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SUSITNA-WATANA
HYDROELECTRIC PROJECT

Fish and Aquatic Resources Technical Work Group Meeting 2nd Quarter 2013

June 24, 2013

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RSP Section	RSP Title	2nd Quarter 2013 Activity
9.5	Fish Distribution and Abundance Upper River	Field planning and training, ELH sampling, revised GRTS sample sites per SPD.
9.6	FDA Middle and Lower River	Field planning and training, winter sampling, ELH sampling, Screw trap installation & PIT tag array deployment, revised sample sites per SPD.
9.7	Salmon Escapement	Telemetry station, fish wheel & weir installation, field camp setup.
9.8	River Productivity	Incorporation of SPD, access permitting, equipment procurement.
9.9	Habitat Characterization	Incorporation of SPD, develop draft TM to support consultation.
9.10	Future Reservoir and Entrainment	No new activity, in planning.
9.11	Fish Passage Feasibility	Held project orientation Workshop #1 and regular meetings. Prepared background info. Revised schedule.
9.12	Fish Passage Barriers Middle and Upper River	Incorporation of SPD, draft Implementation plan out for review.
9.13	Access, Alignment, Transmission and Construction Area	No new activity, in planning.
9.14	Genetic Baseline	Updated IP, field collections underway.
9.16	Eulachon Run Timing, Distribution, and Spawning	Field deployment , fish tagging, and surveys.
9.17	Cook Inlet Beluga Whales	Remote cameras installed and aerial surveys.

ILP Update: FERC Study Plan Determinations

13 Fisheries & Aquatic Studies

– Nine studies approved by FERC on February 1, 2013

Two studies disputed by NMFS: 9.7 Fish Escapement

9.11 Fish Passage

– Dispute Panel April 3, 2013

– FERC Study Dispute Determination April 24, 2013

ILP Update: FERC Study Plan Determinations

13 Fisheries & Aquatic Studies

Remaining four studies approved with modifications on April 1, 2013

- 9.5 Fish Distribution and Abundance Upper River
- 9.6 Fish Distribution and Abundance Middle and Lower River
- 9.8 River Productivity
- 9.9 Habitat Characterization

9.5 FDA UP

April 1, 2013 Study Plan Determination modified study methods with respect to sampling locations and schedule.

- Tributaries upstream of Devils Canyon:
  - Entire mesohabitat units (one of each type) will be sampled up to the length of the sample unit (200 m, 400 m, 800 m depending on size of tributary).
- Upper River Transects:
  - Main channel and side channel habitat units intersecting the transect that can be boat electrofished will be sampled up to 500 m (or 20xchannel width or entire unit, whichever is less);
  - Other habitats intersecting the transect will be sampled up to 200 m (or 20xchannel width or entire unit, whichever is less).

9.6 FDA ML

April 1, 2013 Study Plan Determination cont.

- Middle River Main Channel
  - Geomorphic reach, Focus Area/Outside Focus Area
  - Selected 500 m lengths of estimated thalweg line for sampling using GRTS
    - 500 m of channel will be sampled (simple, split, or multiple-split)
    - For MR-5 Focus Areas, this is the entire available main channel.
- Middle River Side Channels and Sloughs
  - Geomorphic reach, Focus Area/Outside Focus Area
  - Defined habitat units
  - Units longer than 180% of target length were divided into sub-units of target length (Target Length is 500 m for side channels, 200 m for sloughs)
  - Selected three units or sub-units using GRTS sampling within each stratum
  - Smallest of target length, 20xchannel width, or entire unit will be sampled.

9.6 FDA ML

April 1, 2013 Study Plan Determination cont.

- Lower River Transects
  - Main Channel and side channel habitat units intersecting the transect that can be boat electrofished will be sampled up to 500 m (or 20xchannel width or entire unit, whichever is less).
  - Other habitats intersecting the transect will be sampled up to 200 m (or 20xchannel width or entire unit, whichever is less).
  - Rare habitats that are within a fixed distance of the transect will be added to sampling to ensure coverage.

- Backwaters, Tributary Mouths, Tributary Plumes
  - Entire unit will be sampled, sample selection not changed.

MR Sample Sizes

	MR-1	MR-2	MR-5	MR-6	MR-7	MR-8	New Total	IP Total
Main Channel	3	3	2	3	3	3	17	27
Side Channel	2	3		3	3	3	14	15
Side Slough		3		3		3	9	9
Side Slough Beaver Complex				3			3	3
Upland Slough		3		3	3	3	12	12
Upland Slough Beaver Complex				3	3		6	6
Backwater				1	2		3	3
Tributary		1	1	2	1	1	6	6
Tributary Mouth		1	1	2			4	4
Clear Water Plume			1	1			2	2
Total Focus Area	5	14	5	24	15	13	76	87
Main Channel	3	3	3	3	3	3	18	39
Side Channel	1	3		3	3	3	13	15
Side Slough		3	3	3	3	3	15	15
Side Slough Beaver Complex					3		3	3
Upland Slough		3		3	3	3	12	12
Upland Slough Beaver Complex				3	3		6	6
Backwater		1		3	1	1	6	6
Tributary		3		3	3		9	9
Tributary Mouth		3	1	3	3		10	10
Clear Water Plume		3		3	1		7	7
Total Non-Focus Area	4	22	7	27	26	13	99	122
Grand Total	9	36	12	51	41	26	175	209

MR Main Channel Sample Types

	MR-1	MR-2	MR-5	MR-6	MR-7	MR-8	Total
Main Channel	3	3	2	1	1	3	13
Split Main Channel					1		1
Main Channel/Split Main Channel					1		1
Main Channel/Braided Main Channel				2			2
Focus Area Total Main Channel	3	3	2	3	3	3	17
Main Channel	3	3	2	2	1	1	12
Split Main Channel					1	1	2
Main Channel/Split Main Channel			1	1	1		3
Braided Main Channel						1	1
Non Focus Total Main Channel	3	3	3	3	3	3	18

9.5 FDA UP and 9.6 FDA ML

–River conditions and late thaw have limited field work for most objectives.

– 3rd winter field trip in early April.

– Early Life-History sampling initiated in early May MR.

– Field training completed mid-May.

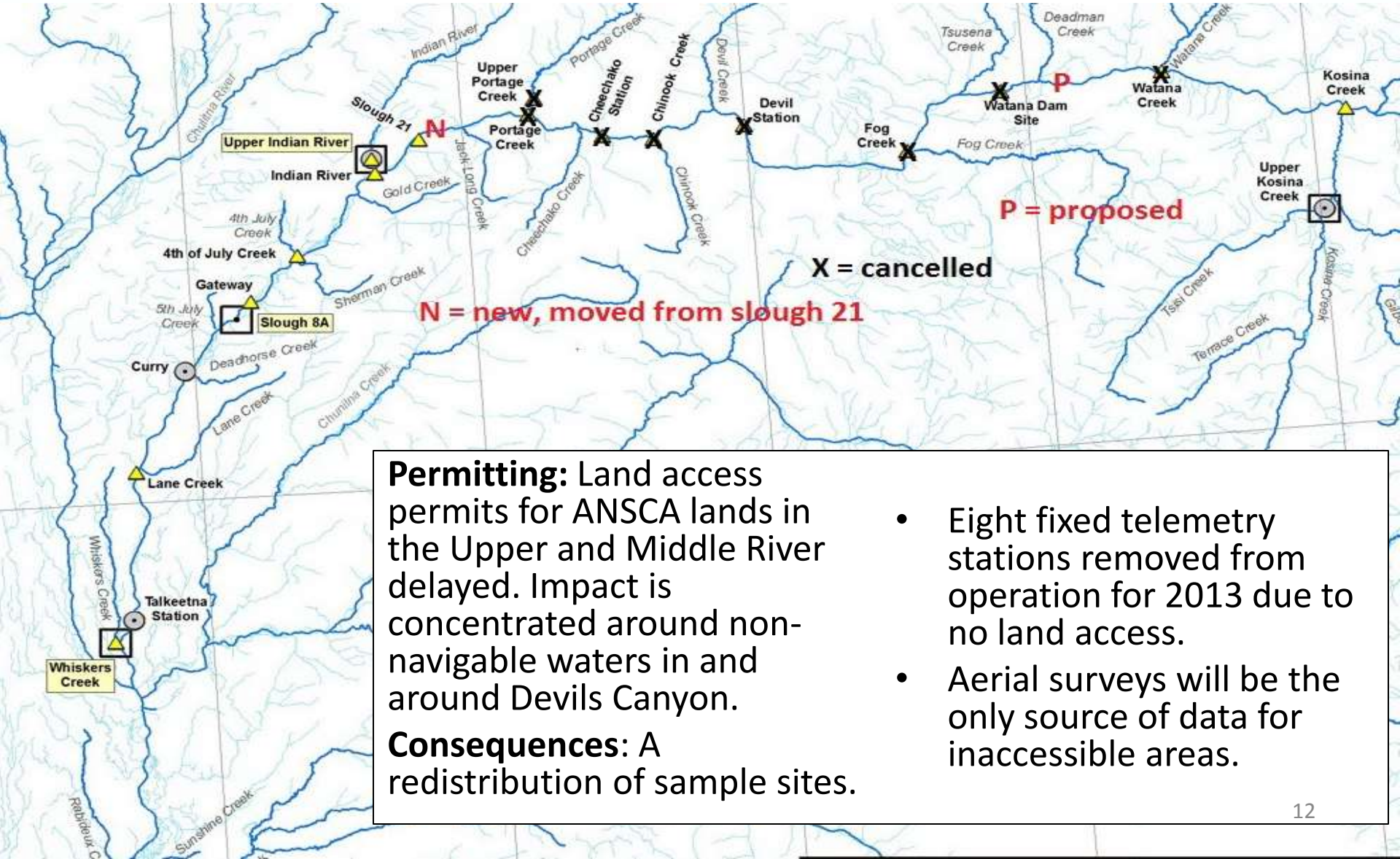
– Access permitting ongoing.

9.5 FDA UP and 9.6 FDA ML

Early life history sampling: document juvenile salmon out-migration and in-river redistributions

- 3 sites sampled in early May
- June sampling planned for
- sites in the:
  - Upper River
  - Middle River
  - Lower River
- June sampling to include 2 lakes outlets draining into Tsisi Creek focus on sockeye salmon.

9.5 FDA UP and 9.6 FDA ML



Permitting: Land access permits for ANSCA lands in the Upper and Middle River delayed. Impact is concentrated around non-navigable waters in and around Devils Canyon.

Consequences: A redistribution of sample sites.

- Eight fixed telemetry stations removed from operation for 2013 due to no land access.
- Aerial surveys will be the only source of data for inaccessible areas.

9.5 FDA UP and 9.6 FDA ML

Schedule:

- Screw trap and PIT array installs began in June.
- Telemetry surgical units begin in June.
  - Radio tags in hand
  - Finalized radio-tagging goals for resident fish
  - Fish to tag in June will be primarily from RST and FW catch because tributary work will be focused on ELH fish.
- FDA seasonal sampling will begin in July and extend through October.

9.5 FDA UP and 9.6 FDA ML

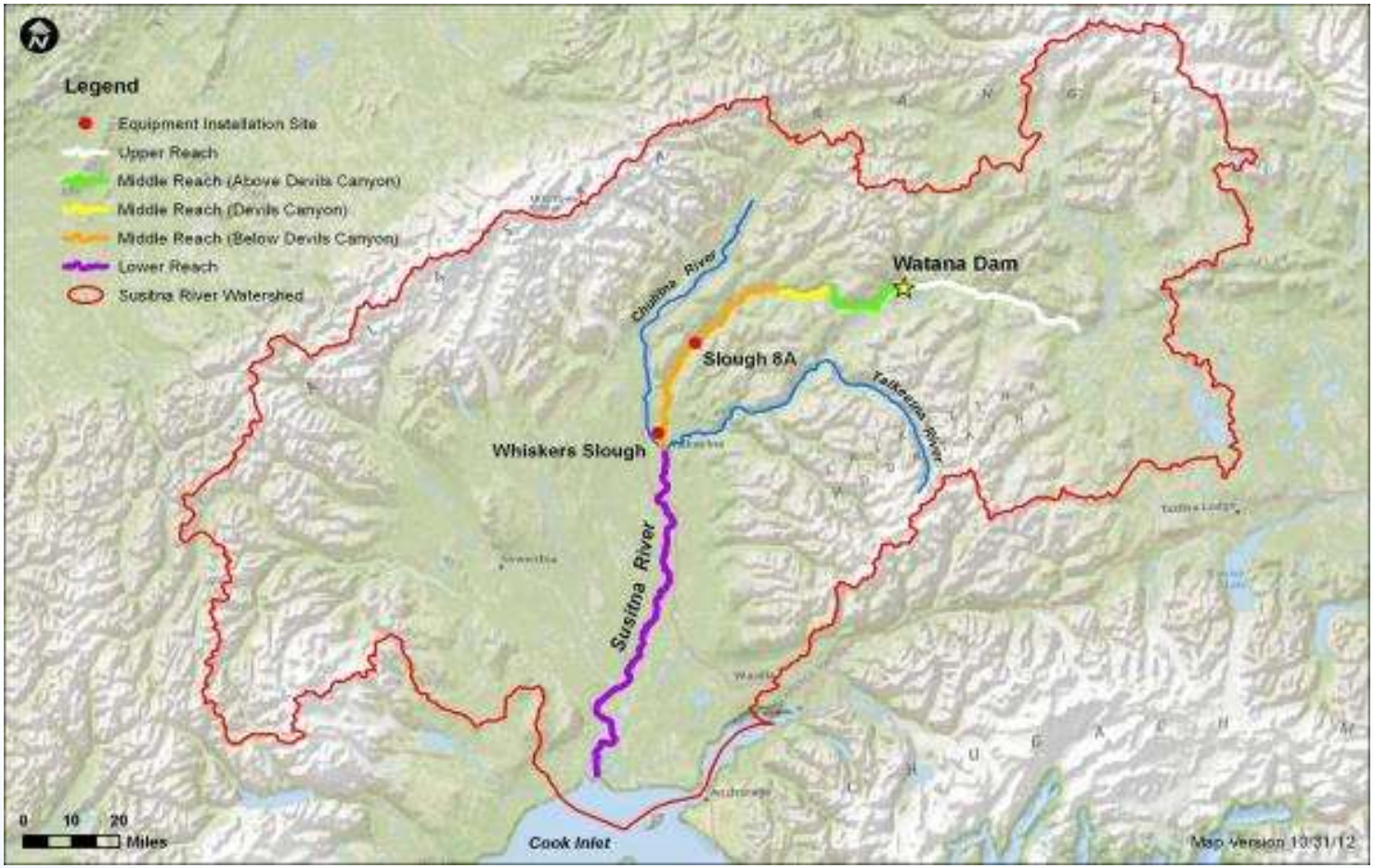
Basic radio tagging goals for resident fish species based on FDA sampling schedule.

Species	Lower and Middle Susitna				Likelihood of Meeting Tagging Goal Middle River	Likelihood of Meeting Tagging Goal in Upper River
	May/June	July	August/Sept	Sept/Oct		
Arctic grayling	spawning	10	10	10	High	High
Burbot	10	10	10	10	Moderate	Moderate
Dolly Varden	10	10	10	spawning	Moderate	Low
Humpback whitefish	10	10	10	spawning	Poor	Low
Lake trout	10	10	10	10	None	None
Longnose sucker	spawning	10	10	10	Moderate	Moderate
Northern pike	10	10	10	10	Poor	None
Rainbow trout	spawning	10	10	10	High	None
Round whitefish	10	10	10	spawning	Moderate	Moderate

FERC recommended tagging (n≥10)

Note: The tag goal for each species is 30 fish in each of the two river sections.

Winter Pilot Study



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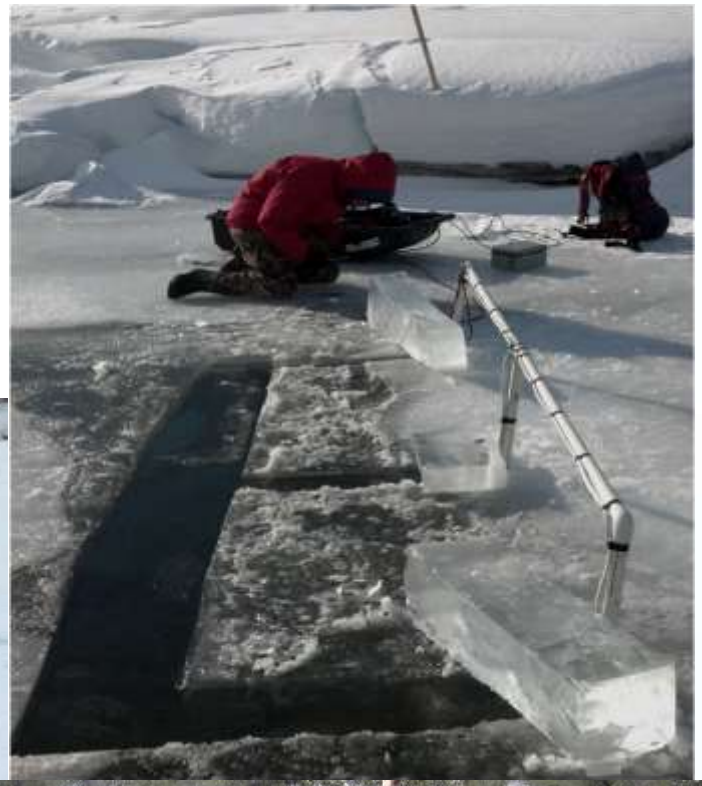
Winter Pilot Study

3 Trips:

-1- 7 February

-18-26 March

-7-13 April



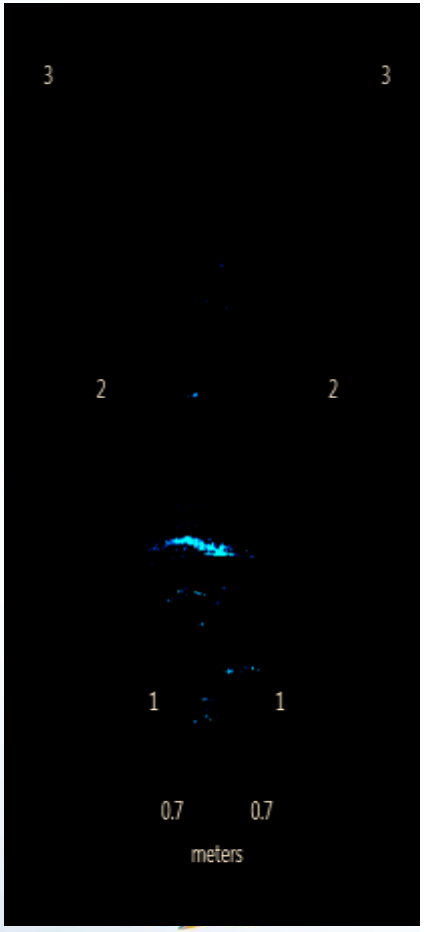
Winter Pilot Study: Habitats Sampled by Gear Type

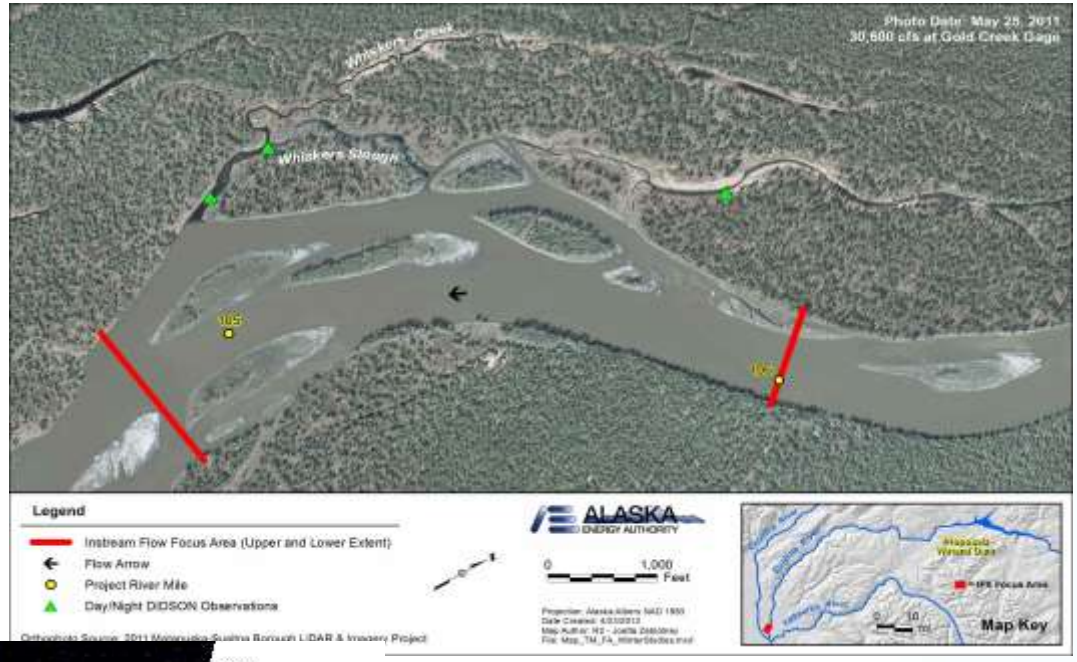
	Habitat Type							
Gear Type	Tributary	Tributary Mouth	Upland Slough	Side Slough	Slough Mouth	Side Channel	Main Channel	Other off-channel
Minnow Trap	WS	WS	WS	WS	WS	WS, 8A		WS
Electrofishing	WS		WS		WS	8A		
Set Line	WS	WS		WS				
Trotline					WS		WS	
Seine						WS		
Underwater Video	WS	WS	WS, 8A	WS	WS		WS	
DIDSON		WS	WS	WS	WS			

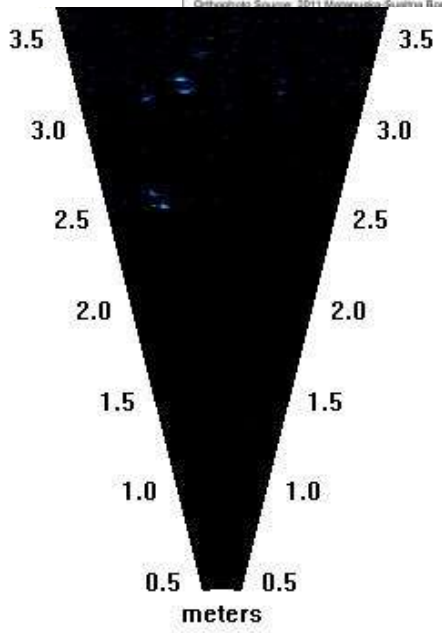
Winter Pilot Study: Fish Species Caught by Gear Type

Species	GearType					
	Angling	Backpack Electrofisher	Baited Trot or Set Line	Minnow Trap	Seine	Underwater Video
Arctic lamprey		X				
Burbot			X	X		
Chinook salmon		X		X		X
Chum salmon		X				
Coho salmon		X		X		X
Pink salmon		X				
Rainbow trout	X	X	X			X
Round whitefish						X
Sculpin		X		X		X
Sockeye salmon				X		
Threespine stickleback		X		X		

Winter Pilot Study: Sonar







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Winter Pilot Study: Video

Chinook salmon in Slough 8A using GoPro for night observation

Daytime observation of round whitefish with Aqua-Vu Micro at Whiskers Slough

ELH Upper River

- 4 – 12 June
- Focus on finding juvenile salmon
- Methods: Backpack electrofishing, fyke net (Tsisi Drainage Only)

ELH Upper River

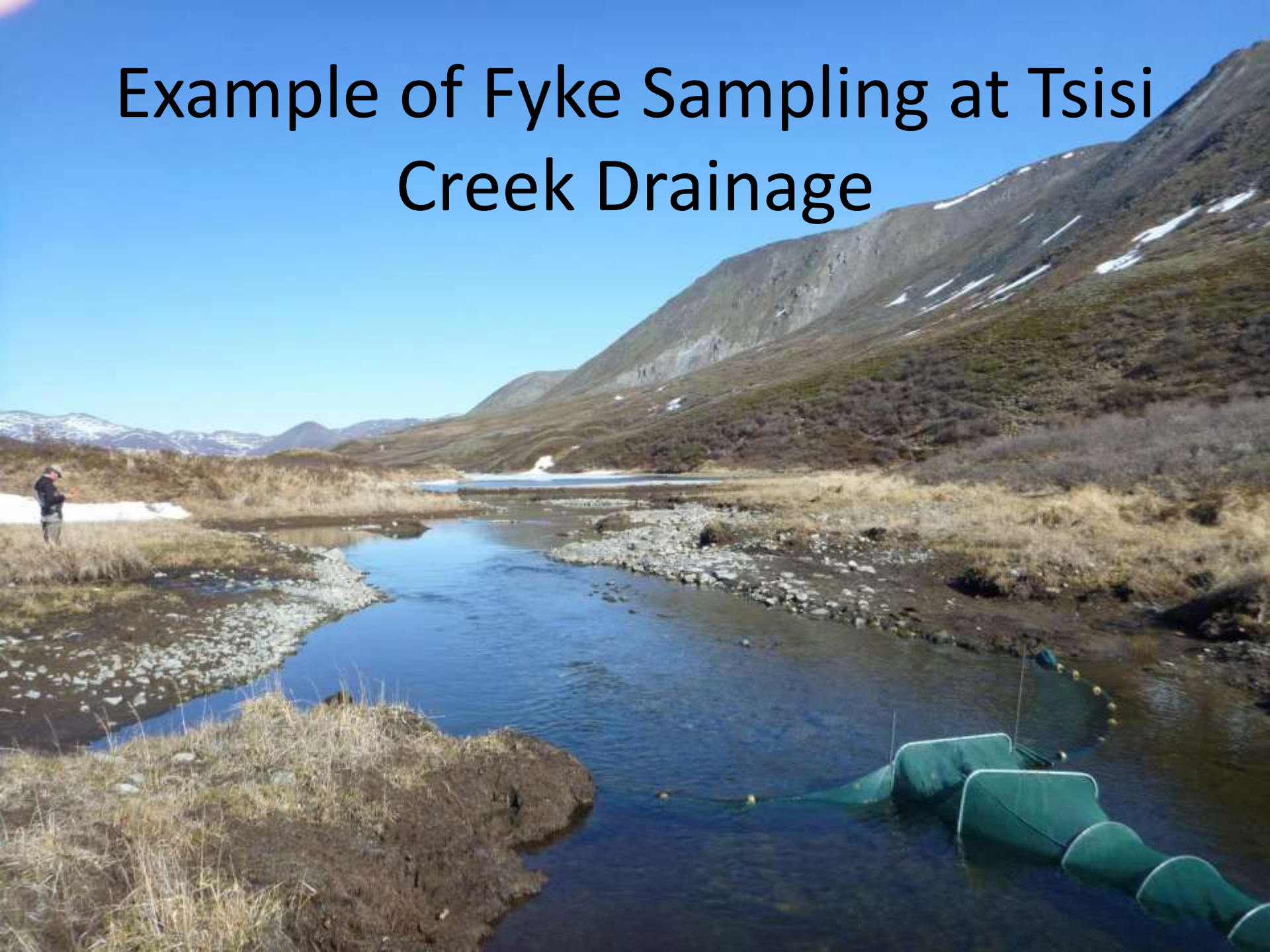
Site Selection:

- Helicopter accessible
- Access to private land
- Spatially stratified based on geomorphic reach
    - Suitable habitat for backpack electrofishing to be effective
    - Multiple mesohabitat types within walking distance of one landing zone
- Proximity to previously identified juvenile and adult Chinook habitats
- Sample unit 100 meters of each mesohabitat type present

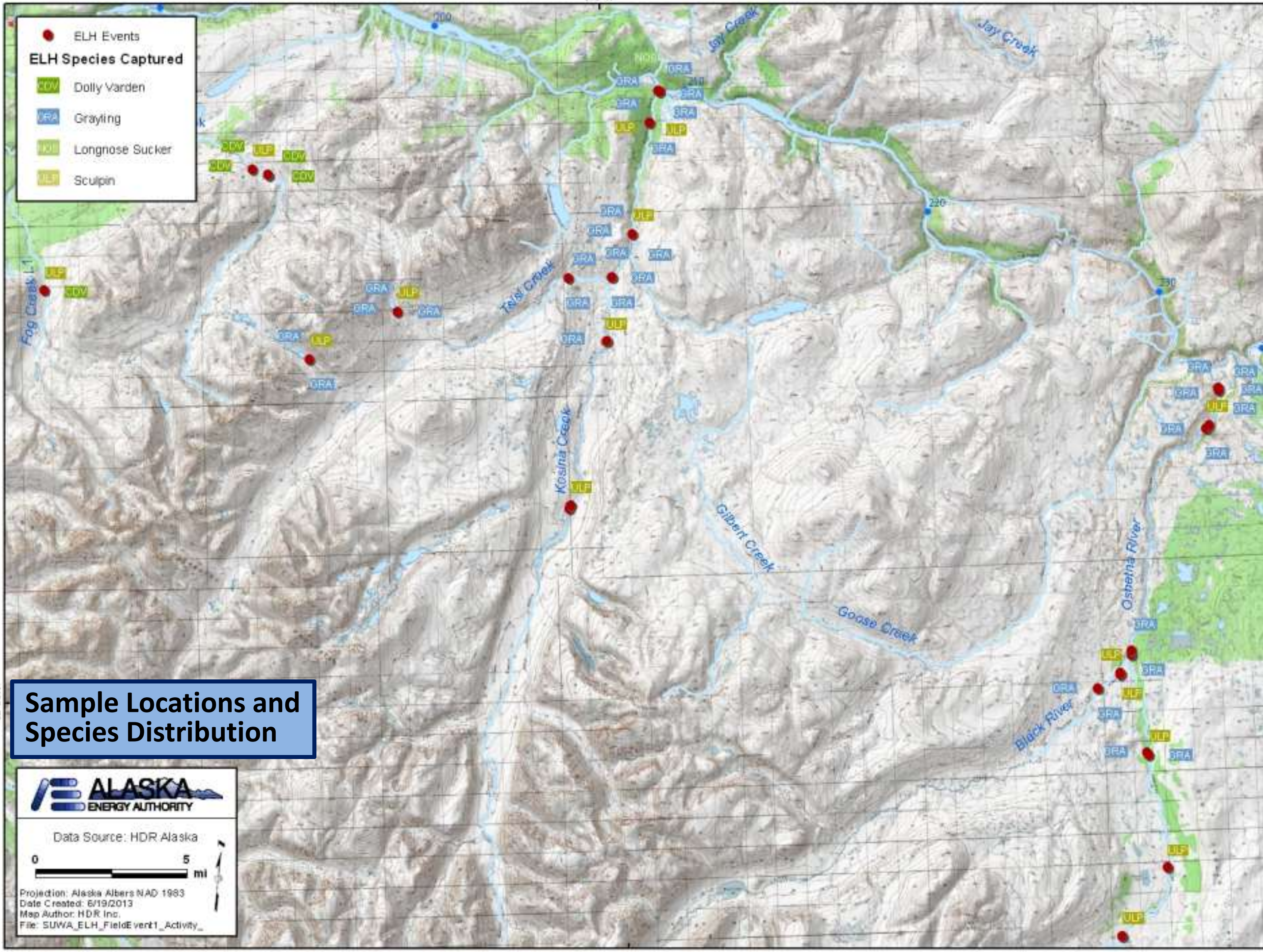
Example of Backpack Shocking and Range of Conditions at Kosina Creek

Field Condition at Oshetna River

Example of Fyke Sampling at Tsisi Creek Drainage



Sample Locations and Species Distribution



Preliminary Data

Species	Life Stage	Count	Length Range (mm)
Sculpin spp.	Juvenile/Adult	498	32-98
Arctic grayling	Juvenile	197	78-155
Arctic grayling	Adult	75	254-470
Round whitefish	Juvenile	5	120
Round whitefish	Adult	1	375
Humpback whitefish	Juvenile	1	210
Longnose sucker	Juvenile	2	110
Burbot	Juvenile	2	90-110
Dolly Varden	Juvenile	48	55-120
Dolly Varden	Adult	1	160

Preliminary Data

Waterbody	Sites	Mesohabitat Units	Total Length E-Fished (m)	Fyke Net Days
Oshetna River	6	17	1,605	0
Black River	2	6	422	0
Kosina Creek	6	14	1,155	6
Tsisi Creek	2	6	200	0
Tsisi Lake 1	1	2	80	3
Tsisi Lake 2	1	2	100	3
Fog Creek	3	5	300	0
Fog Creek L1	1	1	70	0
Susitna River	1	1	100	0
Total	23	54	4,032	12

ELH Middle River

- 2 Sampling Trips:
  - 29 April - 3 May: Whiskers Slough, Slough 8A, Gold Creek
  - 4 -15 June: Whiskers Slough, Oxbow Island, Slough 8A, Slough 11/Gold Creek, Indian River, Side Channel 21
- Focus on finding juvenile salmon in spawning and rearing habitats
- 6, 40 m sites per location
- Methods: backpack electrofishing, fyke net, seine, minnow trapping, snorkel

ELH Middle River

- May trip highlights: newly emerged pink, chum, sockeye, lamprey ammoecetes
- June trip highlights: smolting Chinook and coho, resident fish (burbot, rainbow trout, round & humpback whitefish, longnose sucker)

Rotary Screw Traps

Six trap installations, 8 – 23 June

- TKA station: 5 species juvenile salmon, burbot, whitefish, grayling, Dolly Varden, lamprey, rainbow trout
- Indian River: 5 species juvenile salmon, whitefish, grayling, Dolly Varden, rainbow trout
- Kosina Creek: No fish (2 days)
- Oshetna River: burbot, grayling, round whitefish, longnose sucker
- Middle R. at Curry: 4 species salmon, grayling, round whitefish, humpback whitefish, burbot, sculpin
- Montana: installation complete 6/21

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PIT Tag Antenna Installation

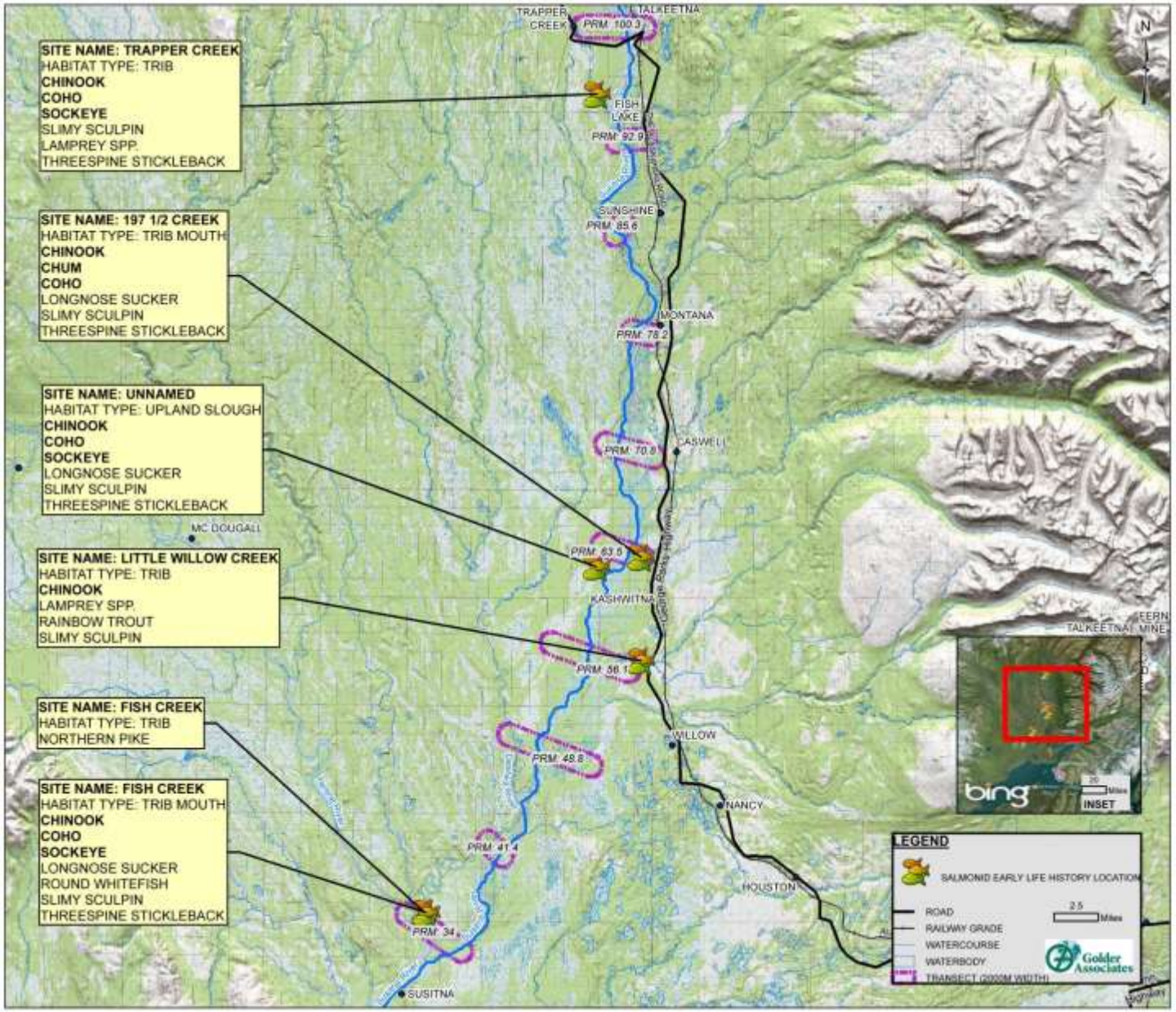
- Six antenna installations 13 – 22 June
- Design optimized for 12mm half duplex tags

Swim over and swim through designs 20 - 60 ft in length

Tagging of juvenile and resident fish began in early June at all study sites

ELH Sampling, Lower River

- 1 to 7 June
- 6 locations
- 3, 40m sites per station
- Minnow trapping, snorkeling, electrofishing



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Middle River Resident Fish Radio Tagging

Prelim. Results, Through 6/20

- Grayling (11), round whitefish (11), rainbow trout (8), longnose sucker (8), Dolly Varden (1), humpback whitefish (1)
- Two grayling tagged at Curry above Powerline Stn (HRM 142, upstream of Indian River)

RSP 9.7 Salmon Escapement

Study Highlights

- Installations delayed due to snow/ice conditions.
- Seven telemetry stations installed
  - Deshka (2), Sunshine, L. Yentna, U. Yentna, Skwentna, Talachulitna
- Four left to install
  - Talkeetna, Montana, Chulitna (2)

RSP 9.7 Salmon Escapement

Variations from plan

- High discharge and ice pack delayed startup of fishwheels. Original to start tagging May 22
- Fishwheels started
  - Yentna R. started 2 June; tagged 2 June
  - Susitna R. started 3 June, tagged 4 June
- Weir installation delayed due to high water.
  - Deshka weir operational 7 June.
  - Montana and Chulitna to be installed by 18-25 June.
  - Talachulitna ARIS sonar operational 10 June (in place of weir)
  - Lake Creek not to be installed (channel reconfiguration, flooding, and logistical issues)

RSP 9.7 Salmon Escapement

LOWER RIVER

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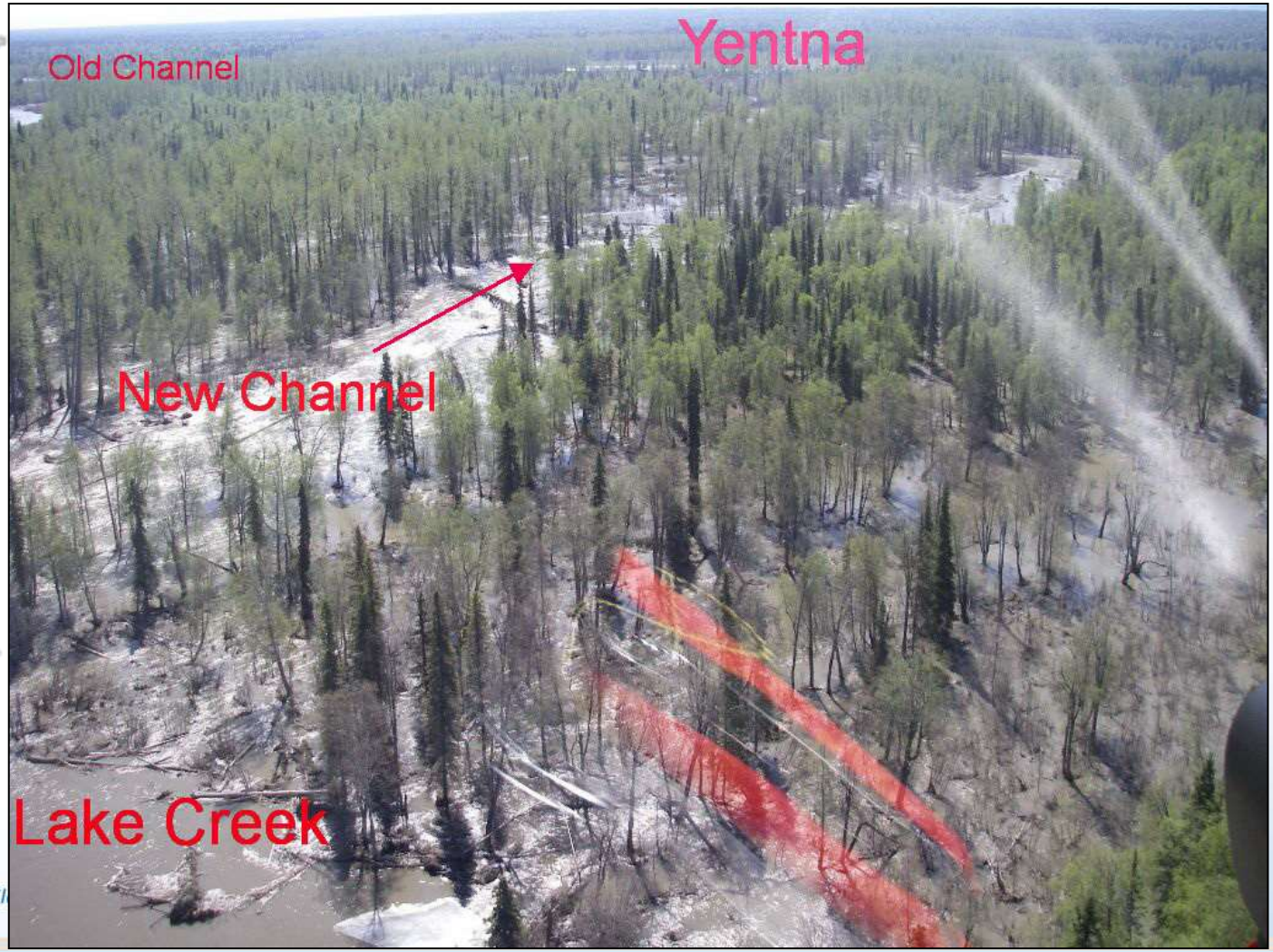


RSP 9.7 Salmon Escapement – Q2 2013 Study Highlights

- Curry field camp setup May 27
- Sonar (ARIS) deployed at Curry June 7 to monitor for signs of Chinook migration
- Site 1 fishwheel operational June 9
- Indian weir mob. begun (target June 22)
- Seven receiver stations installed
  - Montana, Whiskers, Lane, Gateway, 4th of July, Indian, Susitna at Powerline.
- Four receiver stns to be installed
  - Upper Indian, Deadman, Kosina, Oshetna

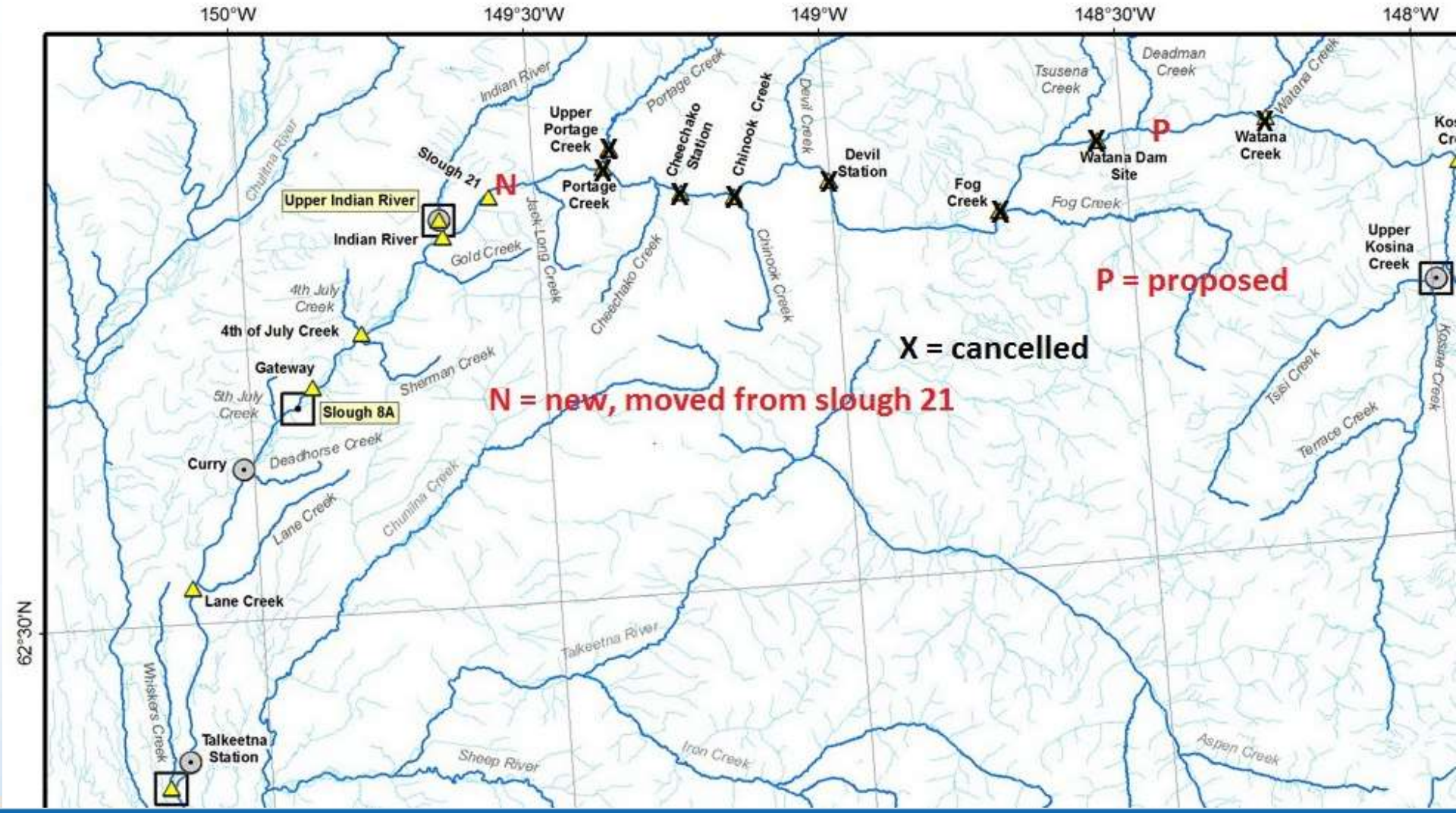
RSP 9.7 Salmon Escapement – 2013 Variations

- Limitations on land access will preclude:
  - Installation of fishwheel below Devils Canyon
    - Will conduct additional fishing and tagging at Curry to meet target numbers of tagged Chinook in DC; additional 160 tags to be applied.
  - Siting eight fixed telemetry stations (see figure)
    - Aerial flights of DC to be conducted daily when Chinook arrive near Impediment 1
    - Anticipate meeting all RSP objectives

RSP 9.7 Salmon Escapement – 2013 Variations

- Land access limitation may impact ability to assess the feasibility of weir or sonar near Watana dam site.
- Sonar methods to detect spawning in turbid water modified:
  - to use ARIS sonar (next generation DIDSON)
  - Side-scan sonar to be replaced by enhanced ARIS sonar.

RSP 9.7 Salmon Escapement



RSP 9.7 Salmon Escapement

Mainstem Susitna

Prelim. Results, through 6/ 20

- Chinook, 1764 caught, 658 tagged
- Montana Creek weir
  - installed 6/17
  - No fish as of 6/19
- Middle Fork Chulitna River
  - ARIS sonar installed 6/20
  - Weir install problematic (high flow)

RSP 9.7 Salmon Escapement

Mainstem Yentna

Prelim. Results, through 6/20

- Chinook, 1760 caught, 655 tagged
- Talachulitna River
  - ARIS sonar installed 6/9
  - Weir install problematic
- Lake Creek
  - Accessibility is very limited

RSP 9.7 Salmon Escapement

<u>New / Prelim. Results through 6/18</u>

- Fishwheels catching fish
  - Chinook, 24 caught, 19 tagged
  - Sockeye, 1 caught, 1 tagged
- Four Chinook and one sockeye above Powerline (HRM 142)

RSP 9.8 River Productivity Study

2nd Quarter 2013 Activities:

- Incorporated FERC SPD recommendations
- Equipment procurement for field activities
- Access permitting ongoing

- Spring sampling effort delayed due to ice conditions
- First seasonal collection trip planned for late June.

RSP 9.8 River Productivity Study

FERC Study Plan Determination:

- Sampling at Upper Susitna sites dropped from study plan (RP 248 and RP 233).
- Sampling sites established in all unique macrohabitat types present at each River Productivity study station, for a total of 21 sites.
- Drift sampling upstream and immediately downstream of tributary mouths.
- Grab samples will be collected in select macrohabitats with fine substrates and low velocities.

RSP 9.8 River Productivity Study

FERC Study Plan Determination:

- Benthic algae samples will be taken from cobble substrates at multiple depths when collecting a composite sample.
- Five replicate plankton tows will be taken within still water areas (if present) with an 8-inch plankton tow net (253 um).
- Organic matter samples will obtain AFDM measurements, as opposed to oven-dry weights.
- An additional 5 replicate macroinvertebrate samples will be collected from large, immobile LWD at each site, if present.

RSP 9.8 River Productivity Study

FERC Study Plan Determination:

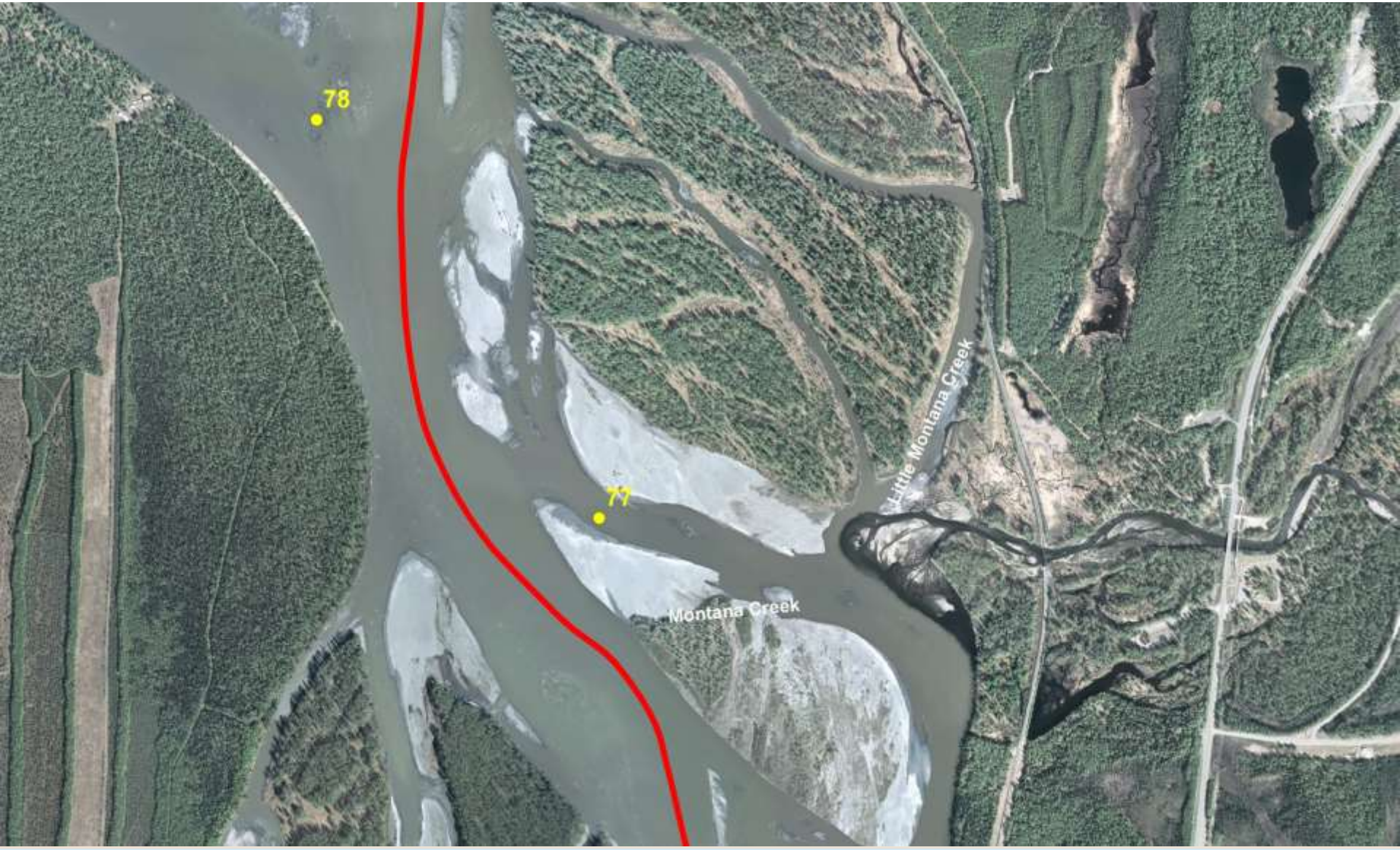
- Emergence traps will be deployed in ice-free areas, if available, starting in April (2014), removed during ice breakup, and redeployed after ice breakup.
- Measure, mark, and weigh the first 50 fish of each target species and age class within each sampled macrohabitat by PIT-tagging.
- Incorporate flow velocity into the foraging models and account for associated capture efficiencies when establishing consumption rate.

RSP 9.8 River Productivity Study

Variations from plan:

- In order to meet the FERC recommendations for fish collection and tagging in the Lower River, it was necessary to relocate that station; Lower River station RP 92 did not coincide with fish collection efforts
- FDA fish tagging and collection efforts in the Lower River have been located at Montana Creek; therefore, the RivPro Lower River station has been relocated to that area.

RSP 9.8 River Productivity Study



RSP 9.8 River Productivity Study

FERC Recommendations for Consultation:

1. AEA will consult with NMFS and FWS when identifying the appropriate two focus areas for stable isotope sampling.
   - The implementation plan proposed FA-141 (Indian River), and FA-104 (Whiskers Slough), with stable isotopes collected at all River Productivity sites within those FAs. With the FERC SPD recommendations, this would include all new sites.
2. AEA will consult with the TWG when selecting the Talkeetna River reference study station.
   - Comments to the draft Implementation Plan suggested areas near Wiggle Creek or Clear (Chunilna) creeks

RSP 9.8 River Productivity Study

Lower Talkeetna River near Wiggle Creek

RSP 9.8 River Productivity Study

Talkeetna River above Clear Creek

RSP 9.8 River Productivity Study

No access to ANCSA corporation-owned lands in 2013

- Focus Areas FA-173 and FA-184 located within ANCSA-owned areas
- FA-173 and FA-184 only accessible via submerged lands
- If flows preclude access via submerged lands, will need to develop alternative.

RSP 9.9 Habitat Characterization and Mapping Study

- FERC Determination April 1, 2013
- FERC Recommended 6 Modifications to RSP
- FERC Required documentation of consultation with Licensing Participants on Item 3

  "Provide detailed description of the specific methods to be used for selecting representative sample of small and low-order Upper River tributaries for habitat mapping"

RSP 9.9 Habitat Characterization and Mapping Study

- AEA submitted a Technical Memorandum June 7, 2013 to Licensing Participants which details the tributary selection method
- AEA will meet with Licensing Participants at June 24, 2013 TWG meeting to discuss and receive comment.
- AEA must submit Final Technical Memorandum to FERC by June 30, 2013.

RSP 9.10 – Future Reservoir and Entrainment

- FERC Study Plan Determination February 1, 2013
- Desk top study rescheduled until March -September 2014
- Effect of rescheduling this study:
  - lacustrine white paper will be delayed; completion in Q2 2014.
  - benefit from having seasonal sampling data from FDA,
  - will be in synch with Fish Passage concept development and water quality modeling outputs
- No effect of rescheduling on inputs to other studies.

RSP 9.11 Fish Passage Feasibility Study

- Fish Passage Technical Work Group (FPTWG)
  - Technical reps and passage experts from ADF&G, NMFS, NOAA, AEA
  - AEA added Dr. Dana Schmidt, Dr. Al Giorgi and Mr. Chick Sweeney to FPTWG in response to NMFS request for additional experts.

RSP 9.11 Fish Passage Feasibility Study

- Held Workshop #1, April 9-10, 2013
  - Review of existing physical, operations, and ecological information
  - Brief on multiple other studies that will inform FPTWG
- Conducted Meeting #3 on May 21, 2013
  - Updates on workshop information and meeting notes
  - Communicated future schedule updates.
- Coordinated tributary flow needs for fish passage with 2013 field studies.

RSP 9.11 Fish Passage Feasibility Study

- Next meeting July 9, 2013 (teleconference)
  - Follow up on information summary
  - Prepare for site reconnaissance trip.
- Site Reconnaissance Trip
  - Moved to late August, early September
  - Date to be confirmed after June 7, 2013
  - FPTWG members to observe site prior to beginning the brainstorming and concept development, and begin discussions on concepts.

RSP 9.11 Study Plan Schedule Update

- July 9, 2013: Next FPTWG meeting: Updates to background information summary, prepare for site reconnaissance trip.
- Aug 19–Sept 20, 2013: Site reconnaissance 3-day trip (rescheduled from July 9). FPTWG members to observe site prior to beginning the concept development and brainstorm session.
- March 18-19, 2014: Concept development brainstorm meeting. Revised date provides for 2013 field study preliminary results to be utilized by FPTWG.
- Future Gantt chart schedule and meeting list for FPTWG to be updated based on confirmation of the site reconnaissance meeting.

RSP 9.12 Fish Passage Barrier Assessment

- FERC Study Plan Determination February 1, 2013
- FERC requested additional information or modification to RSP regarding barrier study methods
- FERC required documentation of consultation with Licensing Participants
  - AEA submitted Draft Fish Passage Barrier Implementation Plan to Licensing Participants May 15, 2013
  - Licensing Participants allowed 20 days to provide comment; comments received June 7, 2013
- AEA will file responses to comments and Final Implementation Plan with FERC June 15, 2013

RSP 9.13 – Aquatic Resources in the Access & Transmission Alignment

- FERC Study Plan Determination February 1, 2013
- Field work rescheduled until June-September 2014
- Effect of rescheduling to other studies
  - Study 9.13 will benefit from 2013 data collected for fish distribution (RSP 9.5) and aquatic habitat (RSP 9.9).
  - No studies are dependent upon information collected in 2013 for RSP 9.13.
  - Data collected for RSP 9.13 in 2014 will supplement information on fish distribution in the study area.

RSP 9.14 Genetic Baseline Study

Q2 2013 Highlights

- Draft Implementation Plan submitted for comments; Comments on IP received and incorporated
- Filed Final IP with FERC April 30, 2013
- 2013 field collections underway

RSP 9.14 Genetic Baseline Study

Key results from FERC SPD and subsequent agency comments on Implementation Plan (IP):

- File annual IPs with FERC on April 30
- Update RSP to reflect IP
- Postpone analysis of 2012 samples until sample sizes increase
- Confer with agencies as sampling is completed regarding:
  - Adequacy of sample sizes
  - Data inclusion
  - Appropriate tests

RSP 9.16 Eulachon Study

- Field deployment delayed by late ice break-up
- Preliminary recon surveys conducted May 8-24 to monitor early activity (deviation from RSP) – only one eulachon collected
- Field mobilization May 28, 2013
- Sonar and telemetry installed at fixed sites
- A few fish detected by sonar on Day 1
- Fish sampling and mobile sonar surveys initiated May 29
- Six fish radio-tagged on May 29 (between RM 10 and 17.5)

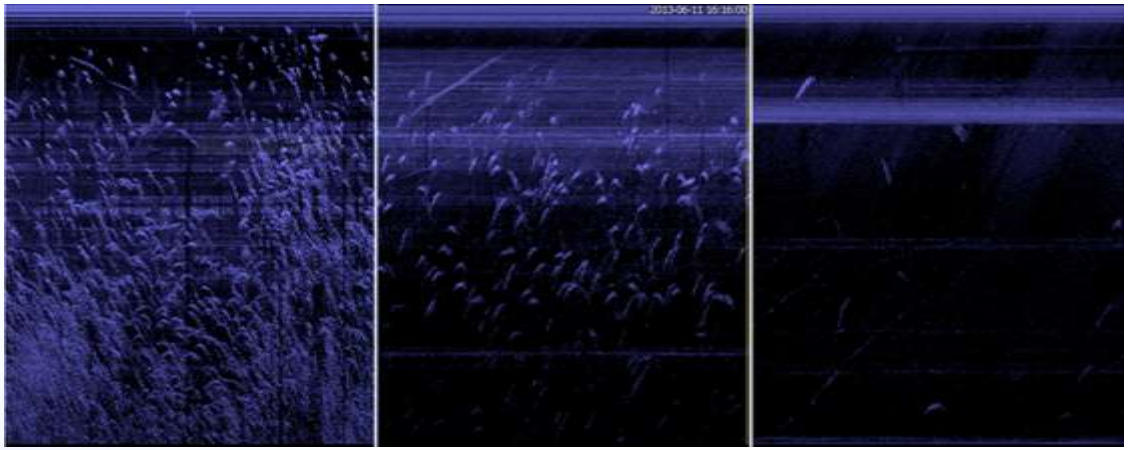
RSP 9.16 Eulachon Study

- Eulachon run approximately 2 weeks later than usual
- Ice conditions on the river delayed some initial activities, but sampling was still conducted to catch beginning of run
- Radio-tagging deployment schedule adjusted to compressed run timing

Eulachon Study

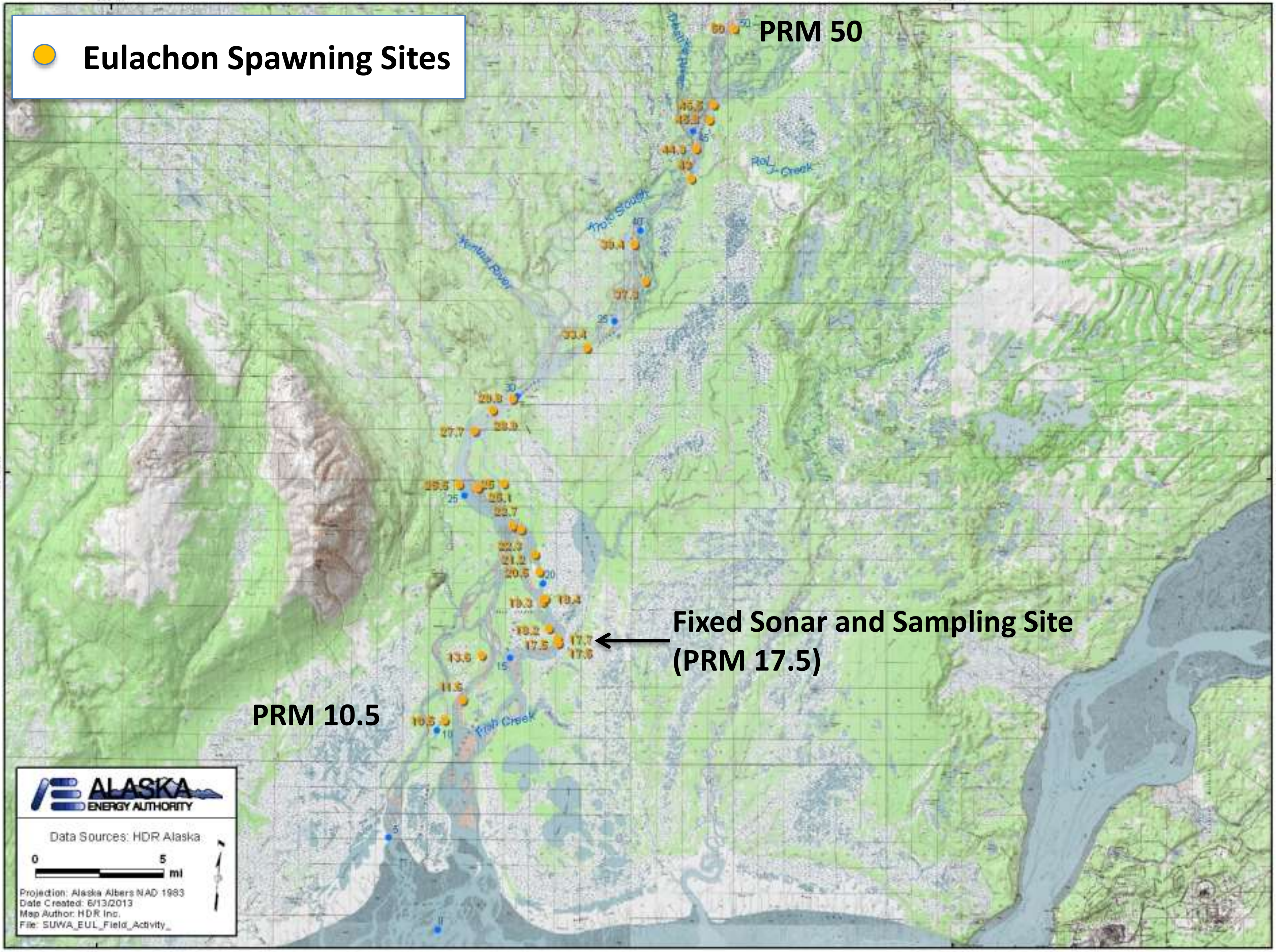
Fixed Sonar and Active Sampling Site - Run Timing and Duration

DIDSON Images



June 6 June 11 June 12

Date	Eulachon per Minute of Dip-netting
20130531	0.63
20130601	2.76
20130602	2.56
20130603	4.73
20130604	39.54
20130605	4.30
20130606	93.00
20130607	250.00
20130608	24.37
20130609	47.00
20130610	7.00


Eulachon Spawning Sites
PRM 50
Fixed Sonar and Sampling Site
(PRM 17.5)
PRM 10.5
ALASKA
ENERGY AUTHORITY
Data Sources: HDR Alaska
0
5
mi
Projection: Alaska Albers NAD 1983
Date Created: 6/13/2013
Map Author: HDR Inc.
File: SUWA_EUL_Field_Activity_
151°W
150°W

RSP 9.14 Eulachon Radio Tagging

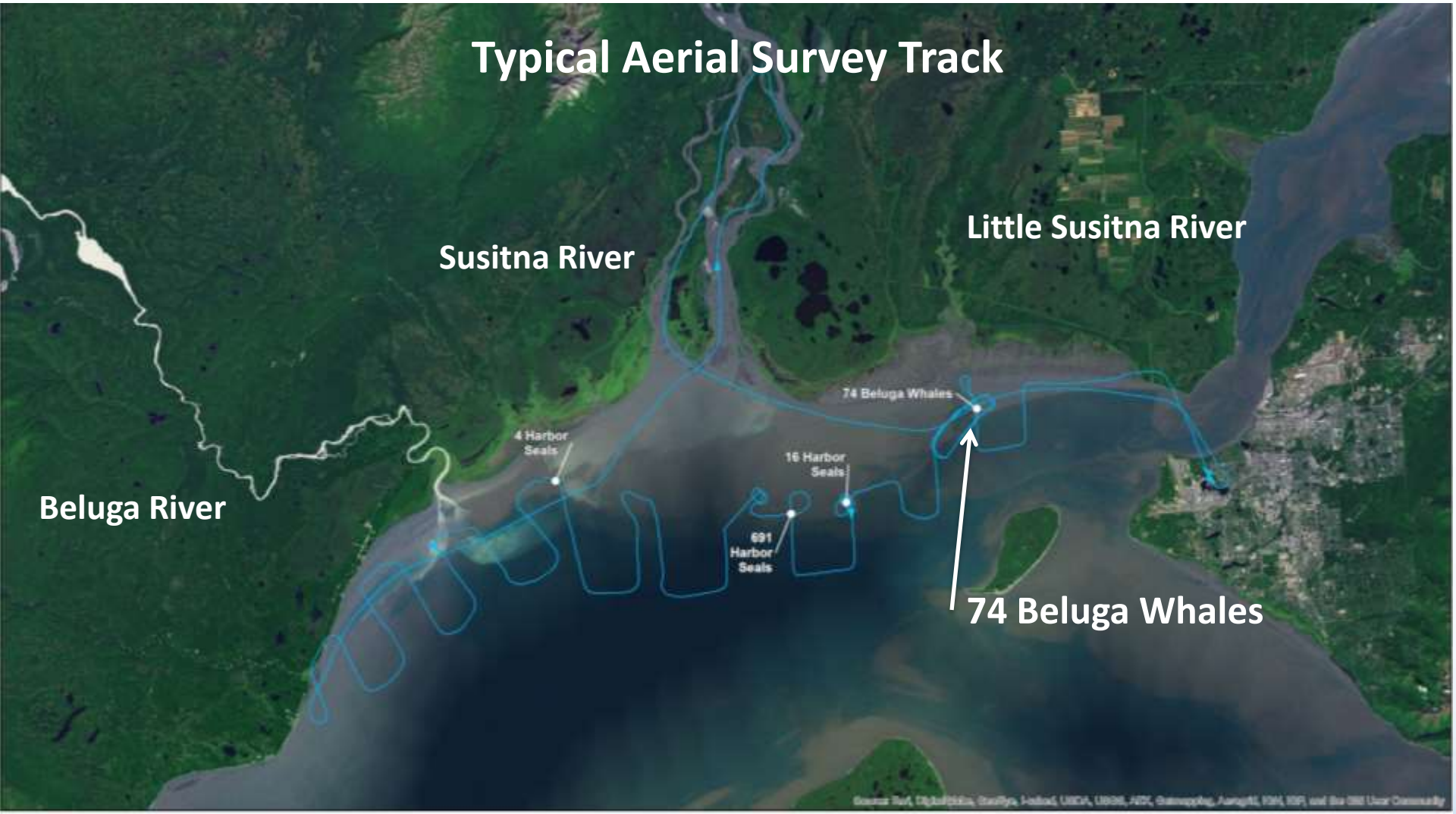
New / Prelim. Results, Through 6/20

- Run over and field project demobilizing
- 207 eulachon tagged (goal 150)
- 12 aerial surveys
- Farthest tagged fish upstream, APRM 44

RSP 9.17 Cook Inlet Beluga Whale Study

- Aerial Surveys – HDR and APU
  - Surveys conducted May 6th, 13th, 19th, 27th, 2013
  - 3-40 beluga whales observed per flight – primarily to west of Susitna River (near Beluga River)
- Remote Cameras – HDR and ASLC
  - Video and still cameras and hardware received
  - Monitoring stations set up at HDR office
  - Installation of cameras (delayed by ice conditions)
- WSE Model
  - rescheduled until 2014

Cook Inlet Beluga Whale Study



Cook Inlet Beluga Whale Study

Aerial Survey Summaries

Date	Survey Start	High Tide	Low Tide	Beluga-White	Beluga-Gray	Beluga Calf – Dark Gray
20130506	10:00	17:58	12:01	6	1	0
20130513	12:20	09:21	16:43	17	1	0
20130519	13:30	15:23	09:33	2	1	0
20130527	10:30	08:55	16:21	34	6	0
20130611	14:30	09:07	16:22	68	6	0