



SUSITNA-WATANA HYDROELECTRIC PROJECT

Results of the 2012 Upper Susitna River Fish Distribution and Abundance Study

**Fish and Aquatic Resources
Technical Workgroup Meeting**
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Prepared by HDR, Inc.



Study Objectives

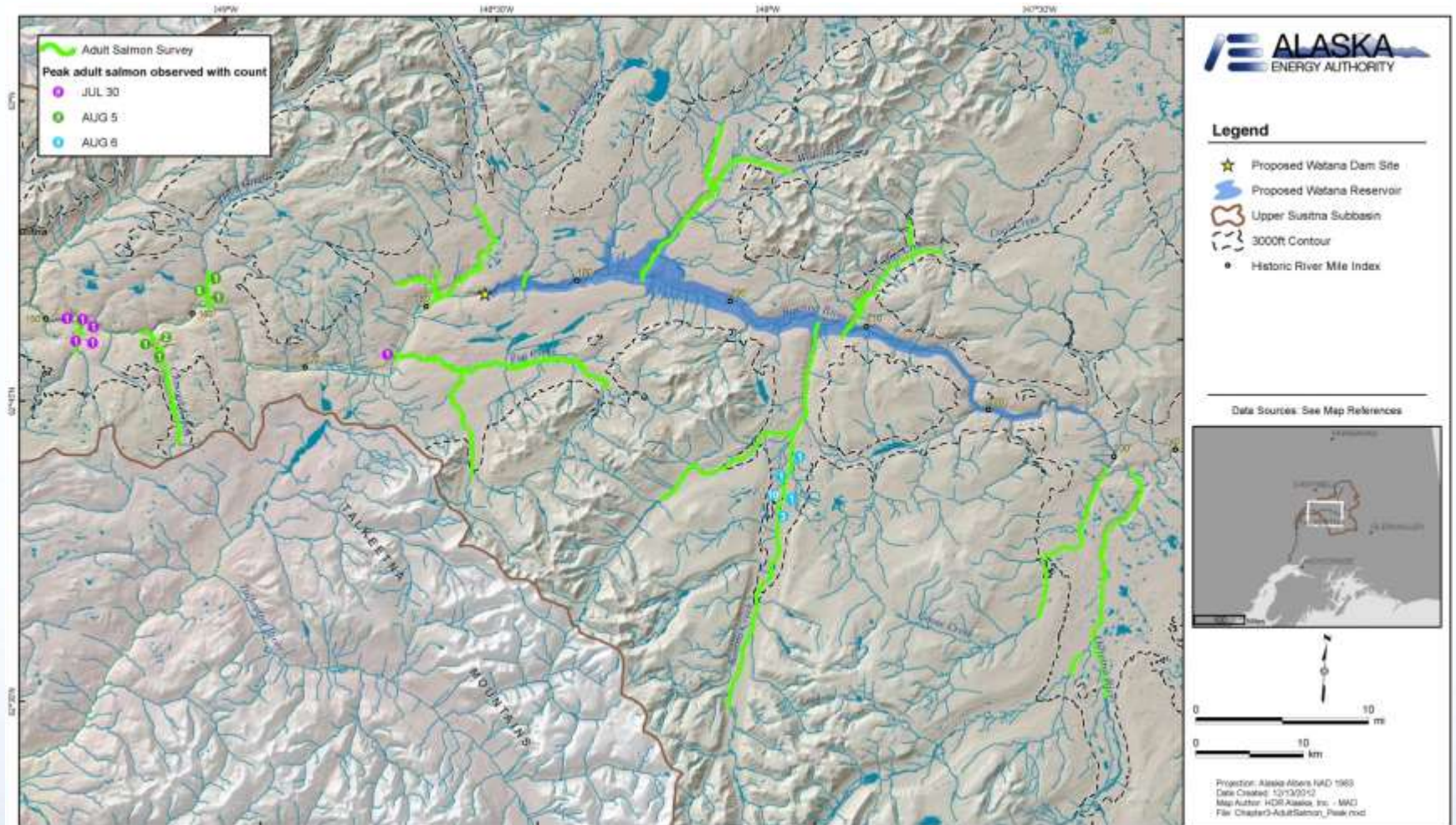
- Determine distribution/abundance of adult Chinook salmon in Susitna River and tributaries above Devils Canyon
- Determine distribution/abundance of juvenile Chinook salmon and other species in Susitna River and tributaries above Devils Canyon



Two Components

- Aerial Chinook Spawning Ground Surveys
- Distribution of Juvenile Chinook salmon and Other Species in Upper Susitna River

Study Area for Chinook Spawning Ground Surveys



Chinook Spawning Ground Surveys

- 12 Streams
- 4 Surveys at each stream
- 83 Chinook salmon observed
- 53 from Kosina Creek

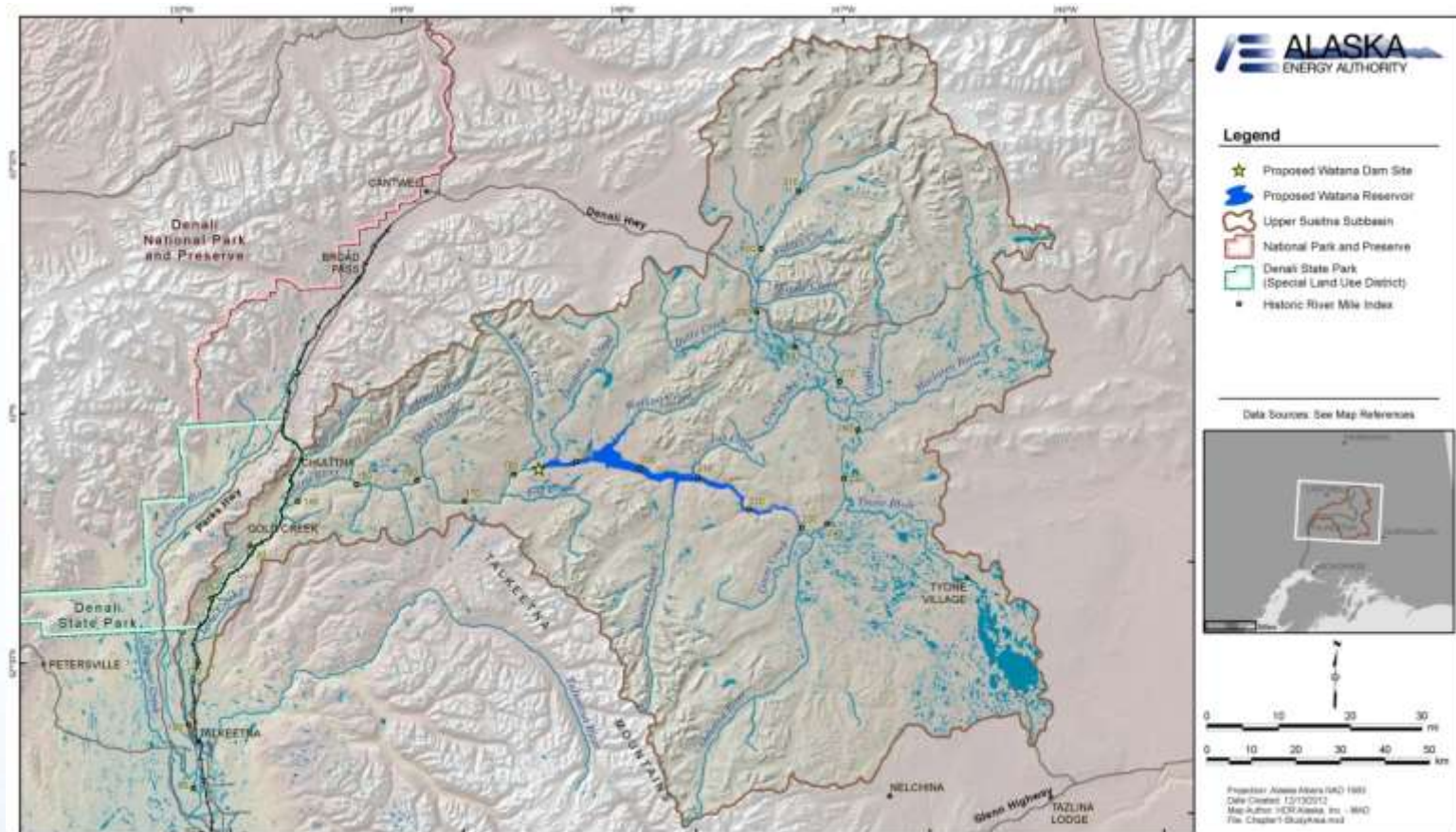
Chinook Spawning Survey Results

		Adult Chinook Salmon Observed During Surveys			
Stream Name	Historic River Mile	Survey 1 July 24-25	Survey 2 July 30-31	Survey 3 August 5-6	Survey 4 August 10-11
Cheechako	152.4	0	5	0	2
Chinook	157.0	0	2	4	0
Devils	161.4	2	6	7	1
Fog	176.6	0	1	0	0
Unnamed	181.2	0	0	0	0
Tsusena	181.8	0	0	0	0
Deadman	186.6	0	0	0	0
Watana	194.1	0	0	0	0
Kosina	206.8	15	8	16	14
Jay	208.6	0	0	0	0
Goose	231.0	0	0	0	0
Oshetna	233.5	0	0	0	0

Chinook Creek with Adult Chinook Observed from Helicopter



Fish Distribution Study Area



Fish Sampling Methods

- Backpack electrofishing (88.2% of catch)
- Boat-based electrofishing
- Fyke nets
- Minnow traps
- Angling
- Gillnets
- Snorkeling



Habitats Sampled

- Mainstem Susitna River
- Tributary Plumes
- Tributaries to Susitna River
- Lakes



Collection Methods and Units Sampled

Habitat Type	Backpack Electrofisher	Boat-Mounted Electrofisher	Minnow Trap	Fyke Net	Gillnet	Angling	Snorkel
Mainstem Susitna	30	10	--	1	--	1	--
Tributary Plume ¹	12	8	--	1	--	1	--
Tributaries	184	14	18	--	2	9	6
Lake	1	2	23	7	--	2	--
TOTALS	215	26	41	8	2	12	6

¹ Note that Tributary Plume habitat is part of mainstem habitat and is included in the mainstem total as well. It is shown here for extra detail.

Total Catch Collected

Fish Species Latin Name	Fish Species Common Name	Total Number Captured	Minimum Length (mm)	Maximum Length (mm)
<i>Salvelinus malma</i>	Dolly Varden	246	26	366
<i>S. namaycush</i>	Lake trout	5	320	510
<i>Thymallus arcticus</i>	Arctic grayling	559	22	500
<i>Coregonus pidschian</i>	Humpback whitefish	1	231	231
<i>Prosopium cylindraceum</i>	Round whitefish	14	119	420
Salmonidae	Salmonid-unspecified	15	18	52
<i>Oncorhynchus tshawytscha</i>	Chinook salmon	37	54	72
<i>Lota lota</i>	Burbot	5	372	410
<i>Catostomus catostomus</i>	Longnose sucker	32	20	404
<i>Cottus cognatus</i>	Slimy sculpin	366	25	175
Cottidae	Sculpin-unspecified	1,126	22	124
	Total Catch	2,406	18	510

Electrofishing Effort and Catch

Habitat Type	No. of Sample Units	Effort minutes	Chinook salmon	Dolly Varden	Lake trout	Arctic grayling	Round whitefish	Humpback whitefish	Whitefish spp.	Salmonid spp.	Burbot	Longnose sucker	Slimy sculpin	Sculpin spp.	Totals
Mainstem Susitna	30	203				195	4				4	21	44	151	417
Tributary Plume ¹	12	105				159	3			2	1		36	112	313
Tributary	184	715	37	210		241				13		3	285	902	1,691
Lake	1	12													0
TOTALS	215	929	37	210	0	436	4	0	0	15	4	24	329	1053	2,122

¹ Note that Tributary Plume Habitat is part of mainstem habitat and is included in the mainstem total as well. It is shown here for extra detail.

Electrofishing an Unnamed Tributary



Fyke Netting an Unnamed Lake



Sampling in the Field

Clockwise from top left: juvenile Chinook salmon, Dolly Varden, juvenile round whitefish, juvenile Arctic grayling



Questions?

