

Confederated Tribes of the Colville Reservation

Evaluate Live-Capture Fishing Gear for Salmon

BPA Project #2007-249-00

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Confederated Tribes of the Colville Reservation



Colville Tribes

- Confederation of 12 recognized tribes
- Over 9,050 members
- Reservation established in 1872; borders the Columbia and Okanogan rivers in north-central Washington
- Reserved rights to salmon fishing

Colville Tribes' Executive Order:

- Fishing Right is not diminished.
- Includes the right to co-manage so that fish are present for harvest.
- Extends to the North Half and elsewhere.
- Salmon runs blocked by Chief Joseph and Grand Coulee dams.

Colville Tribes' Historical Fishing



Kettle Falls



Kettle Falls Basket Trap





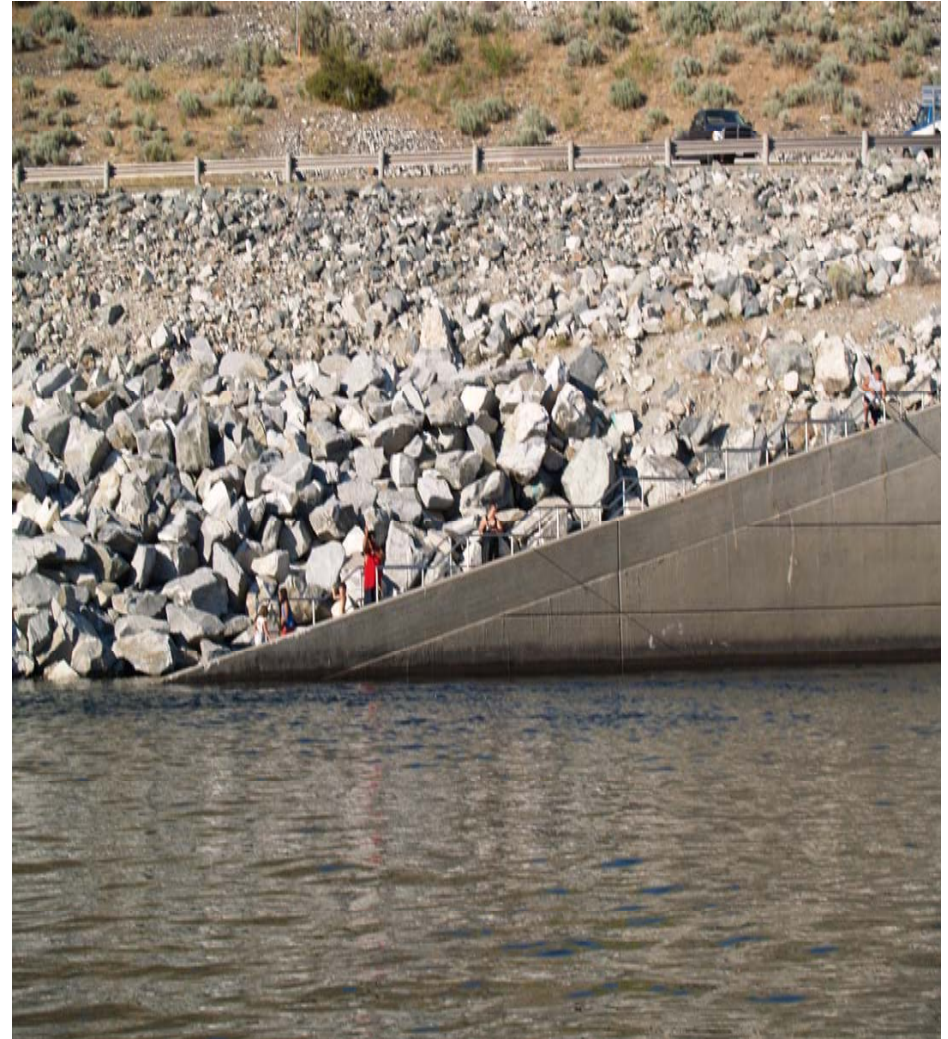
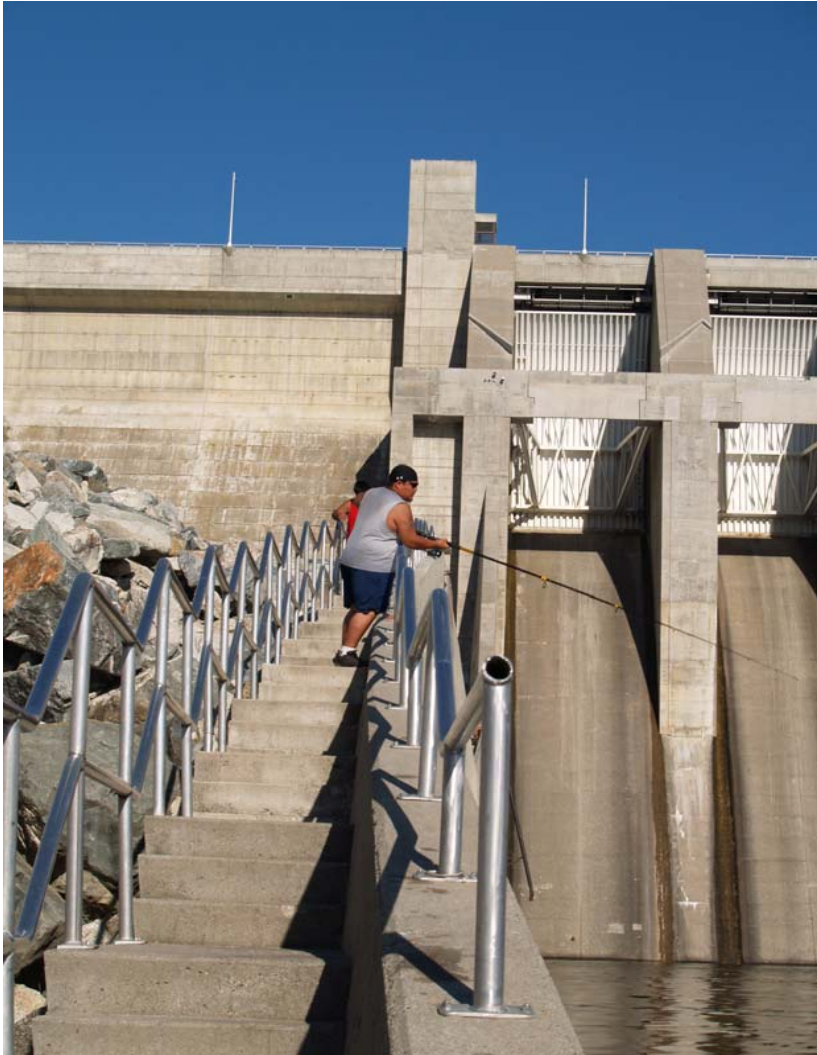
WOODFIELD, PHOTO
ANTHRACITE, PA.

Upper Columbia Tribes Historical Summer Chinook Harvest Numbers

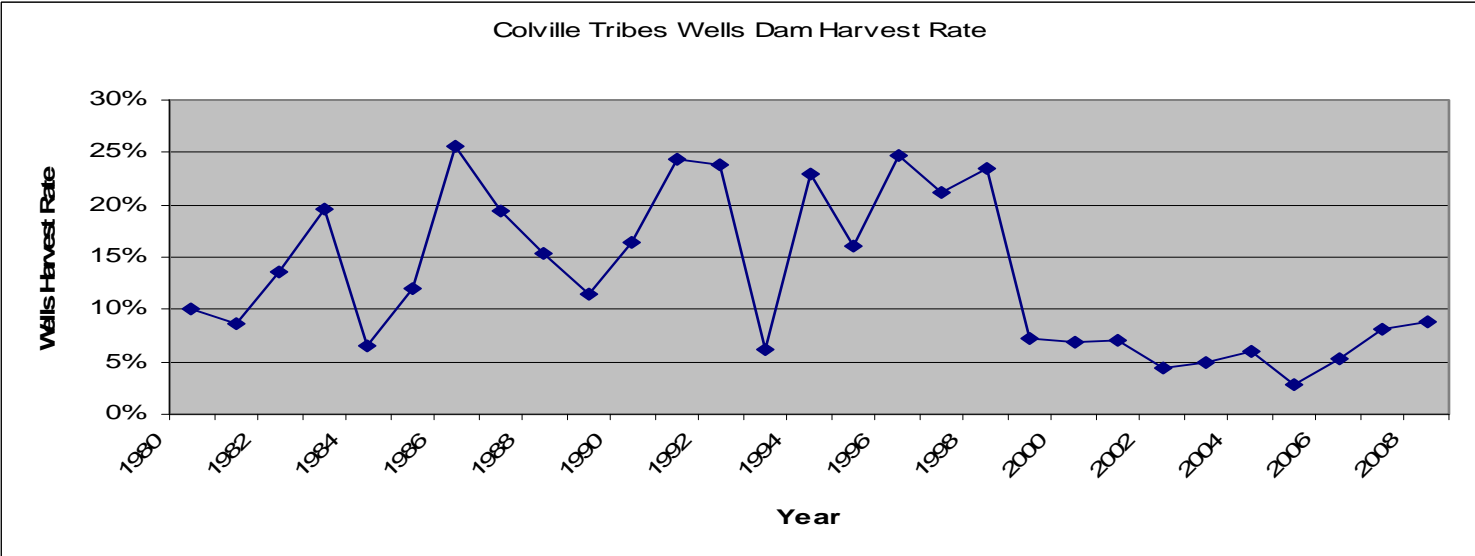
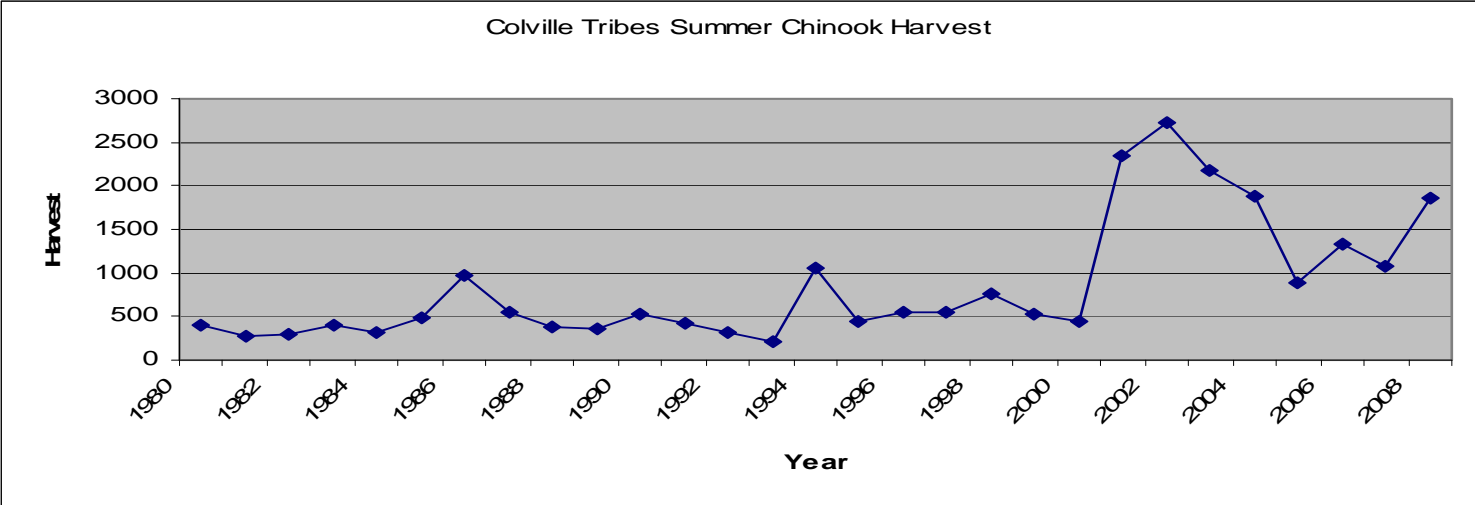
- For at least the last 9,000 years, during mid-summer, lasting about 60 days each year:
 - 1 to 2 Thousand per day at Kettle Falls
 - 1 to 1.4 Thousand per day at Little Falls
 - 1 Thousand per day in Little Spokane River
 - 1 Thousand per day at Spokane Falls
 - 250 per day at other fisheries (e.g., Sanpoil)
- Total 300 Thousand per year
- Does not include Spring or Fall Chinook, Steelhead, Coho, Sockeye, White Fish, Sturgeon and Lamprey



Colville Tribes' Modern "Traditional" Snag Fishery at Chief Joseph Dam



Harvest vs. Wells Dam Harvest Rate



Chief Joseph Dam Hatchery Project

- Mitigation for lost salmon fisheries and production due to hydro-power development.
- Release 2 million Summer Chinook and 900 thousand Spring Chinook starting in 2011.
- Adipose fins will be removed to identify the fish for harvest.
- Acclimation ponds along the Okanogan River to rear, acclimate and release the fish
- PNI (Proportion Natural Influence) at least 67% (up to 100%)



CCT – State Harvest Agreement

- Shares the salmon harvest between the State and Colville Tribes.
- State share increases as abundance increases.
- Benefits all the constituents in the Upper Columbia to allow salmon to pass-through lower river fisheries.
- Historic – this is the first salmon harvest agreement between Washington and a tribe ratified outside of a court proceeding.

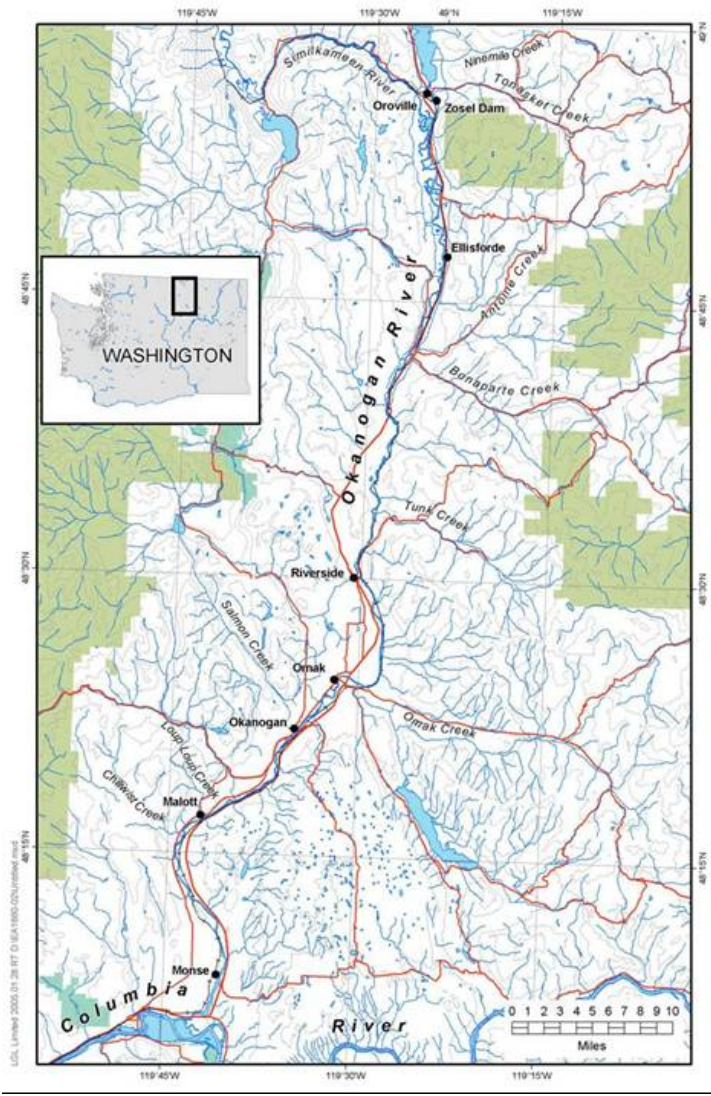
2009 Summer Chinook

- Preseason forecast: 70,700 adults
- Actual run (June 16 – July 31): 55,000 adults
- *U.S. v OR* harvest allocation at 70,700: 18,260 treaty
 - *Actual Allocation*: 12,375
- Non-Treaty Sport and Commercial 18,260 non-treaty
 - *Actual Allocation* 12,375
- Below PRD Sport: 3,068
 - *Actual Allocation (see Commercial)*
- Below PRD Commercial: 3,068 [6,136 total]
 - *Actual Allocation Sport + Commercial* 2,662
- Above PRD Sport: 5,562
 - *Actual Allocation* 4,356
- Wanapum: 500
 - *Actual Allocation* 500
- Colville Tribes: 6,062
 - *Actual Allocation* 4,856

Live-Capture Selective Fishing Principles

- **Integrate traditional and modern gears**
- **Secure harvest allocation**
- **Harvest Hatchery-Origin (HOR) fish for Tribal use**
 - **Reduce HOR spawning in the wild (pHOS)**
- **Release unharmed the Natural-Origin (NOR) fish**
 - **Provide NOR for hatchery pNOB**
- **Help ESA fish (Spring Chinook, Steelhead)**
- **Prevent future ESA (Summer/Fall Chinook, Sockeye)**
- **Outreach and Public Education**

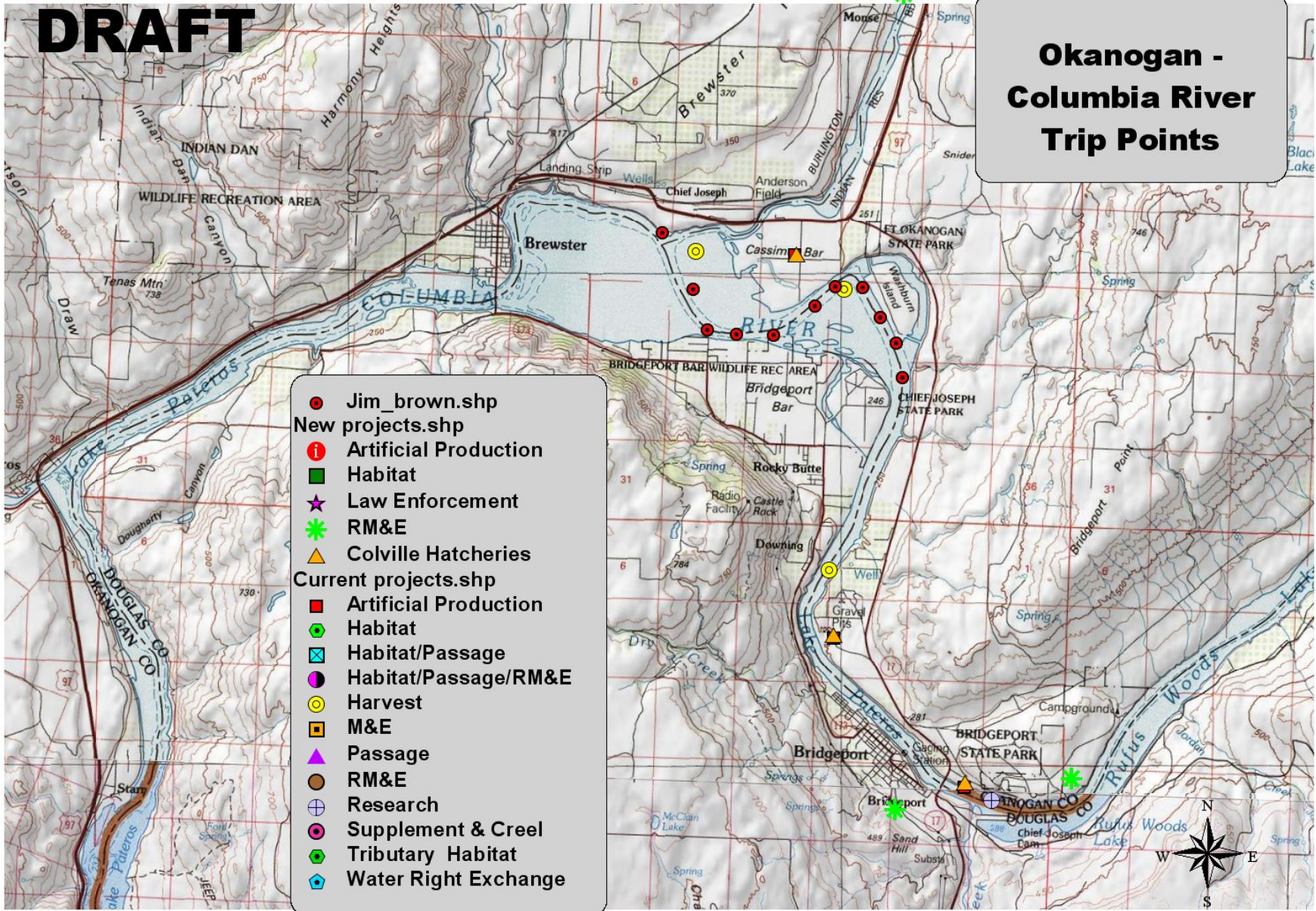
Study Area



DRAFT

Okanogan - Columbia River Trip Points

- Jim_brown.shp
- New projects.shp
- Artificial Production
- Habitat
- ★ Law Enforcement
- ★ RM&E
- ▲ Colville Hatcheries
- Current projects.shp
- Artificial Production
- Habitat
- Habitat/Passage
- Habitat/Passage/RM&E
- Harvest
- M&E
- ▲ Passage
- RM&E
- ⊕ Research
- Supplement & Creel
- Tributary Habitat
- Water Right Exchange



Broodstock Collection Study

- Live capture, transport, hold at hatchery, spawn (2006-2007).

Summer Chinook:

Merwin Trap = 0 Harvest

Tangle Nets:	134 Caught
10%	69 Held
Mortality	4 Capture Mortalities
Rate	10 Transport / Holding Morts

Beach Seine:	515 Caught
2%	50 Held
Mortality	0 Capture Mortalities
Rate	10 Transport / Holding Morts

Sockeye: 220 Caught, 38 Mortalities







DODGE
4x4
16193E

REIFF MFG. INC.
5022 S. 10th St. - Portland, OR 97214

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CJKE

Evaluate Live-Capture Gear Phase One (2007)

- Objective – Develop a Study Plan to evaluate the feasibility and efficacy of various live-capture, selective fishing gears to harvest HOR Chinook, to protect NOR Chinook, and to promote the recovery of ESA stocks.

Suitability Matrix Criteria

- Biological
 - CPUE
 - % By-catch
 - Post release survival
 - Cost
 - Equipment / labor
 - Maintenance / labor
 - M&E
- Optimal Condition
- High
 - Low
 - High
 - Low
 - Low

Gear Suitability - Results

- High
 - Beach seine, fishwheel, weir, volunteer channel
- Moderate
 - Hoop net, tangle net, dip net, purse seine
- Poor
 - Angling, Merwin Trap, alternatives
- Conclusion – The highest likelihood of success will be met by implementing several site and time specific applications of live capture gears.

Site Suitability - Results

- Ok. R @ Chiliwist Creek – tangle net
- Raymar Orchard – weir
- Janas Rapids – fishwheel
- Chief Joe Hatchery – volunteer channel
- Chief Joe Dam – hoop/tangle/dip nets
- Columbia @ Okanogan – purse seine
- Ok. R @ Similkameen – beach seine
- Omak Cr. – weir
- Zosel Dam – in-ladder trap

Monitoring Protocols

- Fish Condition Capture and Release (1-6): (1.Vigorous, 2.Vigorous+Bleeding, 3.Lethargic, 4.Lethargic+Bleeding, 5.No Movement or Ventilation, 6.Dead)
- Reflex Response Tests (Y or N): Vestibular-Ocular (eyes stationary vs. “followed”); Caudal Hold (pull back and fish swims forward)
- Number of Sets (and other Effort data), HOR Kept, NOR Released / Revived, By-catch, Fish Condition, Environmental Conditions.

Tangle Nets

- Designed to tangle the fish in the mouth parts for easy removal without gilling or harming the fish.
- Will use in the mainstem Columbia River between the Okanogan River and Chief Joseph Dam.
- Will also be used in the Okanogan River.
- Primarily targets Summer/Fall Chinook.
- Will be modified for Sockeye, Steelhead and Spring Chinook.



































Australia



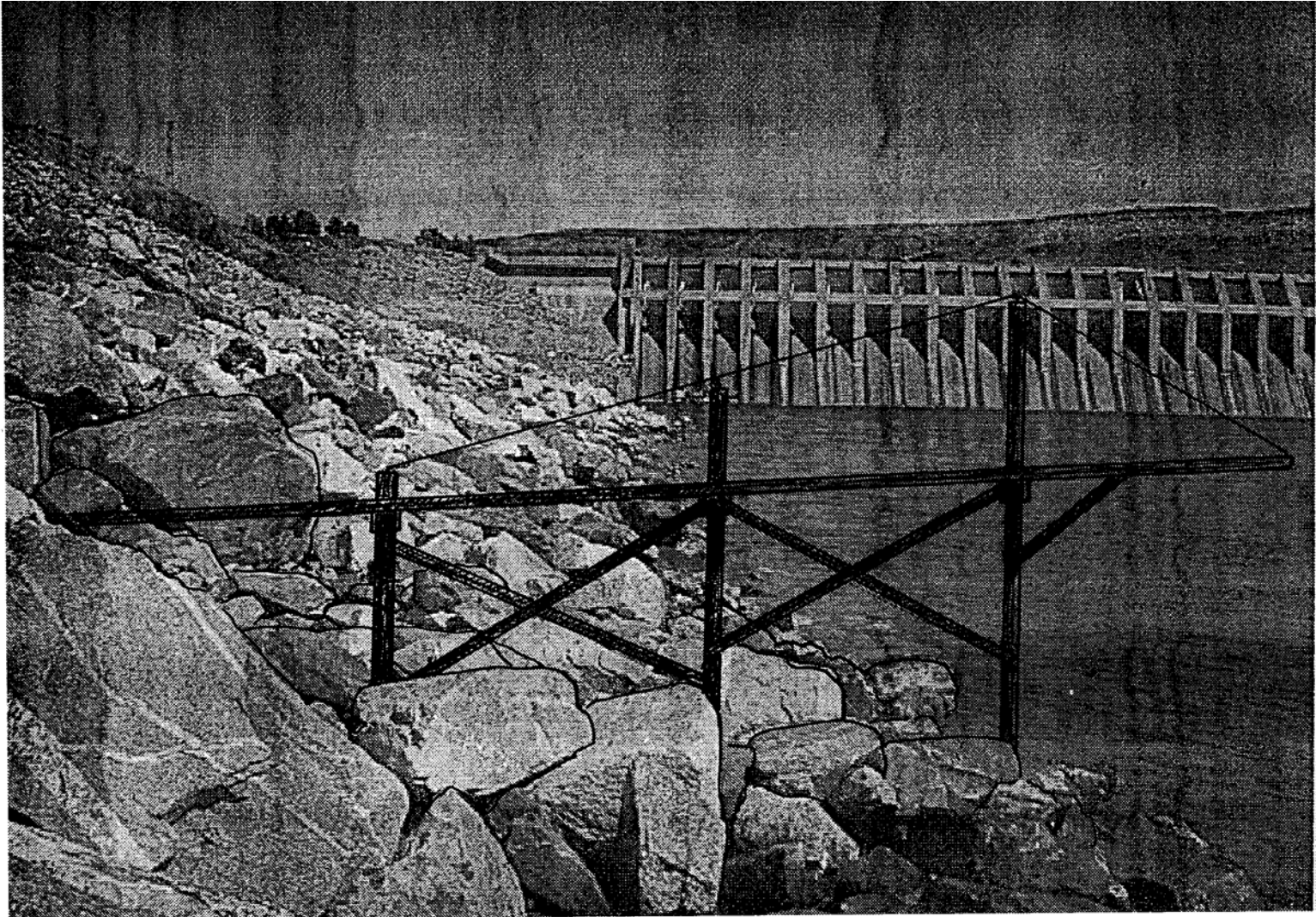




Hoop Nets



Scaffold at Chief Joseph Dam



Portland COE meets Seattle COE



Fish Wheels



Monitoring Fish Wheels at Mission

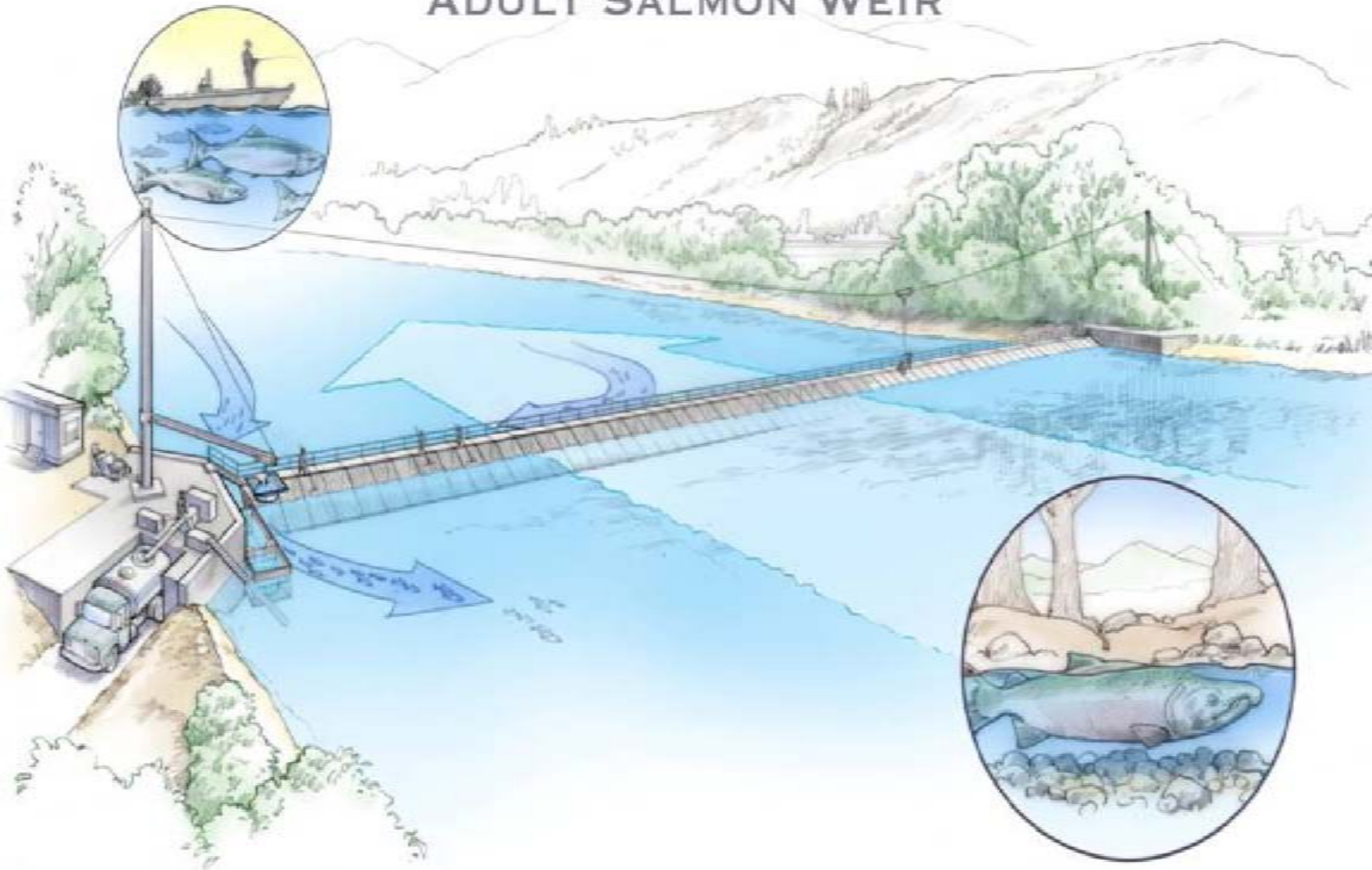




Fish Corral by Indians.
FRANK MATSURA PHOTO.

COLVILLE TRIBES - OKANOGAN RIVER

ADULT SALMON WEIR



Raymar Site – Okanogan R.



Trailer-able Purse Seine





WN2925MA

































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Beach Seine







Pound Net



COLUMBIA RIVER SALMON TRAP

HEAD

THROAT

HEART

POT

TRIGGER



2008 Results

Summer Chinook:

<u>GEAR</u>	<u>TOT</u>	<u>HOR</u>	<u>NOR</u>	<u>REL</u>	<u>Survival</u>
Tangle Net	304	178	126	101	0.80
Purse Seine	314	202	112	112	1.00
Beach Seine	<u>184</u>	<u>99</u>	<u>85</u>	<u>84</u>	<u>0.99</u>
TOTAL	802	479	323	297	0.92

Sockeye 1,024 (all NOR)

Steelhead 5 HOR (1 Released), 1 NOR (Released)

2009 Results to Date (August 12, 2009) - Preliminary

Spring Chinook:

<u>GEAR</u>	<u>TOT</u>	<u>HOR</u>	<u>NOR</u>	<u>REL</u>	<u>Survival</u>
Tangle Net	2	2	0	2	1.0

Summer Chinook (adults only, additional 120 jacks harvested):

<u>GEAR</u>	<u>TOT</u>	<u>HOR</u>	<u>NOR</u>	<u>REL</u>	<u>Survival</u>	
Purse Seine	1,276	637	639	637	0.997	*Additional 300 released
Beach Seine	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
TOTAL	1,276	637	639	637	0.997	

Sockeye: 13,504 (all NOR) *Additional 2K released







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