

Technical Team Meeting

Fish and Aquatics

Instream Flow

2013 HSC Data Collection Revisions

22 May 2013

Prepared by R2 Resource Consultants



2013 HSC Sampling Focus Area Selection

- Emphasis on Middle River Segment
- Concentrate effort on 5 Focus Areas with known fish use and high diversity of macrohabitat types:
 - FA-104 Whiskers Slough
 - FA-128 Skull Creek
 - FA-138 Gold Creek
 - FA-141 Indian River
 - FA-144 Slough 21
- FA-151, 173, & 184 not included in 2013 sampling effort due to access restrictions



2013 HSC Sampling Site Selection

- Within each FA, utilize macrohabitat mapping to determine the composition, length, and distribution of each macrohabitat type
- Segment mainstem macrohabitat types (main channel, split main channel, braided main channel, side channel) into 500-meter sections
- Segment off-channel macrohabitat types (side slough, upland slough) into 200-meter sections



2013 HSC Sampling Site Selection

- Randomly select two macrohabitat segments from each macrohabitat type present with known fish use (1980's and 2012 studies) and two segments with unknown fish use.
- If no known fish use areas have been identified within a macrohabitat type, then only two habitat segments will be selected.
- For main channel macrohabitat segments, subjectively establish one, 100-meter sampling site within each of the randomly selected segments.
- For all other macrohabitat segments, subjectively establish one 50-meter sampling site within each of the randomly selected segments.



2013 HSC Sampling Site Selection

- Sampling Unit Selection Criteria:
 - Areas with diverse distribution of microhabitat (slow and fast velocity, deep and shallow water)
 - Areas of expected fish use
 - Areas with fish cover (LWD, depth, vegetation, velocity shelter)



2013 HSC Sampling Site Selection

- FA-141 Indian River:
 - Selected one, 50-meter sampling site to capture clear water plume macrohabitat type
- FA- 138 Gold Creek:
 - Selected one, 50-meter sampling site outside of the FA boundary to capture tributary mouth macrohabitat type
- Select one oversample segment from each macrohabitat type in case of safety, access, or low diversity issues.



2013 HSC Sampling Site Selection

- Continue integration and coordination of other data sources into HSC sampling design and site selection:
 - ✓ Fish Distribution
 - ✓ Groundwater
 - ✓ River Productivity
 - ✓ Water Quality Monitoring
 - ✓ Fish Passage and Connectivity
- Possible mid-season adjustment based on edits to macrohabitat mapping, number of observations, and preliminary data analysis



FA-104 Whiskers Slough

Pink Spawning Area

Juvenile Use Area

Chum Spawning Area

105

106

(sample sites not to scale – for illustration purposes only)

100m sample site

50m sample site

Main Channel

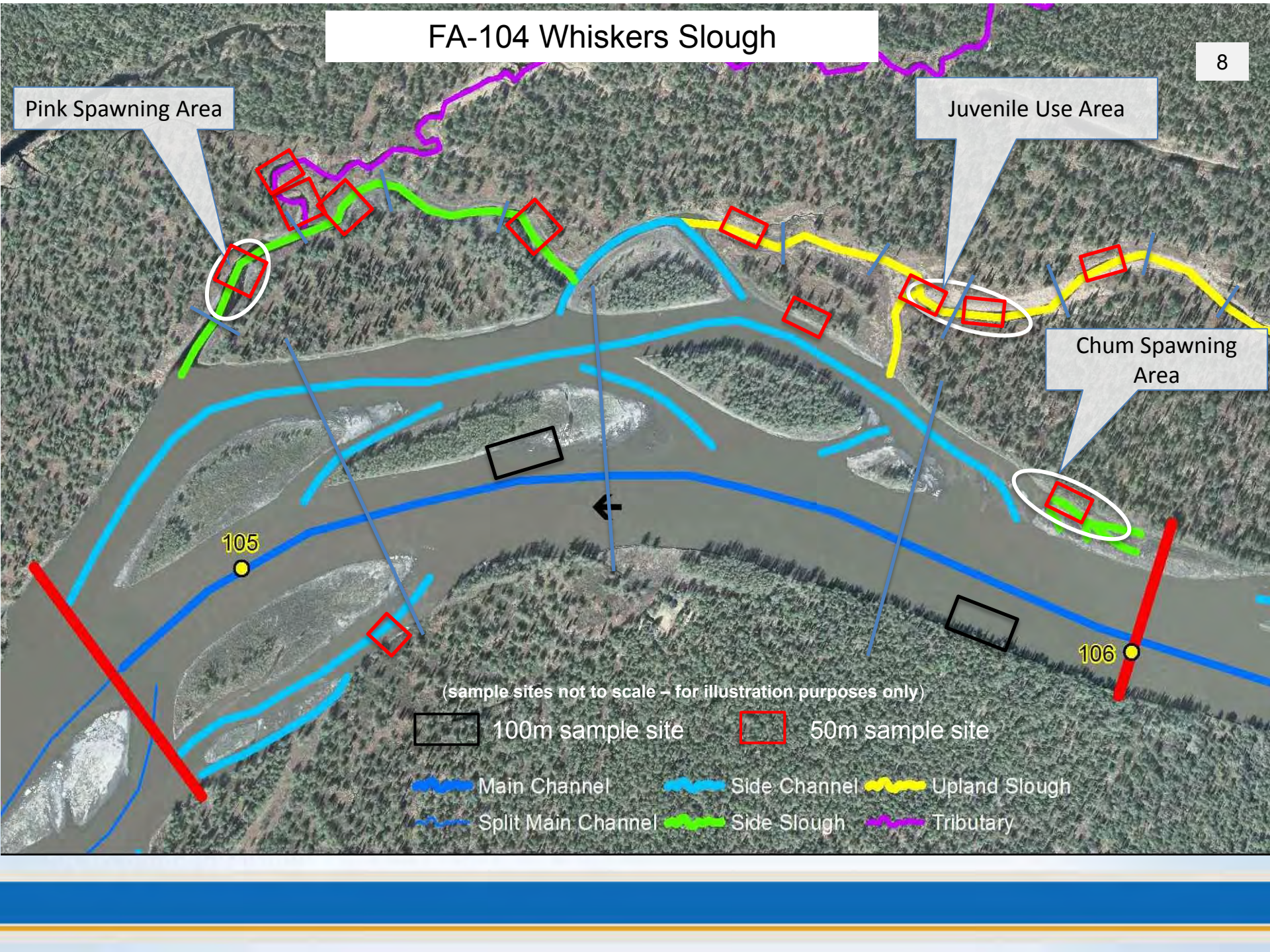
Side Channel

Upland Slough

Split Main Channel

Side Slough

Tributary



FA-104 Whiskers Slough

Pink Spawning Area

GW Task6 Aquatic Study Areas

Juvenile Use Area

Chum Spawning Area

- ★ Cluster Well Station
- Drive Points Wells
- ▼ Streambed Temp Profile

100m sample site

50m sample site

Main Channel

Side Channel

Upland Slough

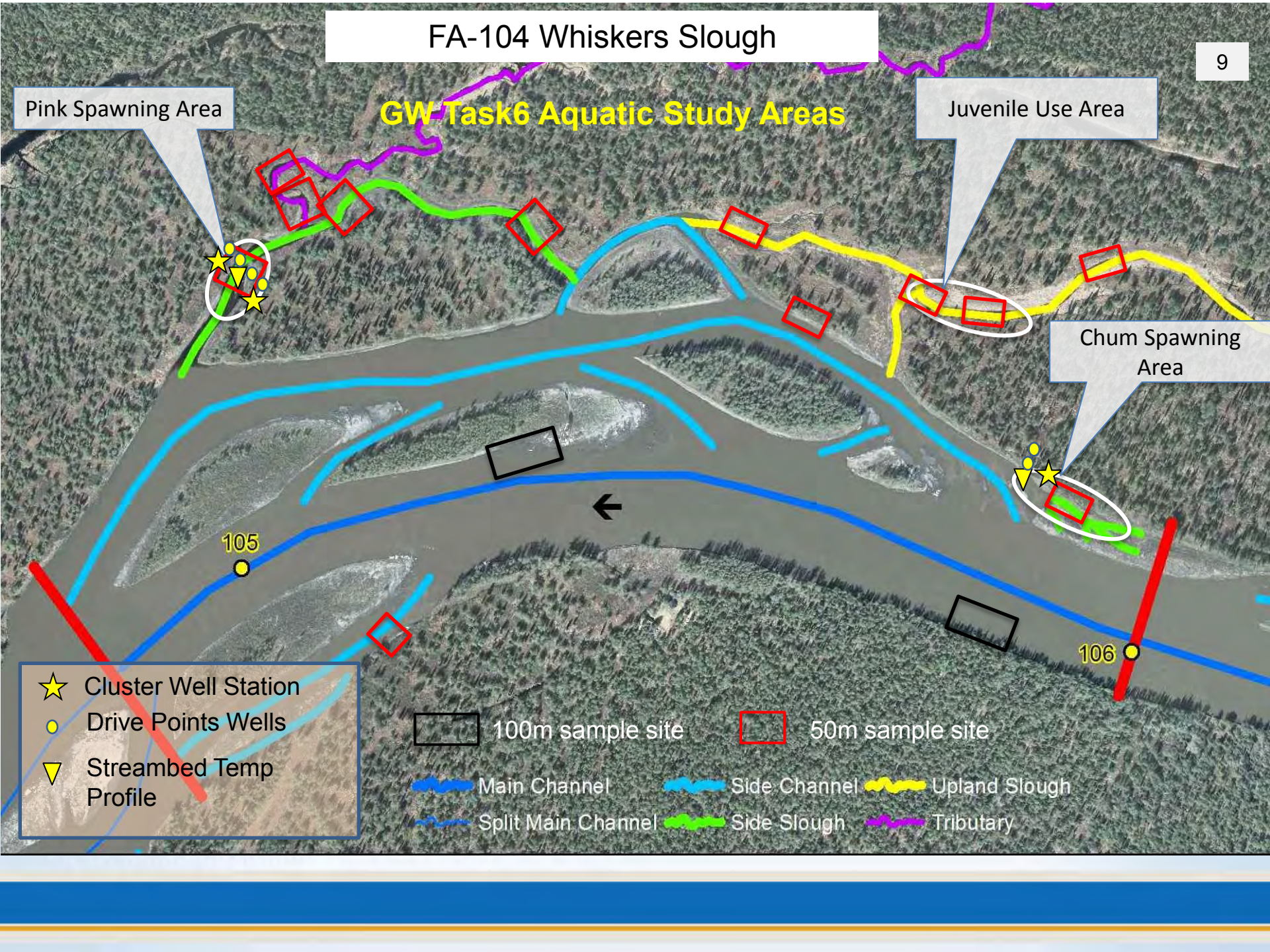
Split Main Channel

Side Slough

Tributary

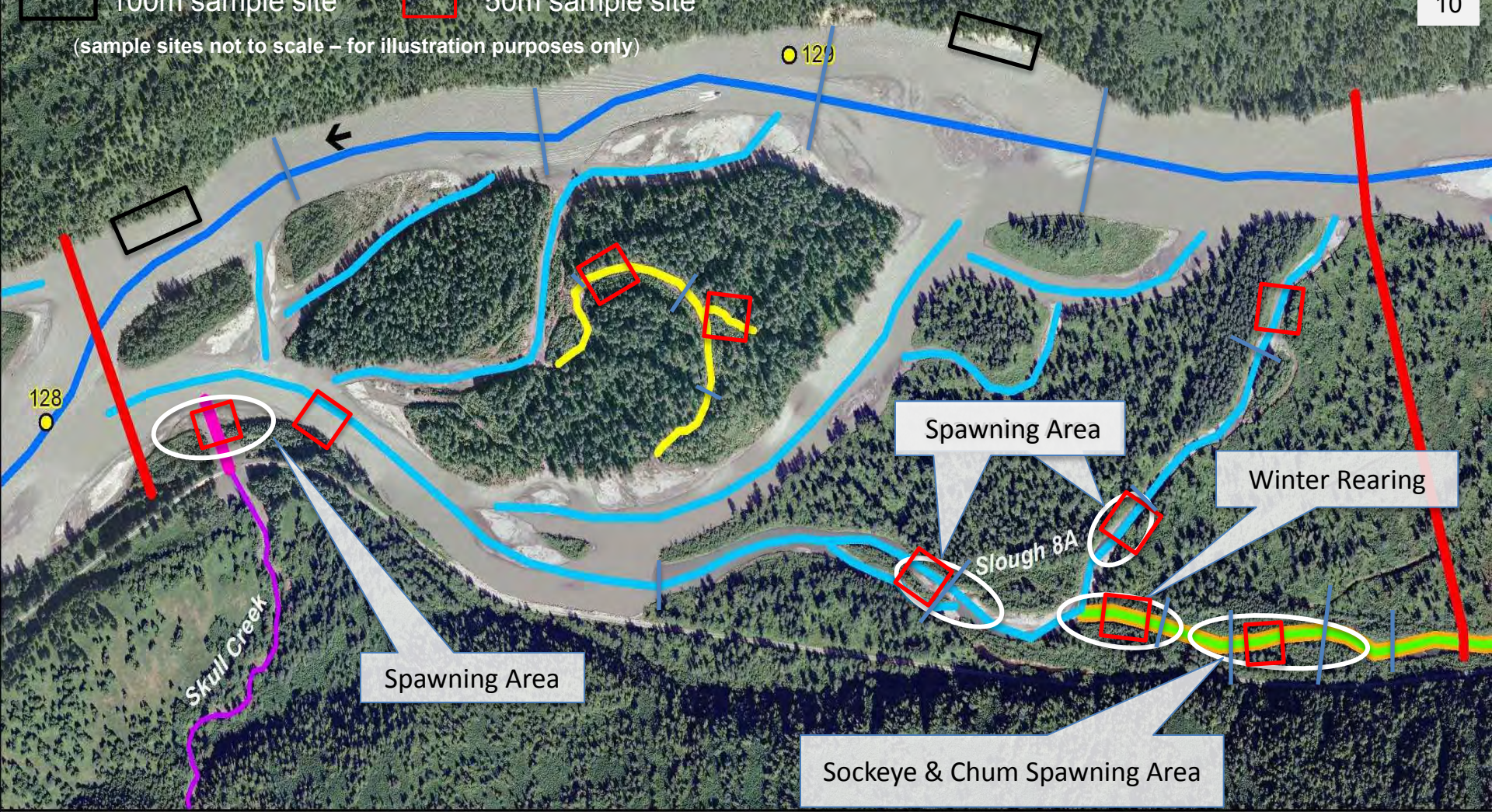
105

106



FA-128 Skull Creek Complex)

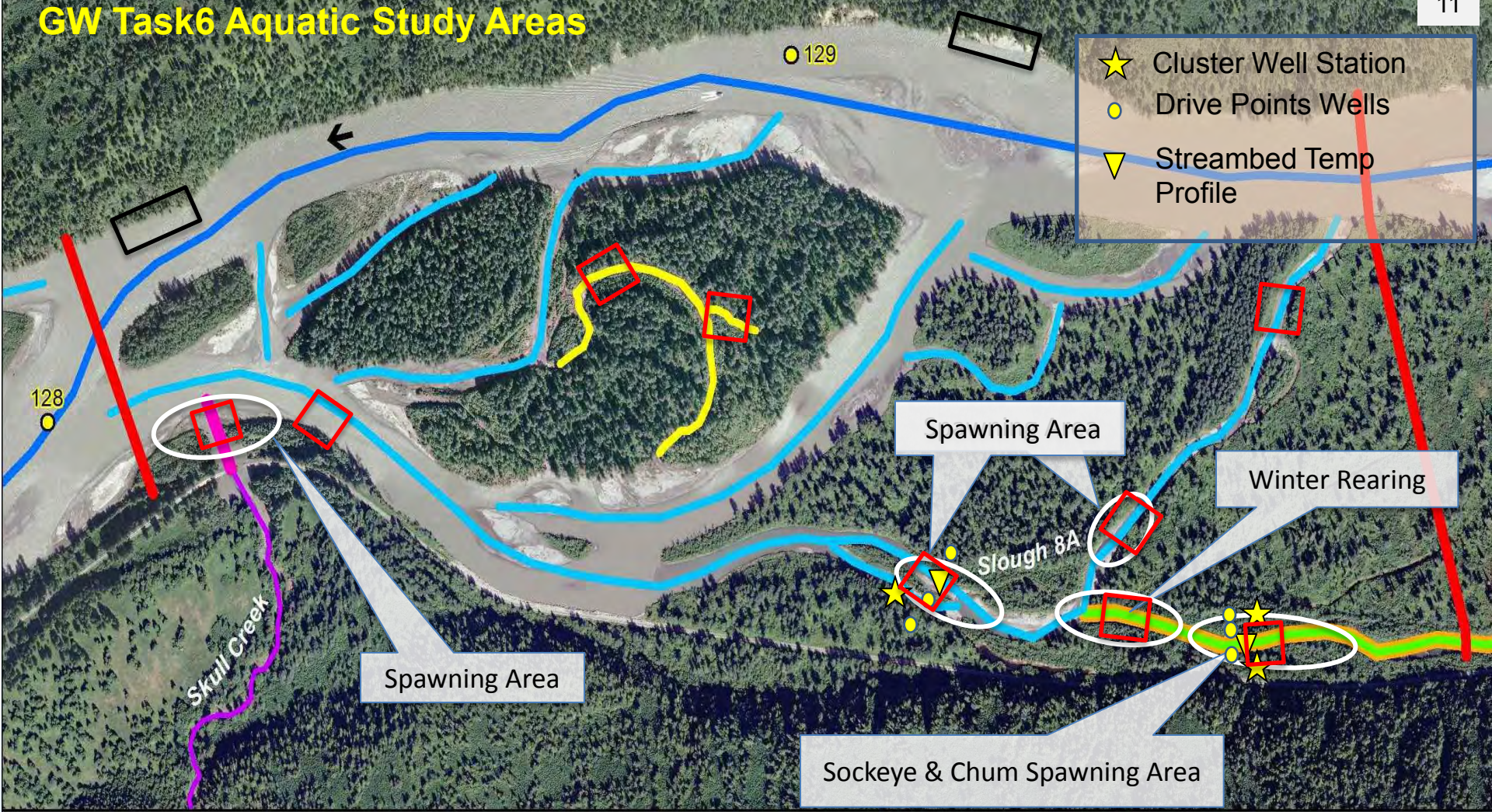
- Main Channel
 - Side Slough
 - Tributary
 - Beaver
 - Side Channel
 - Upland Slough
 - Tributary Mouth
 - 100m sample site
 - 50m sample site
- (sample sites not to scale – for illustration purposes only)

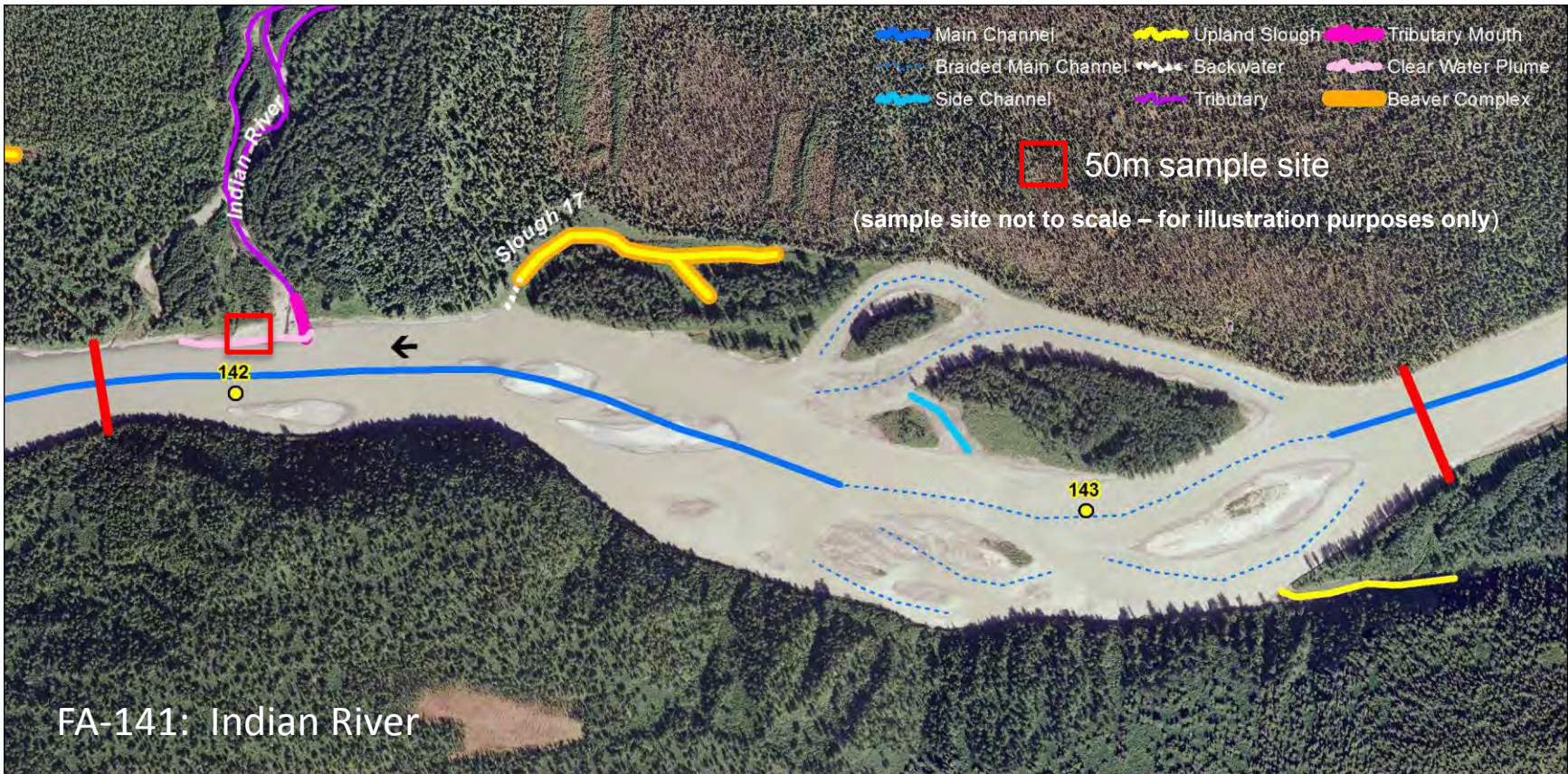


- Main Channel
- Side Slough
- Tributary
- Beaver
- Side Channel
- Upland Slough
- Tributary Mouth

GW Task6 Aquatic Study Areas

- ★ Cluster Well Station
- Drive Points Wells
- ▼ Streambed Temp Profile





Legend

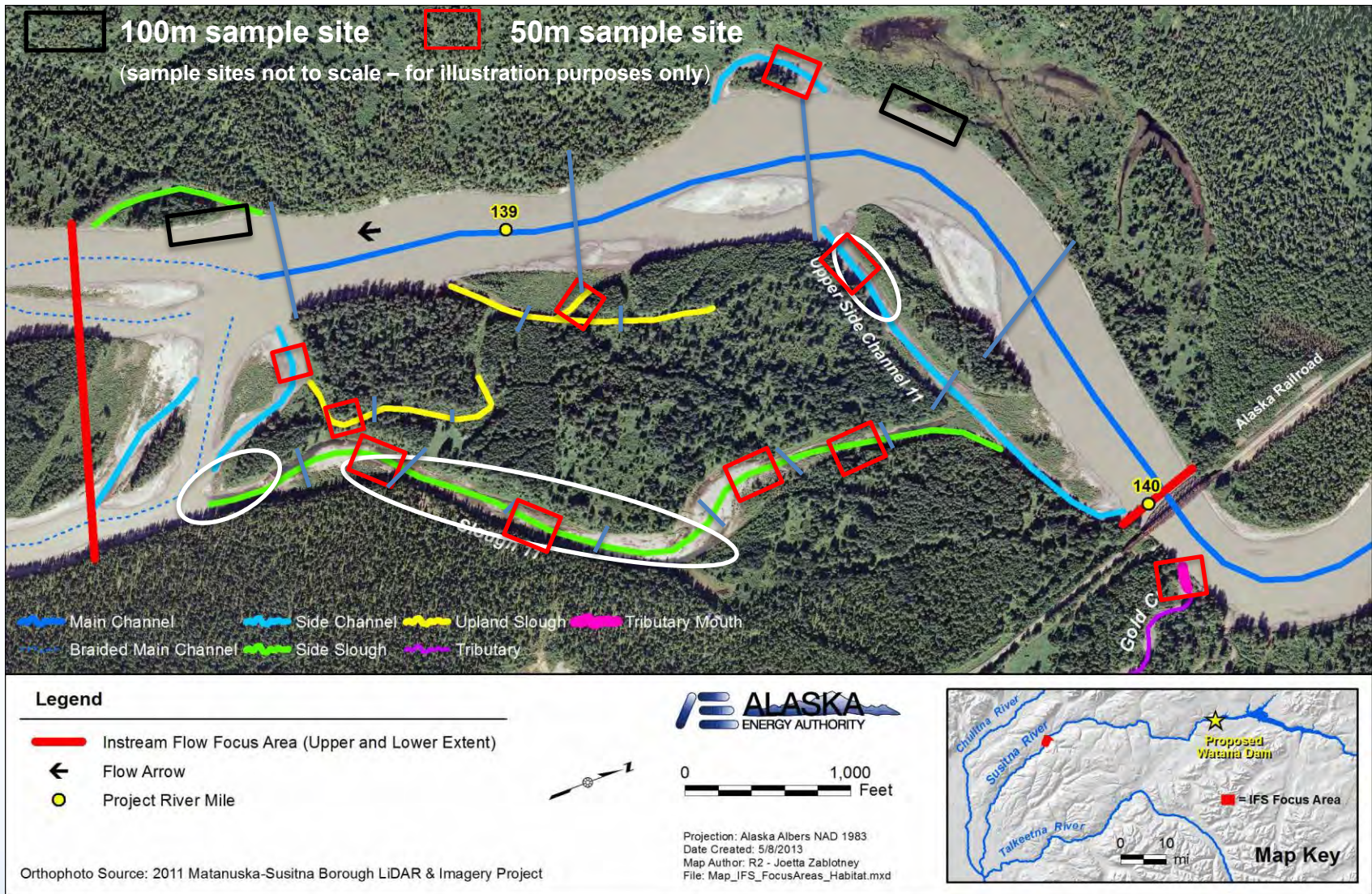
- Instream Flow Focus Area (Upper and Lower Extent)
- Flow Arrow
- Project River Mile



Projection: Alaska Albers NAD 1983
 Date Created: 5/8/2013
 Map Author: R2 - Joetta Zabloney
 File: Map_IFS_FocusAreas_Habitat.mxd

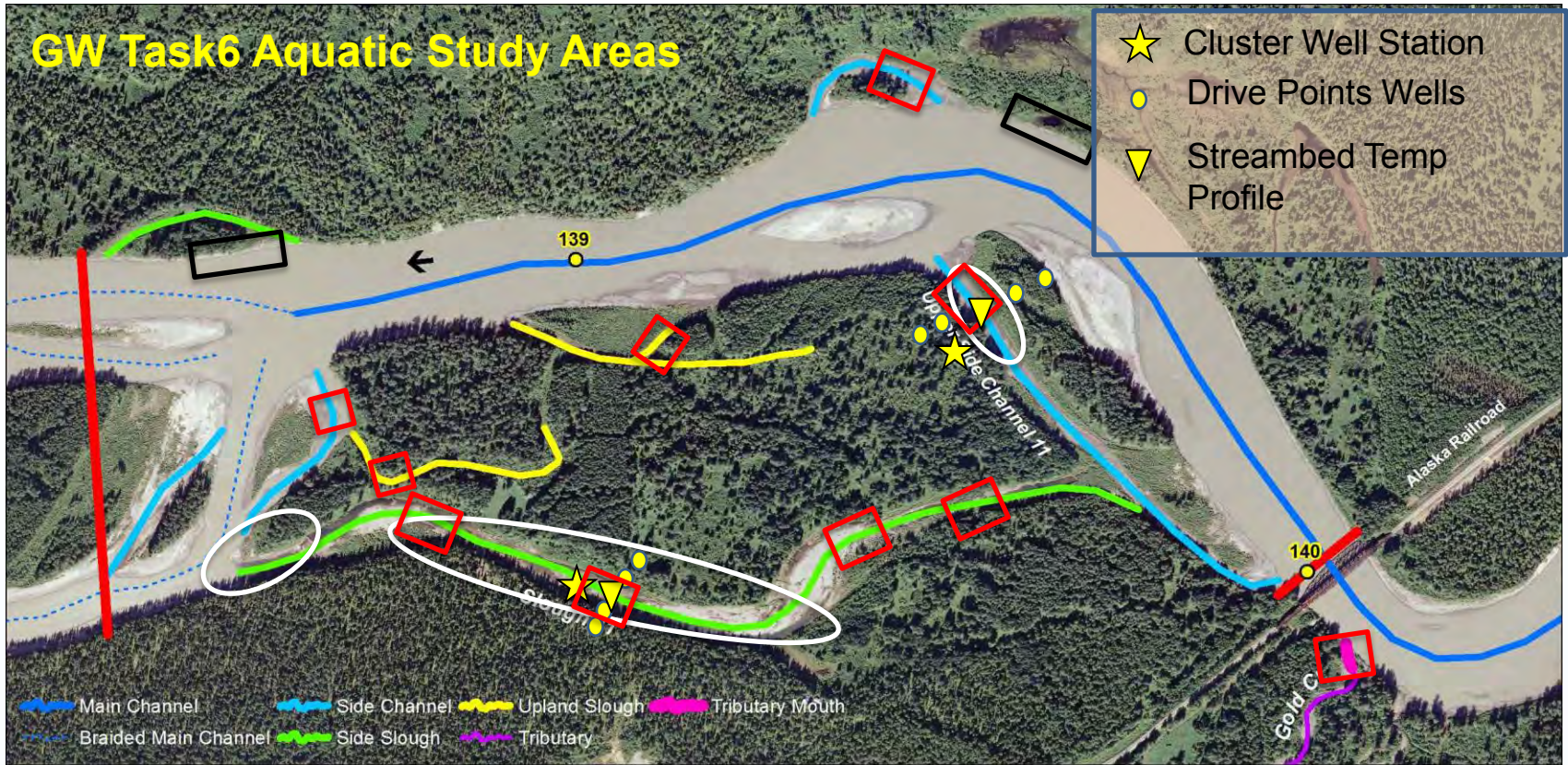


Orthophoto Source: 2011 Matanuska-Susitna Borough LIDAR & Imagery Project



FA-138: Gold Creek (Slough 11)

GW Task6 Aquatic Study Areas



- ★ Cluster Well Station
- Drive Points Wells
- ▼ Streambed Temp Profile

- Main Channel
- Side Channel
- Upland Slough
- Tributary Mouth
- Braided Main Channel
- Side Slough
- Tributary

Legend

- Instream Flow Focus Area (Upper and Lower Extent)
- ← Flow Arrow
- Project River Mile

ALASKA ENERGY AUTHORITY

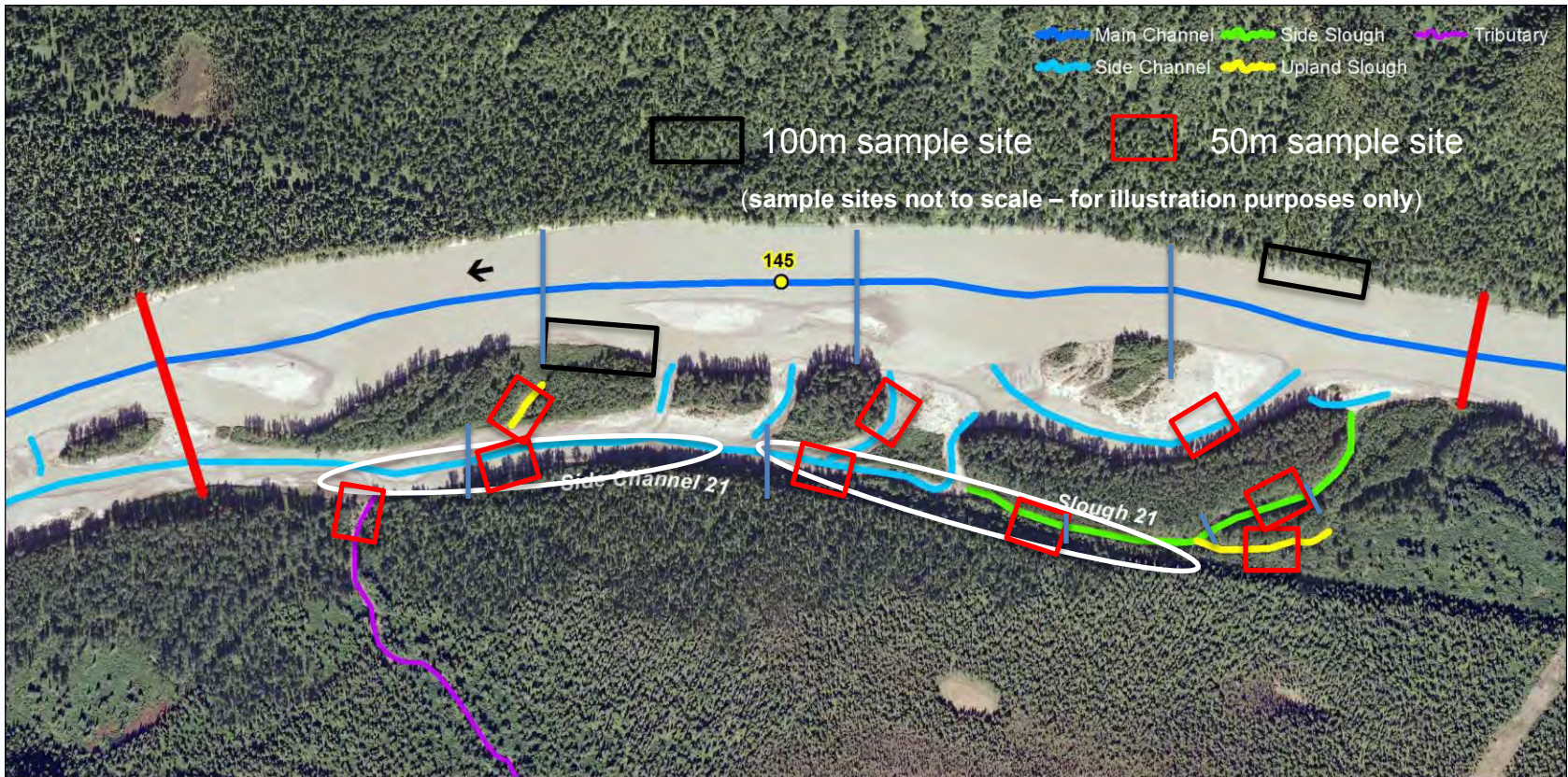
0 1,000 Feet

Projection: Alaska Albers NAD 1983
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Map Key

Orthophoto Source: 2011 Matanuska-Susitna Borough LiDAR & Imagery Project

FA-138: Gold Creek (Slough 11)



Legend

-  Instream Flow Focus Area (Upper and Lower Extent)
-  Flow Arrow
-  Project River Mile



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Orthophoto Source: 2011 Matanuska-Susitna Borough LiDAR & Imagery Project

FA-144: Slough 21

