

Moose Creek Fish Habitat Restoration Project

Coordinated by:

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Chickaloon Village Traditional Council



NFHI



Presentation Outline

- Moose Creek History
- Habitat Restoration History
Phases 1 and 2



Moose Creek History to 2005

1



2



3



4



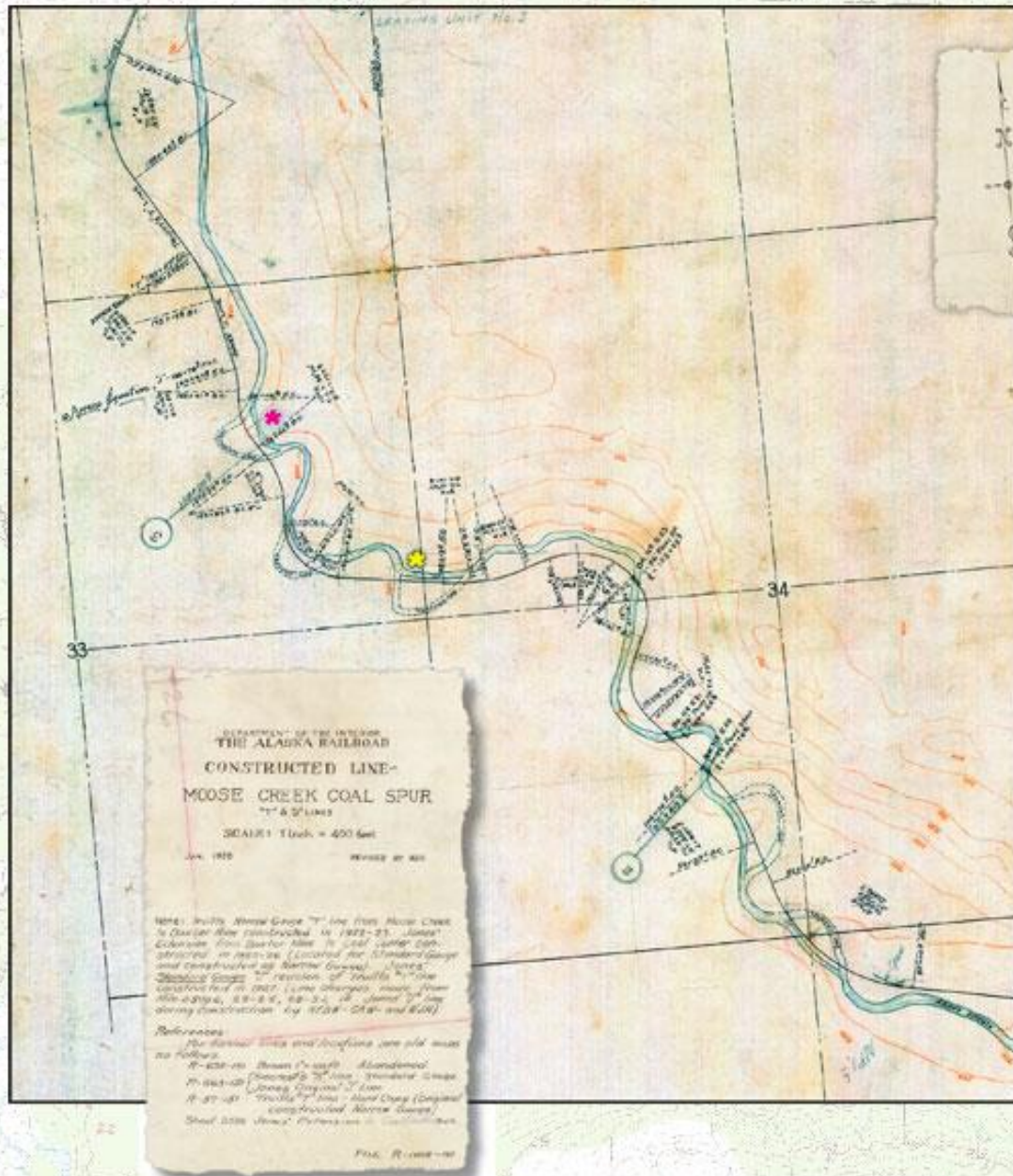
Problem: Tribal Elders noted decreased salmon populations and fish passage barriers on Moose Creek

Goals:

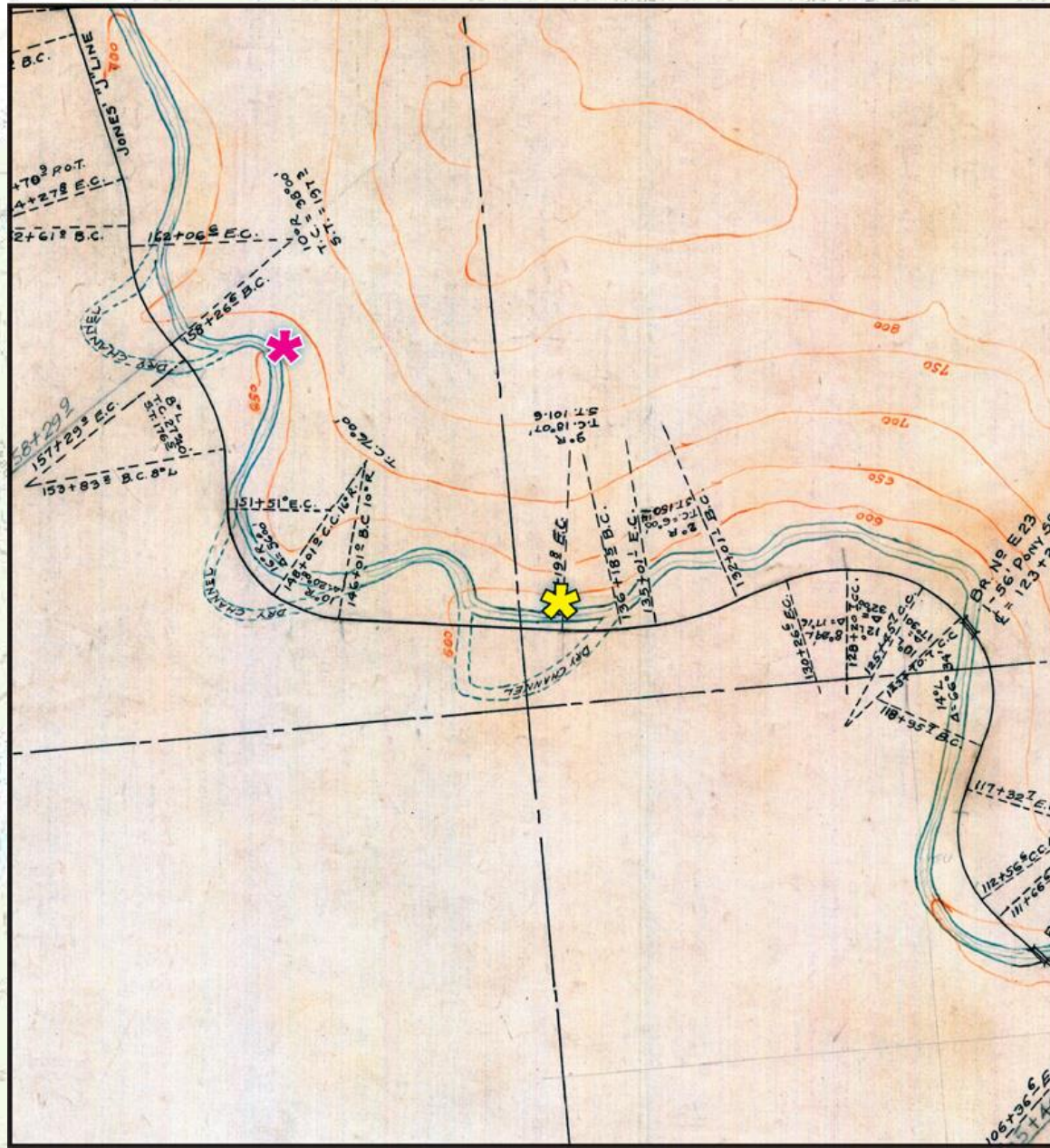
- 1) Restore fish passage to upper watershed**
- 2) Rehabilitate stream processes**
- 3) Restore populations of salmon**



Railroad Alignment Map

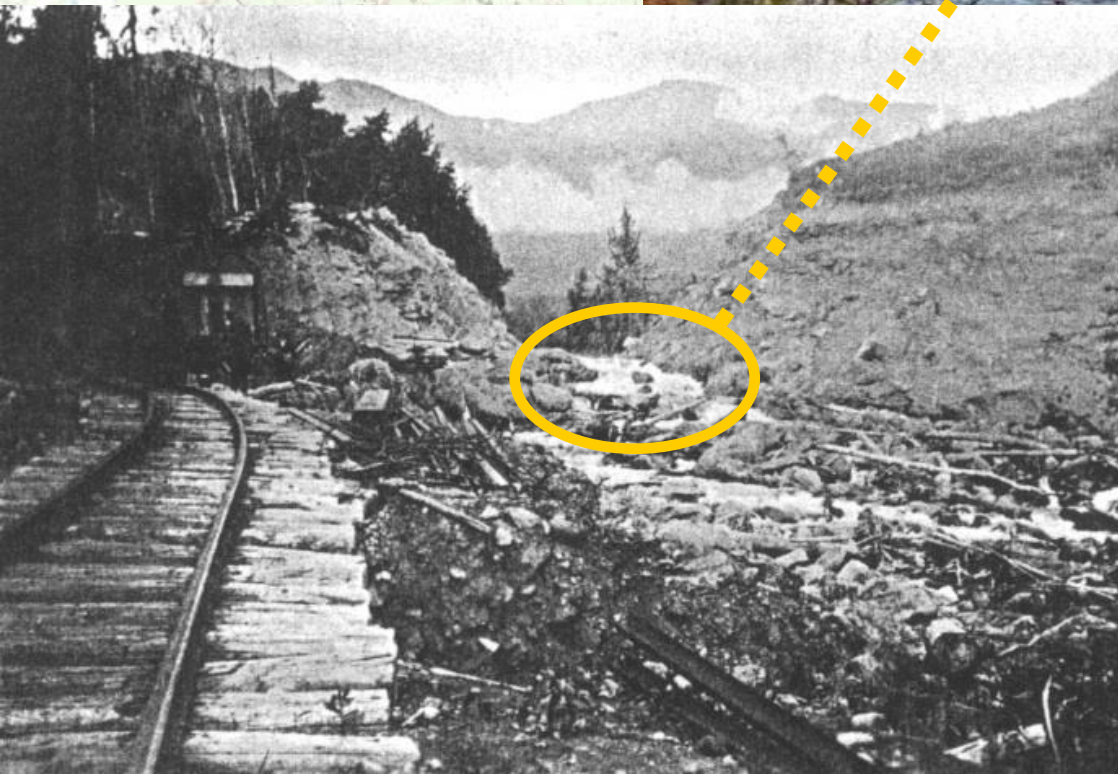


Railroad Alignment Zoom



Moose Creek Fish Passage Barrier

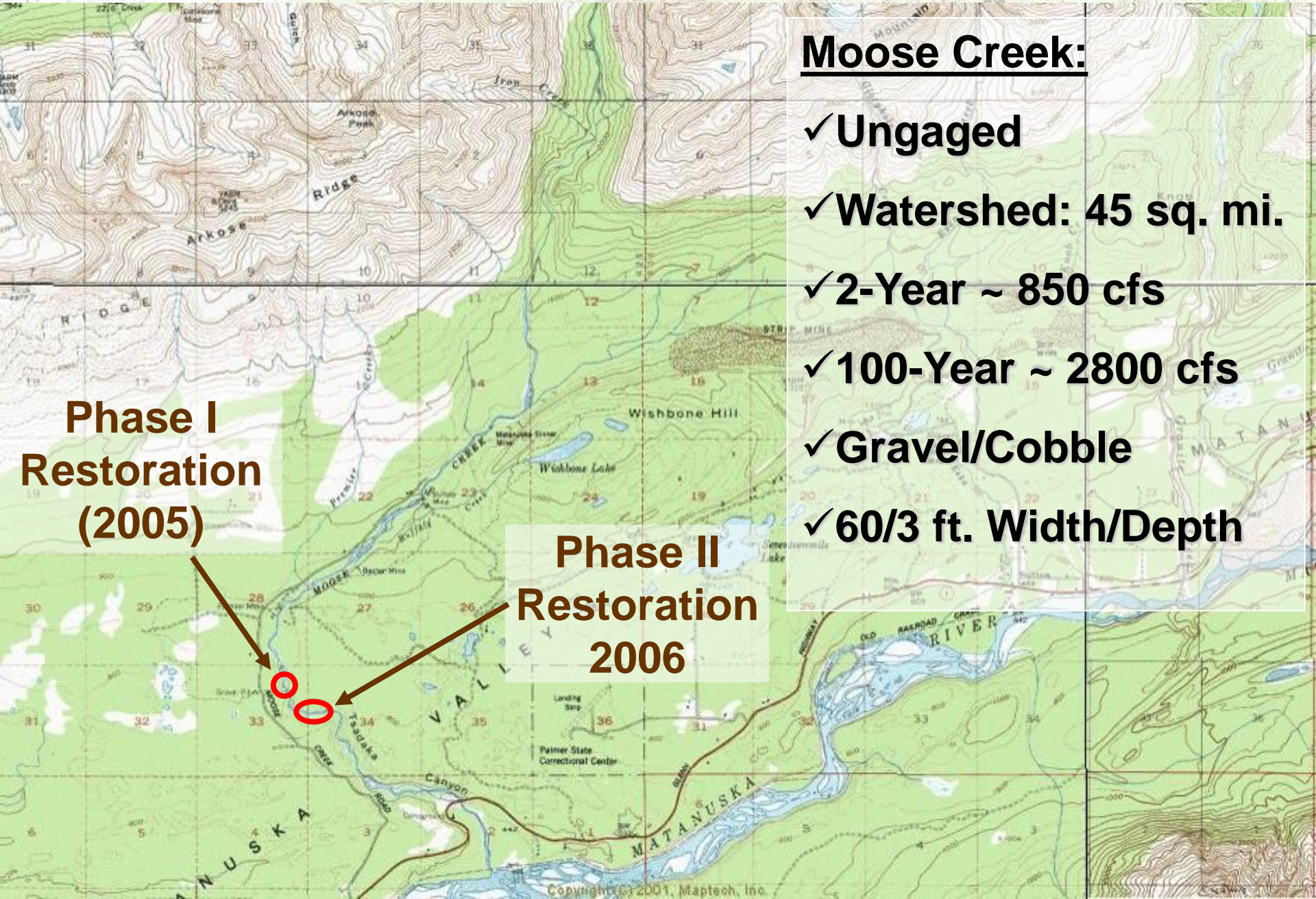
Beginning in the 1920's, coal mines and a railroad were constructed in the lower 7 miles of Moose Creek.



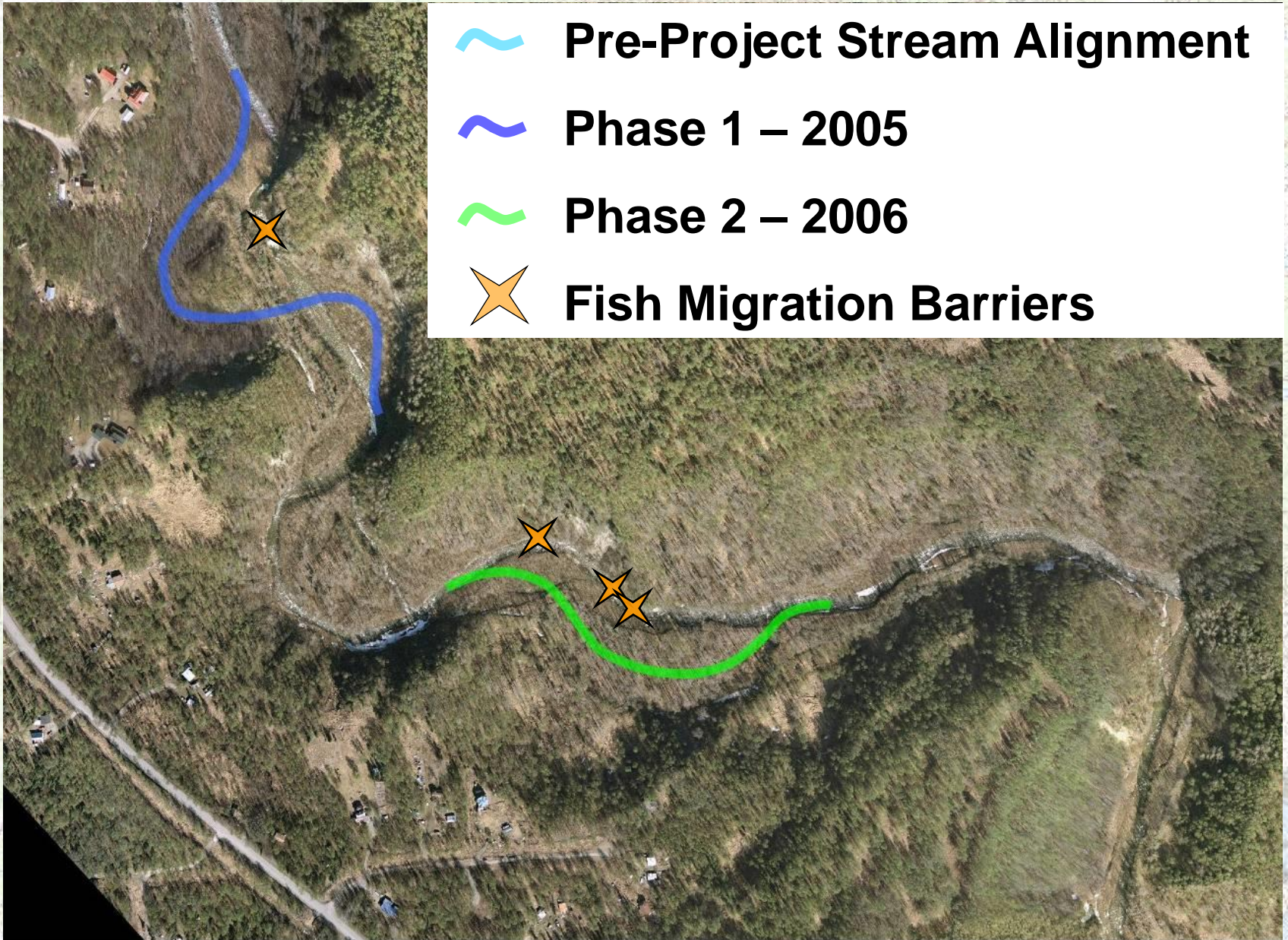
Creek meanders were cut off, and barrier waterfalls formed. Salmon were blocked from the upper watershed.



Moose Creek Fish Passage Restoration



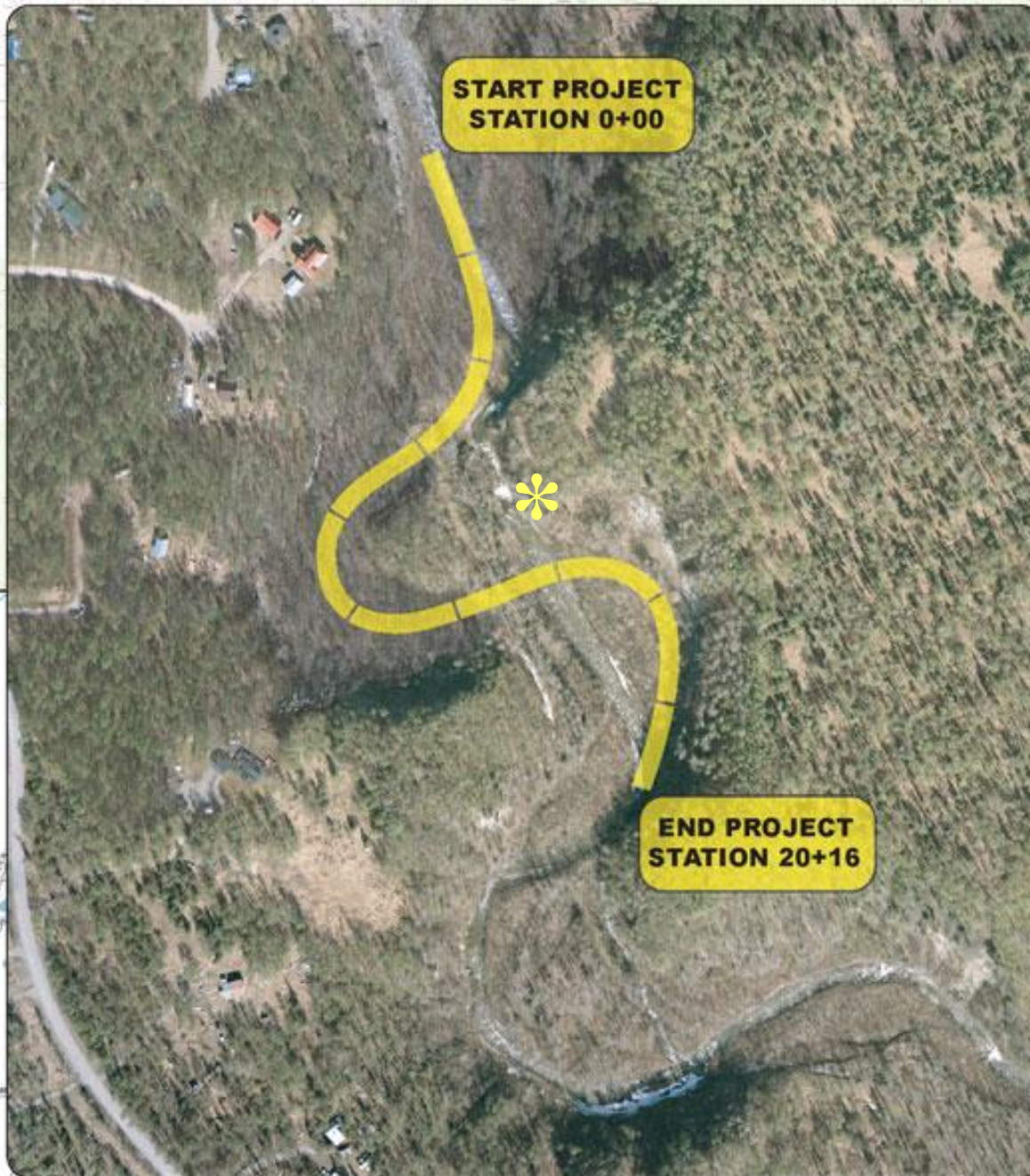
Phase I and II Layout



0 250 500 1,000 1,500 2,000
Feet



Final Design Phase I



Phase 1 Pre-project:

- 1,065 feet long



NO salmon upstream of 10-ft waterfall for decades

Phase 1 Post-project:

- 1,850 feet of new channel



- Salmon access to > 7 miles + tributaries and wetlands
- Over 200 king salmon observed spawning upstream of project within days of completion

Engineered Structure & Off-Channel Habitat Placement



- Cross-Vane Weir
- Rock-Vane
- Cobble-Vane
- Rock-Log Vane
- Off Channel Habitat

* Approximate Location of Structures

Phase I



Seeded Phase I Floodplain with LWD



Large Waterfall = Salmon Barrier



Waterfall *Before* Restoration



Waterfall *After* Restoration



Chinook Salmon Survey 2005

- **215** Adult Chinook salmon counted upstream of the restoration project site



- Chinook salmon counted more than **5 miles** upstream of the restoration project site!!



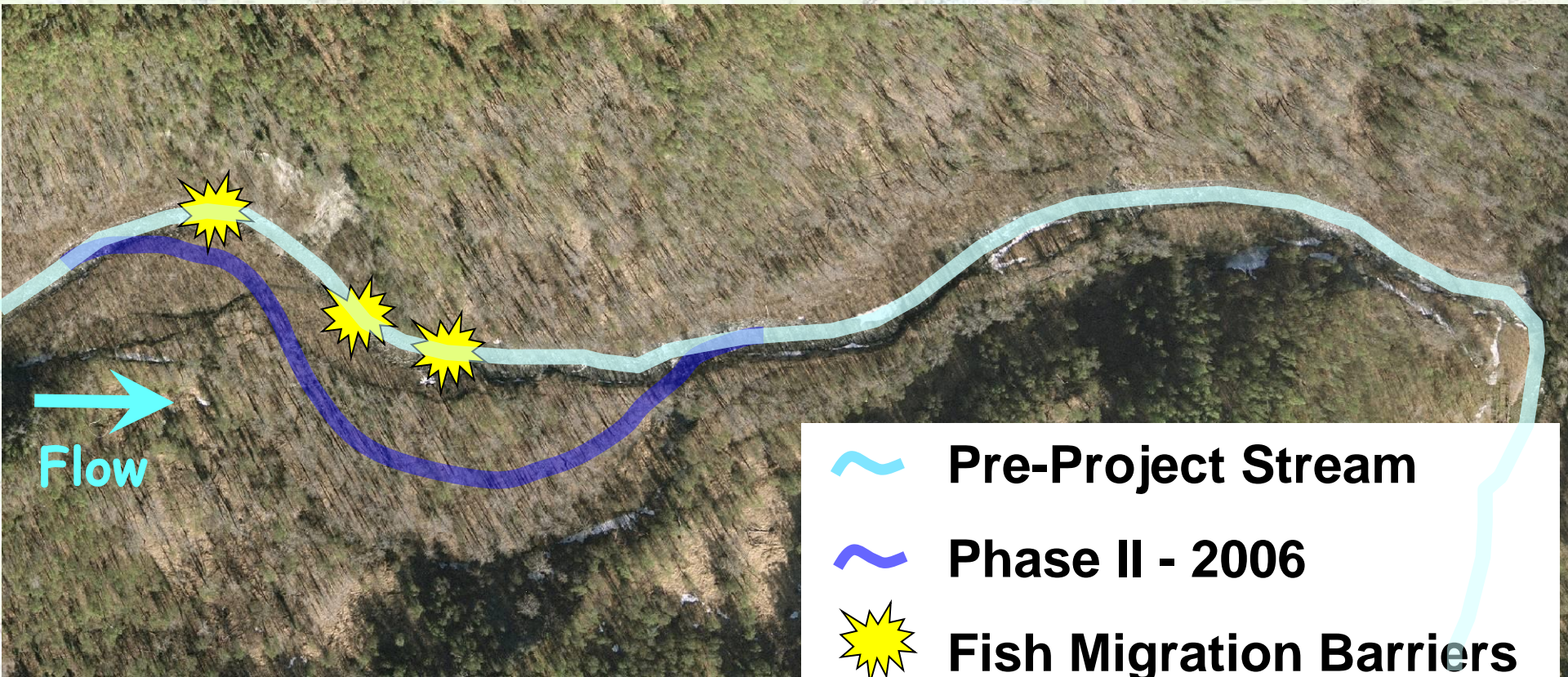
Phase 2

Phase 2 Pre-project:

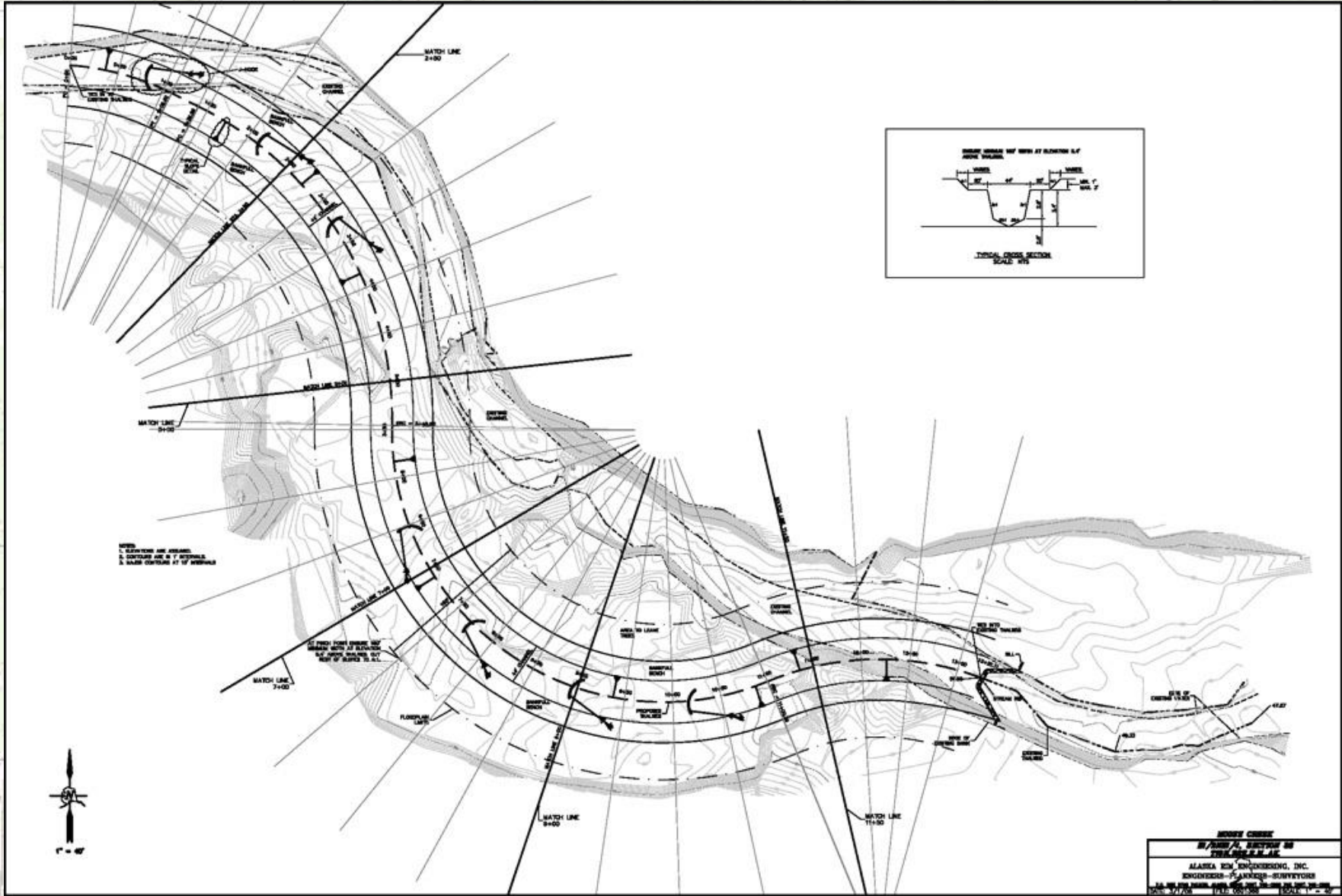
- 1,000 feet long
- Partial barrier to adult salmon / total barrier for juvenile salmon upstream

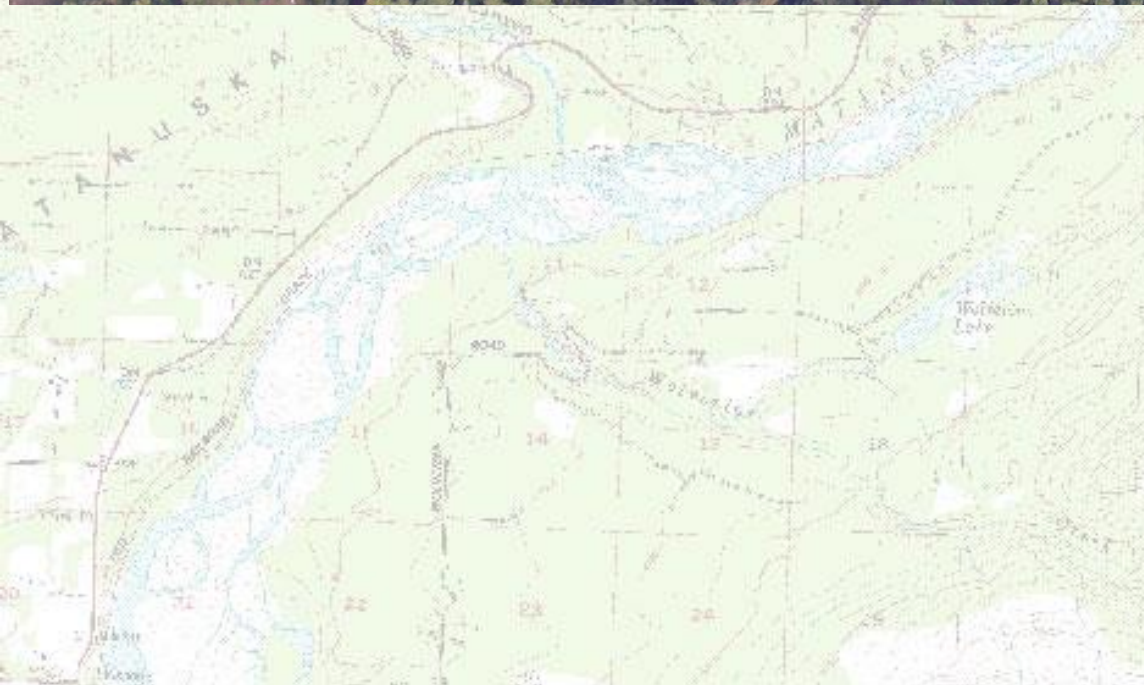
Phase 2 Post-project:



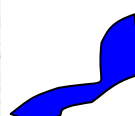



- 1,350 feet of new channel, plus side channel
- Bypass 3 partial barriers
- Improve in-stream habitat quality and diversity



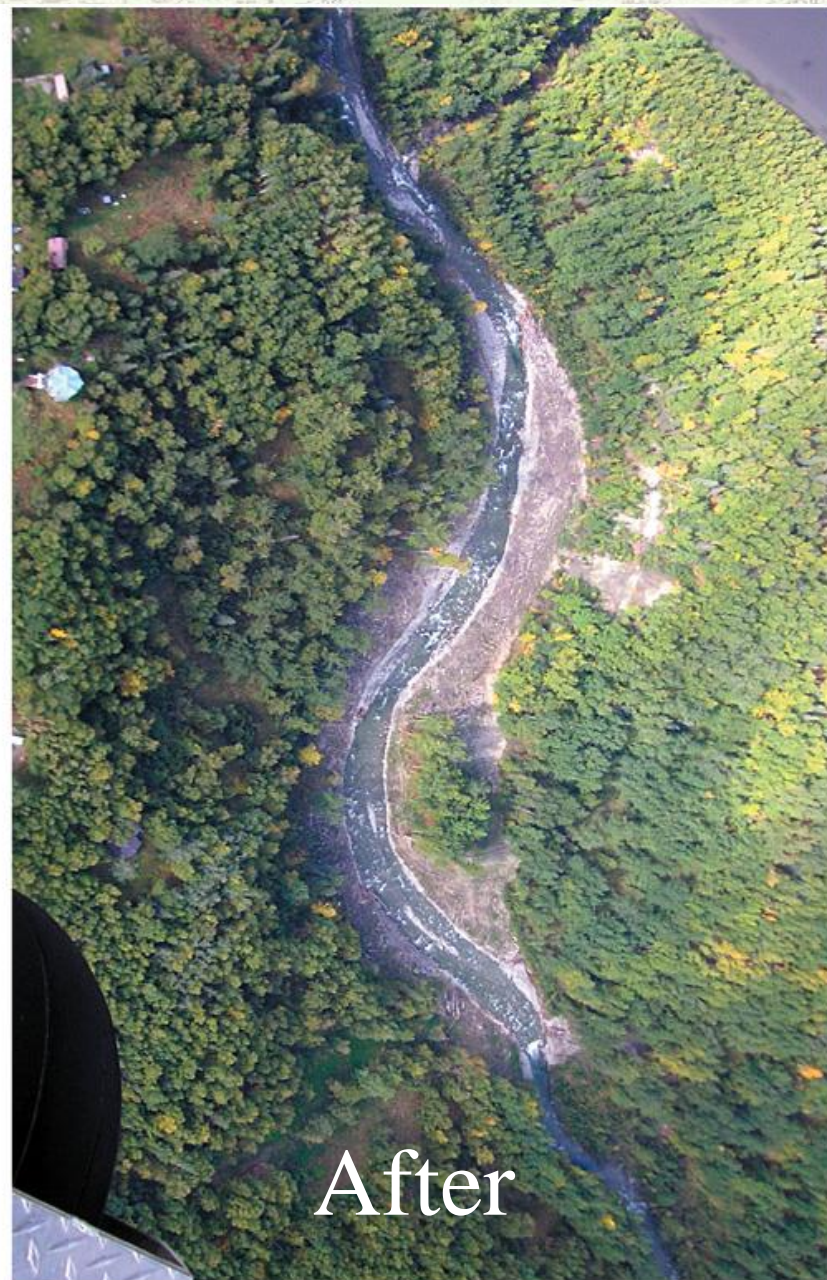
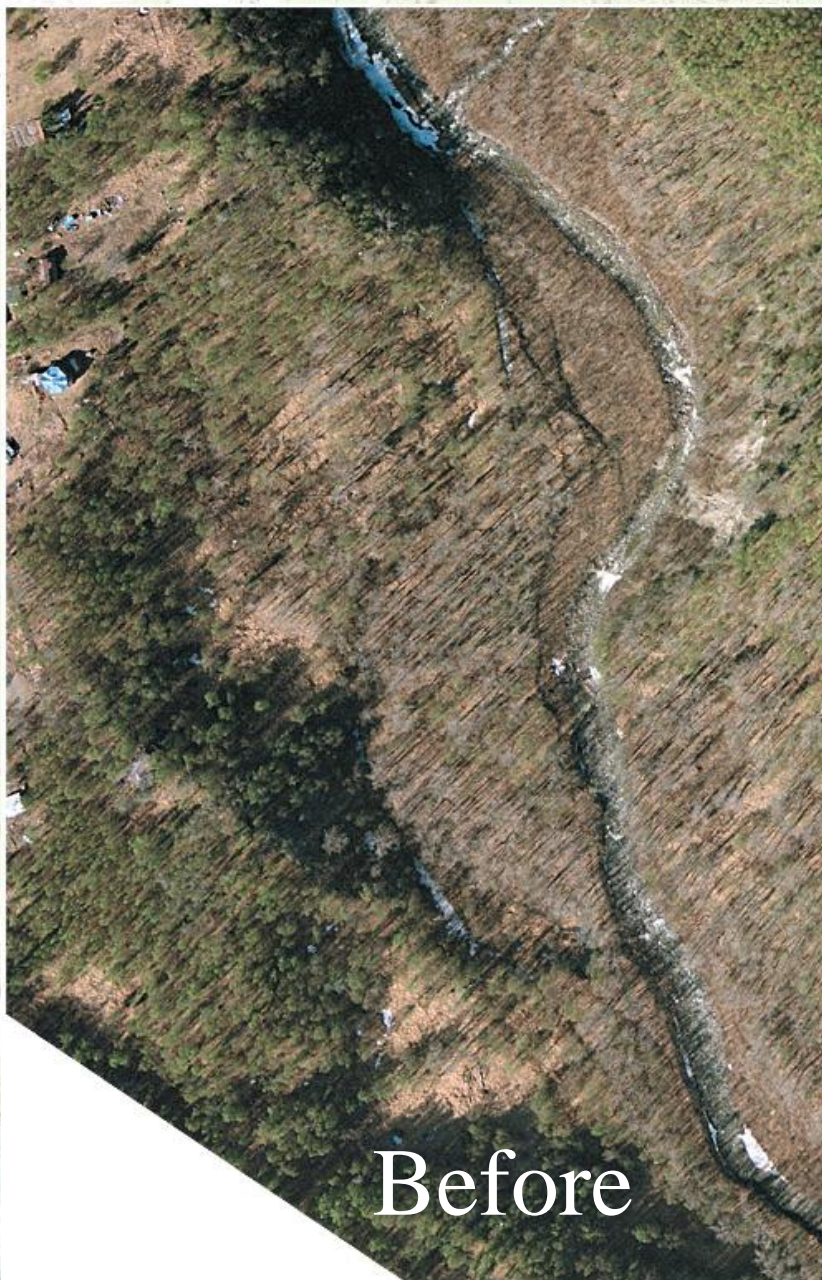
Final Design Phase II





-  **Cross-Vane Weirs**
-  **Vanes**
-  **Side Ponds**
-  **Plug**
-  **Side Channel**
-  **Log Debris Jams**

Aerial Photos Phase II



Engineered Log Jams



Chinook Salmon Survey 2006

- 556 adult Chinook salmon were counted in Moose Creek at the end of July (foot survey).



Coho Salmon Survey 2006

- 335 live coho salmon in Moose Creek (foot survey)
- 342 carcasses counted - many could not be identified to species



Thank You!



Mat-Su Basin Salmon Conservation Partnership!



Thanks to all the volunteers who gave their time and energy to the restoration projects.



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