

Ghost Nets in the Columbia River: How Scary are They?



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Are Ghost Nets Real? We Have Proof They Exist!



History and Recognizing a Problem



- Commercial gillnets since the mid 1860's
- Thousands of gillnet sets each year
- 50 diver gillnets reported lost or stolen from 1995 – 2000 (CRITFE)

Science

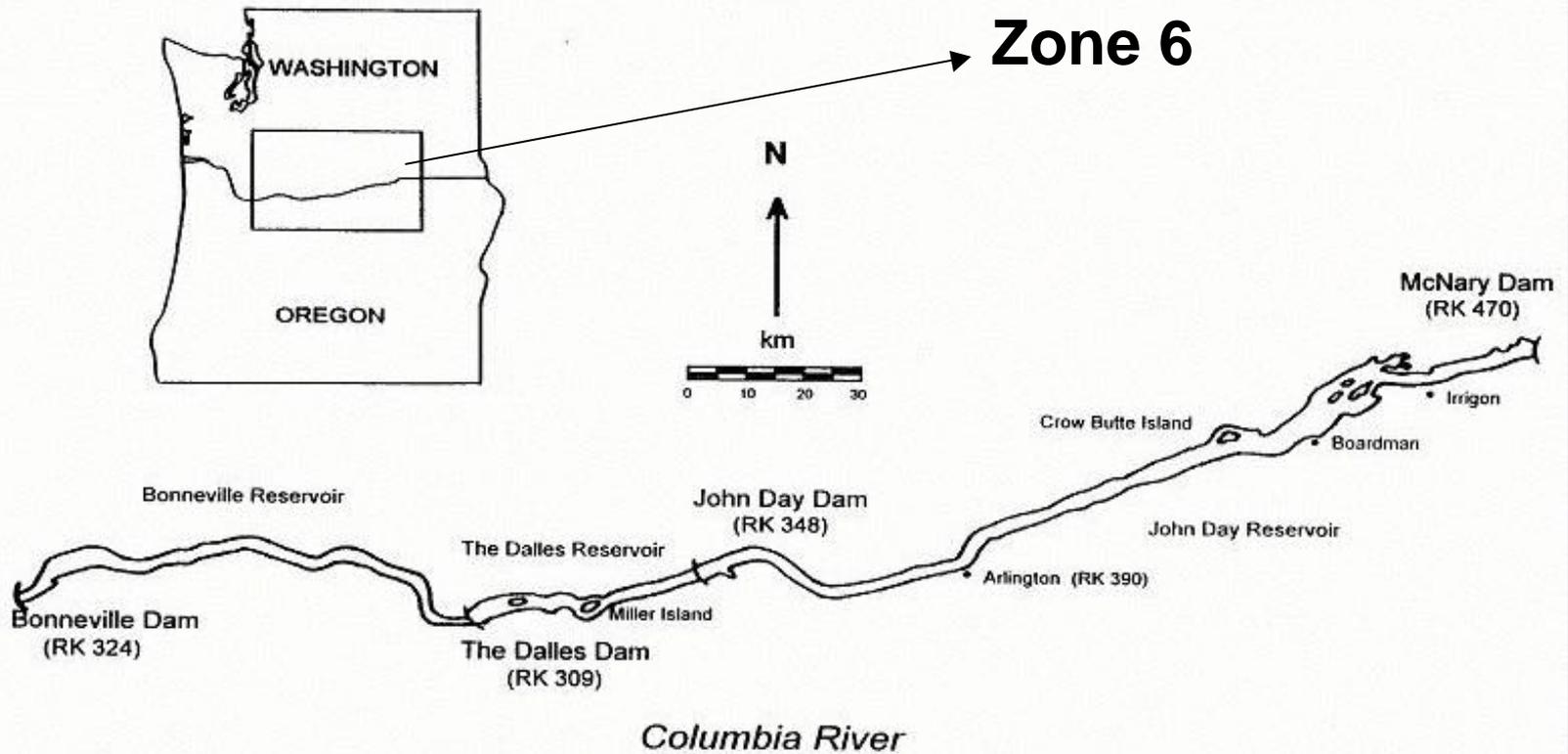
- Early gillnets - natural fiber materials degraded relatively quickly if lost.
- Monofilament adopted 1960's.
- Synthetic material does not degrade - can capture fish for years (Way 1977, DeGange and Newby 1980).
- Tangled net masses 3 years old actively fish with reduction in efficiency (Carr and Cooper 1987; Way 1977).
- Nets fish at 15 % effectiveness up to eight years (NRC, 1990).



Goals of Ghost Net Project

1. Remove Lost Nets.
2. Test efficacy of Side Scan Sonar to locate nets.
3. Document net characteristics, fishes trapped, and number and impact of lost nets.

Zone 6 and The Columbia River

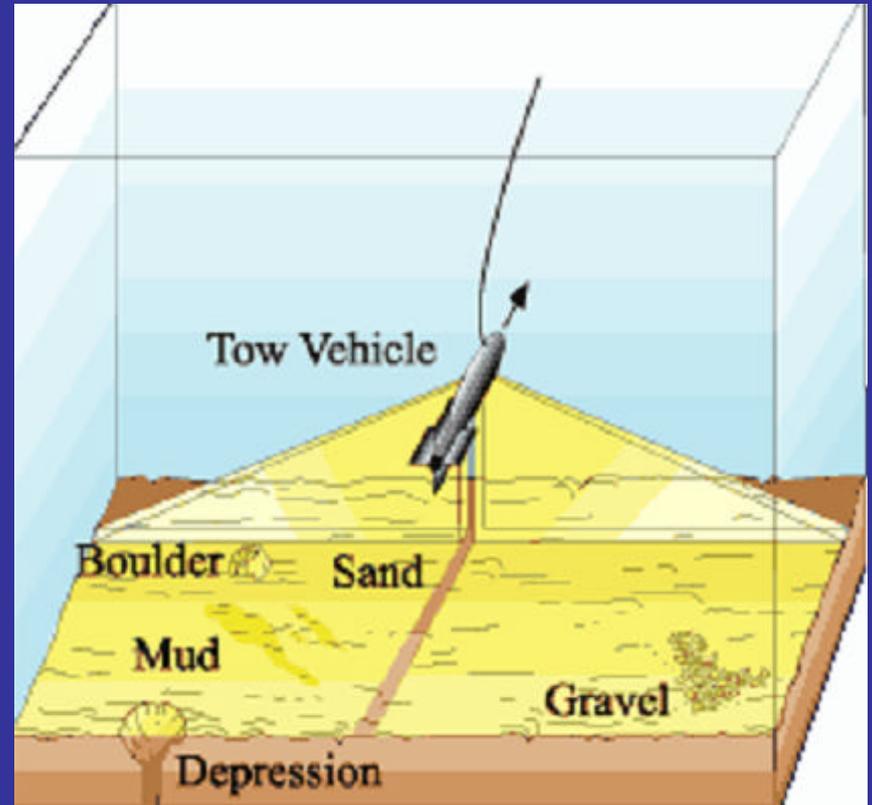


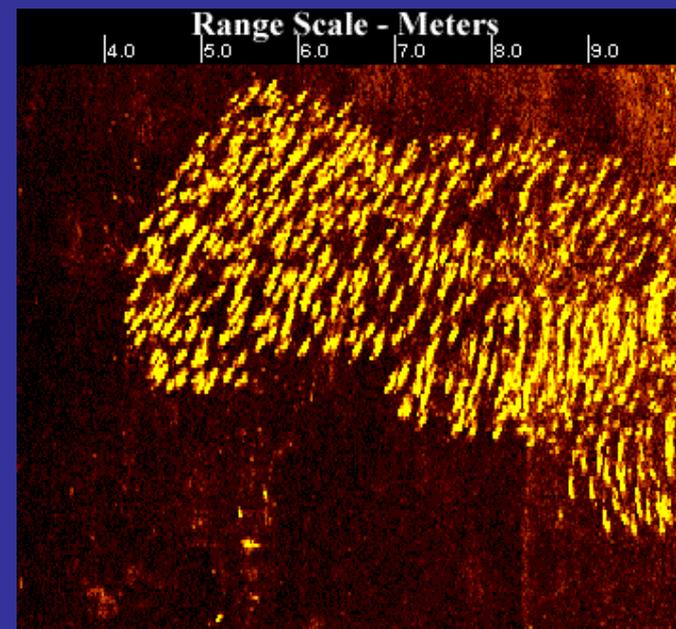
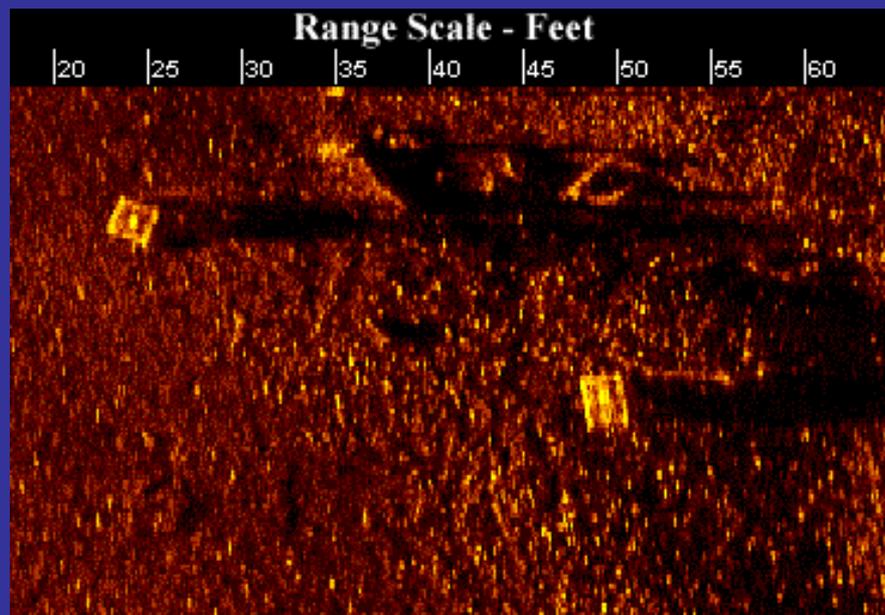
How Do We Locate Lost Nets?

- Enforcement records of Lost Nets
- Local Knowledge – interview tribal fishers and on water tours
- Side Scan Sonar
- Bottom Drag Fishing Areas



Side Scan Sonar





Side Scan Sonar Methods

- Survey identified areas w/multiple transects (40 m swath), depths of 5 – 20 m
- Mark (GPS) and Rank all sites (high-low)

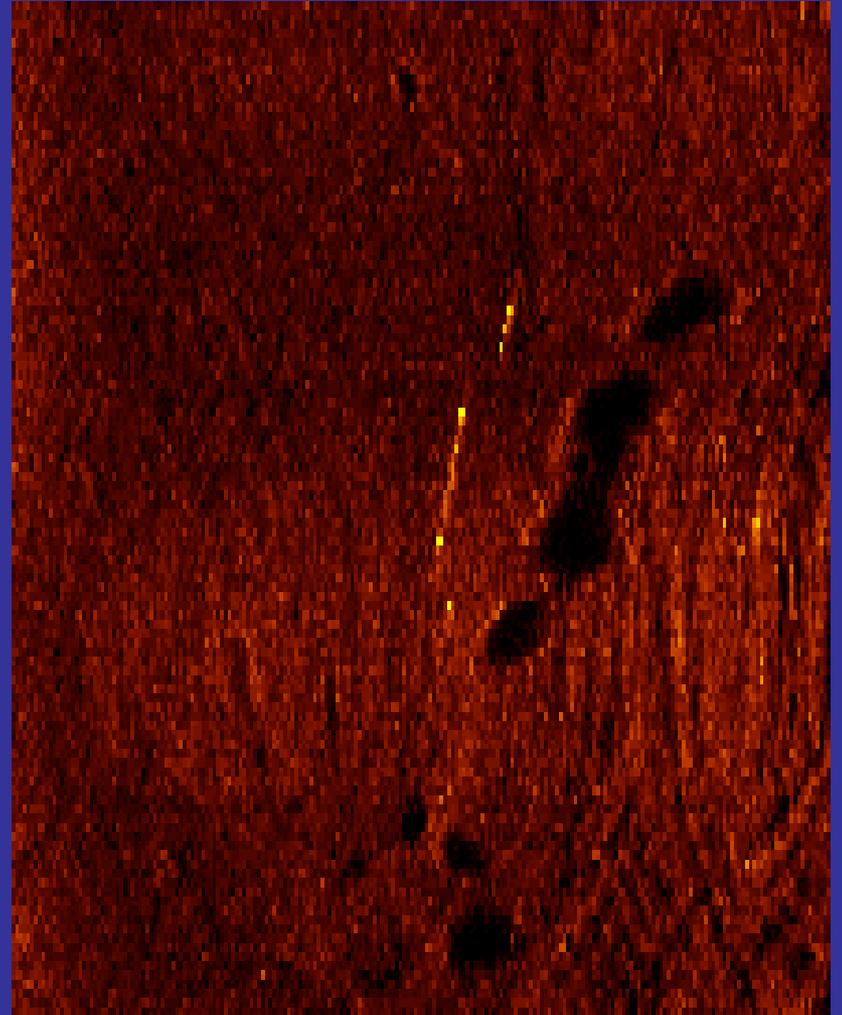
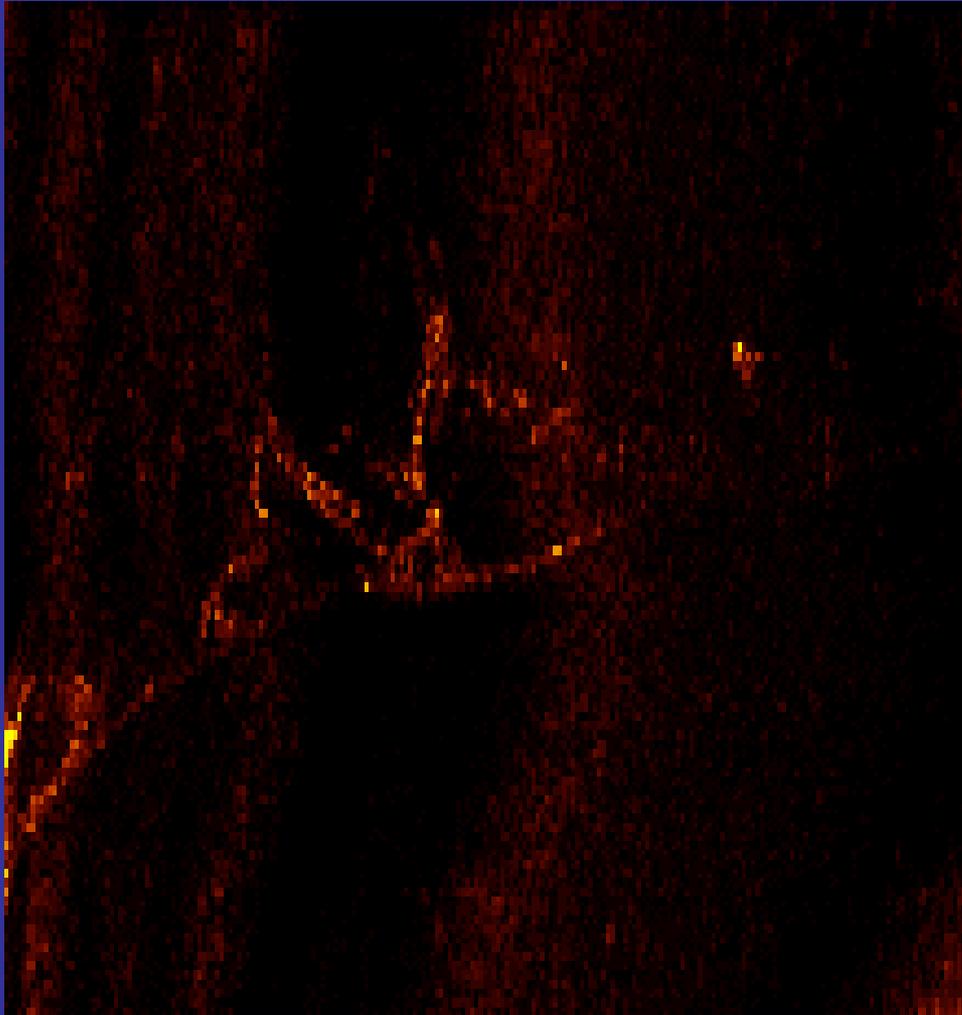


Side Scan Sonar Effort

- 13 days searching w/ SSS
- 2 crewmembers
- Survey suspect/ fishing areas
- Mark suspicious targets and rank



Our Imaging Results



Side Scan Sonar Results

- We marked 173 targets.
- 148 low ranking, 18 medium, and 7 high.
- Based on two recoveries, we were able to positively identify lost nets using SSS.

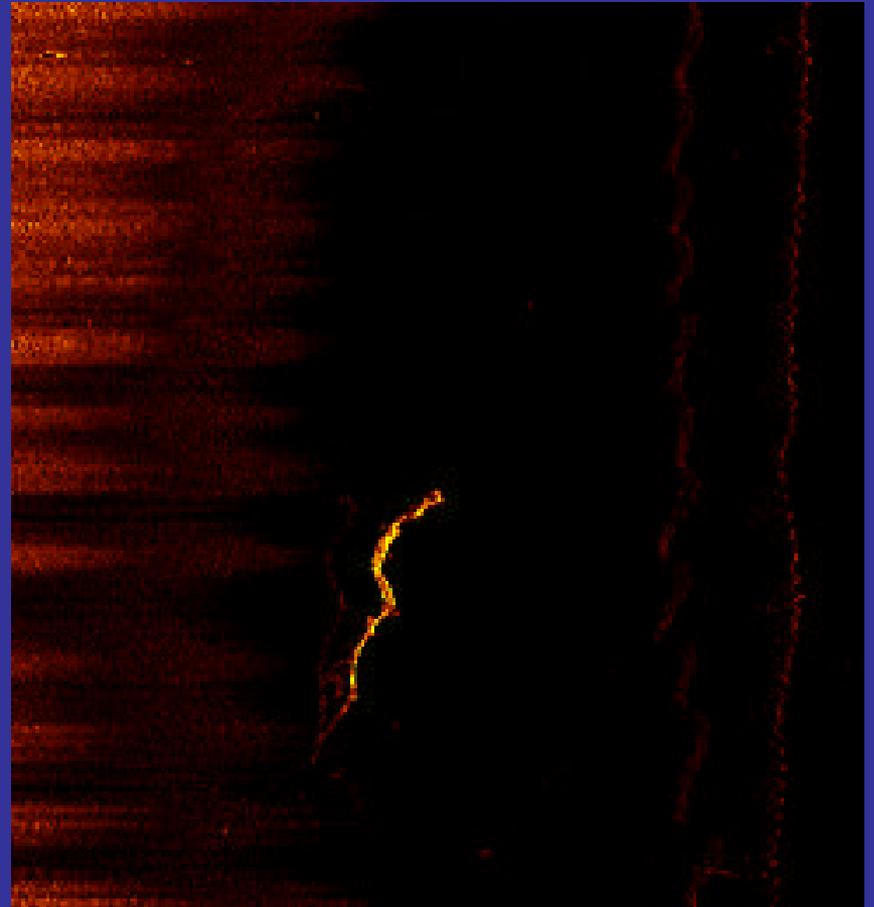
Conclusion of Side Scan Sonar Effort

Cons:

- Time consuming/requires near perfect weather.
- Images are difficult to interpret.
- Nets are difficult targets.
- Confounding factors.

Pros:

- Less impact to sensitive habitat.



Net Recovery Methods

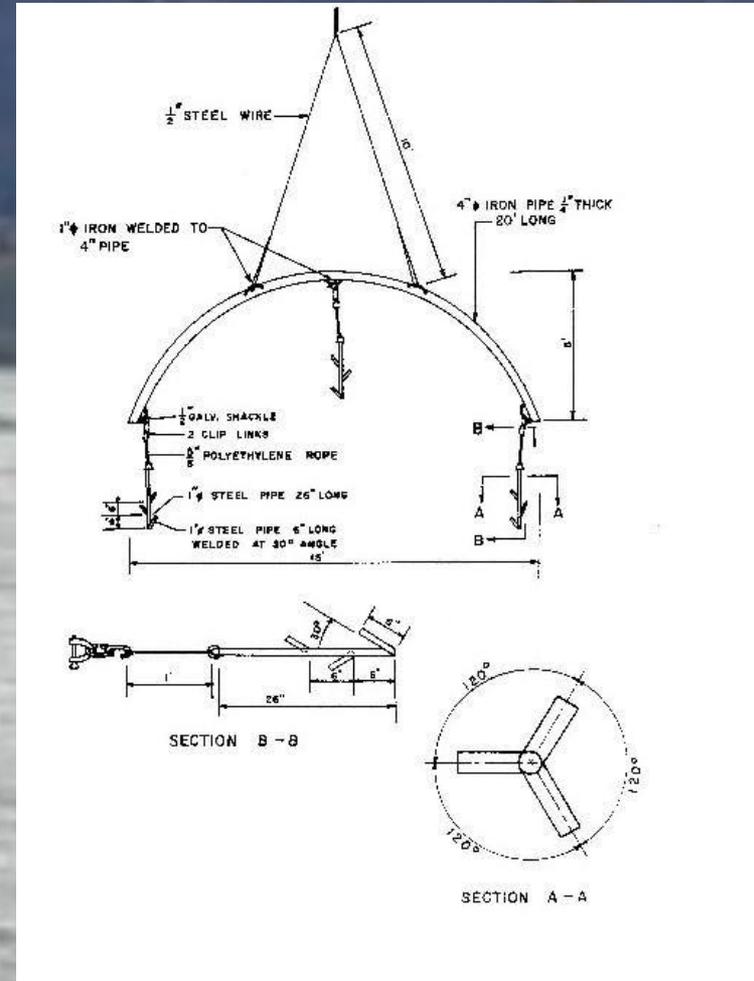
Two Efforts

1. 2003 – Large 70' trawler outfitted for bottom trawling
2. 2004 – Tribal fishers and a 26' vessel



2003 Go Big - Big Vessel Effort

- Safe.
- Work in any weather -large drag equipment.
- Cons: poor maneuverability, uneven bottom, rock pinnacles.



Trawling Gear Effort

Effort

- Nine working days.
- Gear testing.
- 55 Tows ranging from 10 to 95 minutes.
- Approximately 30 hours of time in water towing.



The “Sweet” Smell of Success



The Results - How Scary Is It ?

- Eight Nets.
- Total 80 white sturgeon (carcasses & notochords).
- No other fish species were found.

2004 Tribal Effort

- Maneuverable
- Knowledge and support of tribal fishing community
- 13 days effort
- Less impact



Results

- 25 nets removed.
- 41 dead white sturgeon in nets, 5 live (released).
- White sturgeon were only species found in nets.

Estimated Impact – Mostly Speculation

- How significant compared to sport & commercial catches, as well as other loss vectors.
- Sturgeon lost to a variety of sources including dam operations, illegal fishing, delayed mortality from sportfishing, etc.
- Yearly impact – decreasing as we remove older nets.
- Management Implications.

Ghost Net Busting



Increased awareness - outreach for commercial fishers, sportfishers, and commercial river users.

Use of telemetry equipment to radio tag individual nets.

Continue project to remove lost nets.

Projects Sponsored by:

- 2003 – Bonneville Power Administration
- 2004 – NOAA and Ocean Trust



- Thanks go to Clifford Alexander, James Kiona and Charles Gardee of the Yakama Nation.
- Appreciation to Columbia Pictures and Warner Bros. for the use of “ghostly” images.