areas filled by NHC survey data.

PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 8 of 11



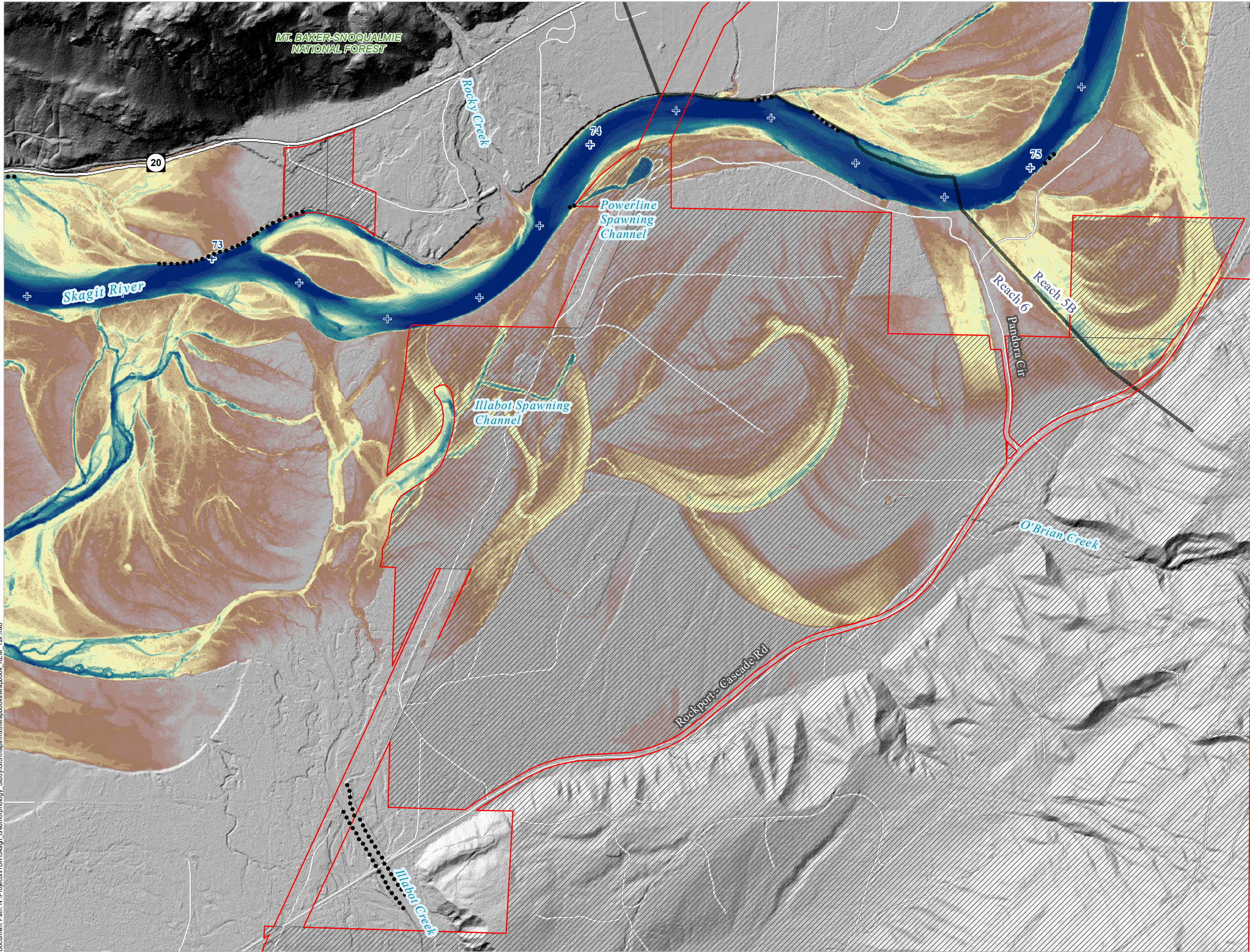
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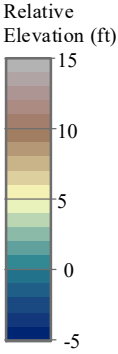


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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 9**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary



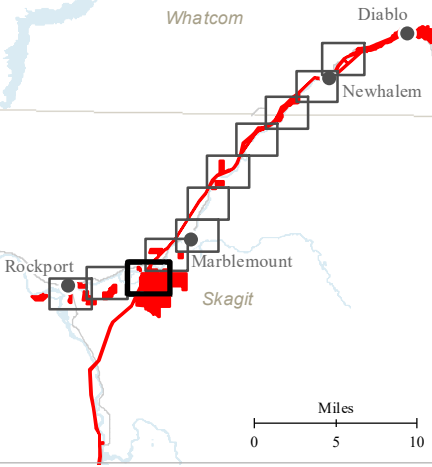
Relative Elevation Map derived from a mosaic of multiple data sources including: 2017 topobathymetric lidar downstream of Marblemount, 2018 topobathymetric lidar upstream of Marblemount; and 2016 lidar covering remaining areas of the valley outside of the map extent for 2018 lidar. Selected void areas filled by NHC survey data.

PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 9 of 11



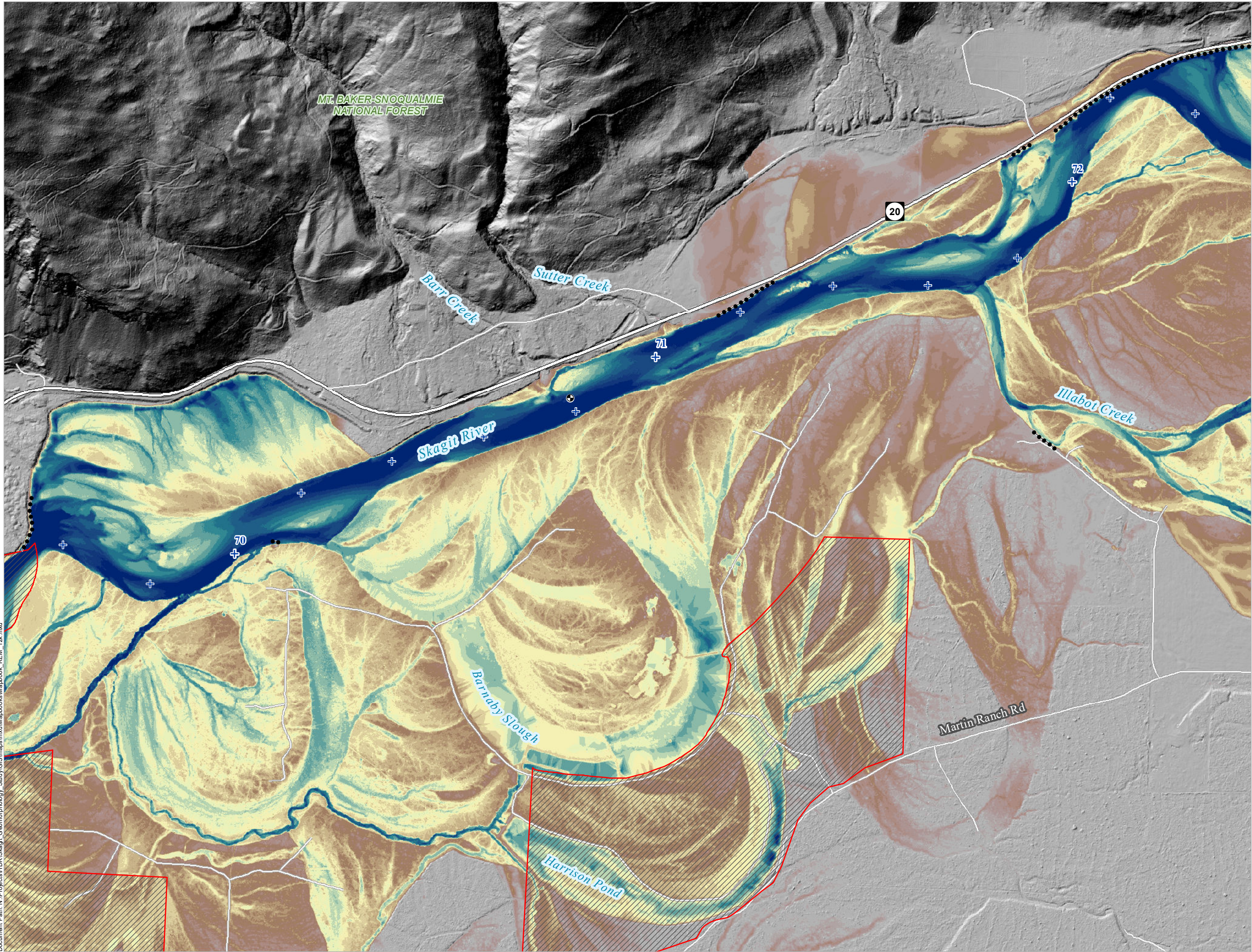
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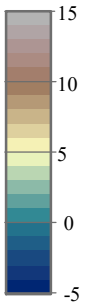
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 10**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- Hydromodified Banks

Relative  
Elevation (ft)



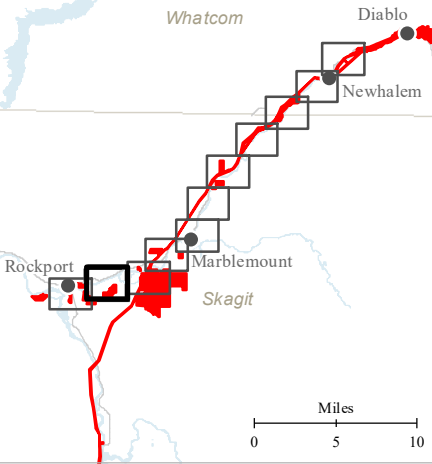
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PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 10 of 11



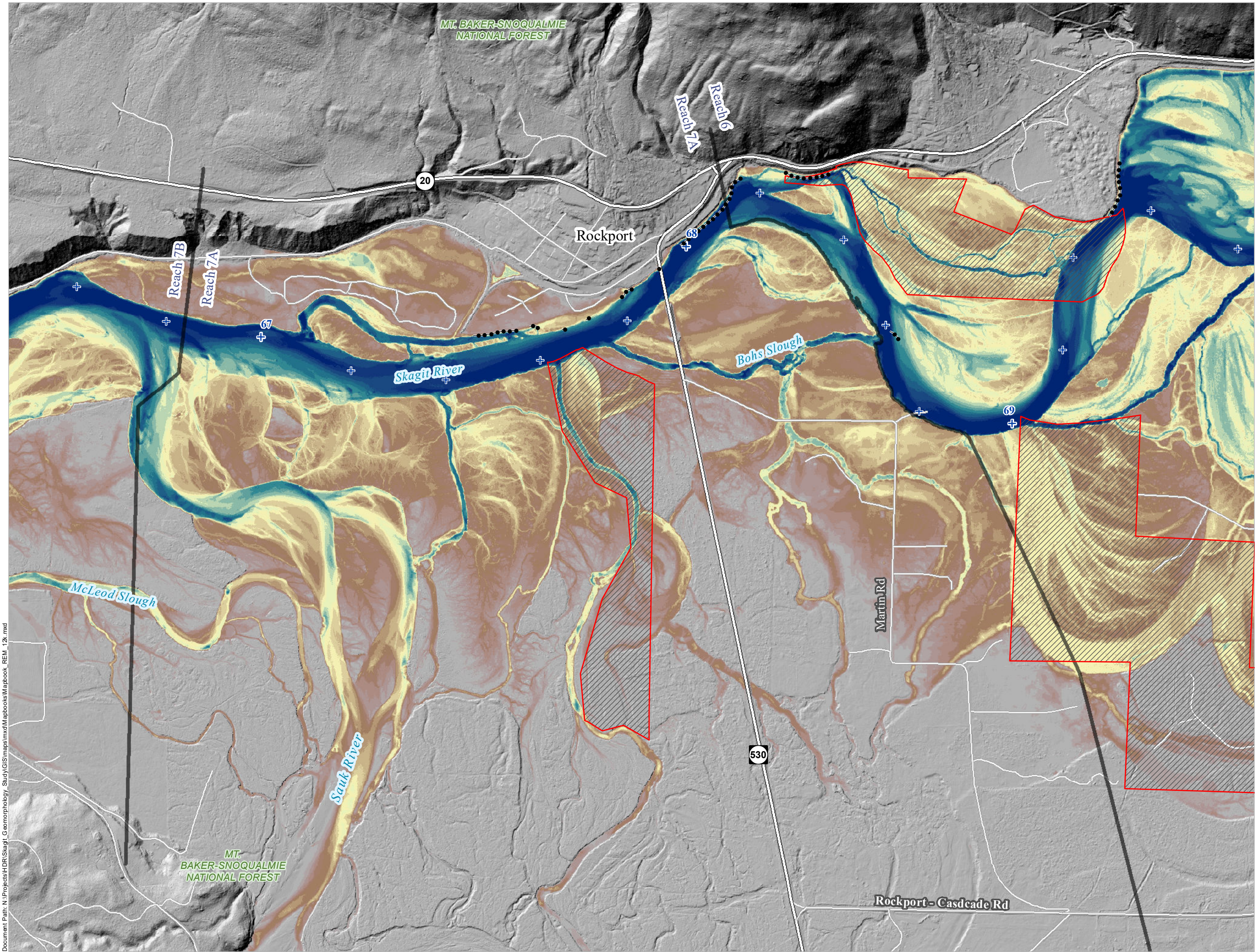
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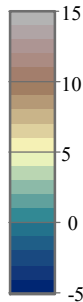
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**GE-04  
GEOMORPHOLOGY STUDY  
RELATIVE ELEVATION -  
SHEET 11**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Relative  
Elevation (ft)



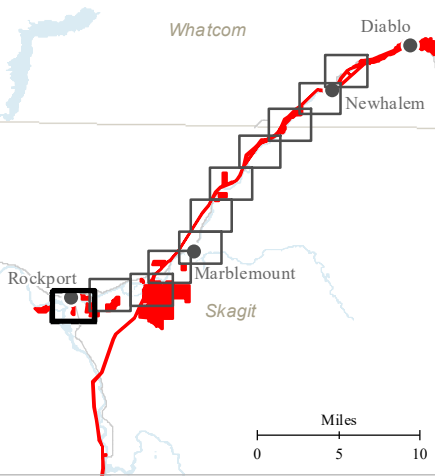
Relative Elevation Map derived from a mosaic of multiple data sources including: 2017 topobathymetric lidar downstream of Marblemount, 2018 topobathymetric lidar upstream of Marblemount; and 2016 lidar covering remaining areas of the valley outside of the map extent for 2018 lidar. Selected void areas filled by NHC survey data.

PRM shown at 0.2-mi intervals



0 600 1,200  
Feet

Page 11 of 11



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