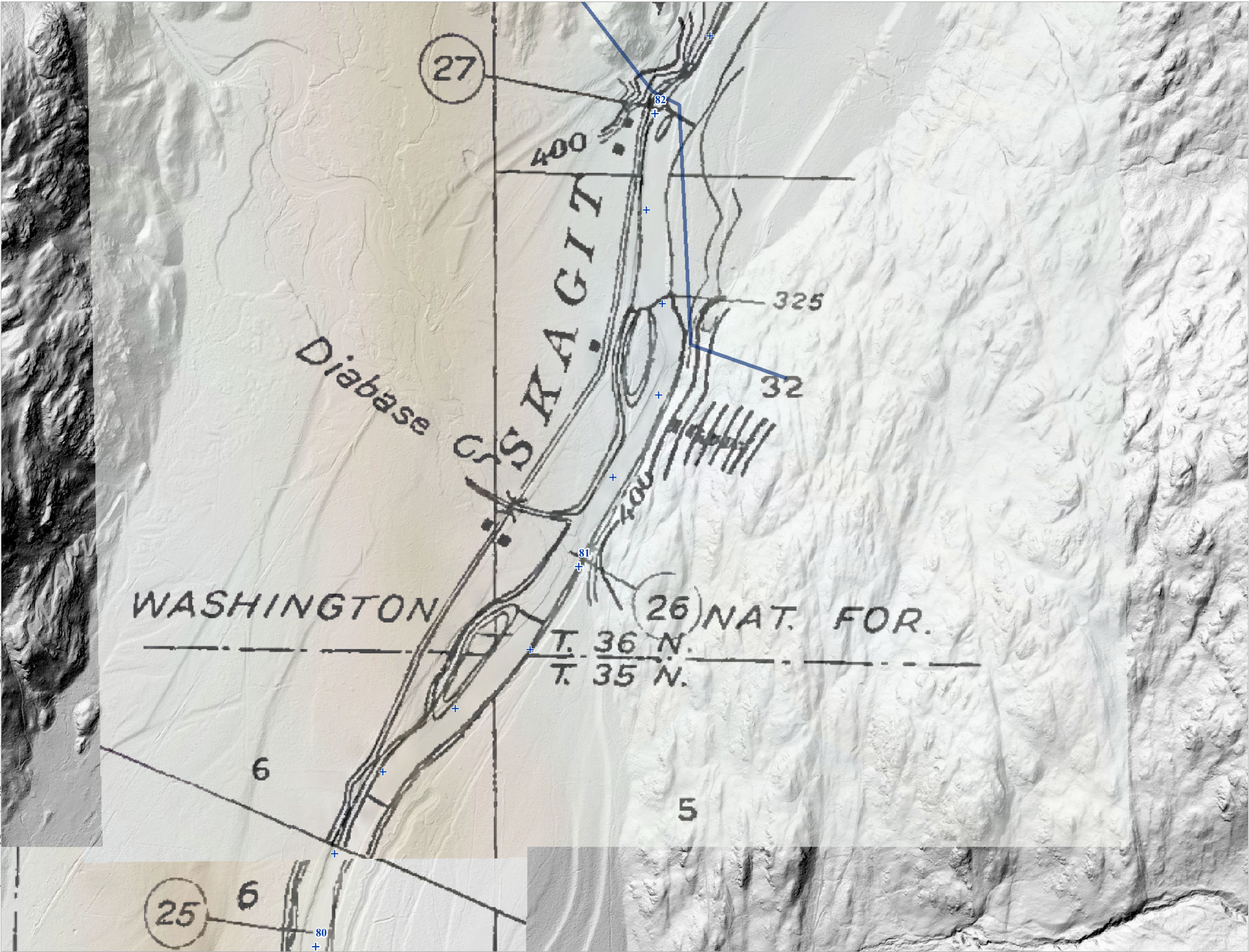


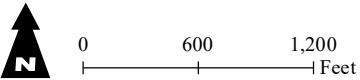
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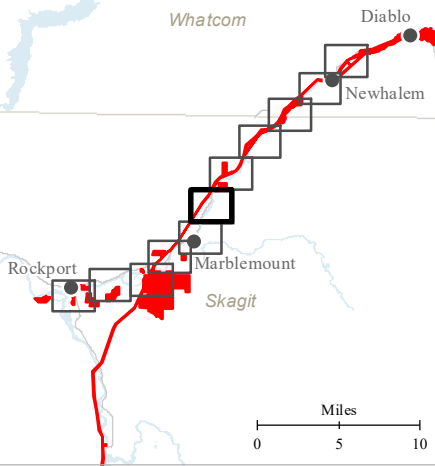
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 6**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



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Seattle City Light

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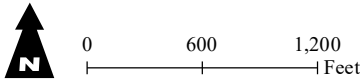


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 6**

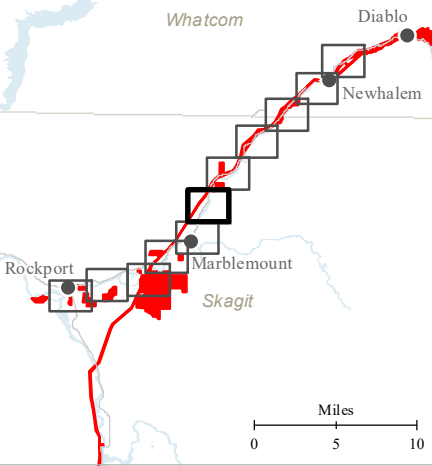
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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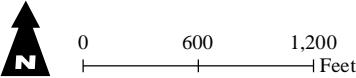


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 6

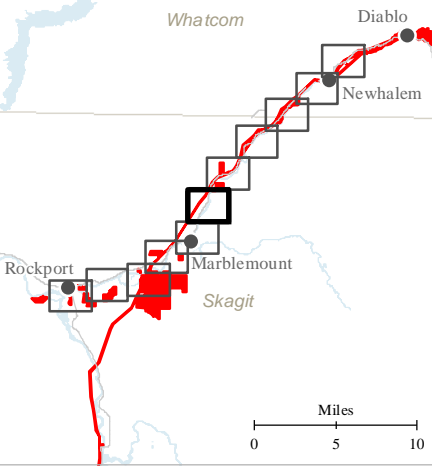
- FERC Project Boundary
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- Project River Miles (PRM)
- Reach Boundary
- Eroding Bank 1944-1964

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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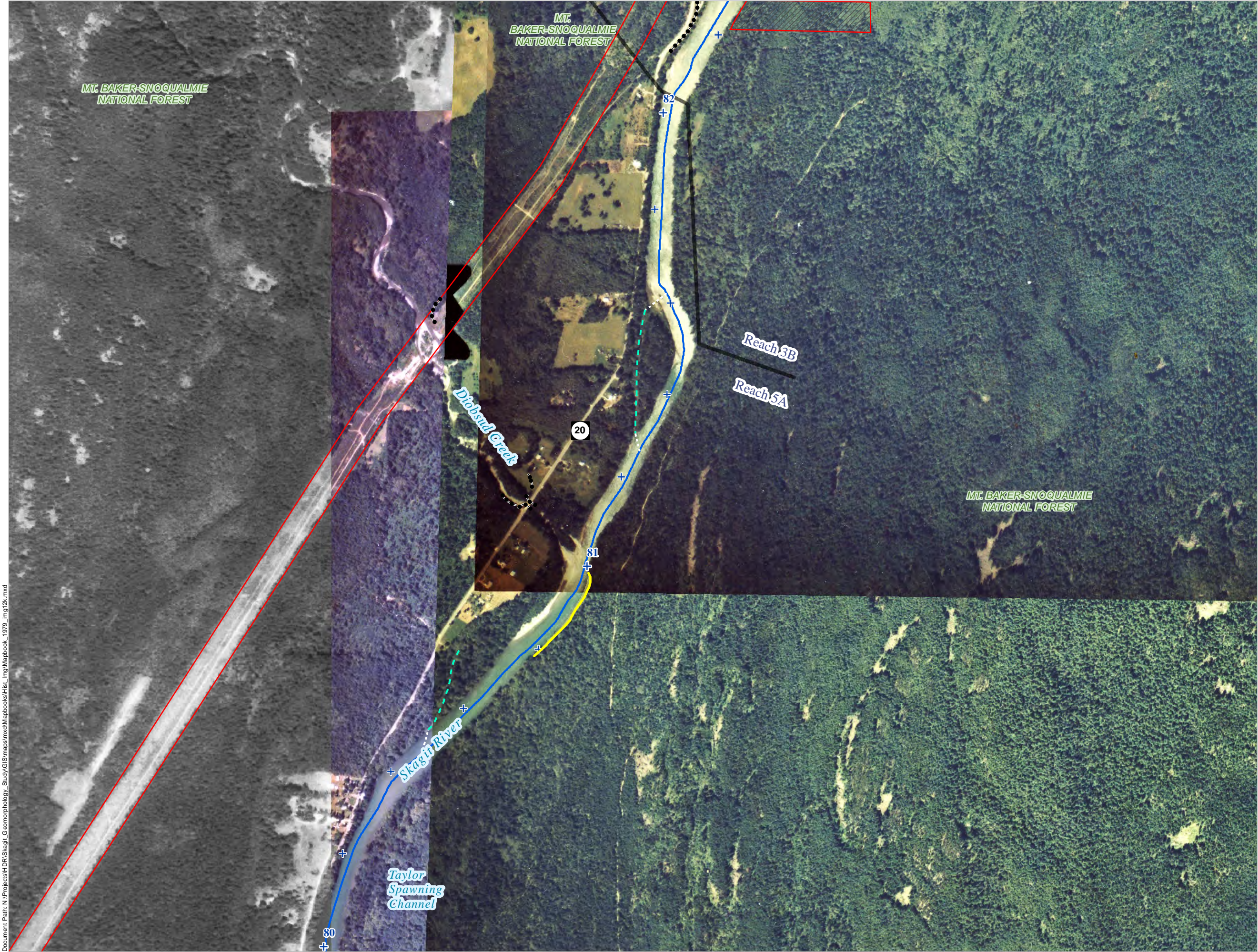


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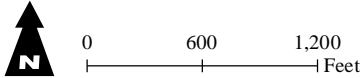


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 6

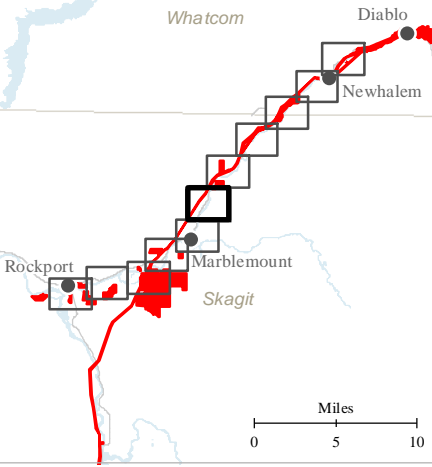
- FERC Project Boundary
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- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

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- Braid Channel
- Side Channel



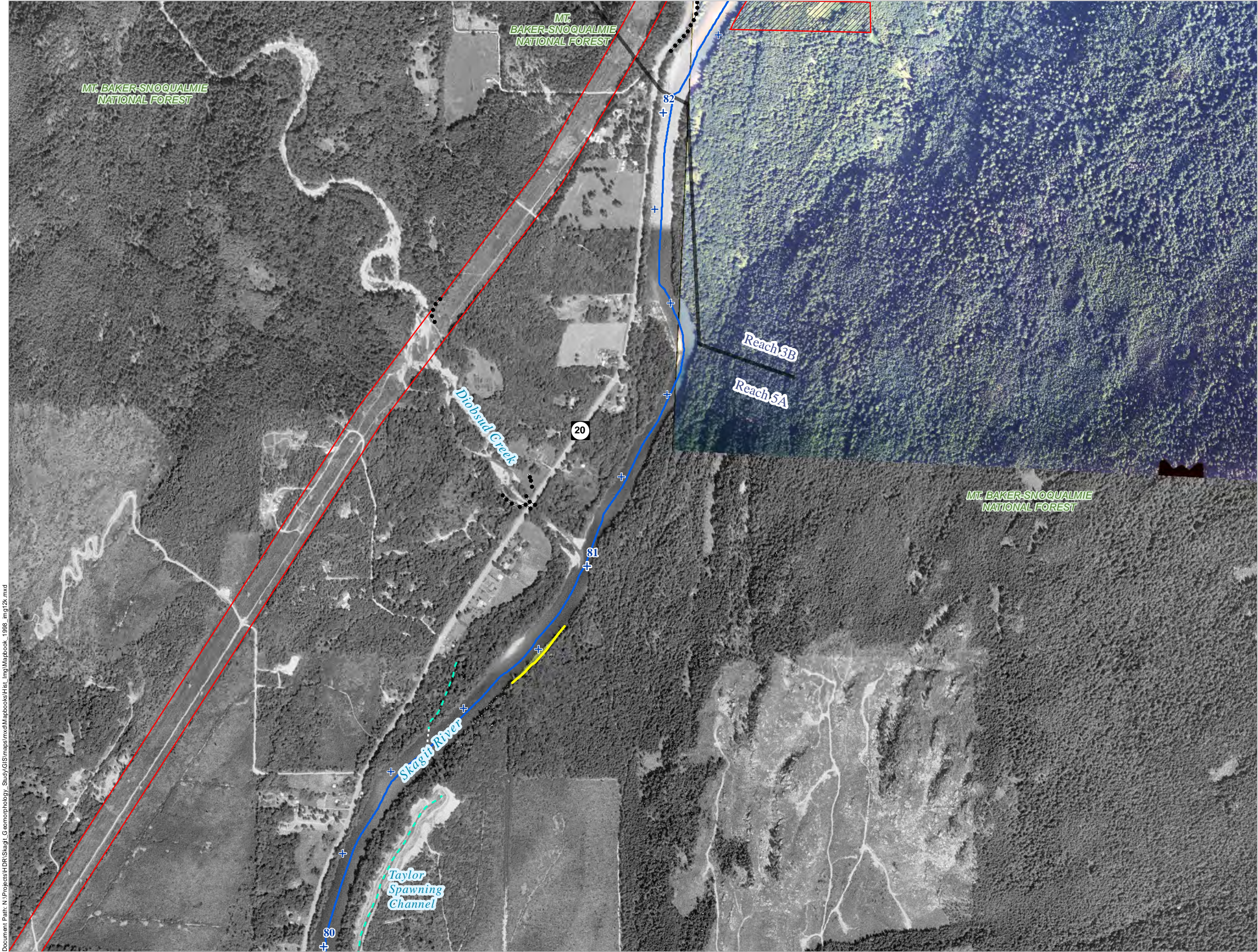
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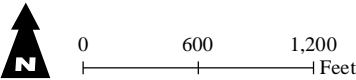


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 6**

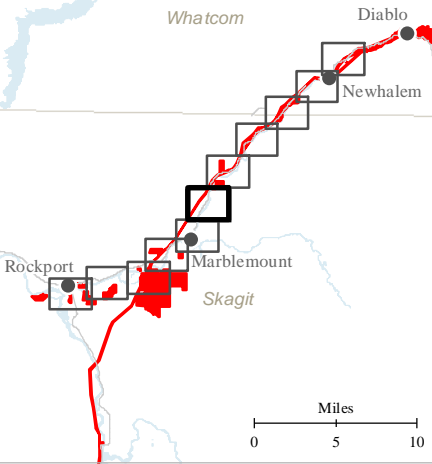
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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

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- Braid Channel
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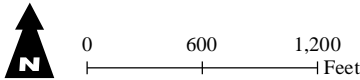


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 6**

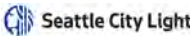
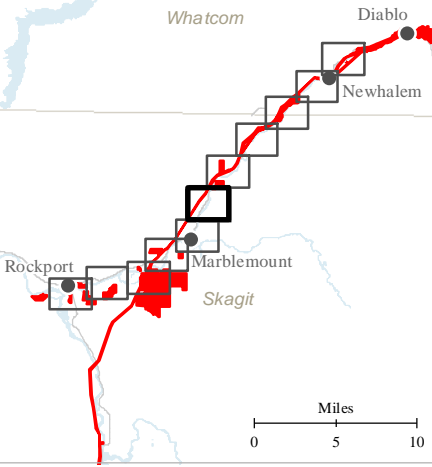
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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

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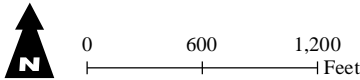


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 6**

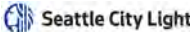
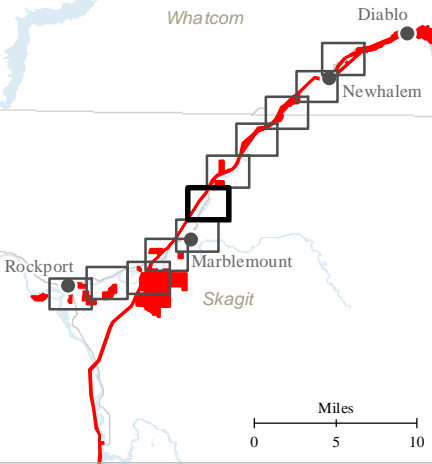
- FERC Project Boundary
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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



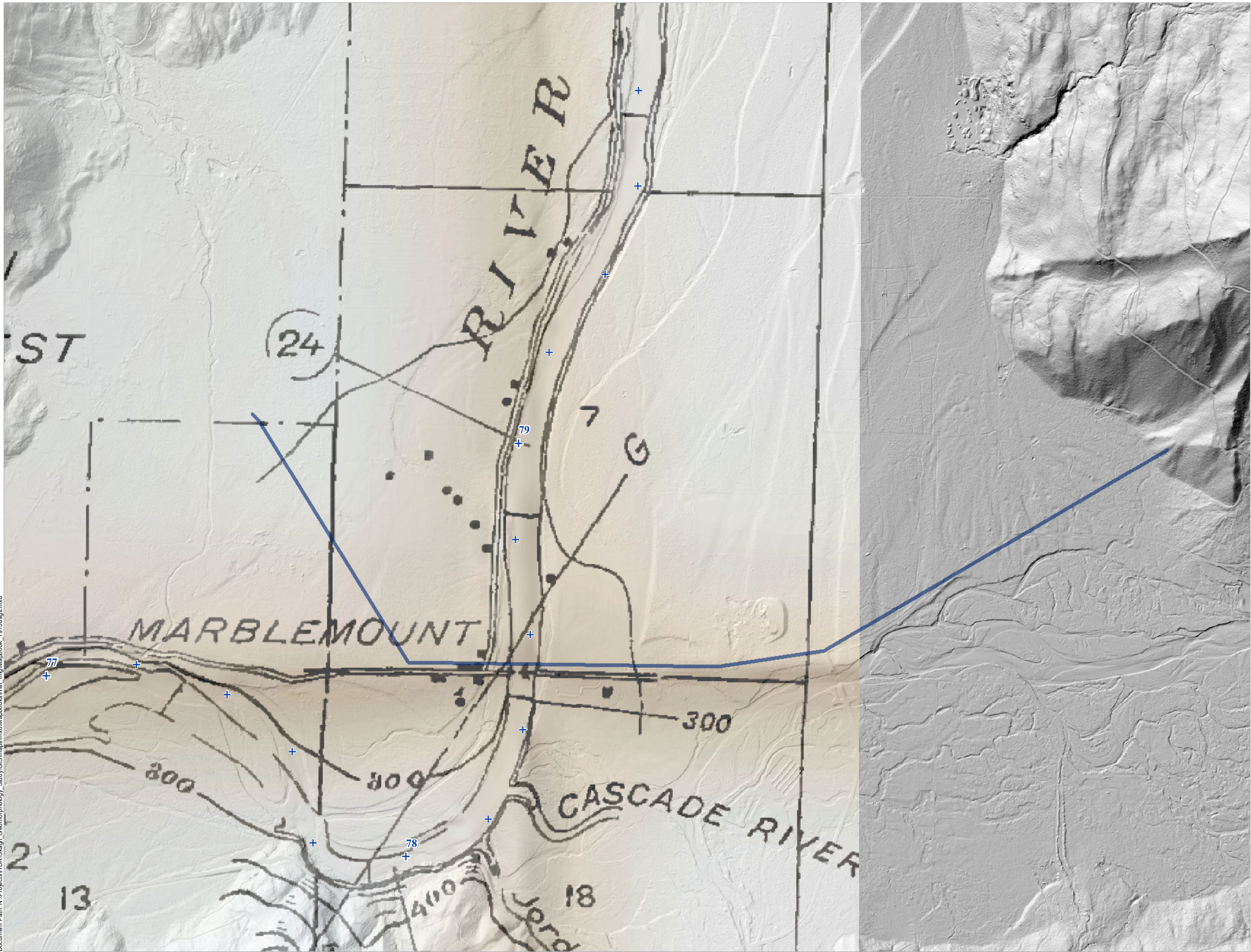
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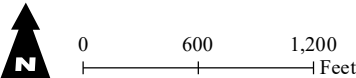
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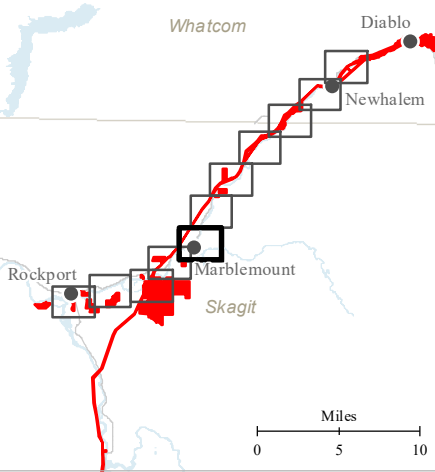
**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1915 MAP* - SHEET 7**

- + Project River Miles (PRM)
- Reach Boundary

*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
derived from composite of 2016-2018
lidar



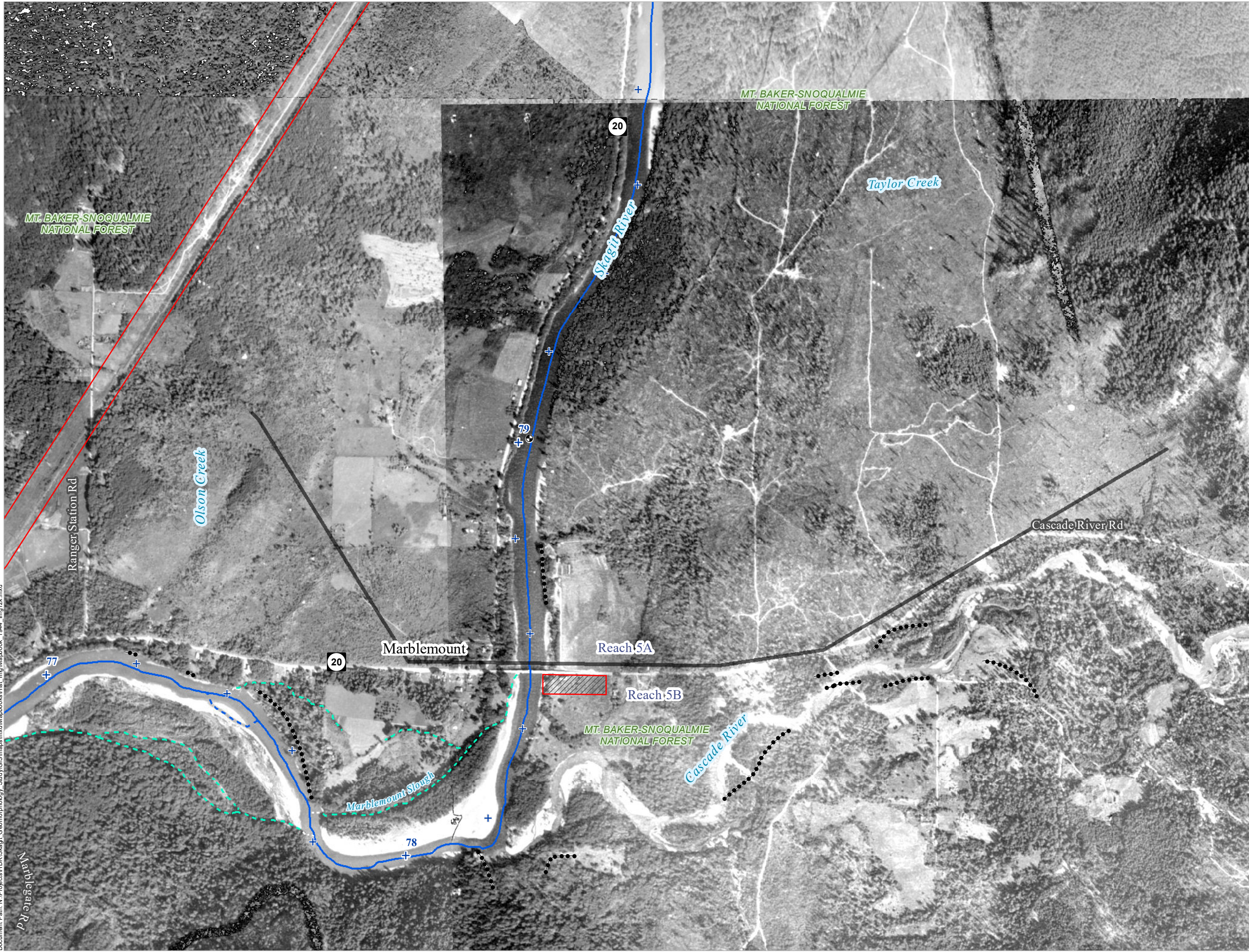
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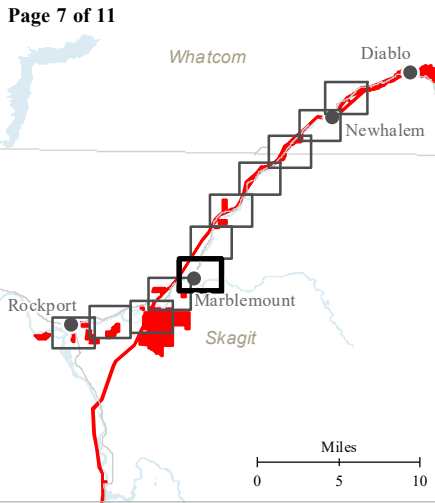
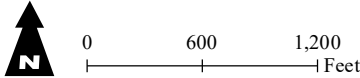


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 7

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

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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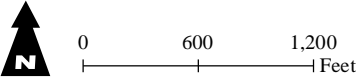


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 7

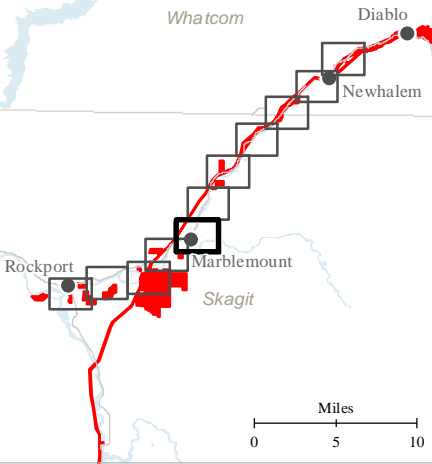
- FERC Project Boundary
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- Project River Miles (PRM)
- Stream Gauge (USGS)
- Reach Boundary
- Eroding Bank 1944-1964

Channel Type

- Main Channel
- Braid Channel
- Side Channel



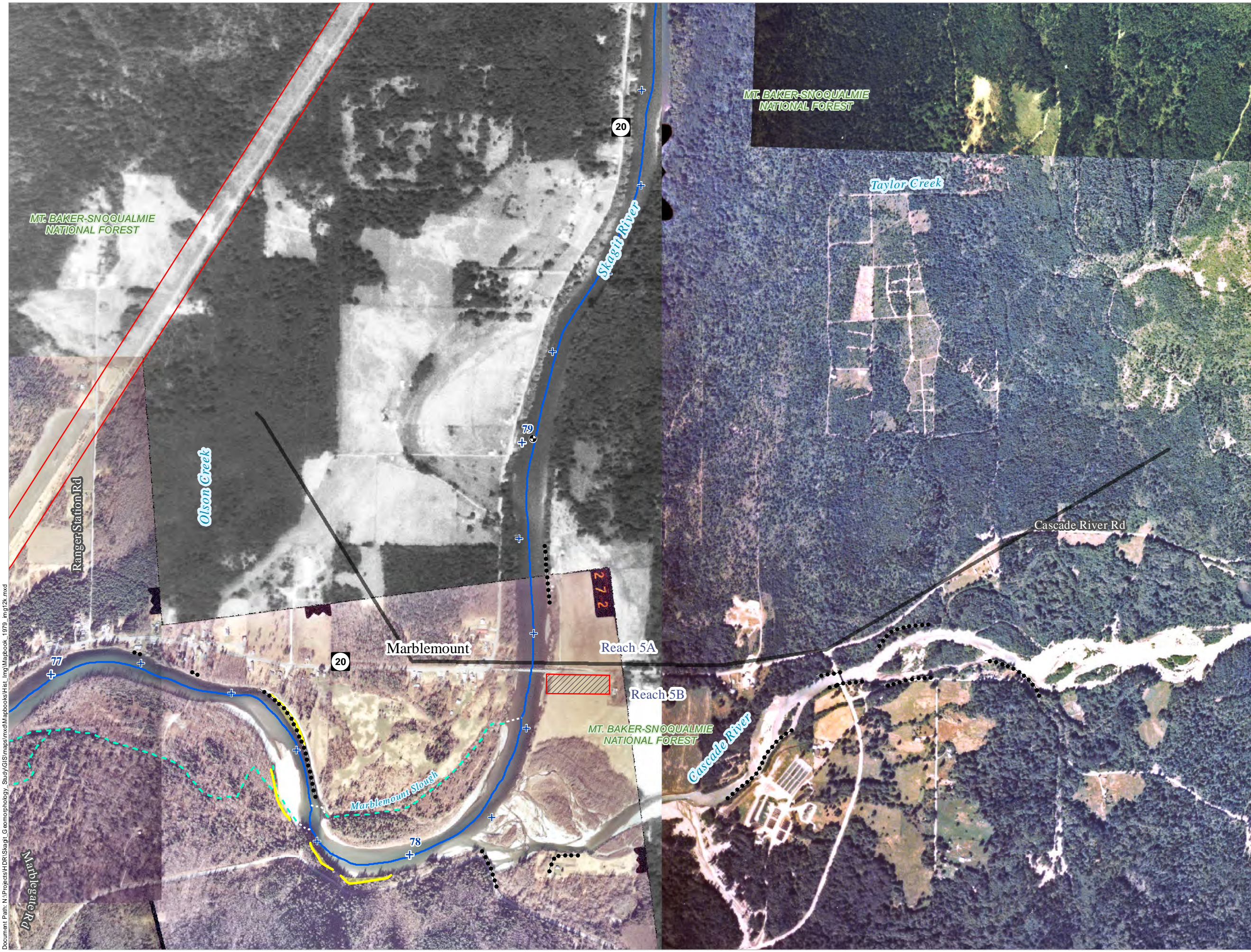
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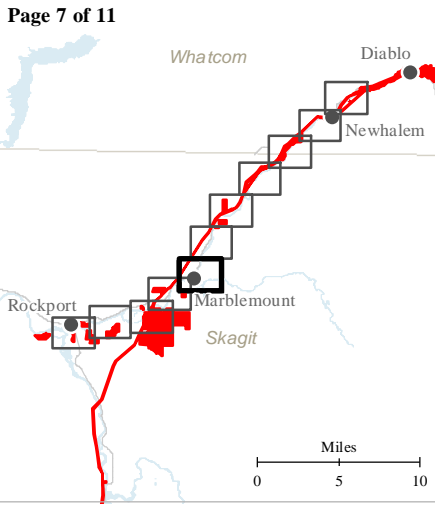
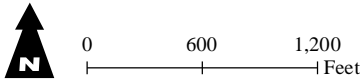


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 7**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

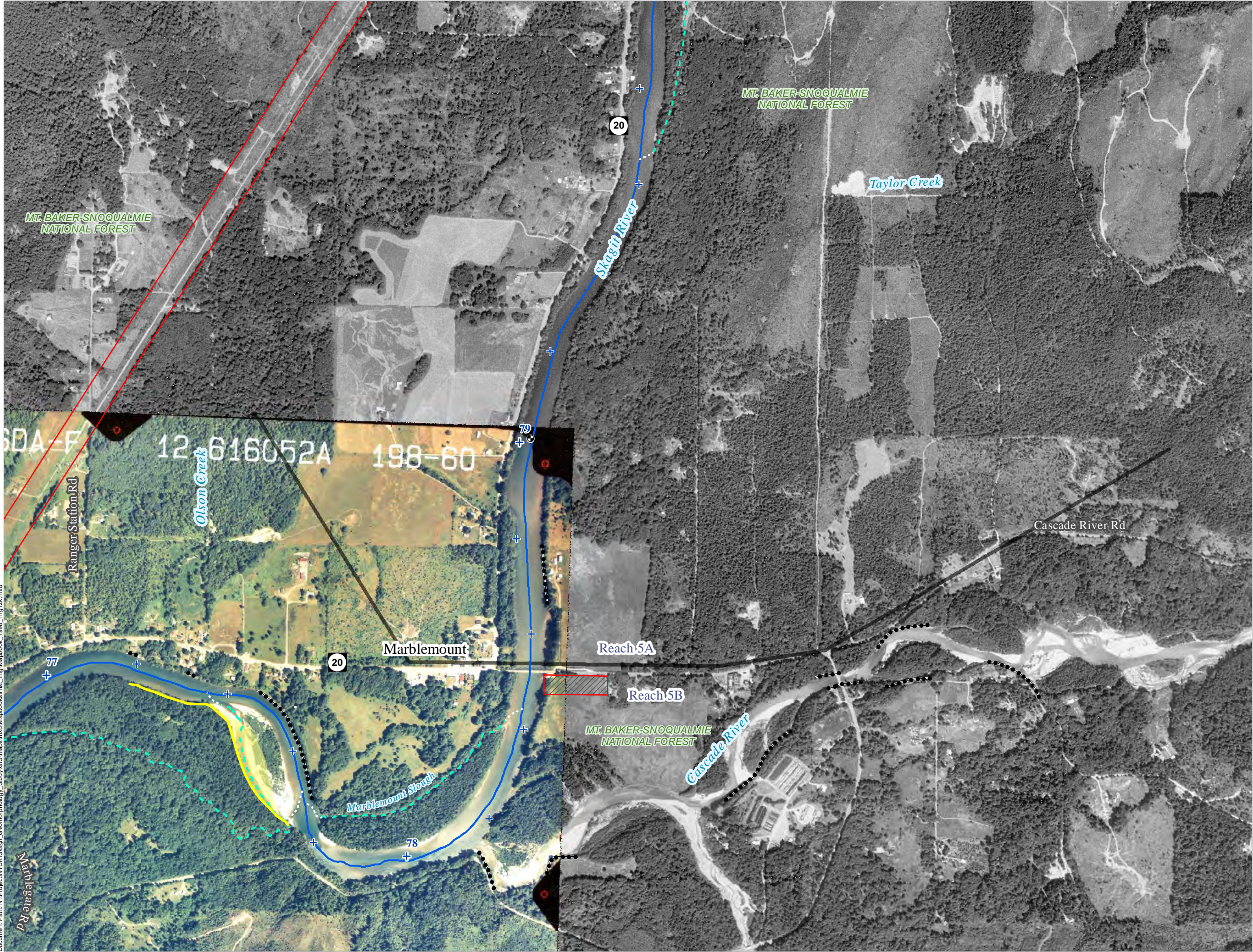
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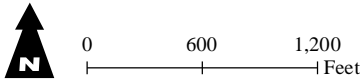


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 7

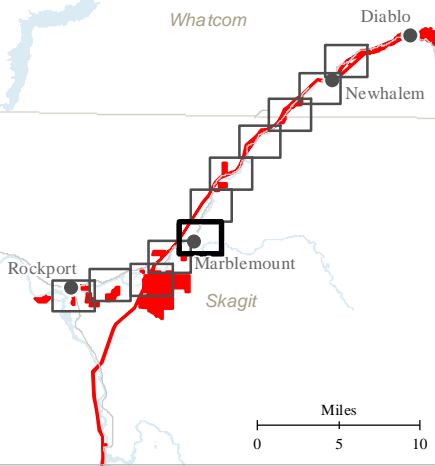
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Stream Gage (USGS)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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Seattle City Light

SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

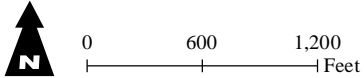
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GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 7

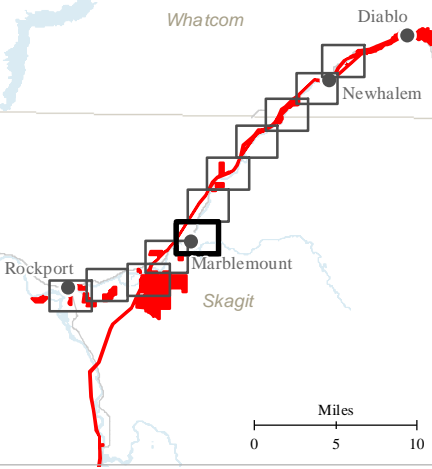
- FERC Project Boundary
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- Project River Miles (PRM)
- Stream Gage (USGS)
- Hydromodified Banks
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Channel Type

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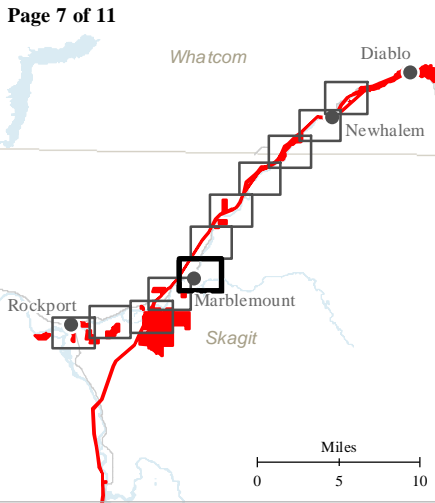
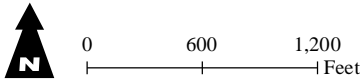


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2019 - SHEET 7**

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

Channel Type

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- Braid Channel
- Side Channel

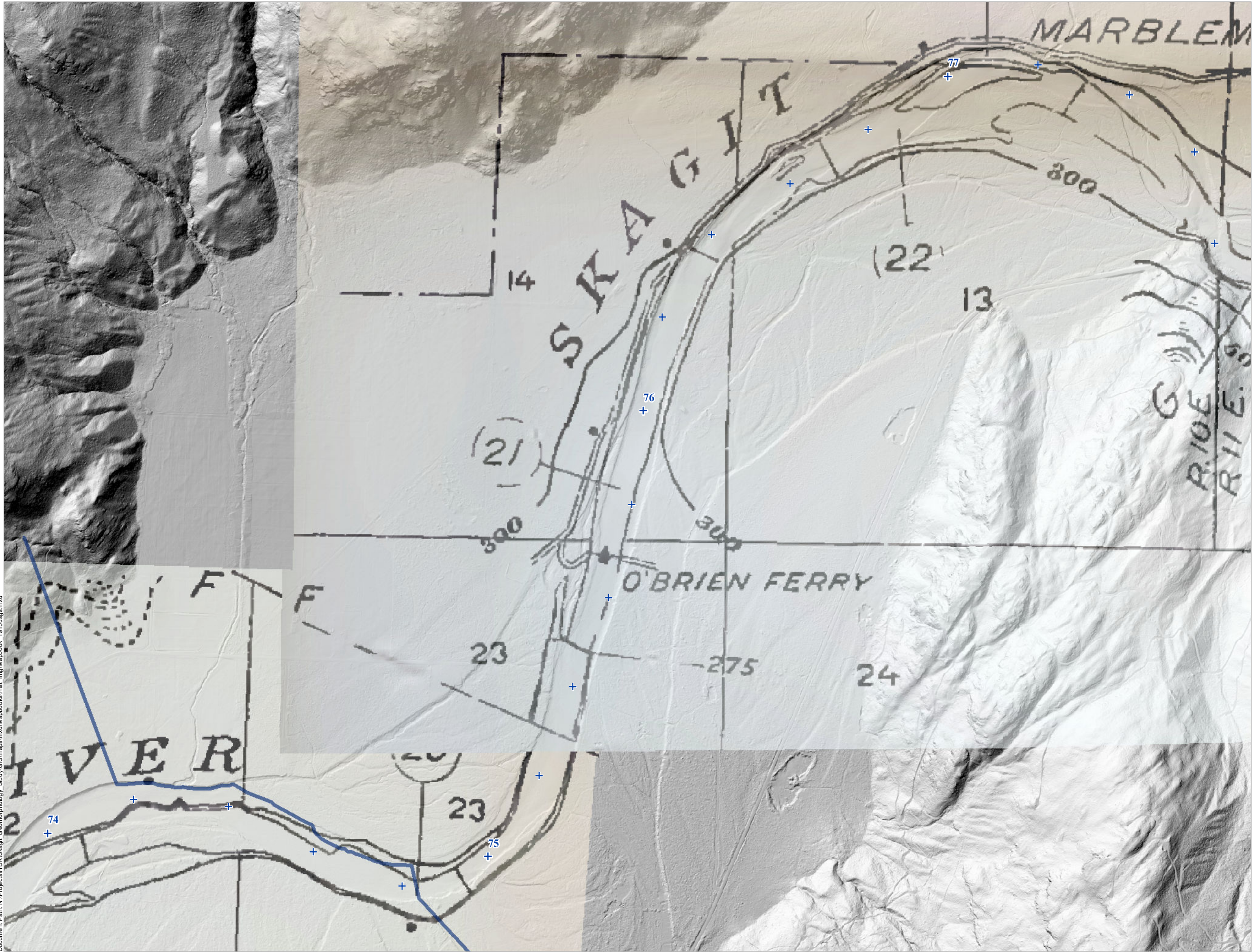


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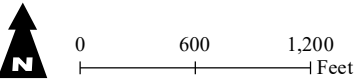
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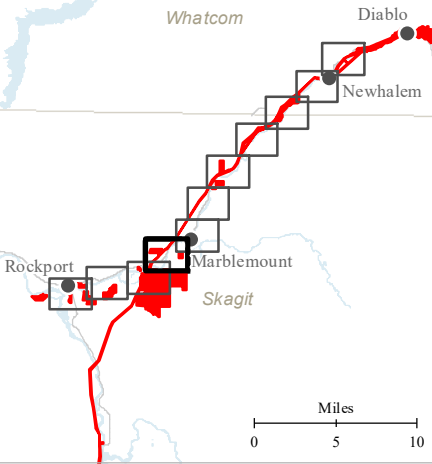
GE-04
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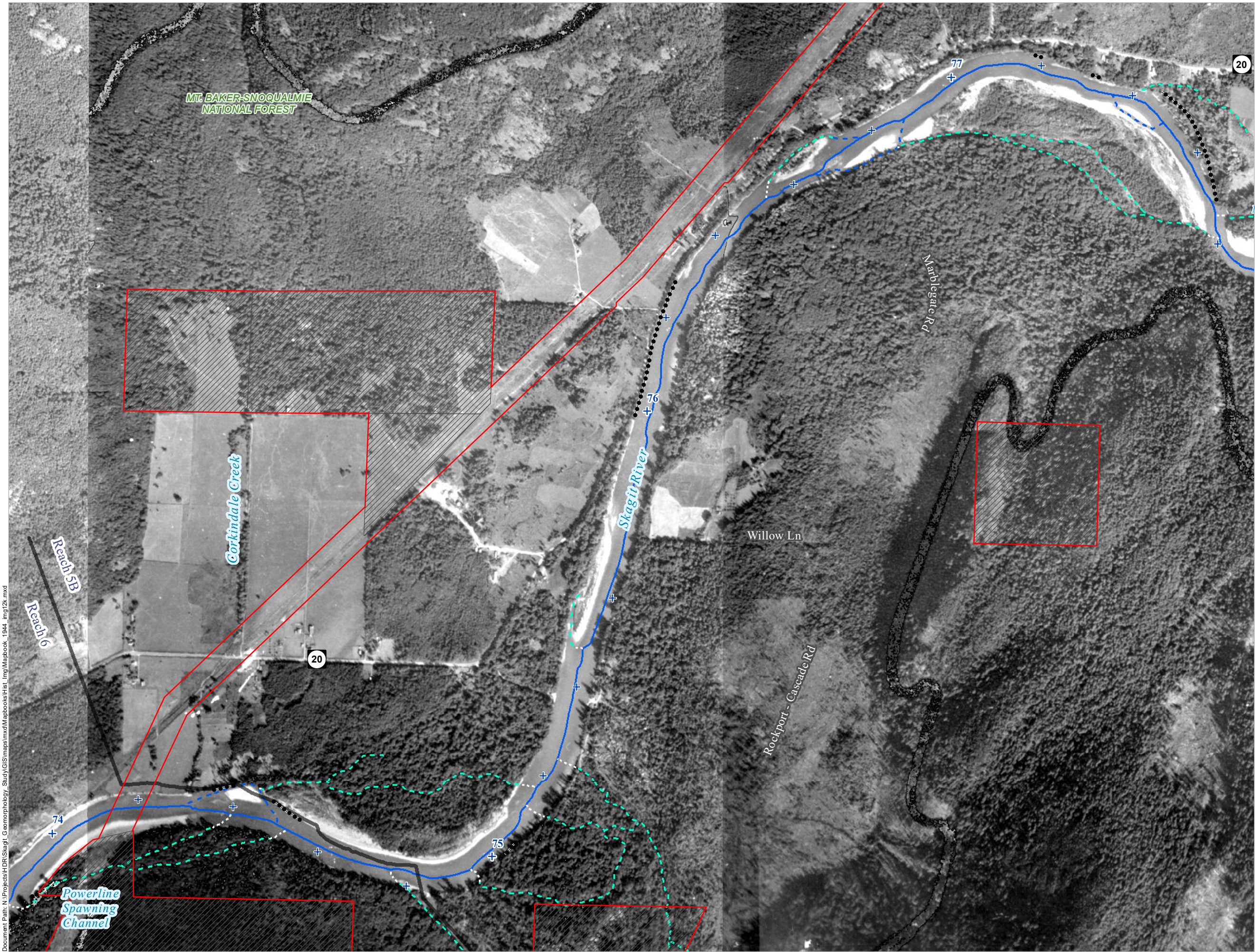


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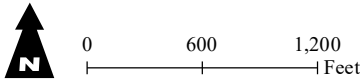


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GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 8**

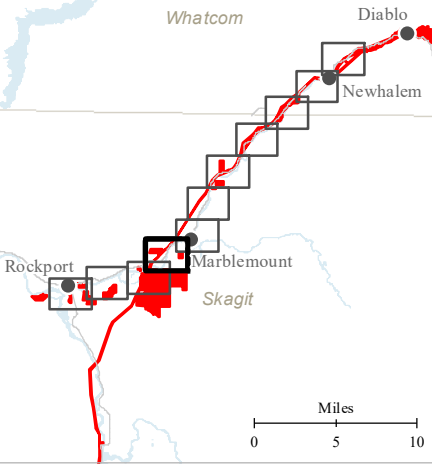
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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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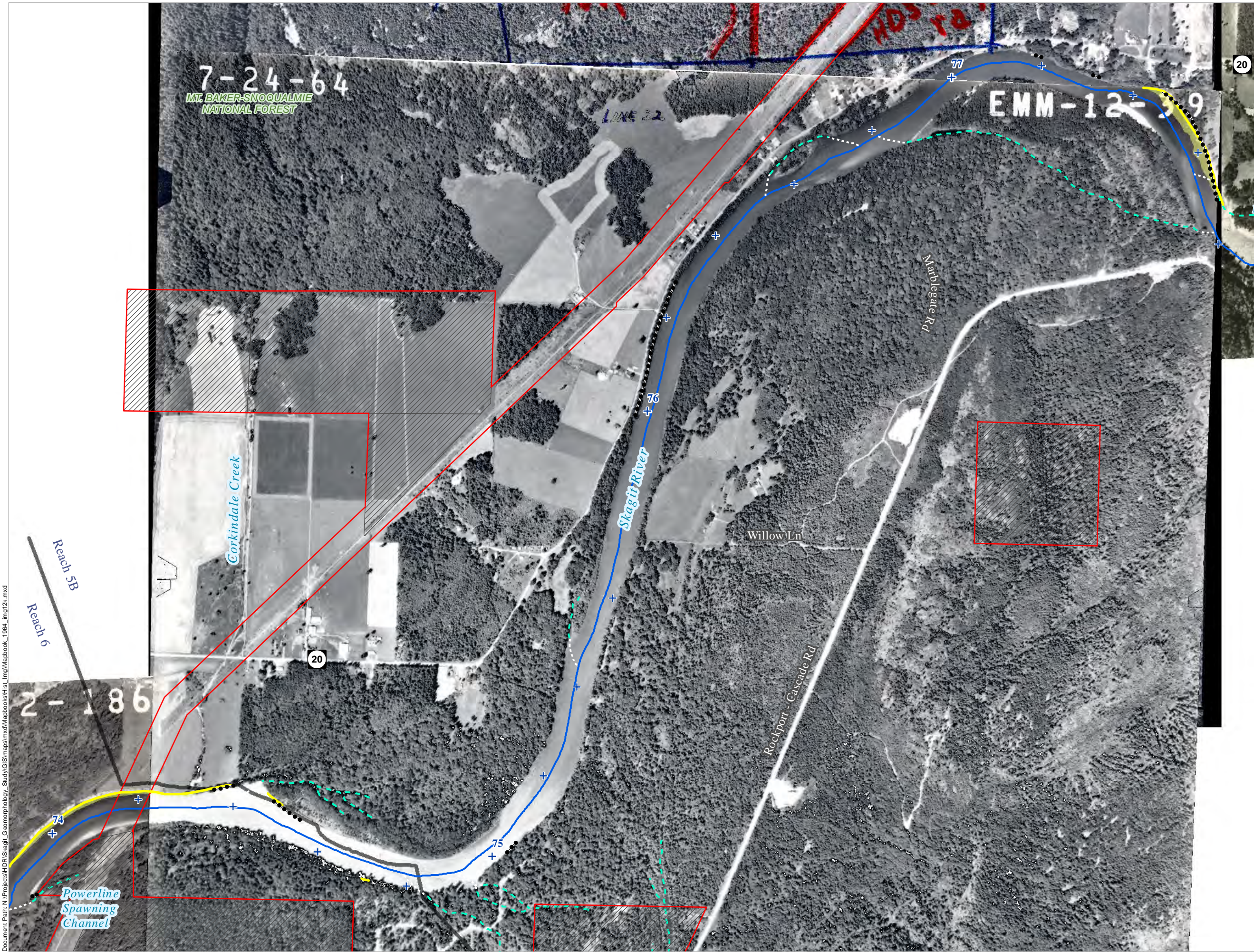


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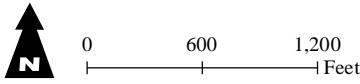


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GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 8**

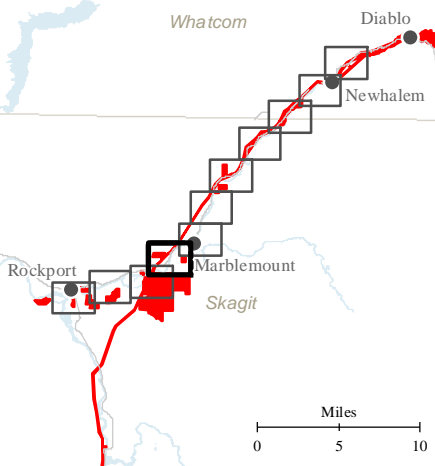
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- + Project River Miles (PRM)
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- Eroding Bank 1944-1964

Channel Type

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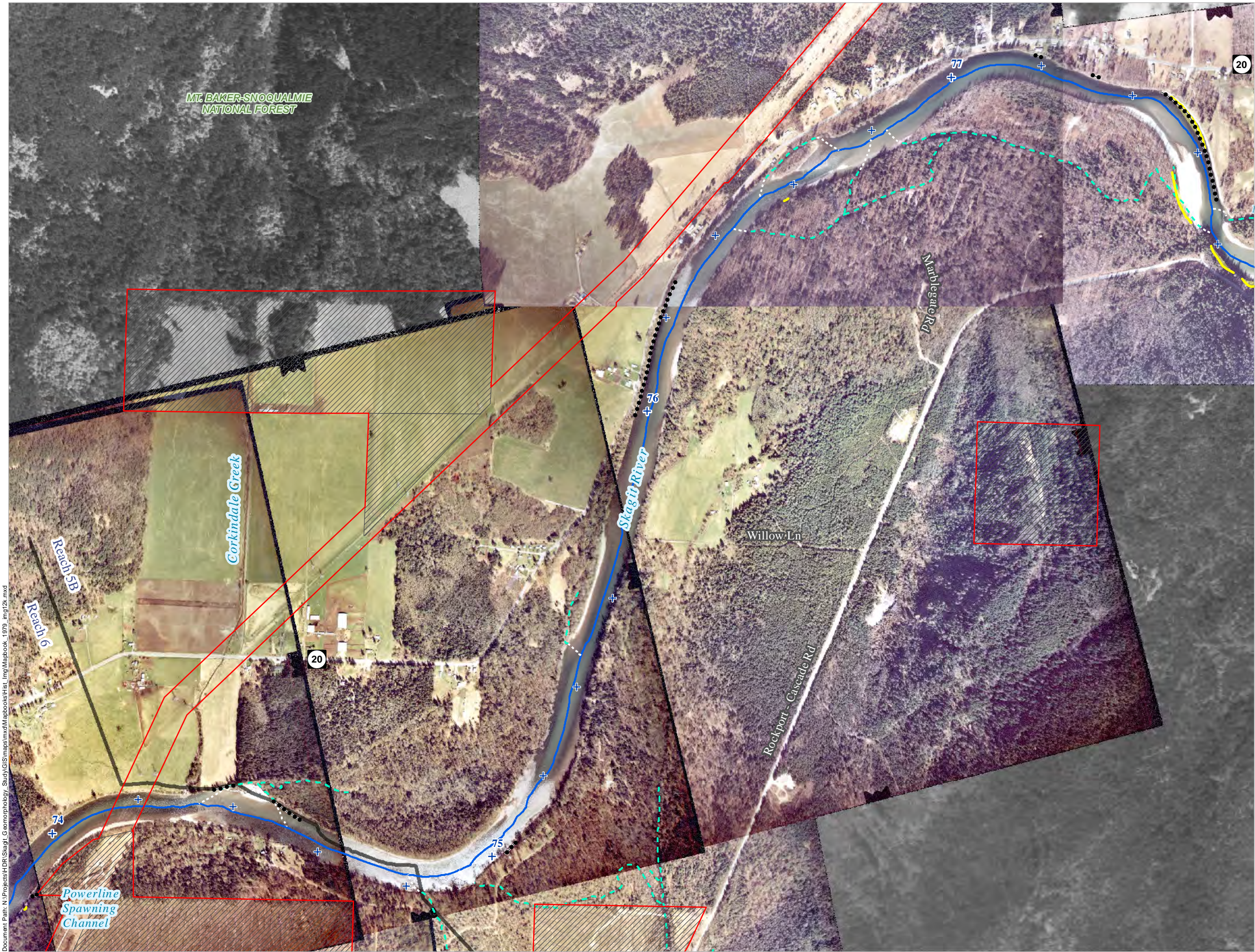
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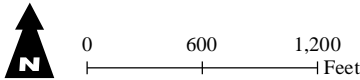


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 8

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Channel Type

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SKAGIT RIVER HYDROELECTRIC
PROJECT (FERC NO. 553)

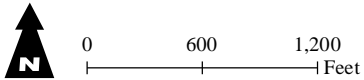
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GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 8

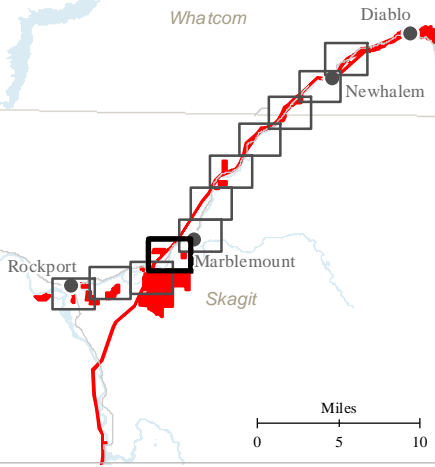
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- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

Channel Type

- Main Channel
- Braid Channel
- Side Channel



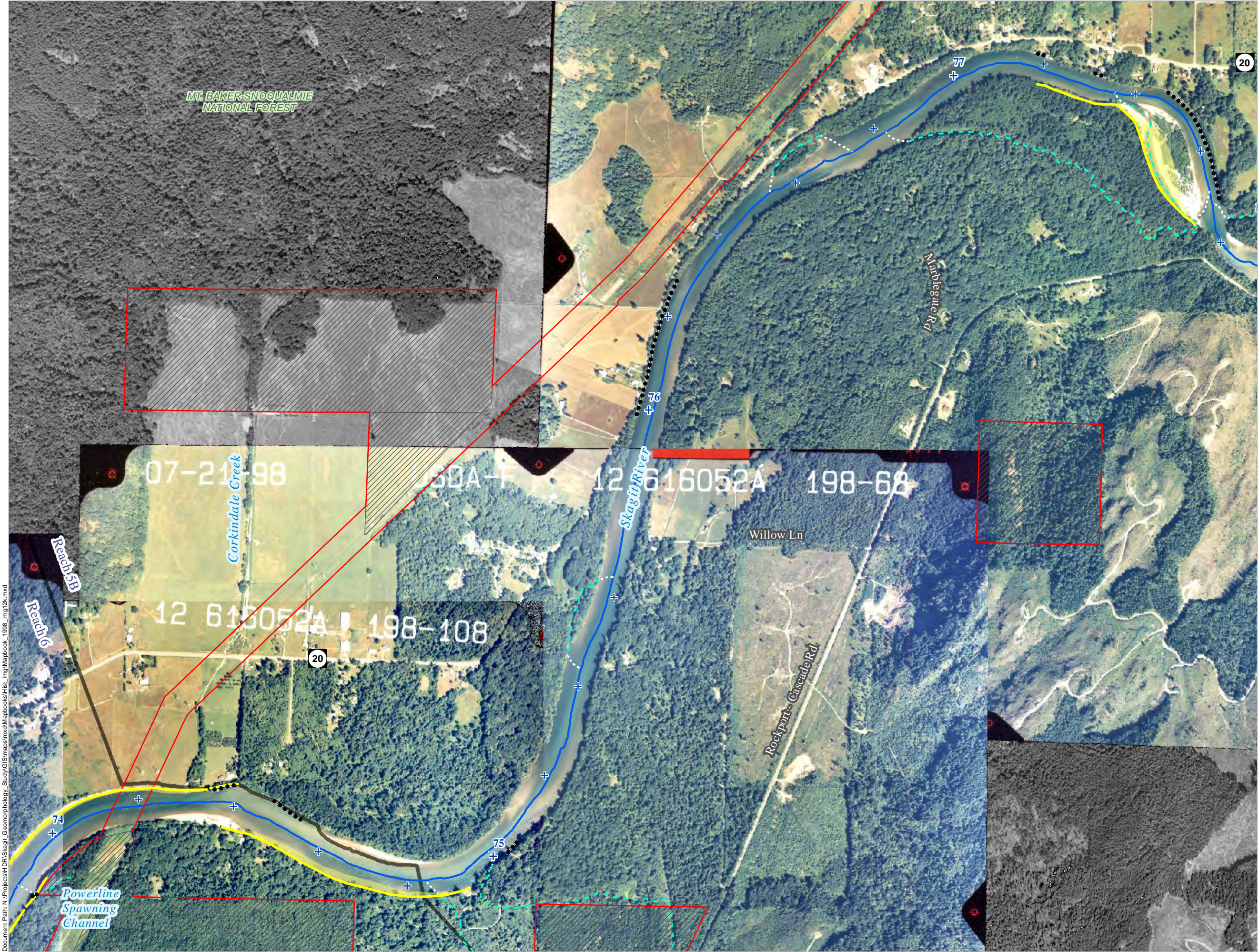
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Seattle City Light

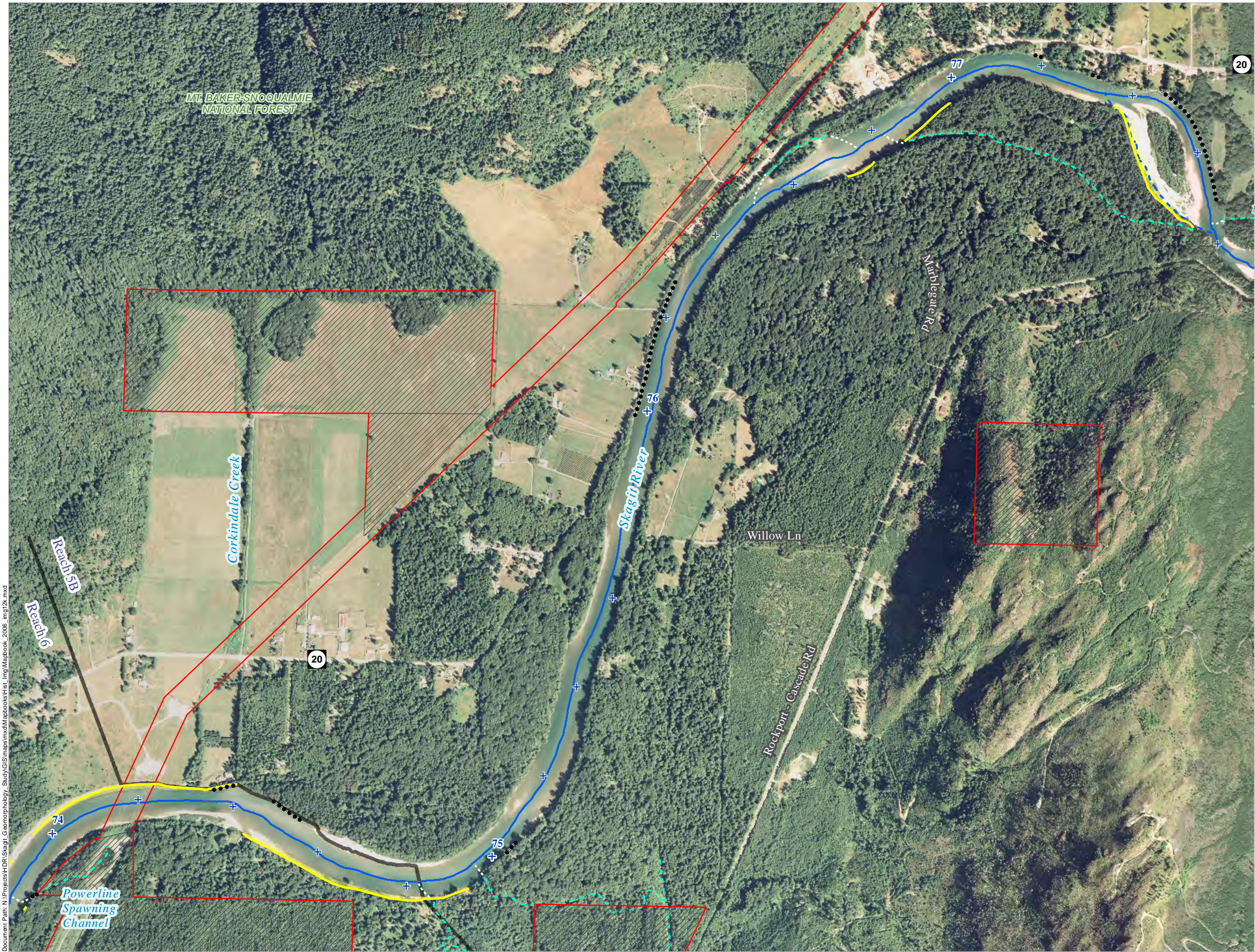
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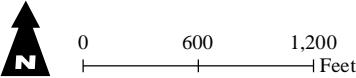


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 8**

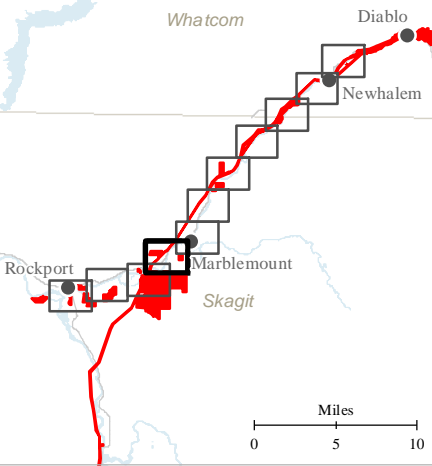
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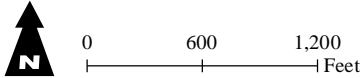


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
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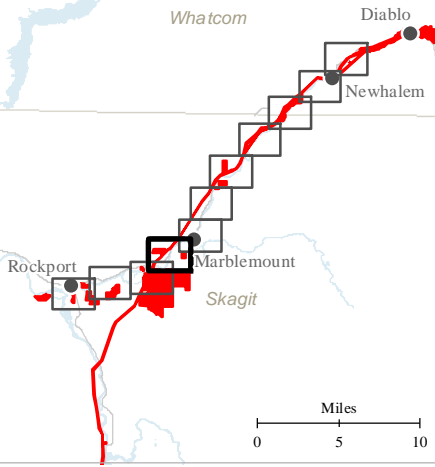
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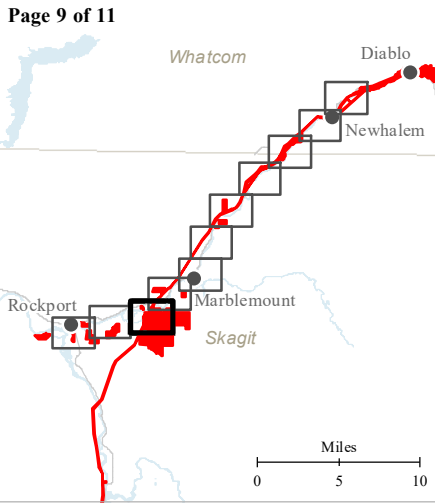
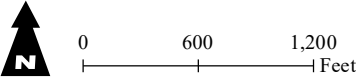
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**GE-04
GEOMORPHOLOGY STUDY
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1915 MAP* - SHEET 9**

- + Project River Miles (PRM)
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*1915 topographic maps from USGS
mosaiced and overlaid with hillshade
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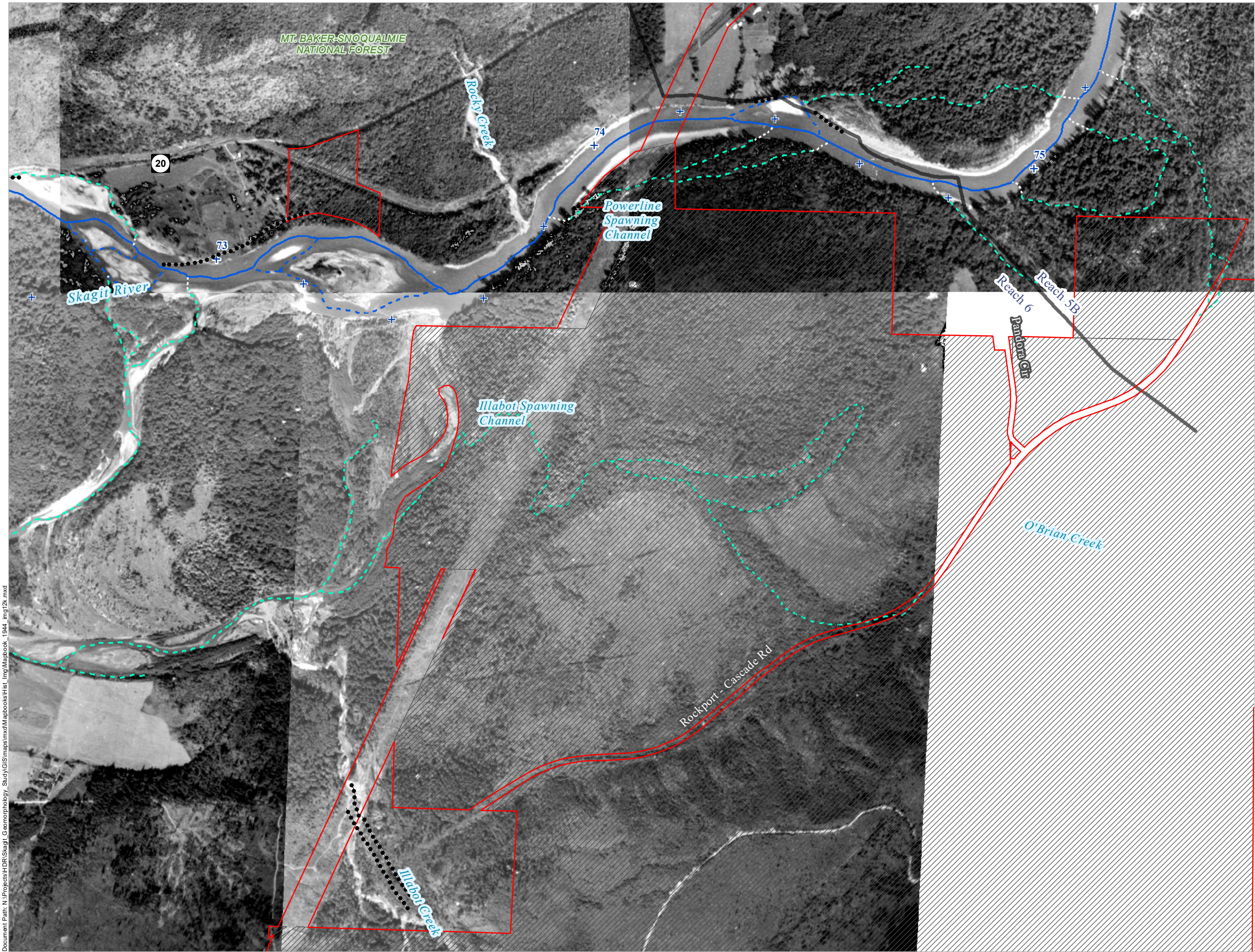


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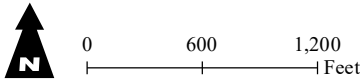


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 9

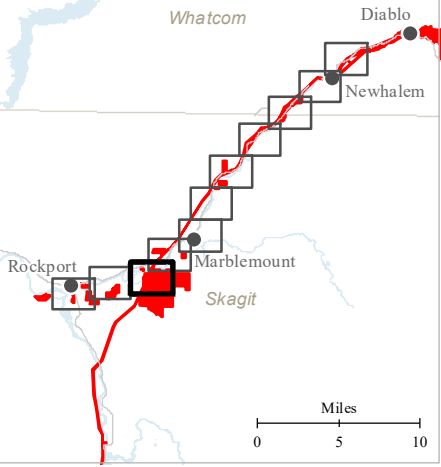
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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

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- Braid Channel
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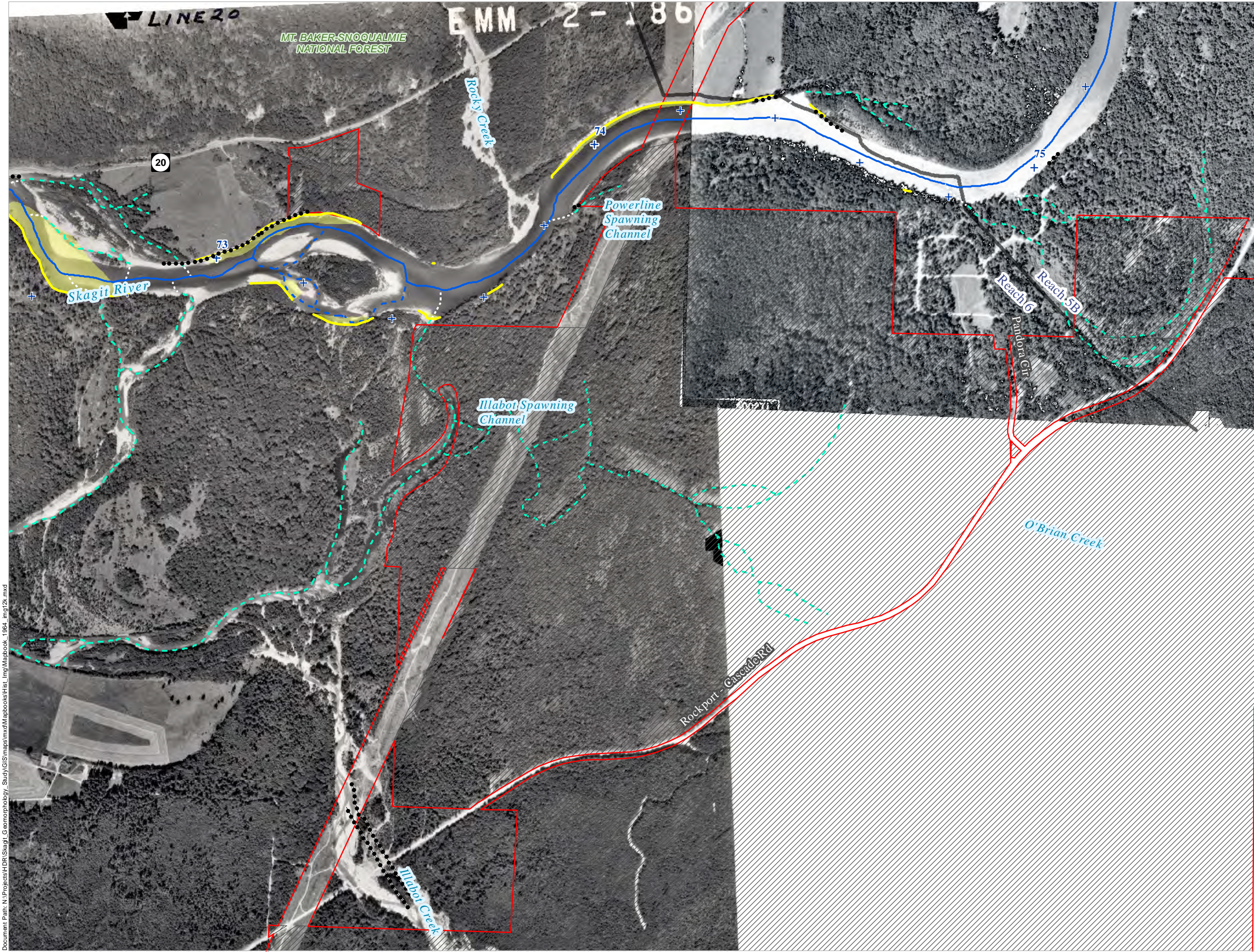
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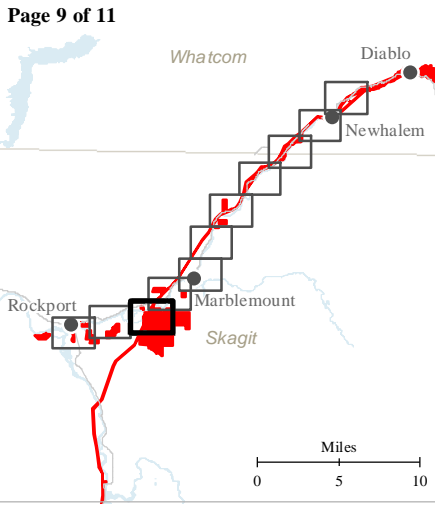
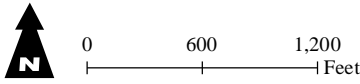


GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 9

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Channel Type

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MT. BAKER-SNOQUALMIE
NATIONAL FOREST

Rocky Creek

Powerline
Spawning
Channel

Illabot Spawning
Channel

O'Brian Creek

Rockport - Cascade Rd

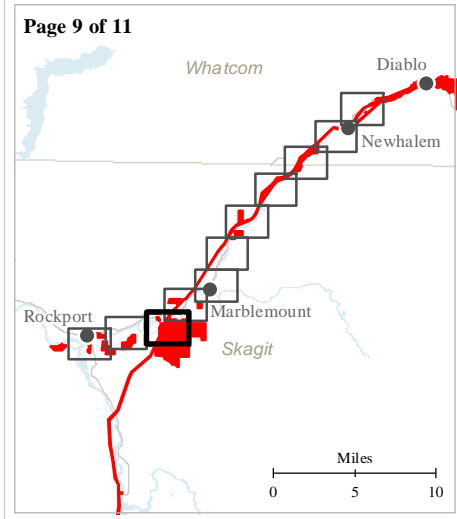
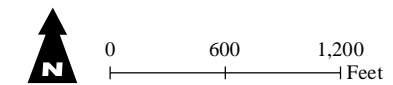
Illabot Creek

GE-04 GEOMORPHOLOGY STUDY HISTORICAL TIME SERIES 1978/79 - SHEET 9

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- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

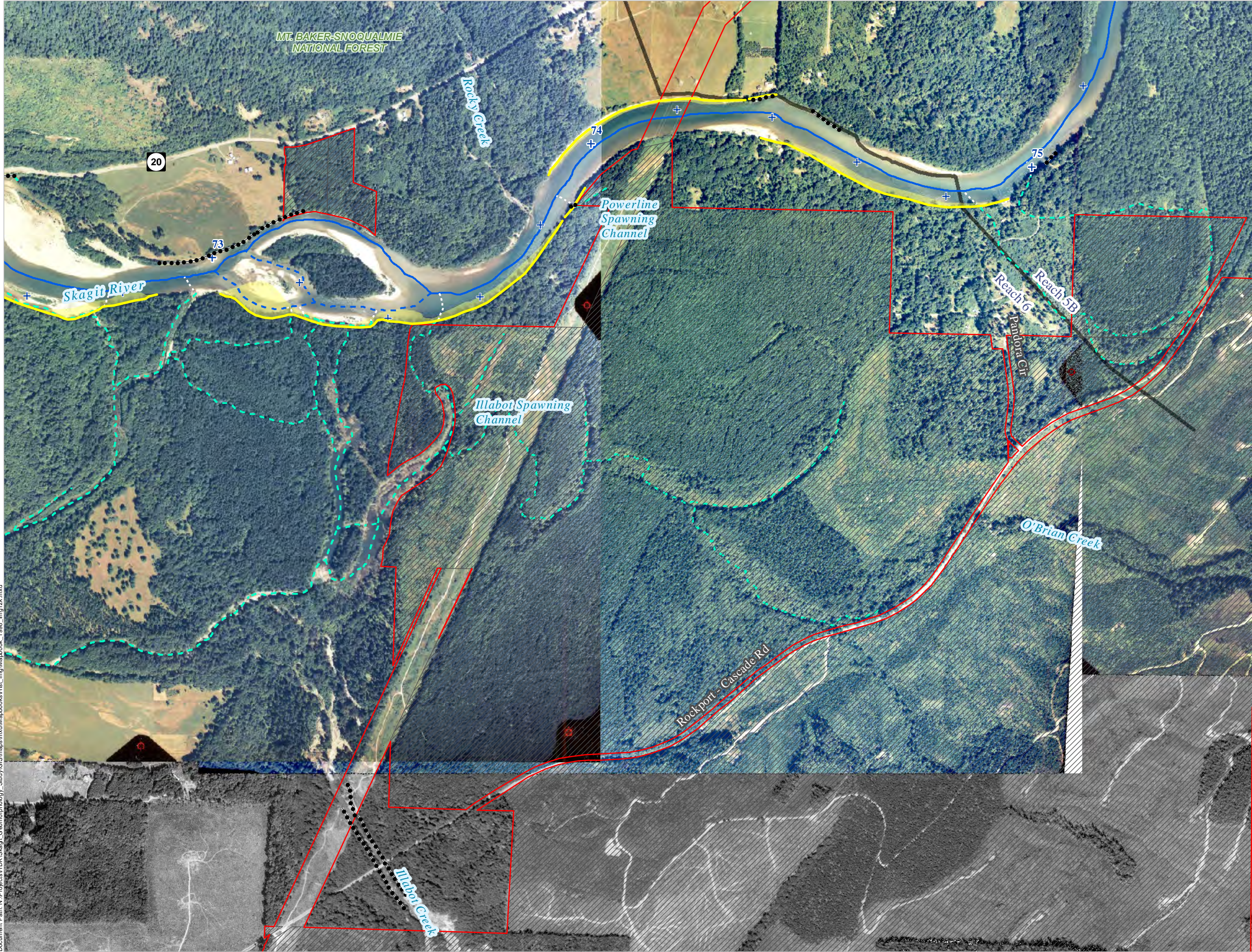
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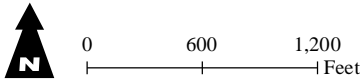


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 9**

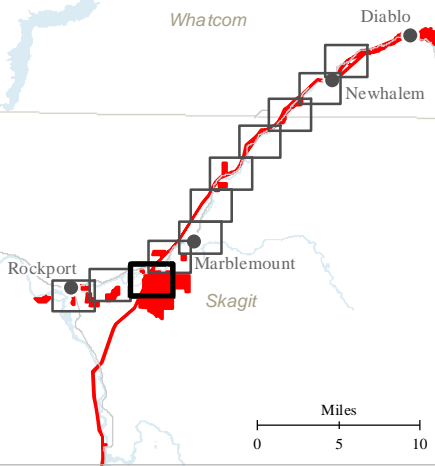
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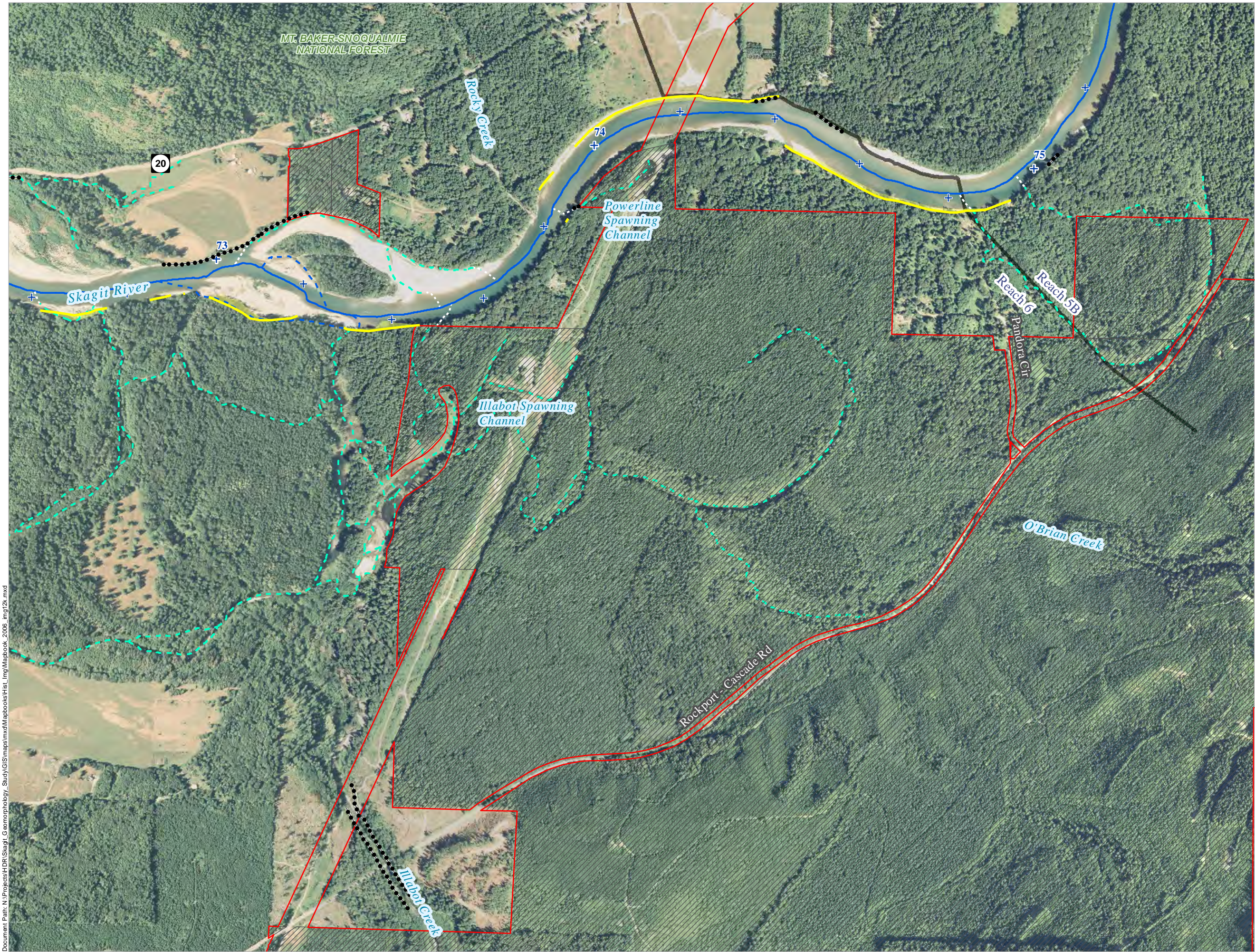
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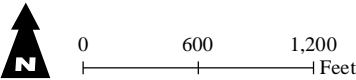


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
2006 - SHEET 9**

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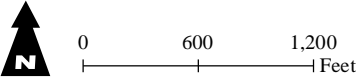


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2019 - SHEET 9**

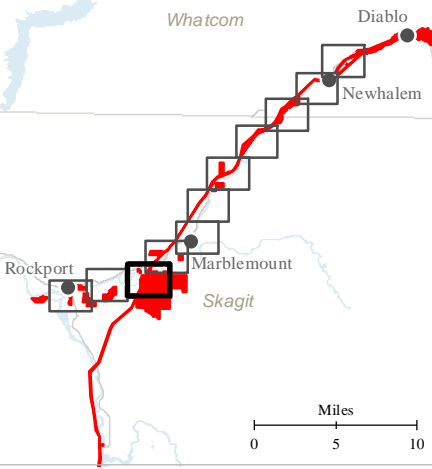
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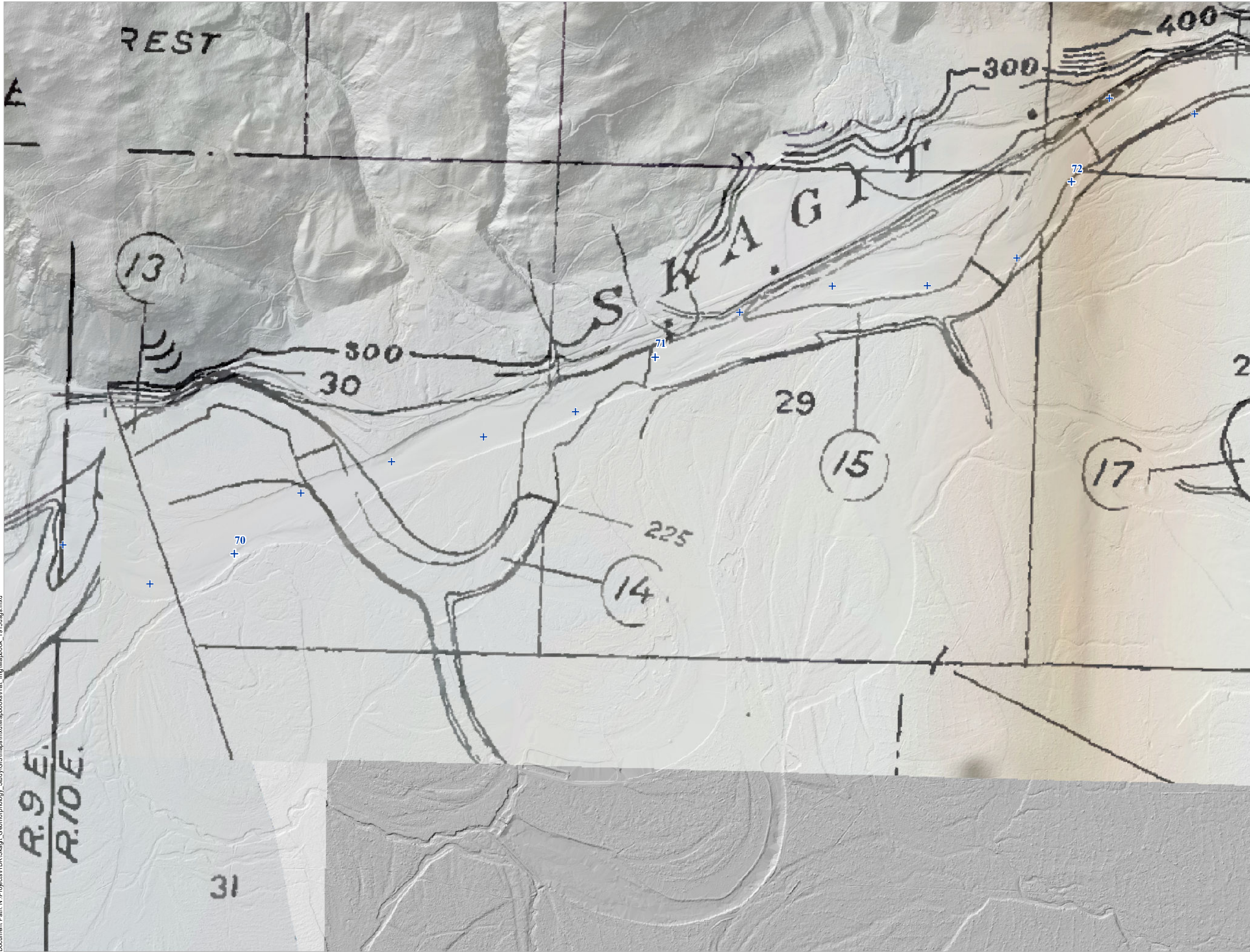


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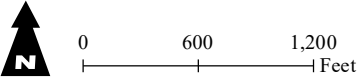
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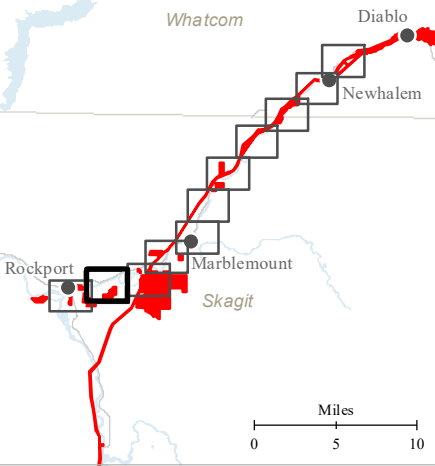
GE-04
GEOMORPHOLOGY STUDY
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1915 MAP* - SHEET 10

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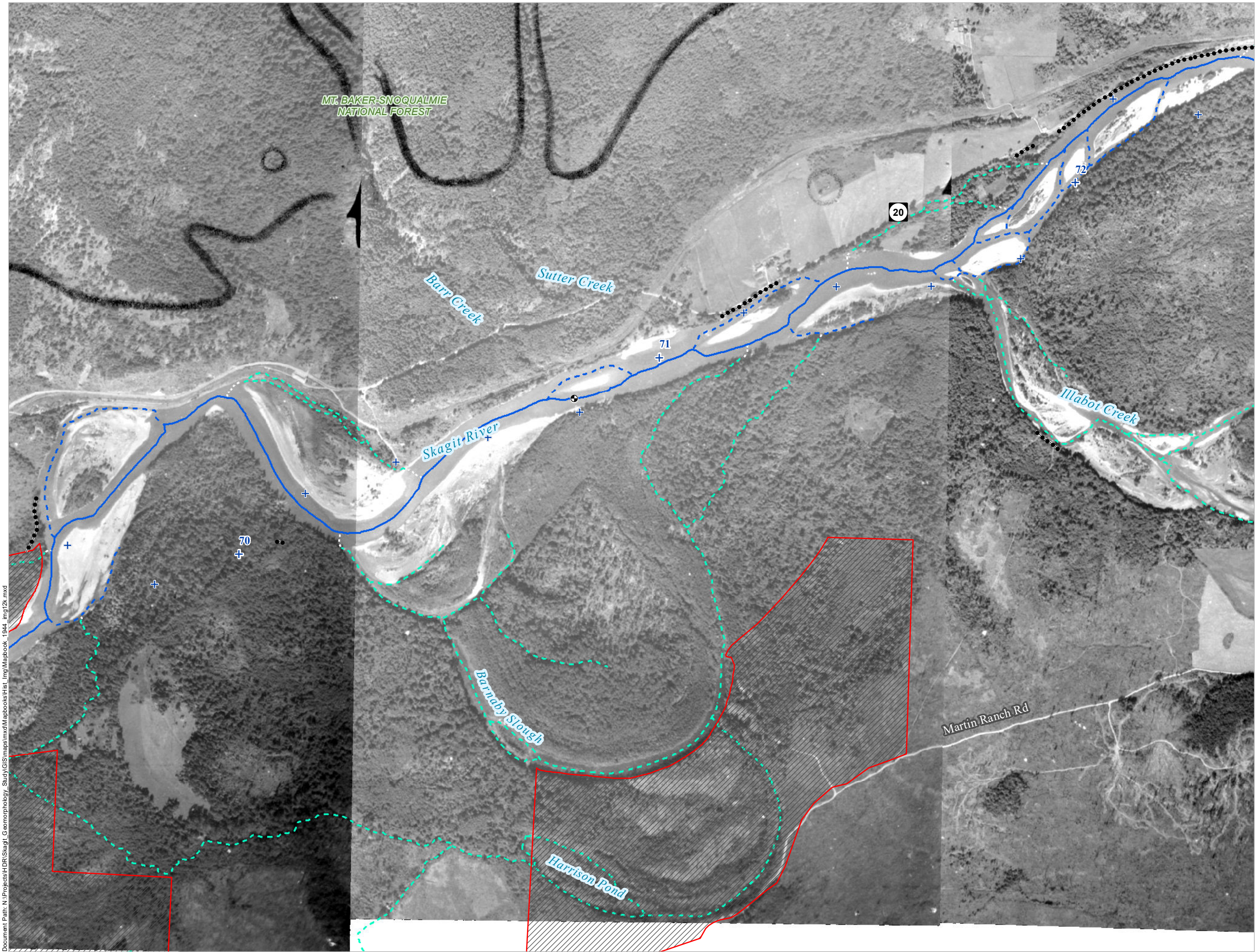


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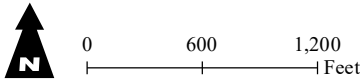


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GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1944 - SHEET 10**

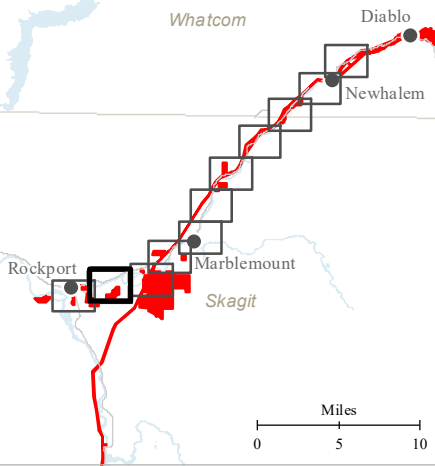
- FERC Project Boundary
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- Stream Gage (USGS)
- Hydromodified Banks

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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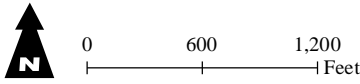


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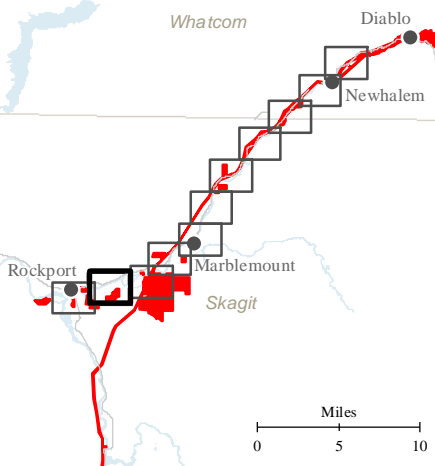
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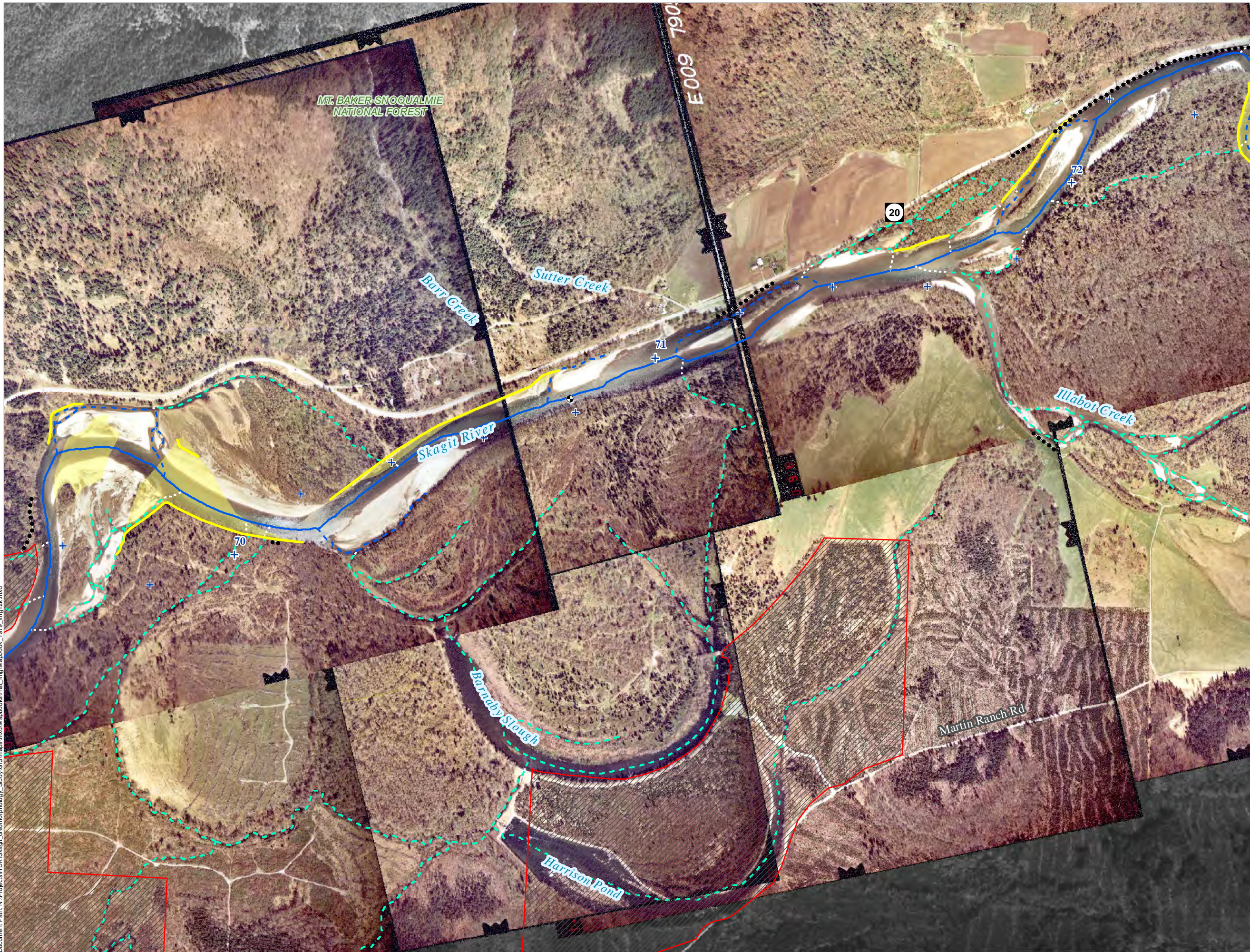
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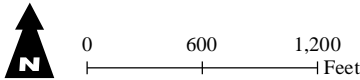


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1978/79 - SHEET 10**

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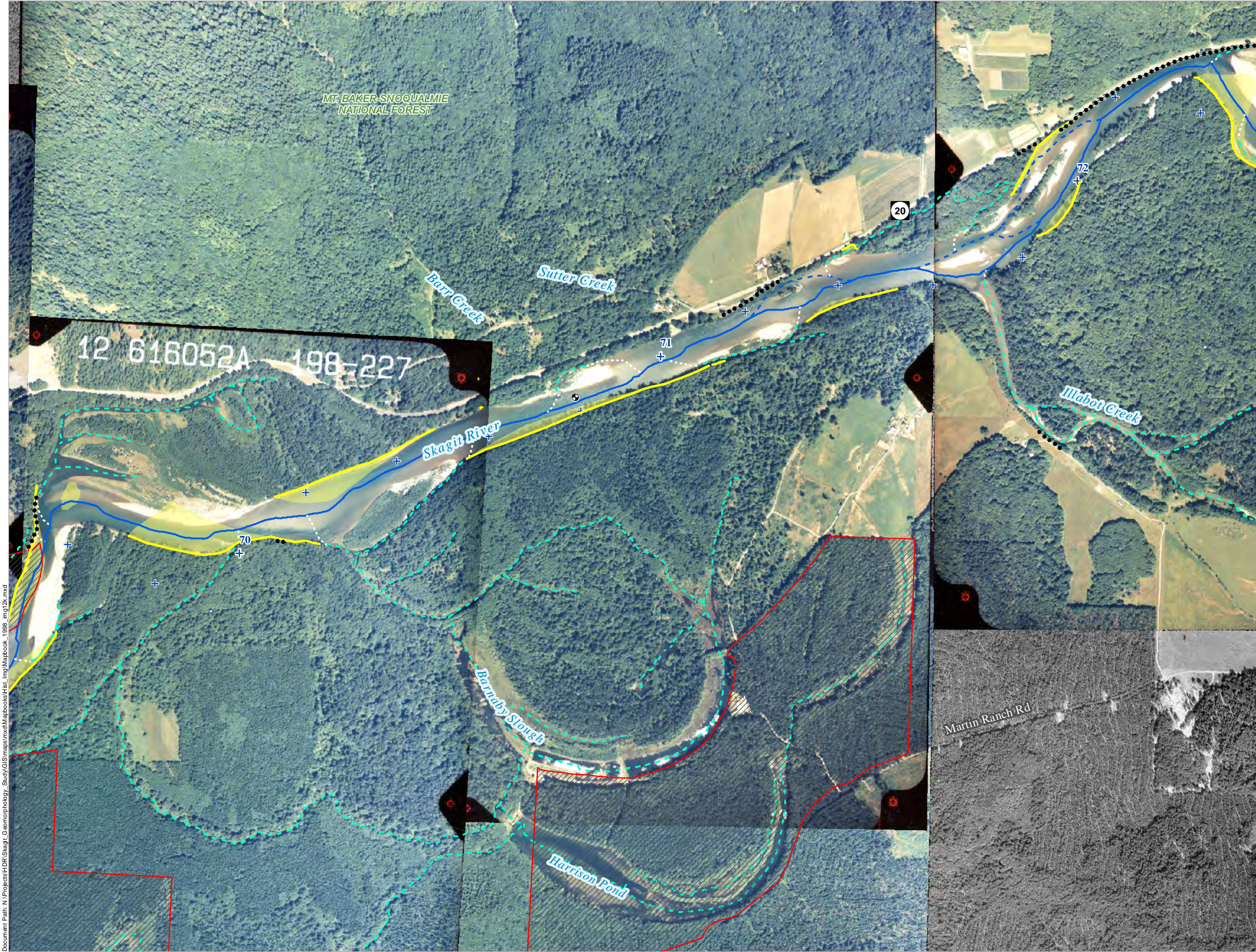
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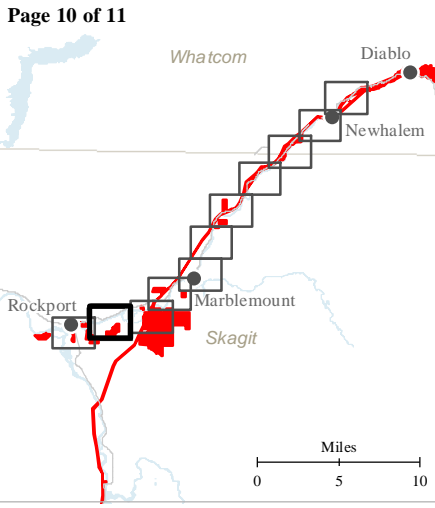
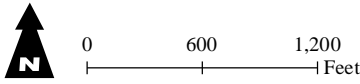


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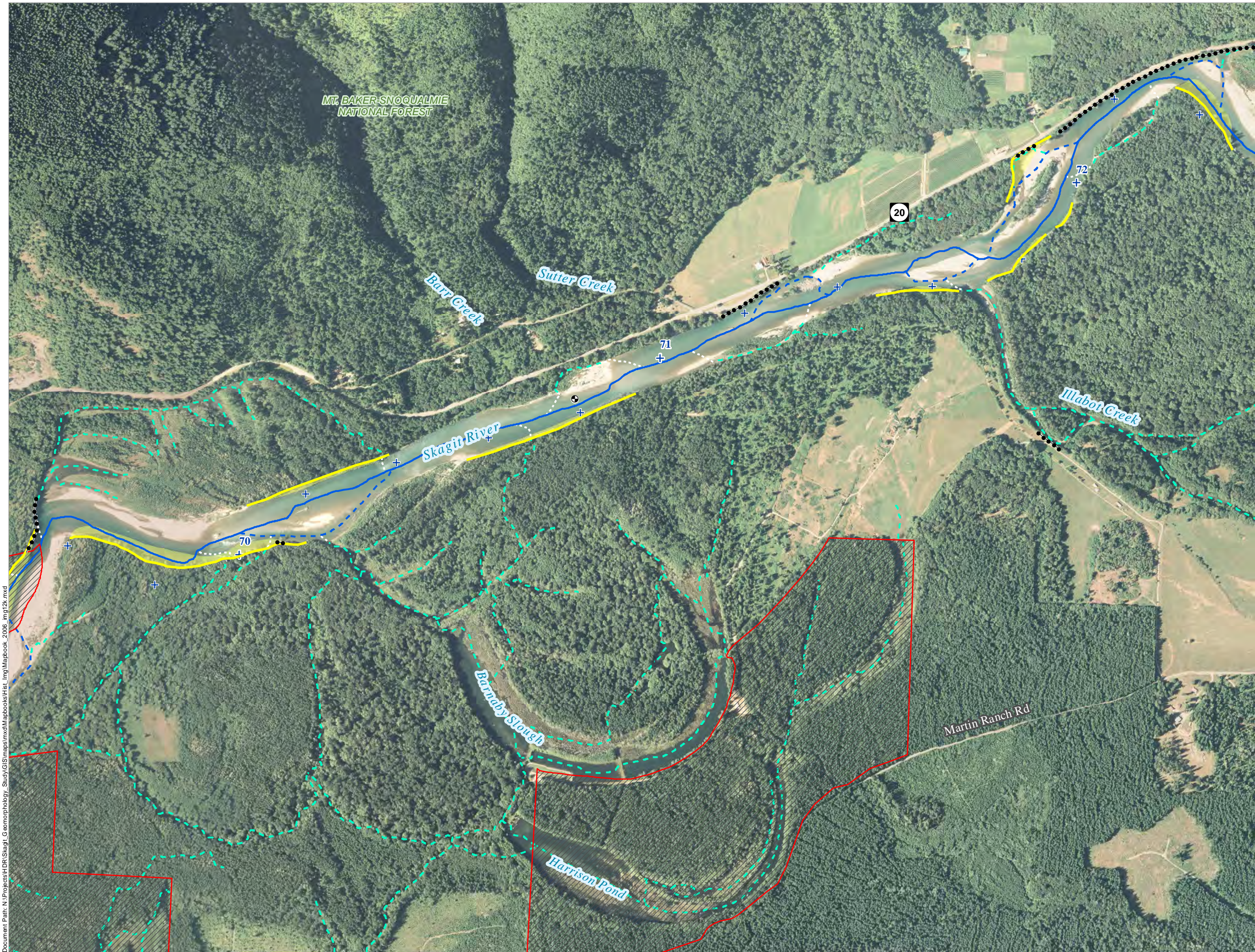
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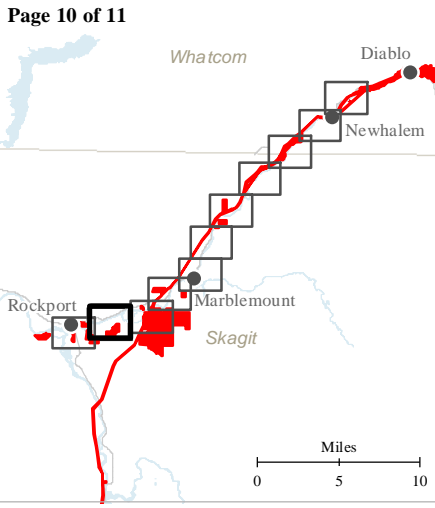
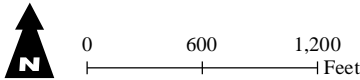


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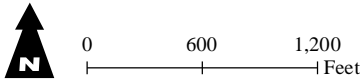


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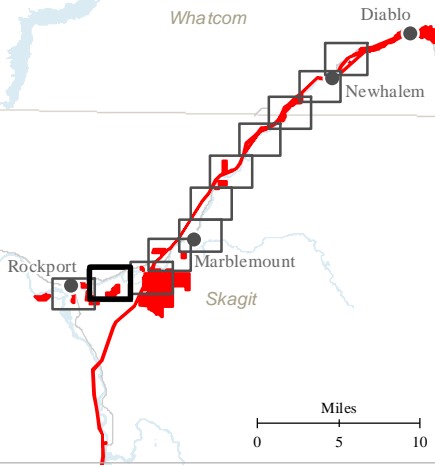
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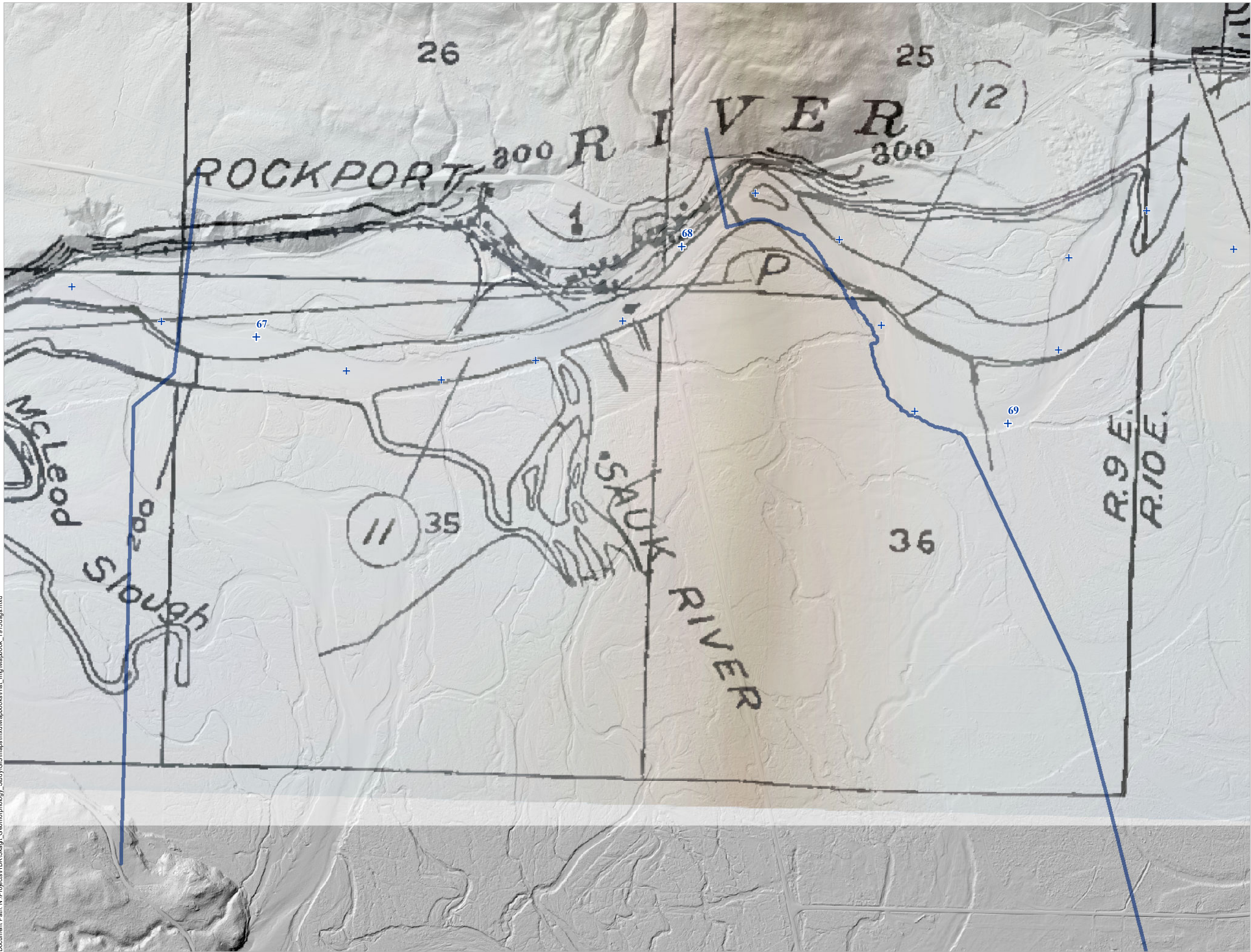


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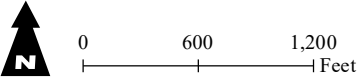
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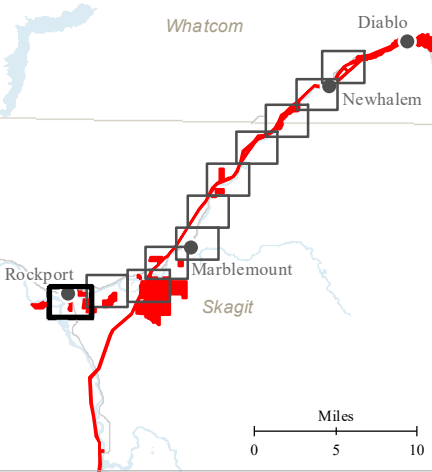
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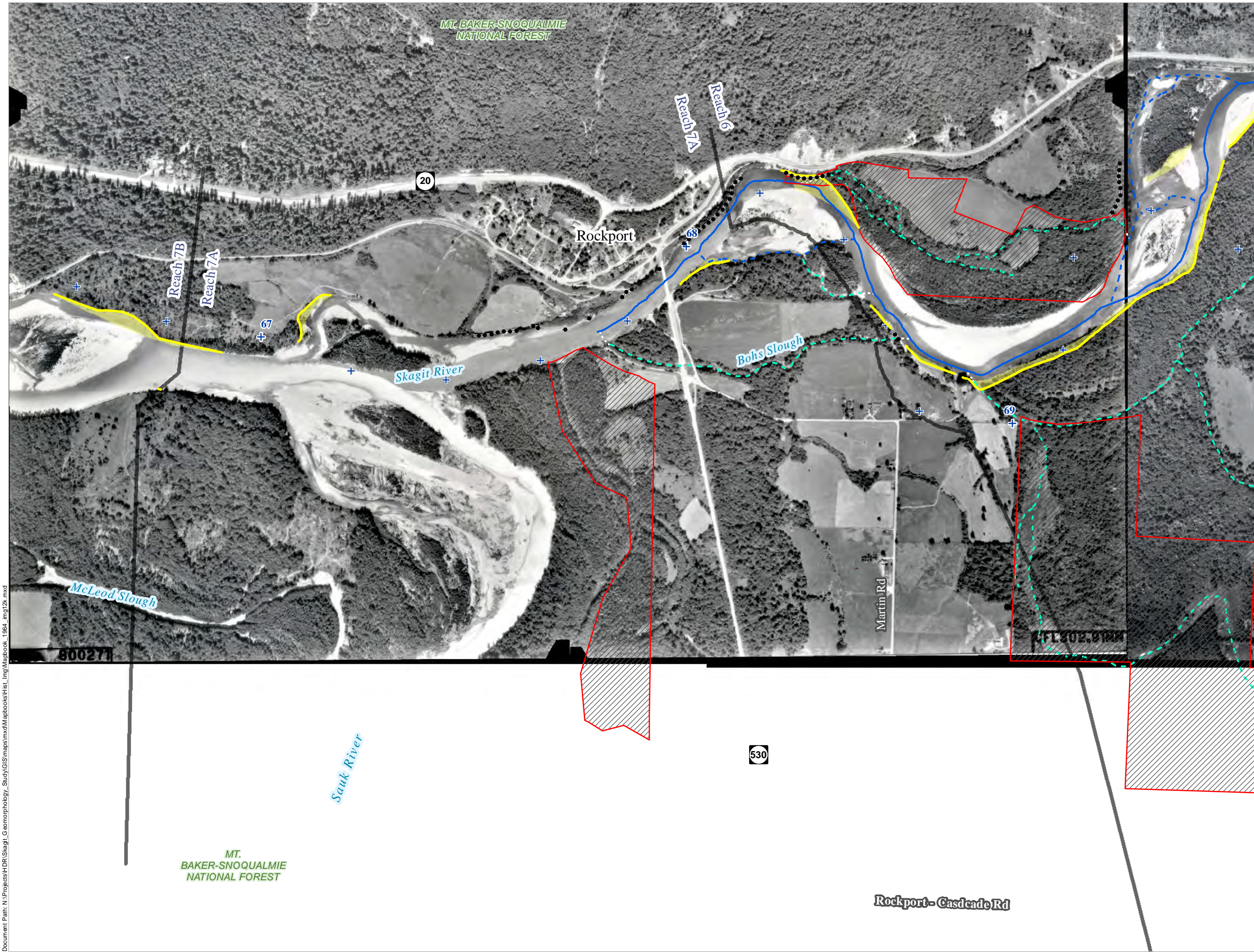


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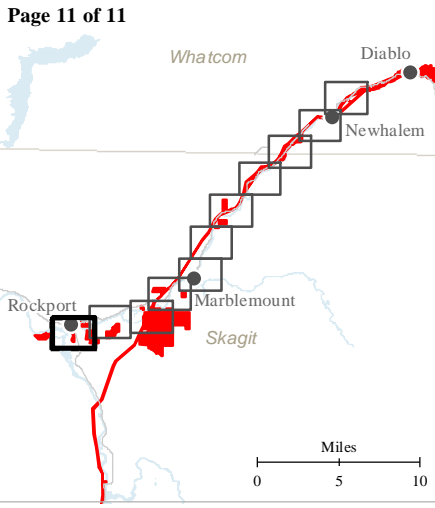
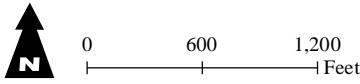


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1963/64 - SHEET 11**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Reach Boundary
- Eroding Bank 1944-1964

Channel Type

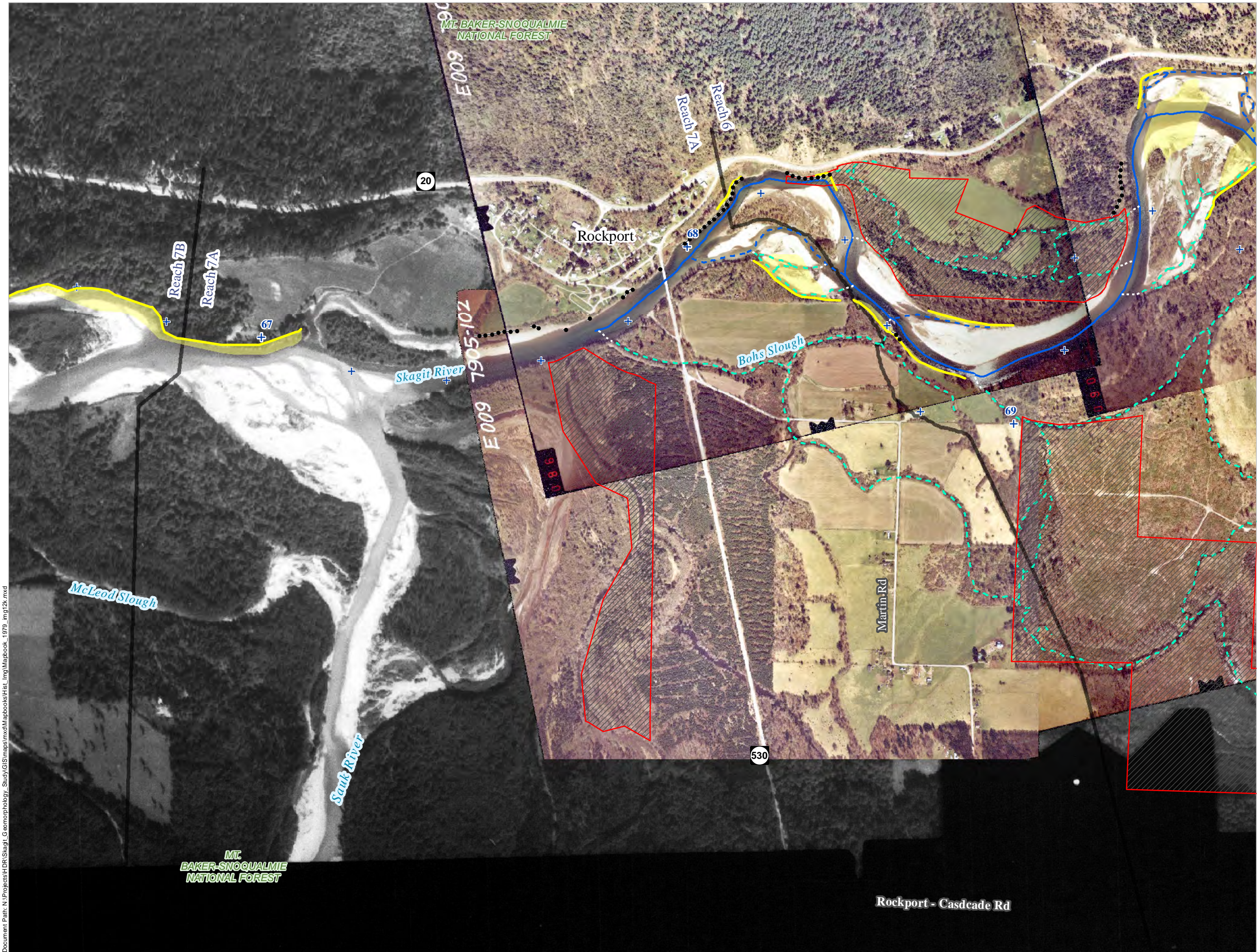
- Main Channel
- Braid Channel
- Side Channel



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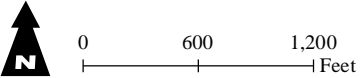


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1978/79 - SHEET 11**

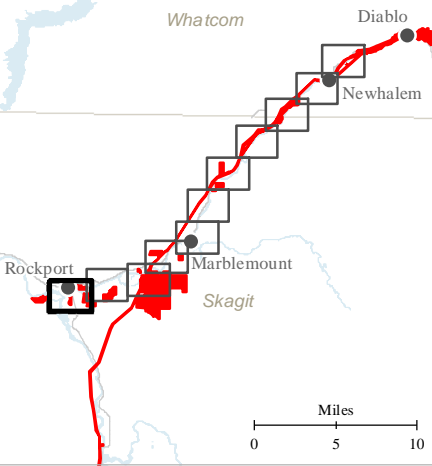
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1964-1979

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 11 of 11

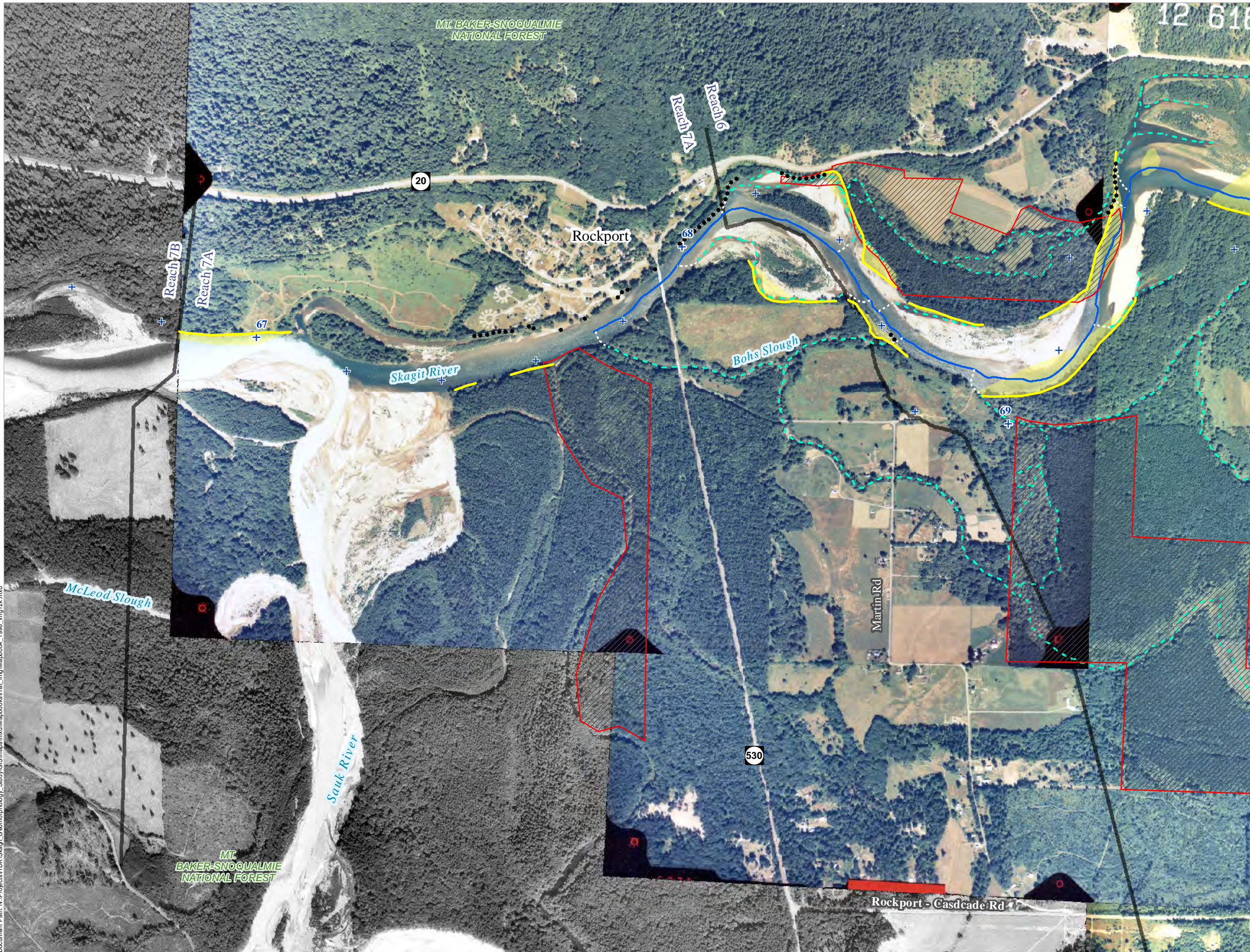


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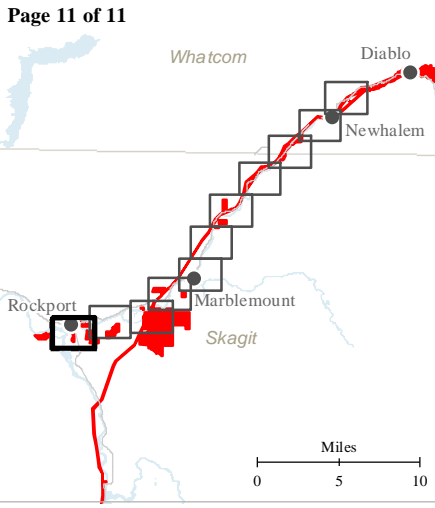
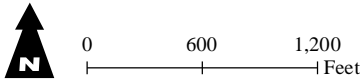
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**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
1998 - SHEET 11**

- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1979-1998

- Channel Type**
- Main Channel
 - Braid Channel
 - Side Channel

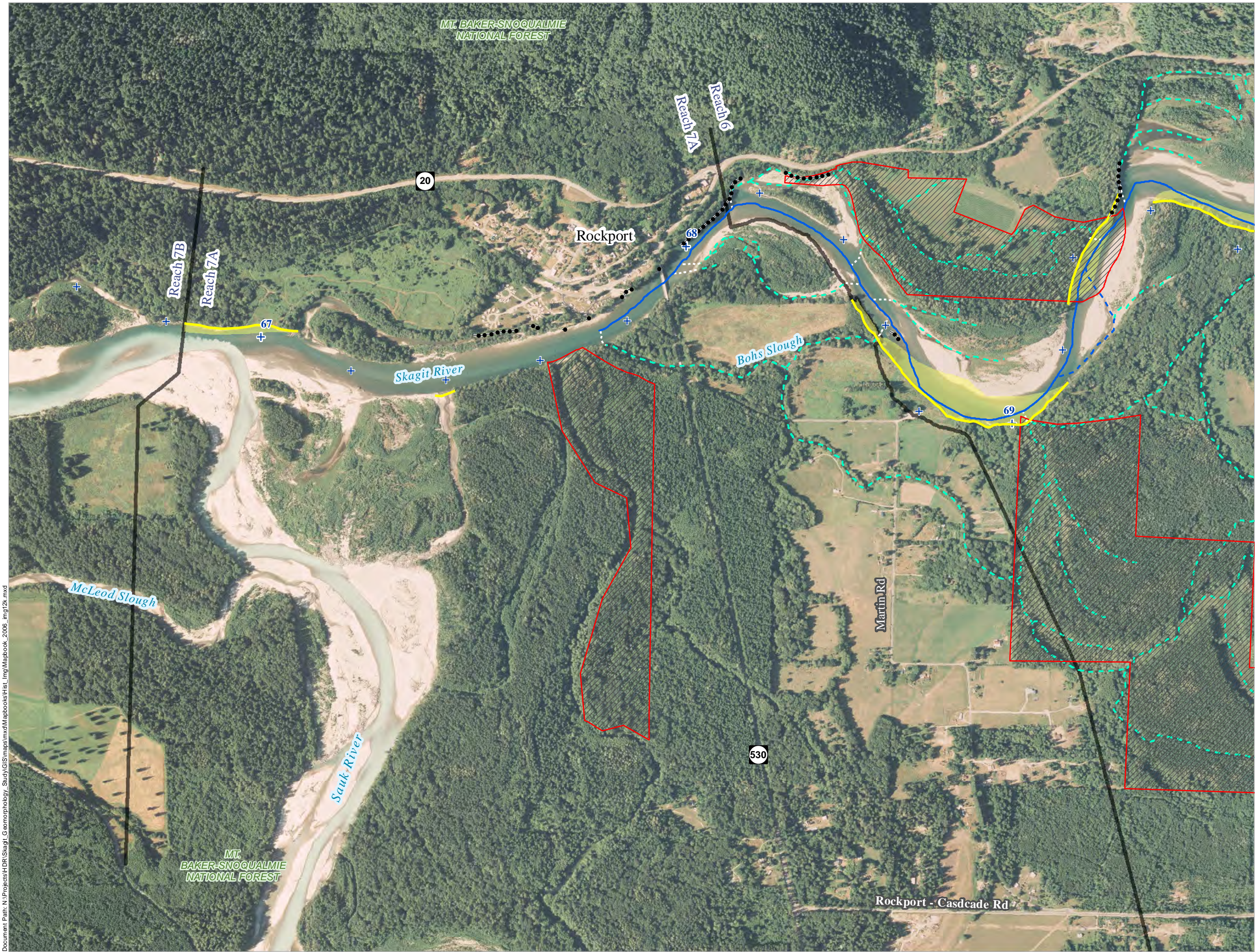


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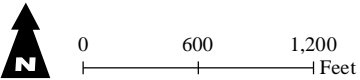


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GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
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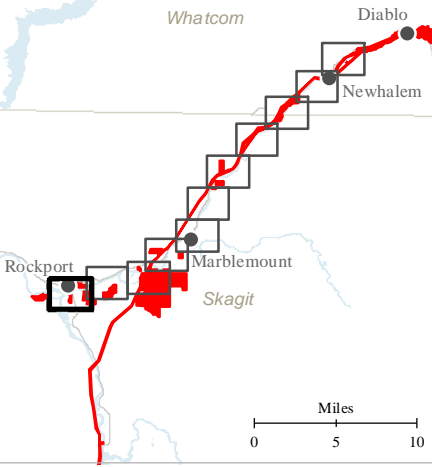
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 1998-2006

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 11 of 11

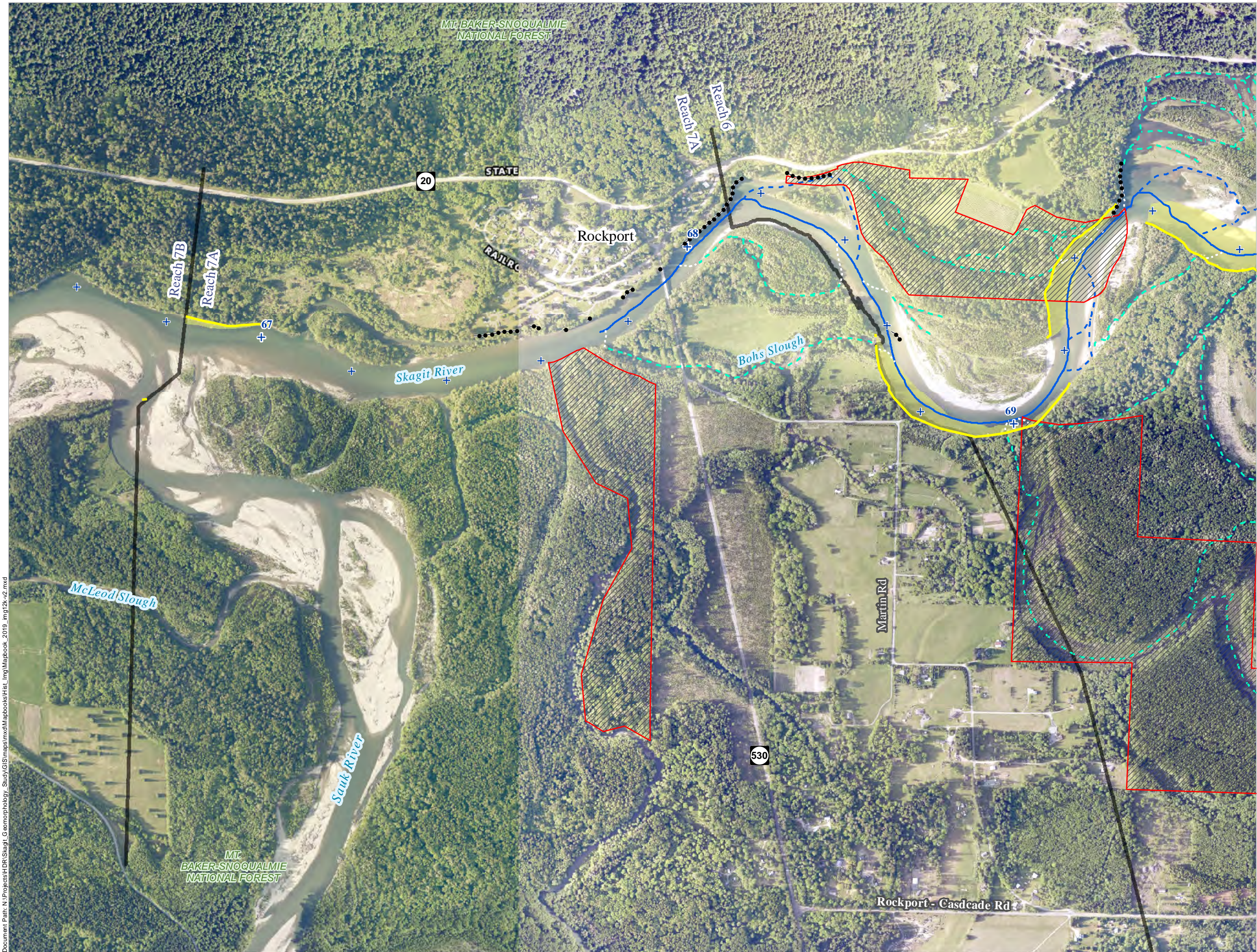


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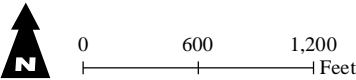


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
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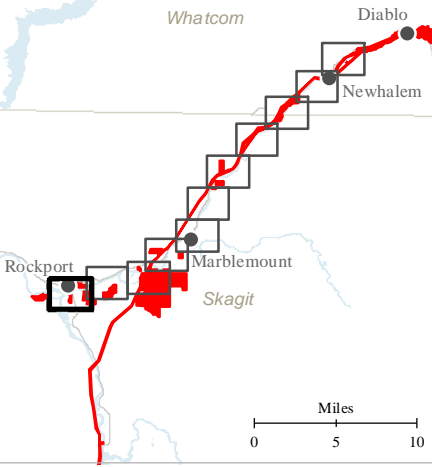
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- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary
- Eroding Bank 2006-2019

Channel Type

- Main Channel
- Braid Channel
- Side Channel



Page 11 of 11

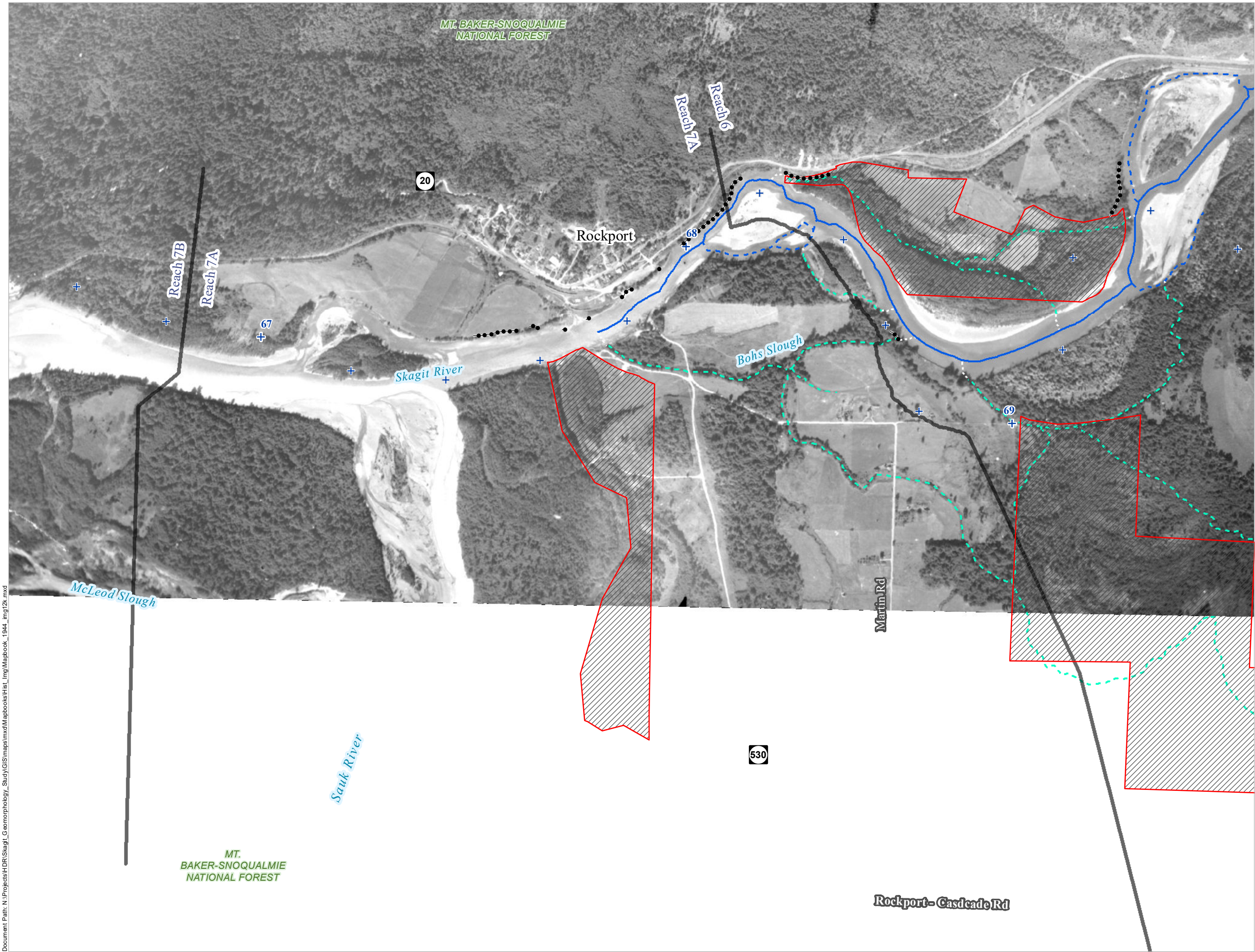


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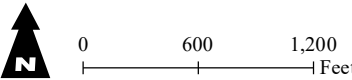


**GE-04
GEOMORPHOLOGY STUDY
HISTORICAL TIME SERIES
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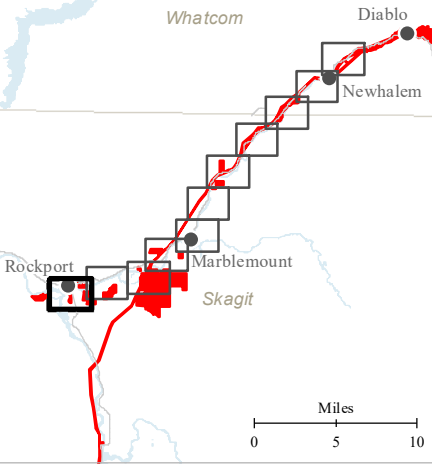
- FERC Project Boundary
- Mitigation Parcel
- Project River Miles (PRM)
- Hydromodified Banks
- Reach Boundary

Channel Type

- Main Channel
- Braid Channel
- Side Channel



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

ATTACHMENT F

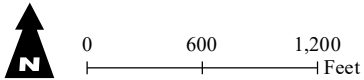
AQUATIC HABITAT MAPBOOK

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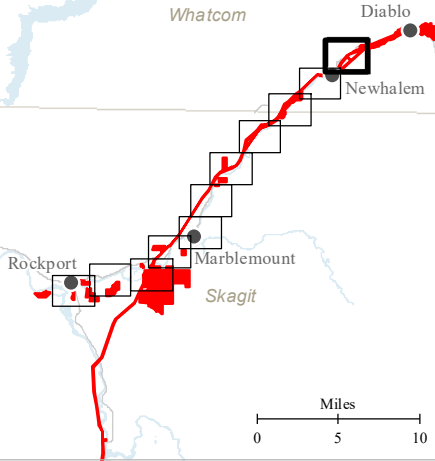


**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 1**

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



Page 1 of 11



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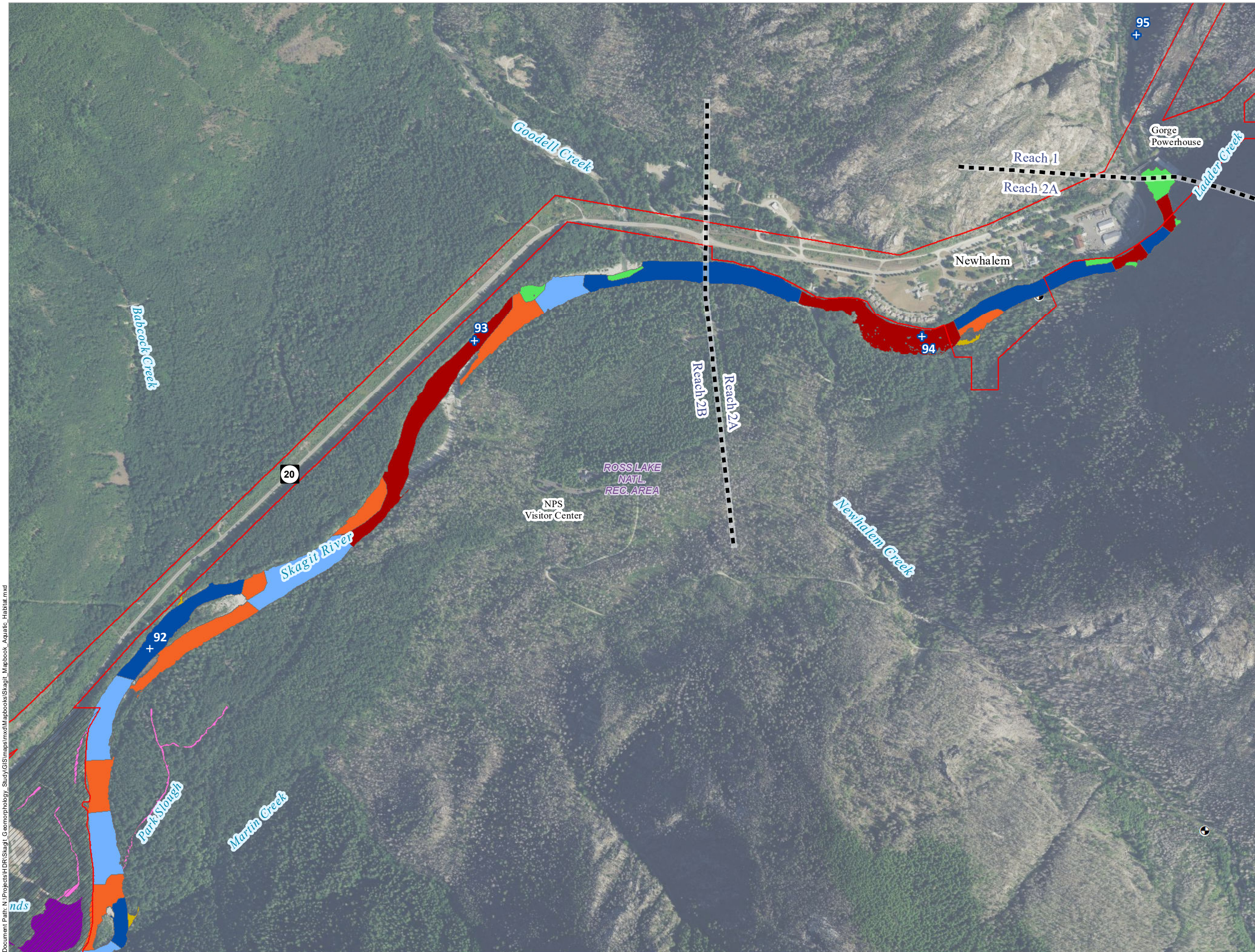
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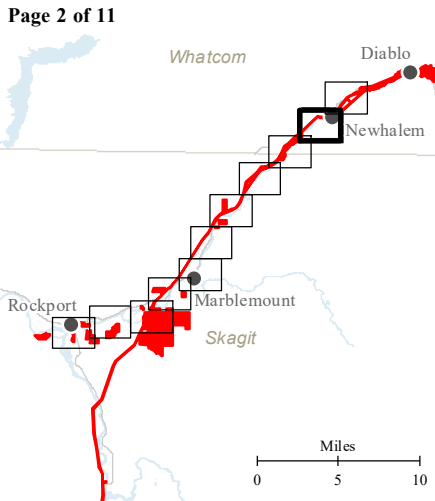
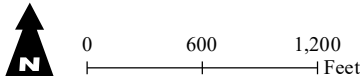
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 2**

- FERC Project Boundary
- Mitigation Parcel
- National Park / National Recreation Area Boundary
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Rapid
 - Riffle
 - Run
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



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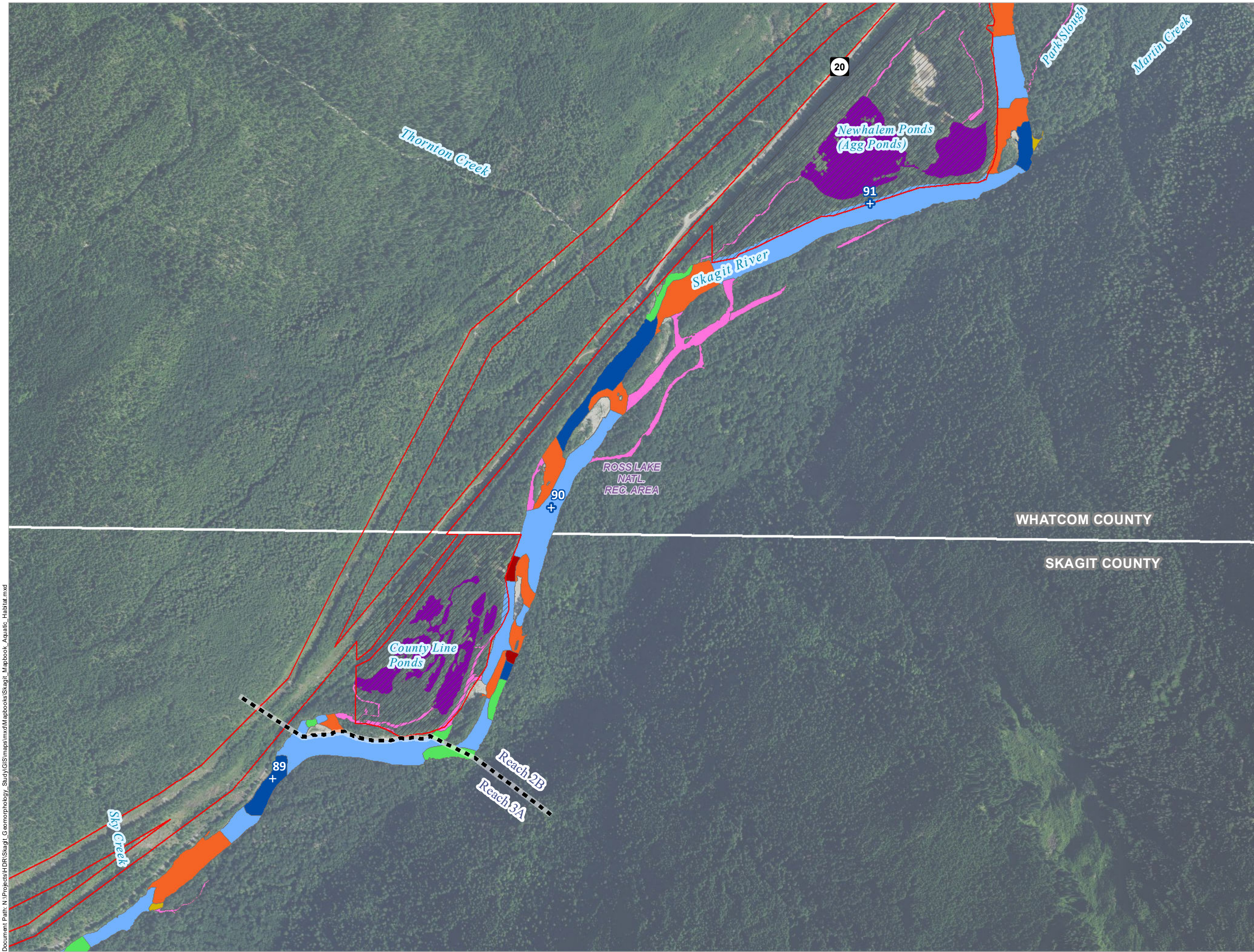
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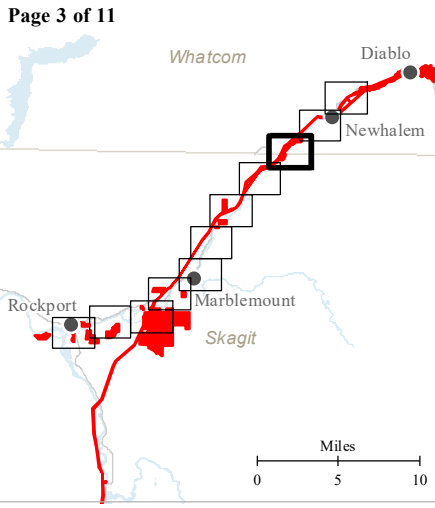
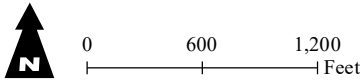
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 3**

- FERC Project Boundary
 - Mitigation Parcel
 - National Park / National Recreation Area Boundary
 - Project River Mile
 - Stream Gage (USGS)
- Aquatic Habitat Unit Type
- Rapid
 - Riffle
 - Run
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



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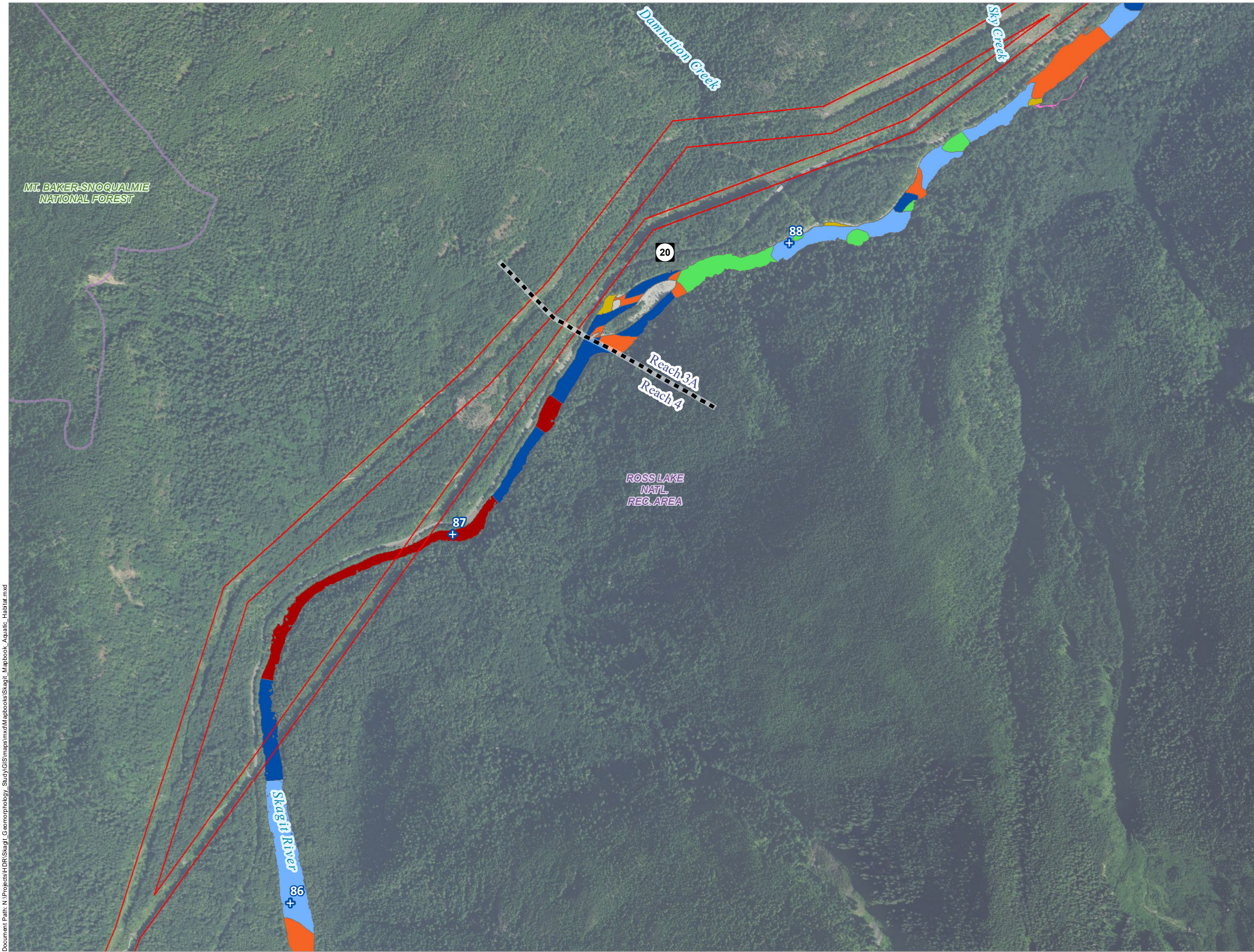
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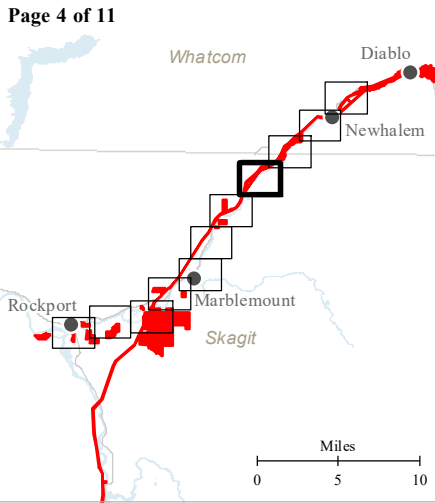
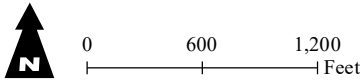
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 4**

- FERC Project Boundary
- National Park / National Recreation Area Boundary
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Rapid
 - Riffle
 - Run
 - Glide
 - Pool
 - Backwater
 - Side Channel



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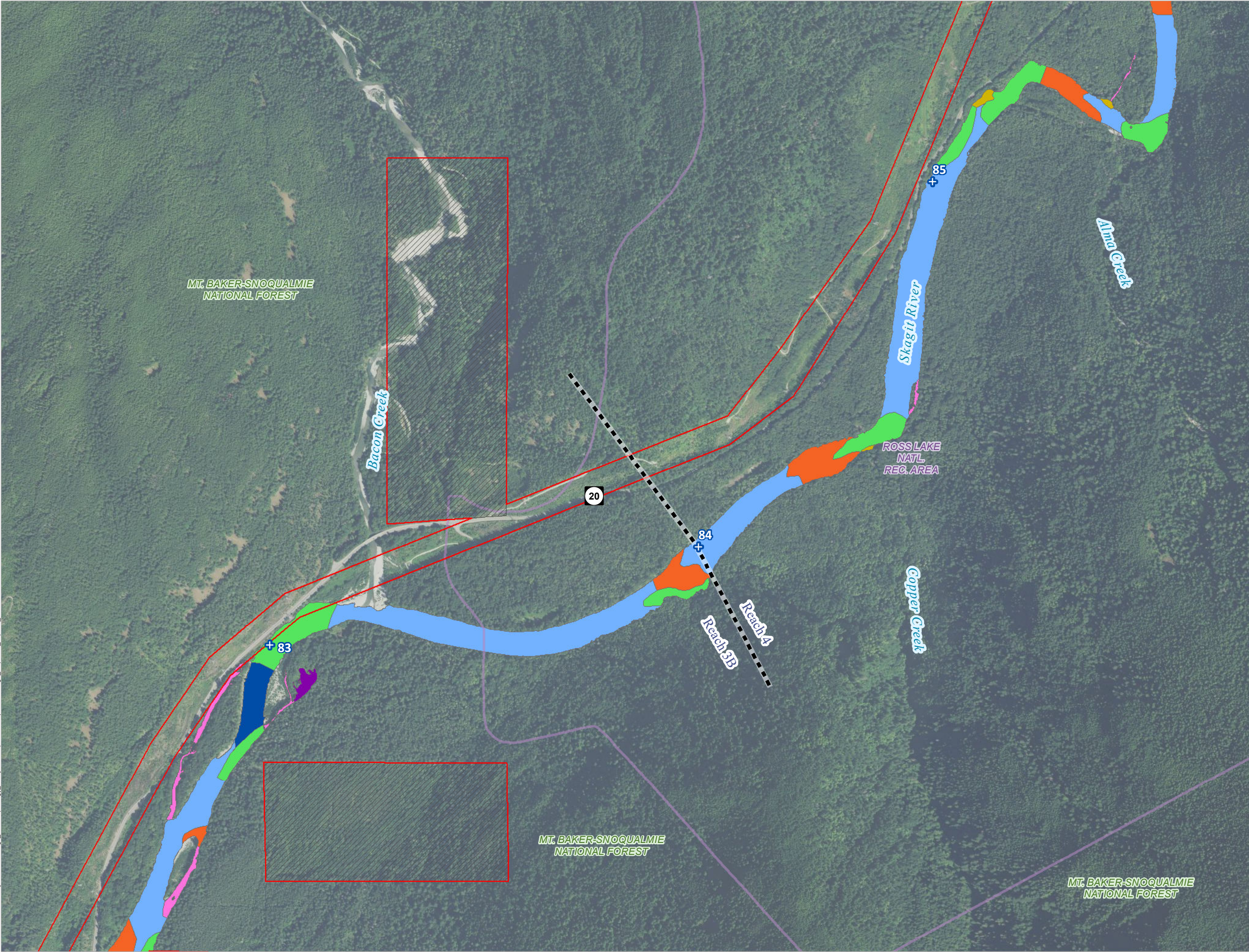
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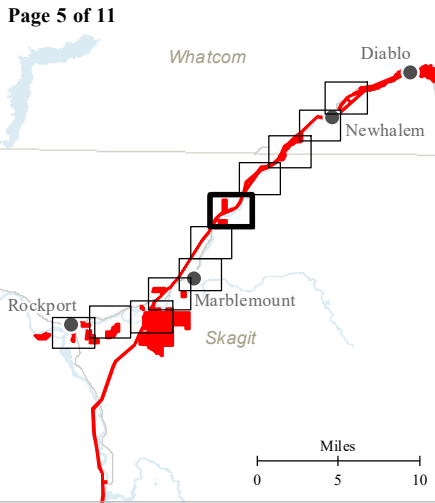
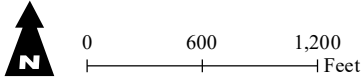
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 5**

- FERC Project Boundary
- Mitigation Parcel
- National Park / National Recreation Area Boundary
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Riffle
 - Run
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



Seattle City Light

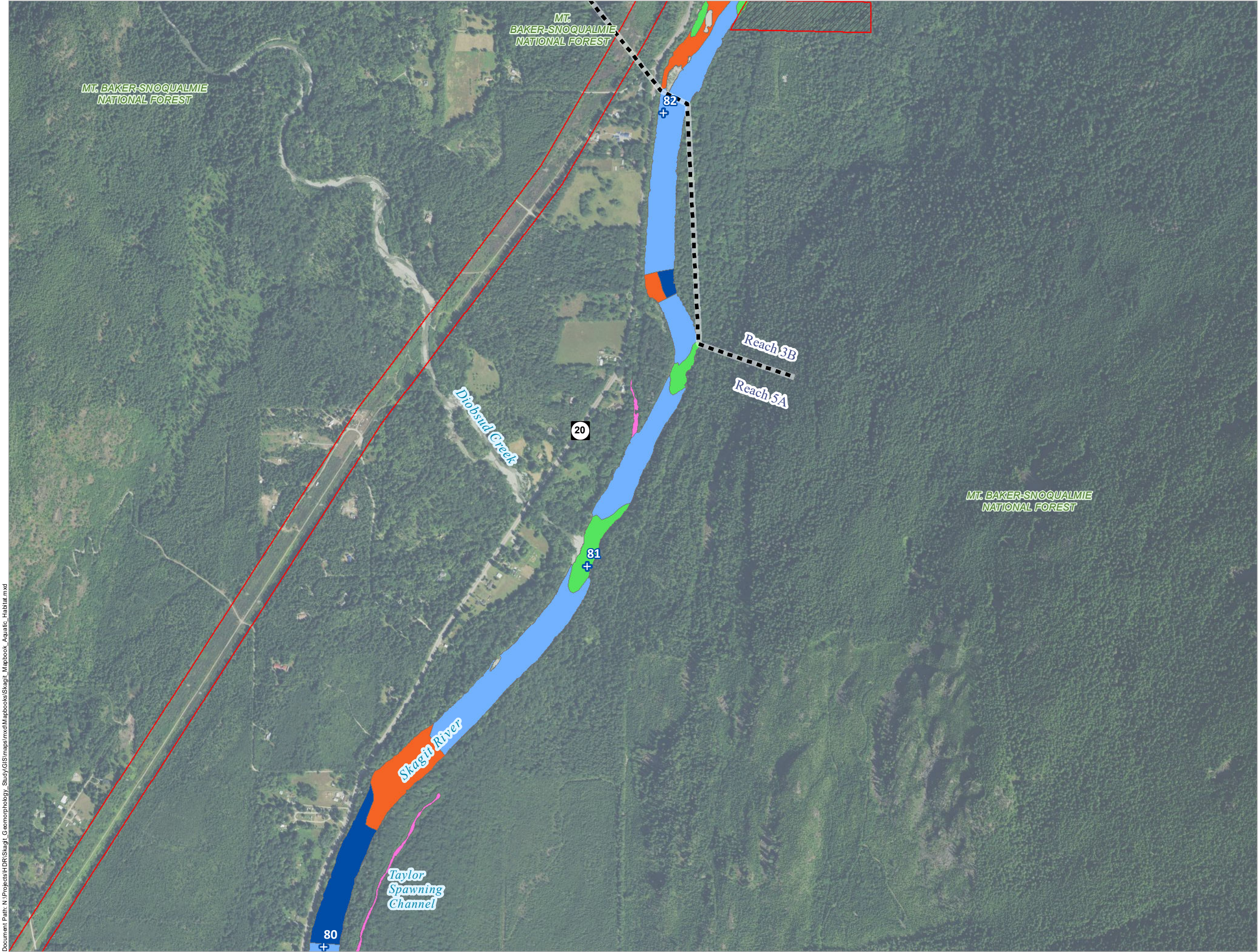
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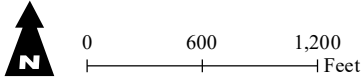
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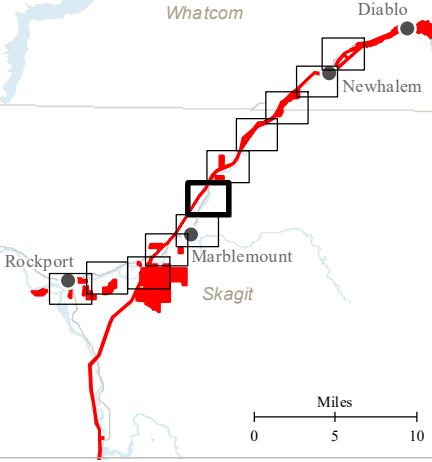


**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 6**

- FERC Project Boundary
Mitigation Parcel
Project River Mile
Stream Gage (USGS)
- Aquatic Habitat Unit Type
- Riffle
 - Run
 - Glide
 - Pool
 - Side Channel



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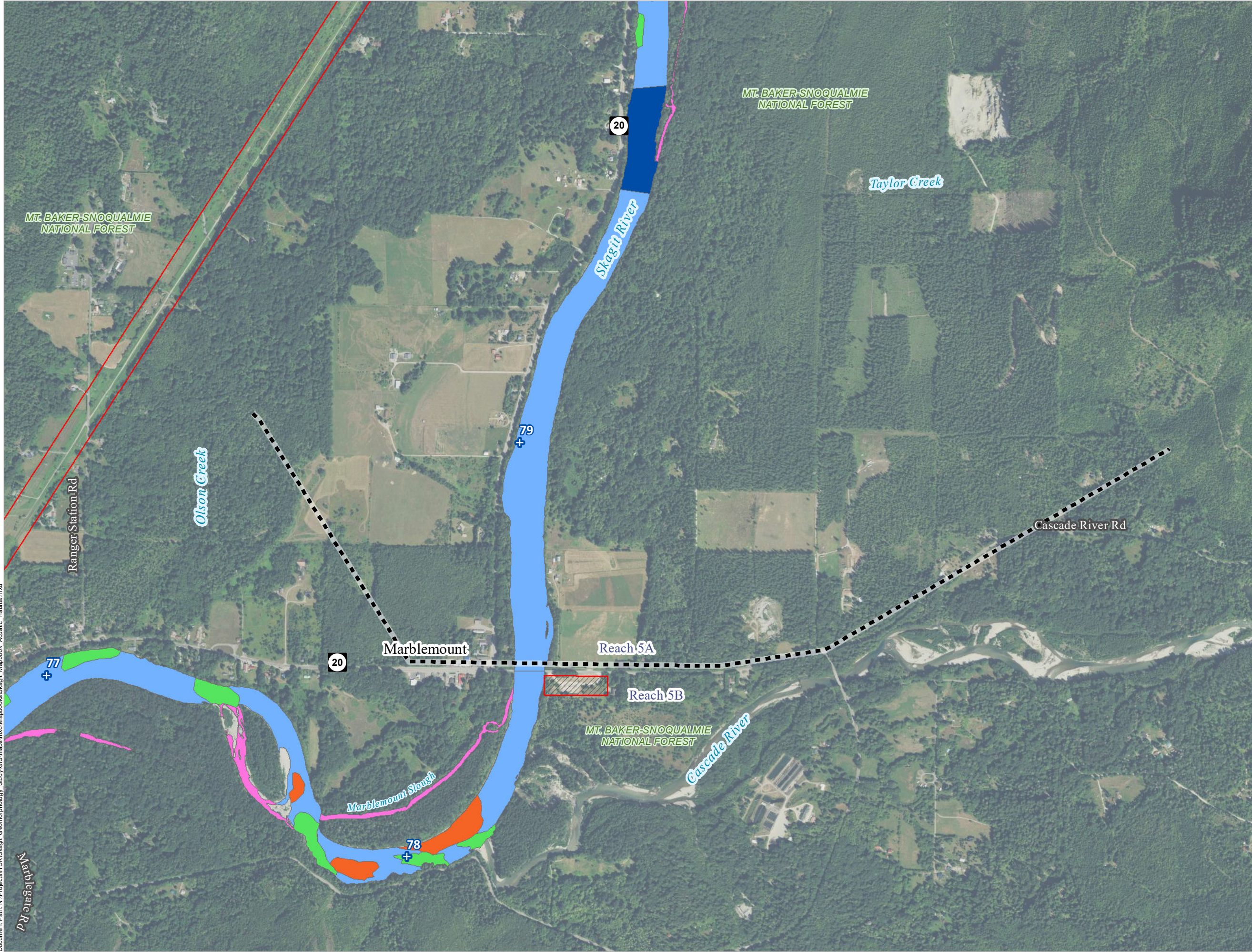
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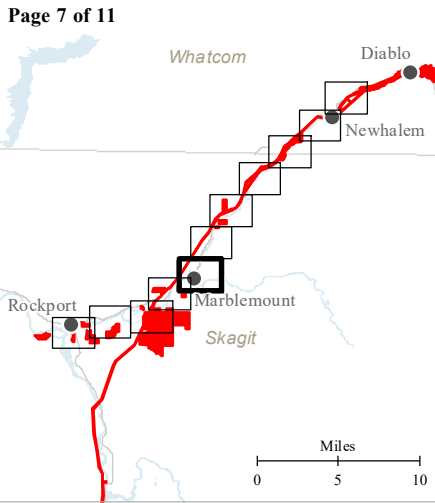
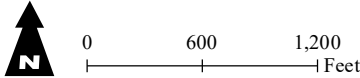
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GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 7

- FERC Project Boundary
- Mitigation Parcel
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
- Riffle
 - Run
 - Glide
 - Pool
 - Side Channel



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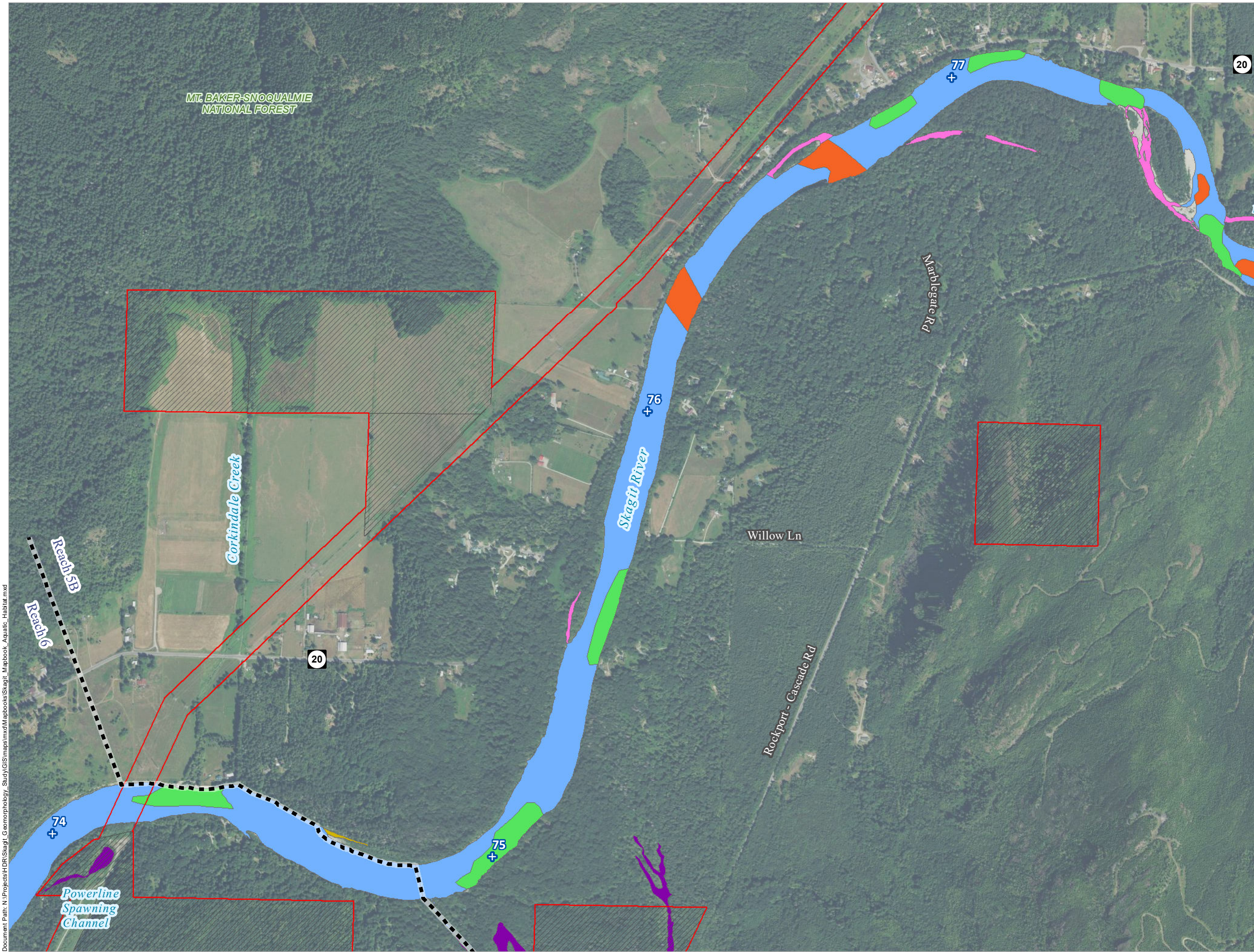
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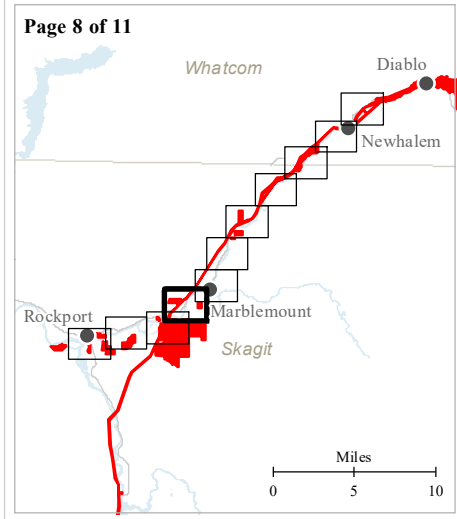
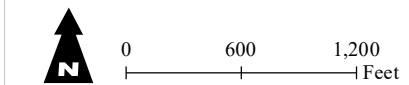
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GE-04 GEOMORPHOLOGY STUDY AQUATIC HABITAT - SHEET 8

- FERC Project Boundary
- Mitigation Parcel
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Riffle
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



Seattle City Light

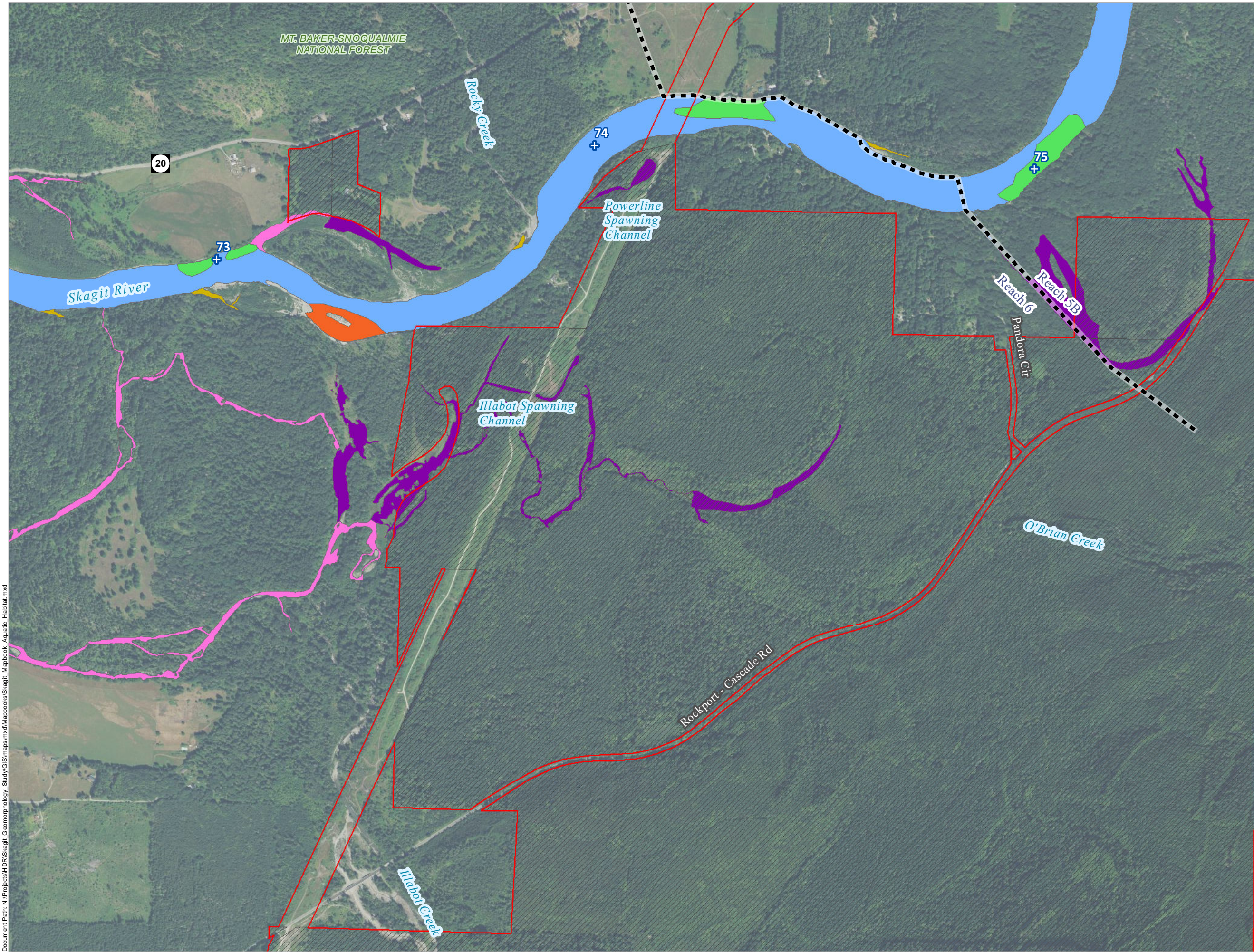
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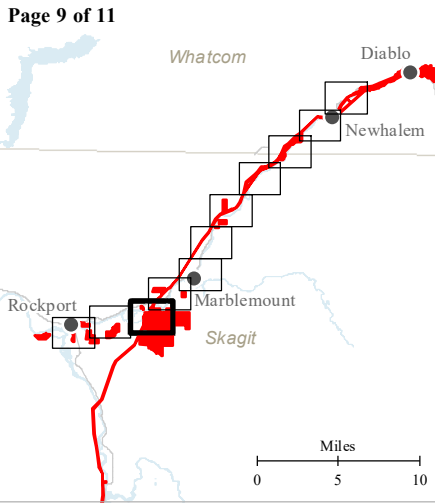
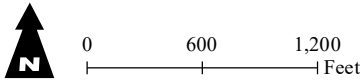
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 9**

- FERC Project Boundary
- Mitigation Parcel
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Riffle
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



Seattle City Light

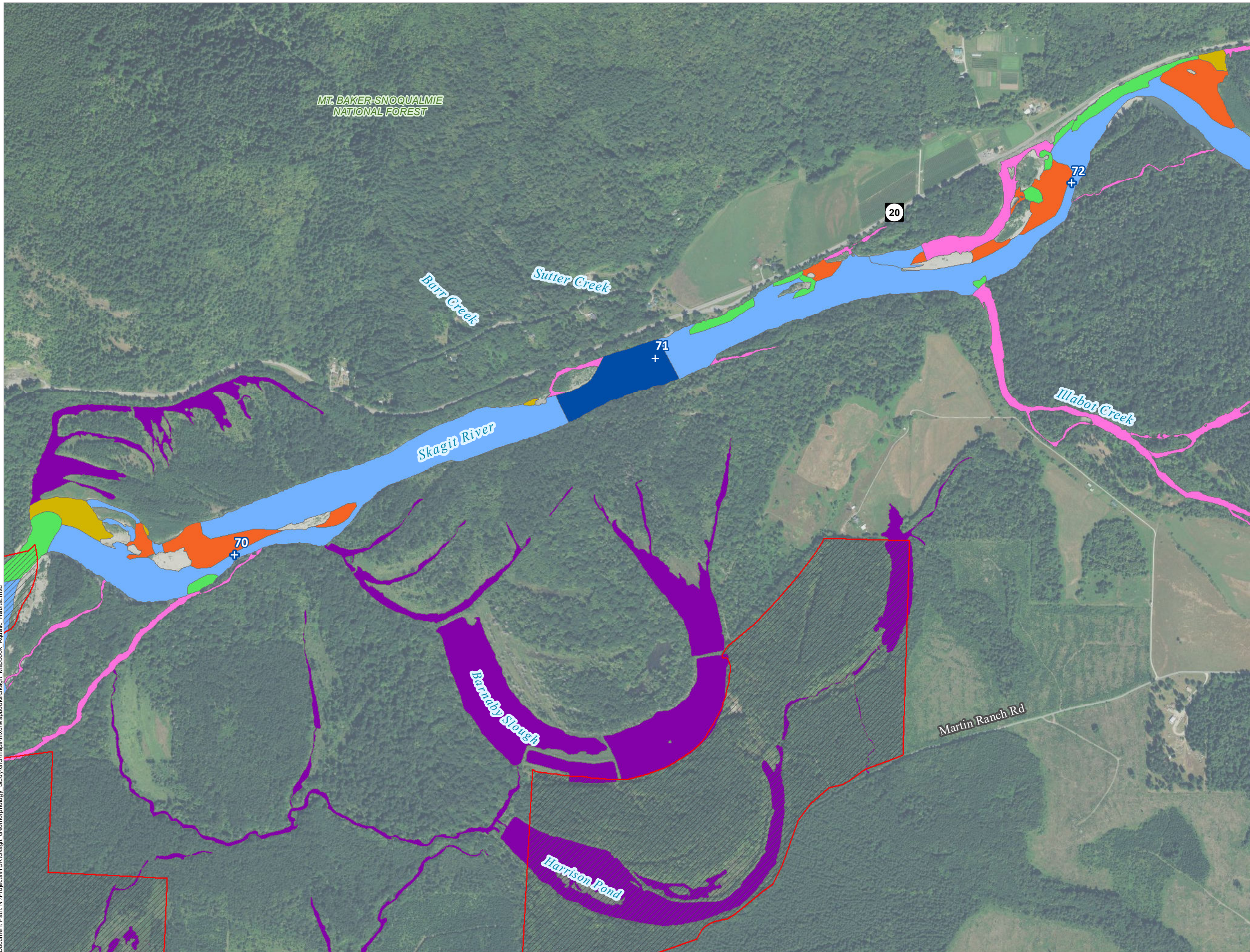
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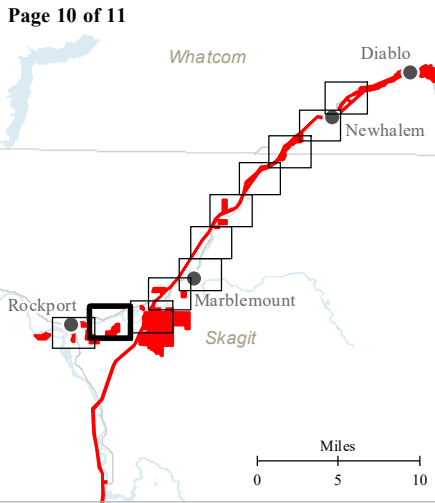
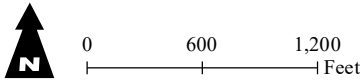
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**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 10**

- FERC Project Boundary
Mitigation Parcel
Project River Mile
Stream Gage (USGS)
- Aquatic Habitat Unit Type
- Riffle
 - Run
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



Seattle City Light

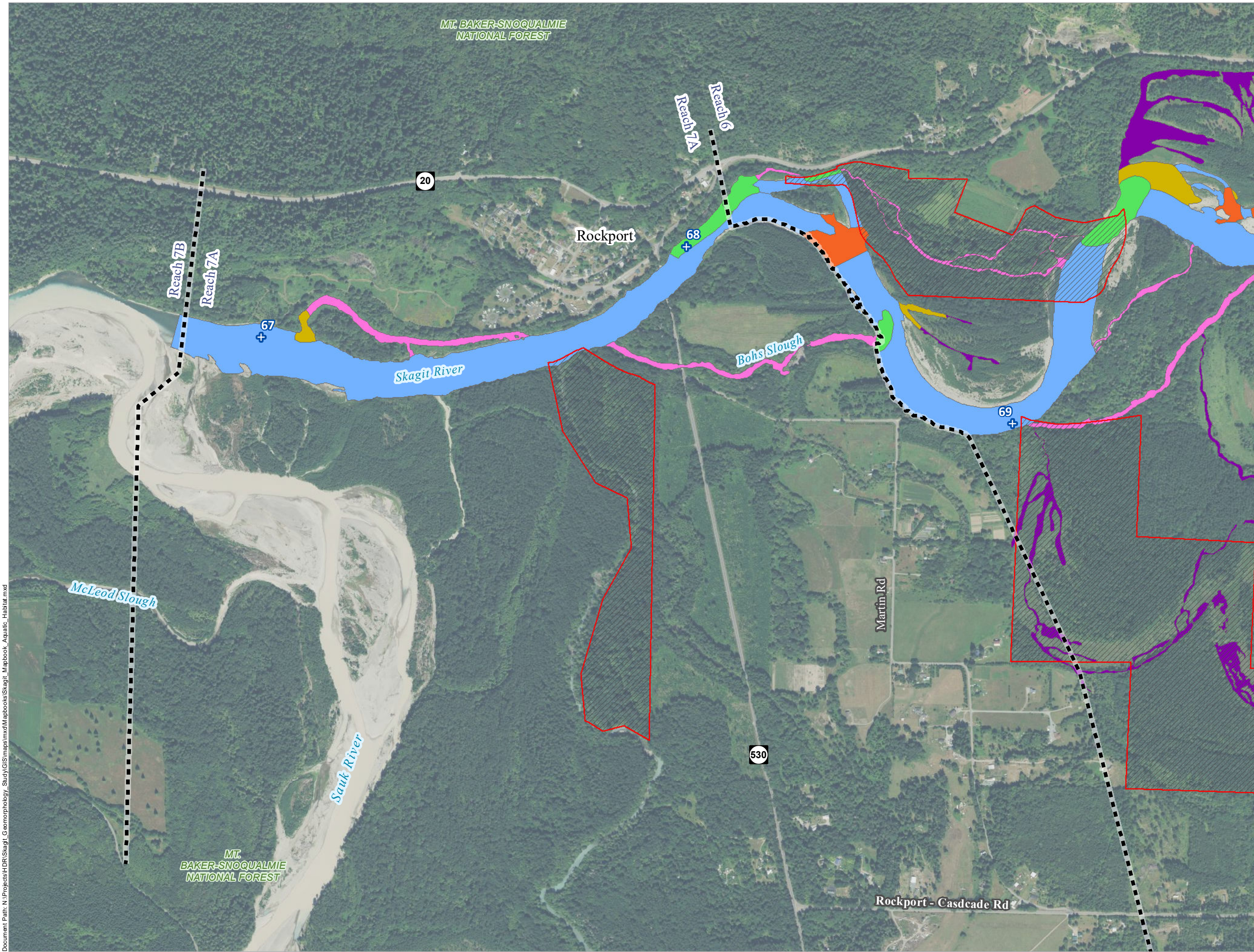
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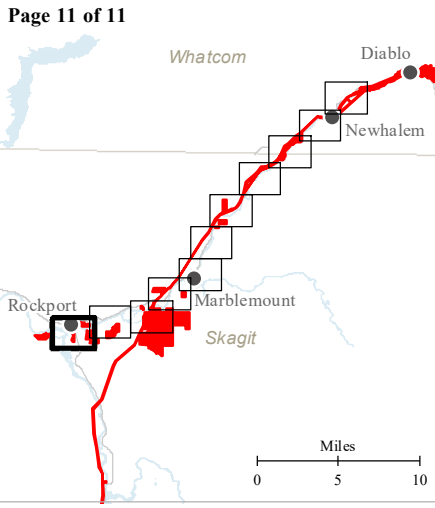
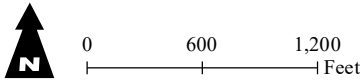
Data Source: Aquatic habitat units - NSD, Aerial imagery - 2019

Document Path: N:\Projects\H\DR\Skagit_Geomorphology_Study\GIS\maps\mxd\Mapbooks\Skagit_Mapbook_Aquatic_Habitat.mxd



**GE-04
GEOMORPHOLOGY STUDY
AQUATIC HABITAT -
SHEET 11**

- FERC Project Boundary
- Mitigation Parcel
- Project River Mile
- Stream Gage (USGS)
- Aquatic Habitat Unit Type
 - Riffle
 - Glide
 - Pool
 - Backwater
 - Side Channel
 - Off Channel



Seattle City Light

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

Created on 2/7/2022 by GE-04 Study Team
(Natural Systems Design, Northwest Hydraulic Consultants, and
Fain Environmental) for Seattle City Light.

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