

Distribution of Pacific lamprey in the Wenatchee River, WA



Tumwater Dam,
Wenatchee River, WA

R.D. Nelle
USFWS

Mid-Columbia River Fishery Resource Office
Leavenworth, WA



Distribution of Pacific lamprey in the Wenatchee River, WA



Mark Nelson, Cal Yonce, Ann Grote, Andy Johnsen
Dan Sulak, Wade Massure, Ken Muir, Hayley Potter

Adult Pacific lamprey passage?



Wenatchee River, WA

FWS Pacific Lamprey Conservation Initiative



- Define historic range wide distribution
- Define present range wide distribution



Wenatchee River, WA

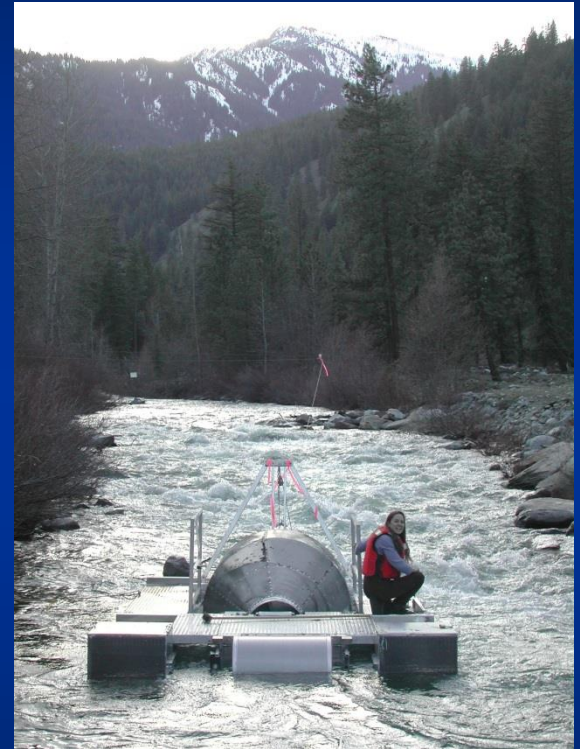
1. Screw trap data

- Chiwawa-No ?
- Nason-No
- White River-No
- Lake Trap-No?
- Monitor-Yes

- Peshastin-No

2. Irrigation diversions

- Jones Shotwell-Yes
- Dryden- Yes



Wenatchee River, WA

3. Historic sampling

- WA Dept Fisheries 1938
 - Lower Wen R. - Peshastin, Icicle, Tumwater Dam fishway
- Gangmark and Fulton 1952
 - Lamprey in stomach samples Lake Wenatchee
- Burke Museum 1950s – Lake Wenatchee
- French and Wahle 1959
 - Tumwater bypass trap
- Hays 1981
 - Electrofishing juvenile sampling



Wenatchee River, WA

4. Passage of adults at Tumwater Dam-?

- No passage recorded since 1999
- Video 1998 WDFW

5. Present distribution data-USFWS 2009



Pacific lamprey distribution



Pacific lamprey distribution



Presence or absence of
juvenile lamprey



Pacific lamprey distribution



**2010 –Sampled prime substrate
Non randomized sampling**

- Downstream of Tumwater Dam = 18 sites
- Downstream of Tumwater Dam = 5 site



2010



Pacific lamprey distribution

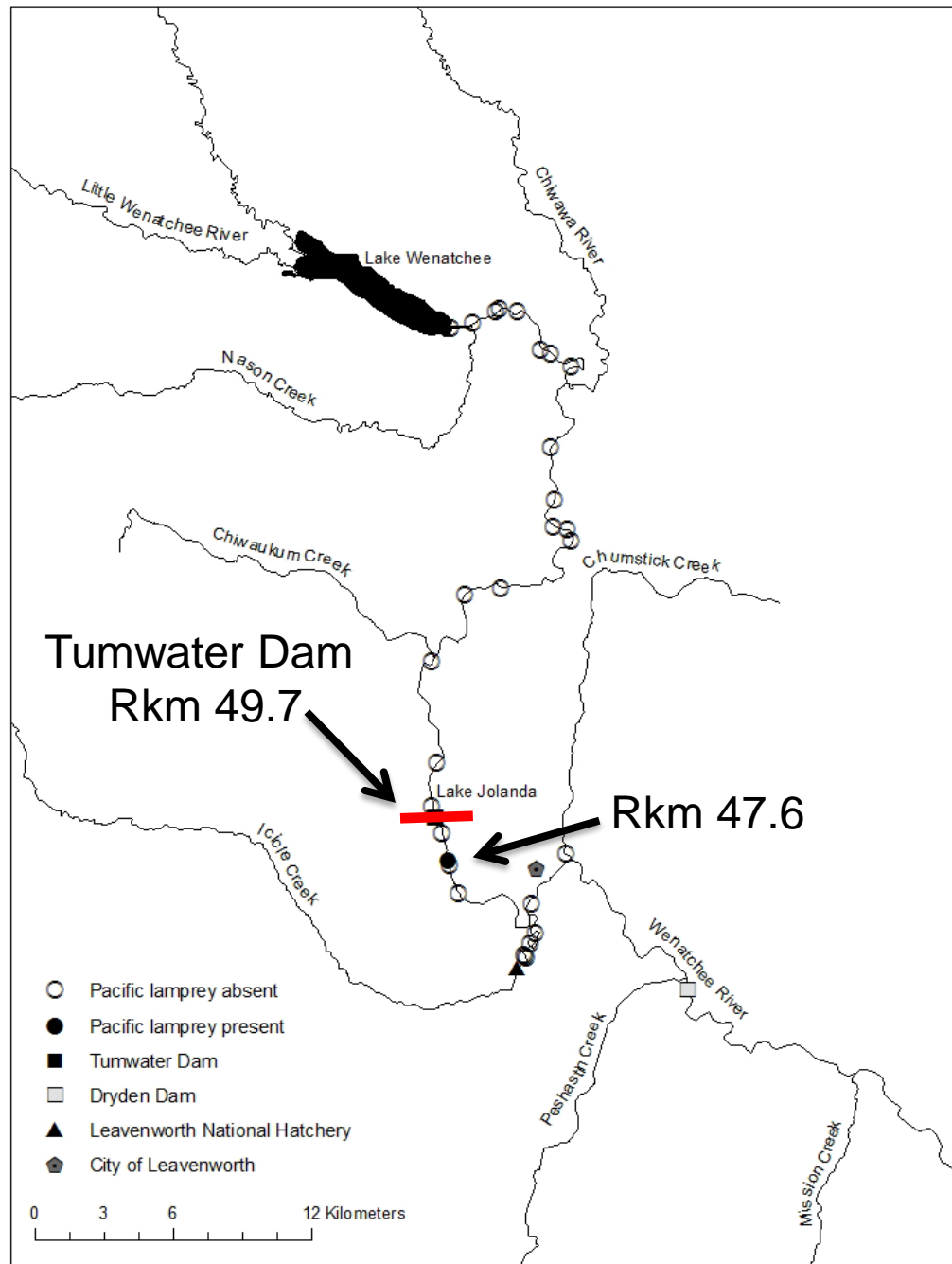


2010 –Sampled prime substrate

- No lamprey collected upstream of Tumwater Dam
- Lamprey collected downstream of Tumwater Dam
- Johnsen and Nelson 2012



2011



Pacific lamprey distribution

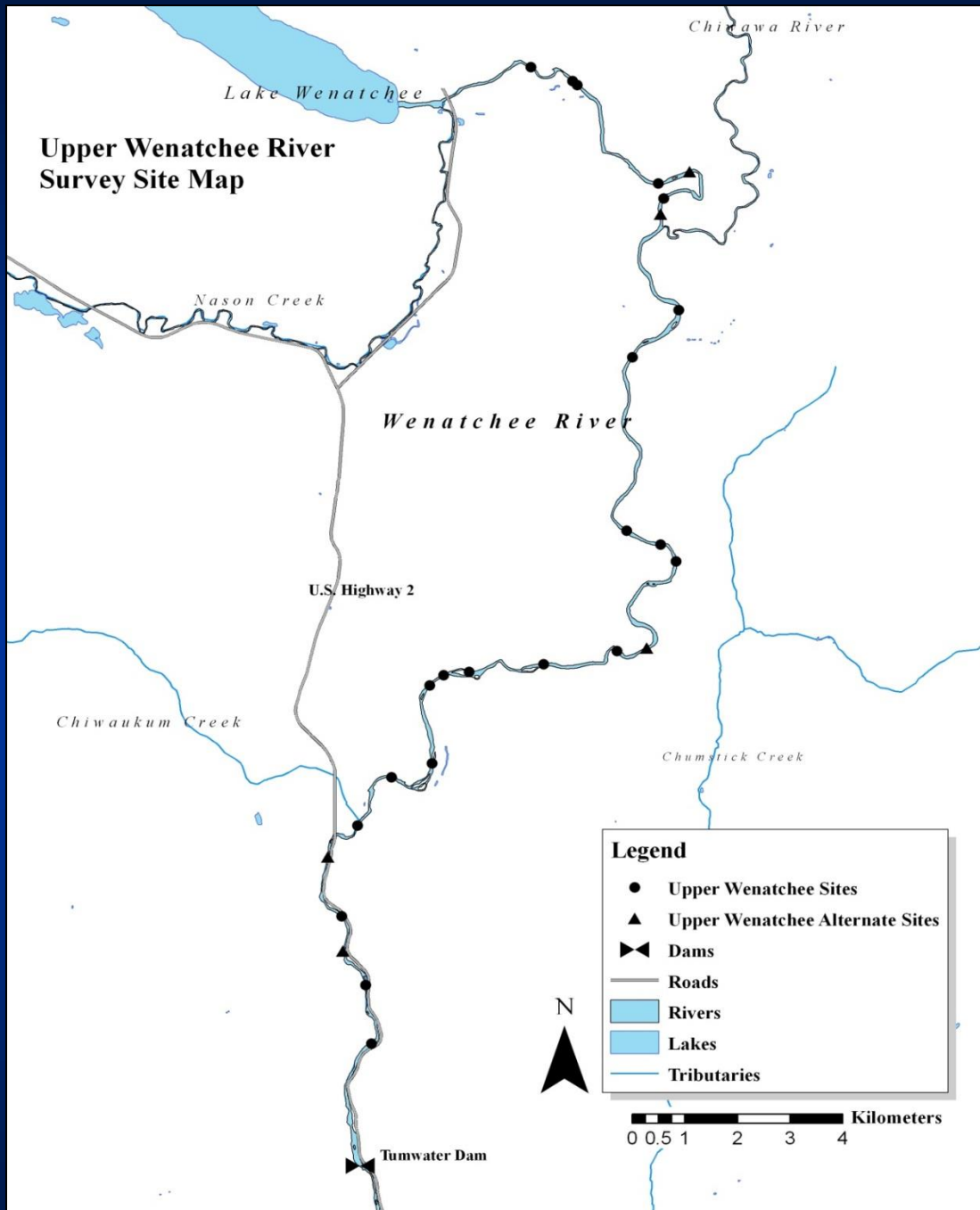


2012 –Probability of occurrence sampling

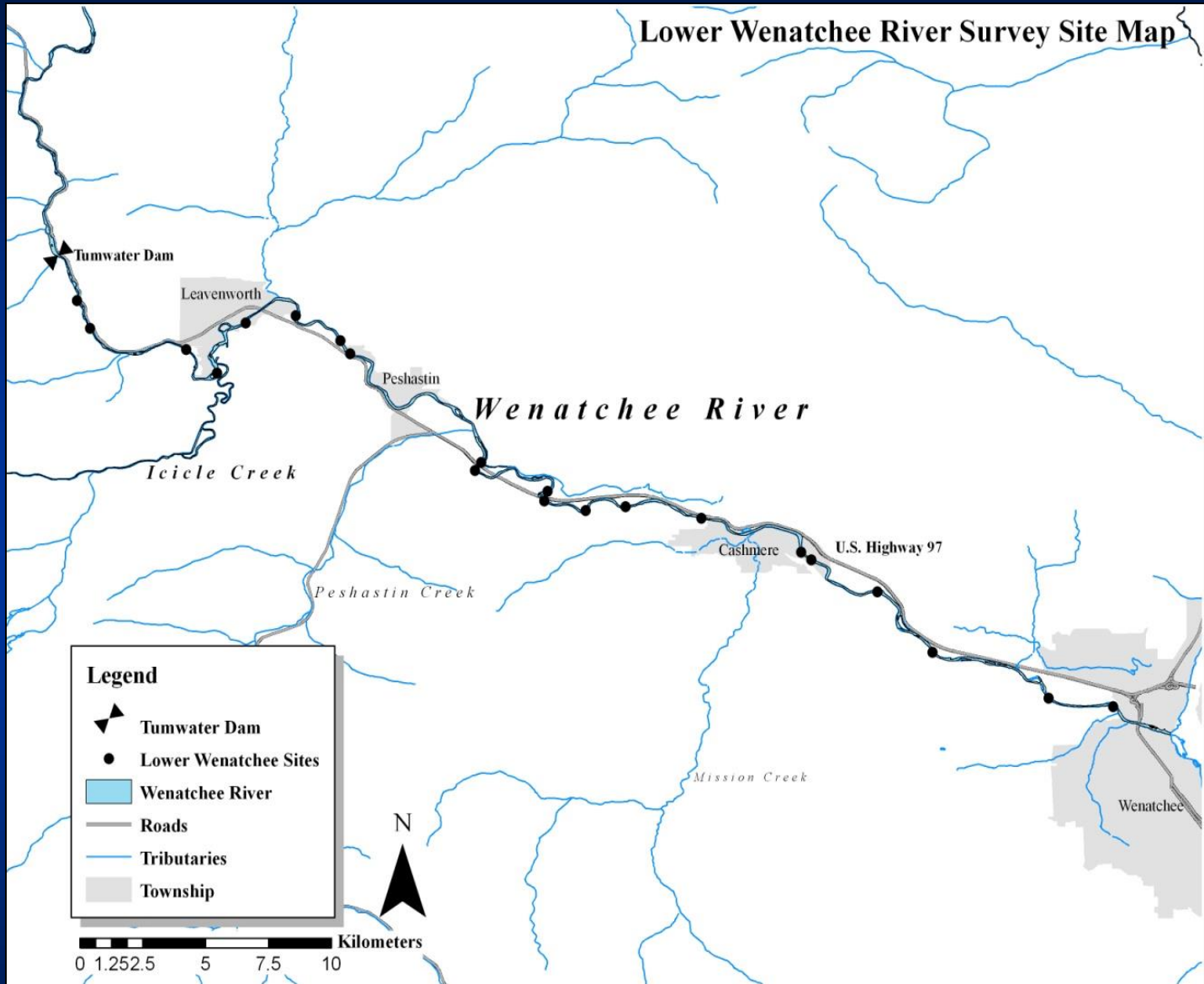
- GRTS survey design - 50 m sites
- Hybrid design (deepwater and wadeable)
- Sept – Oct, 2012



Upper Wenatchee River Survey Site Map



Lower Wenatchee River Survey Site Map



Pacific lamprey distribution



2012 –Probability of occurrence sampling

- Upstream of Tumwater 21 (23) sites
- No lamprey captured



Pacific lamprey distribution



2012 – Probability of occurrence sampling

- Downstream of Tumwater 21 sites
- 20 of 21 sites captured lamprey



Pacific lamprey distribution

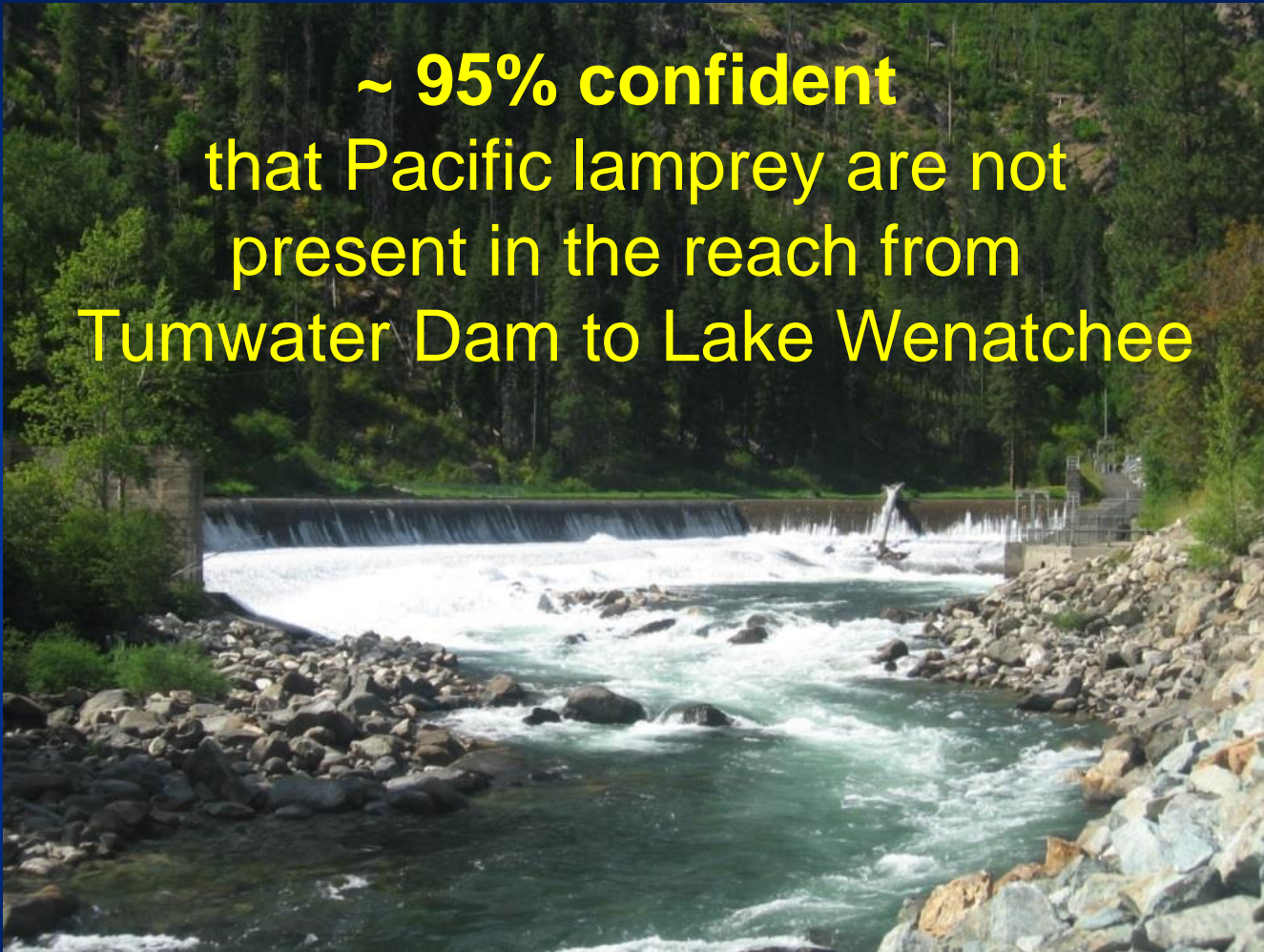


2012 – Probability of occurrence sampling

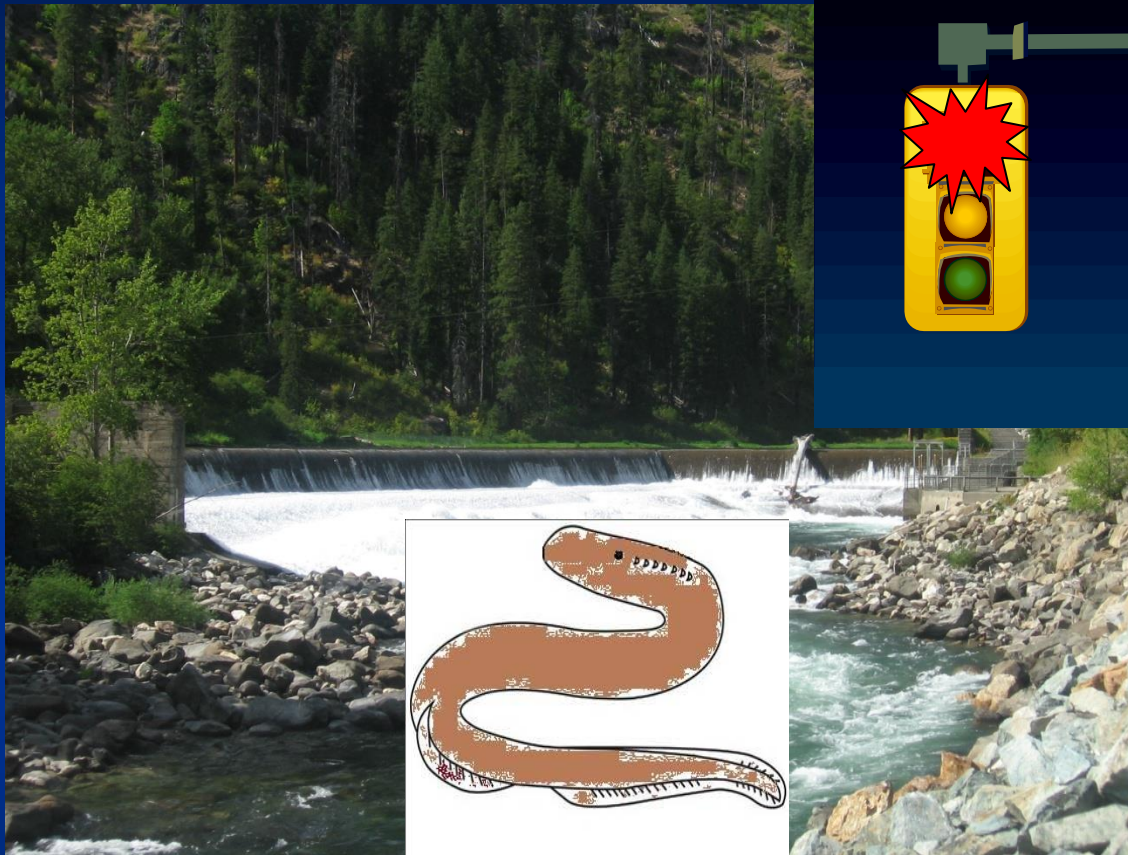
- 1 to 187 juvenile lamprey / site
- 669 total captured
- Size from 15 to 155 mm



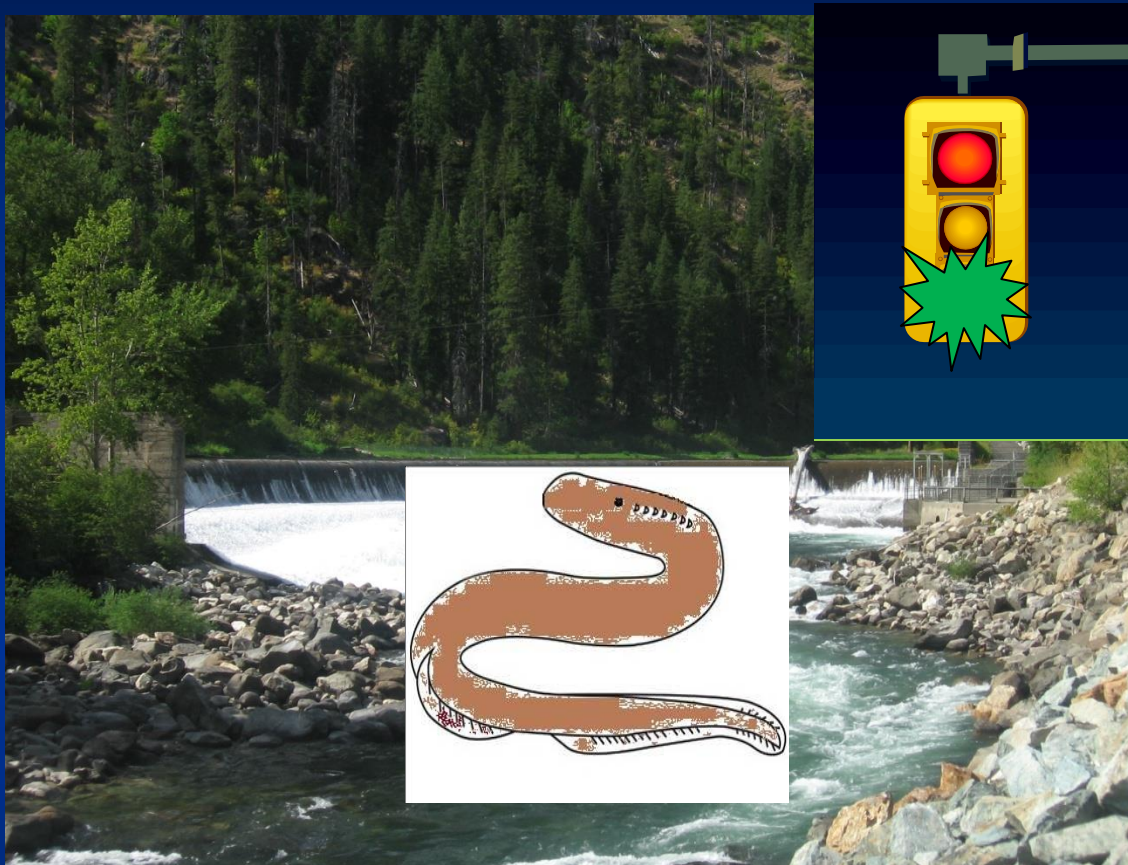
~ 95% confident
that Pacific lamprey are not
present in the reach from
Tumwater Dam to Lake Wenatchee



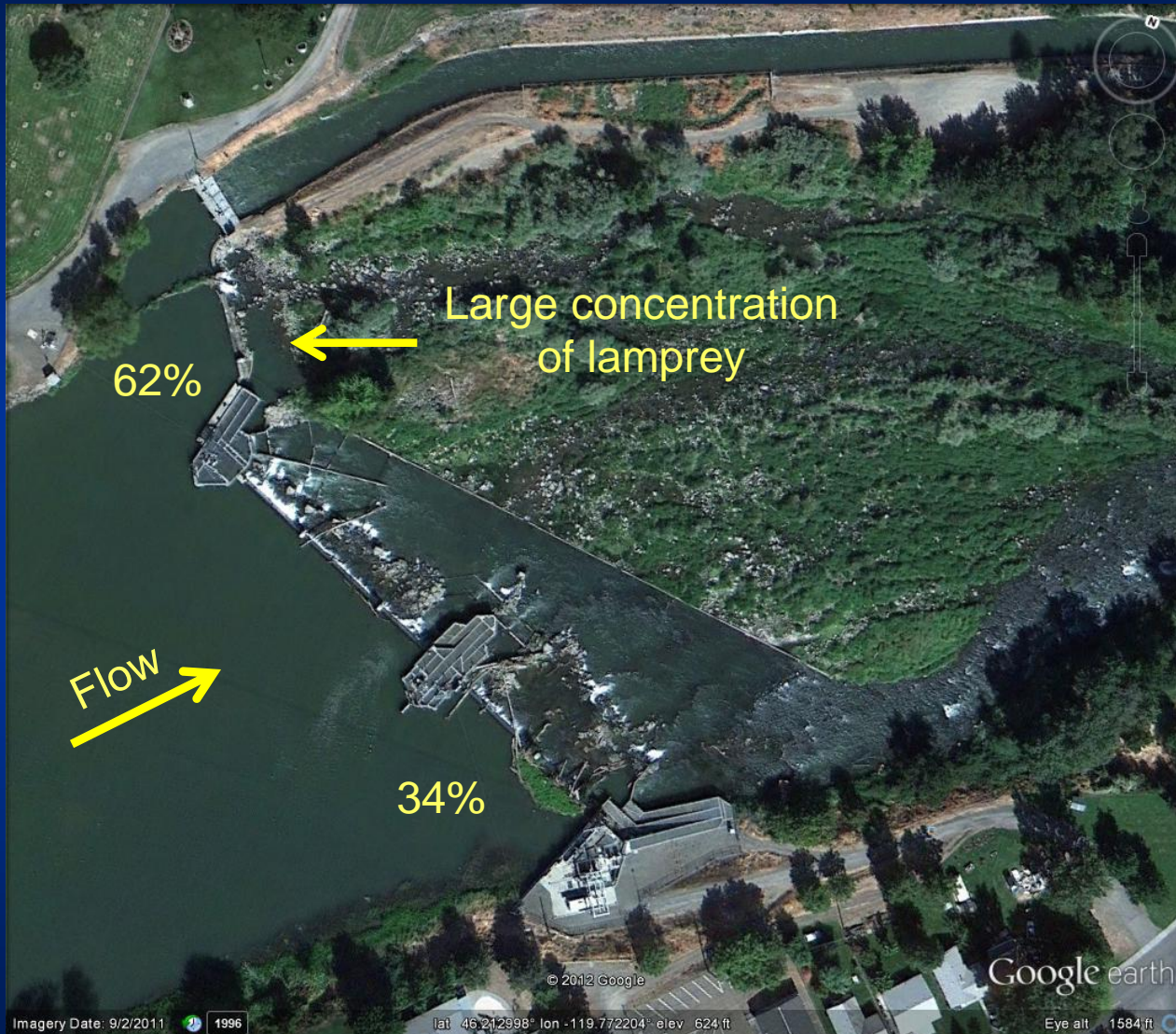
Present



Future



Lessons from the Yakima River



Prosser Dam

Prosser Dam, Yakima River WA

Radio telemetry study



Lessons from the Yakima River

Night tracking to determine site specific movements and behavior



Radio-tagged lamprey behavior at left corner

Climbing ledge at slack water area



Emerging from water

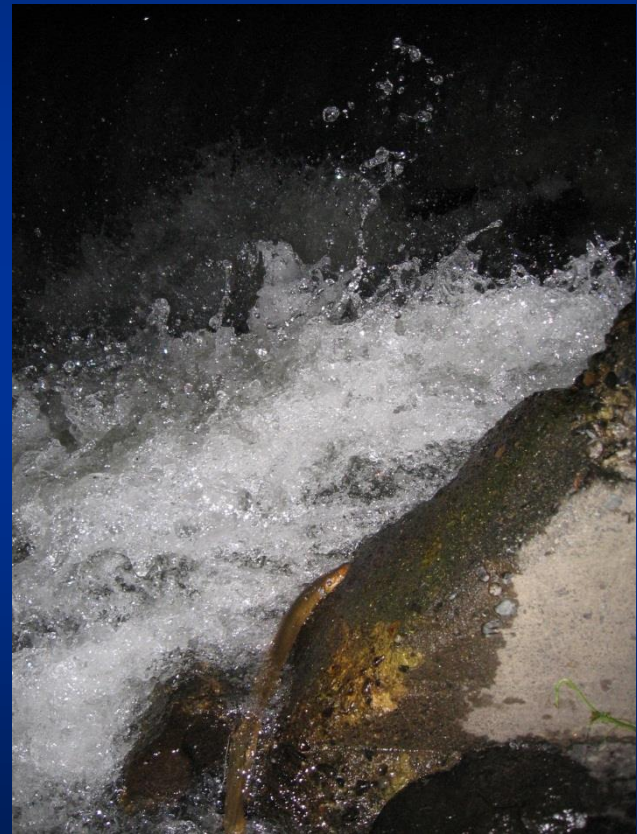


Radio-tagged lamprey behavior at left corner

Moving upstream along seam

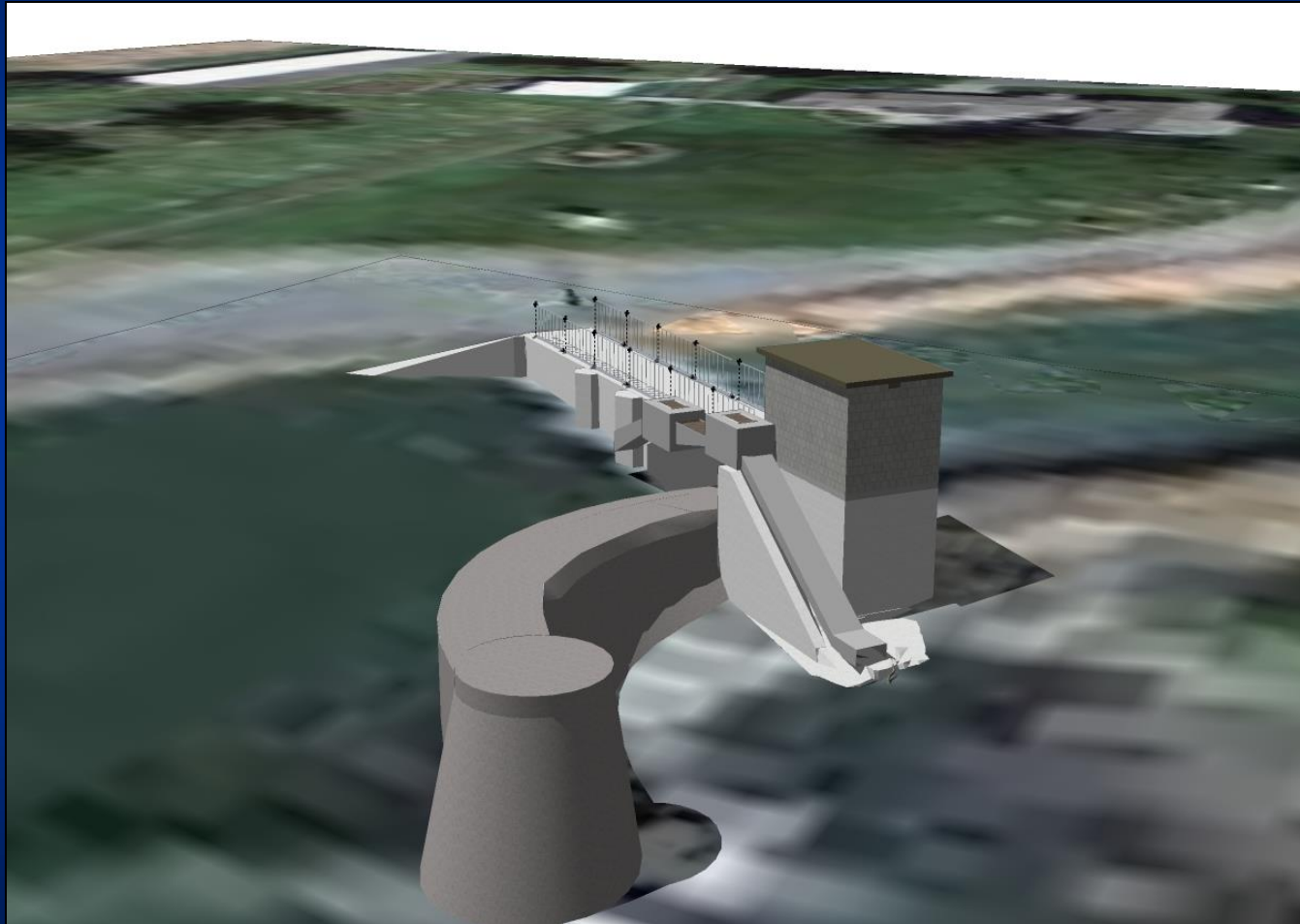


Attached on angled wall



Prosser Dam, Yakima River WA

Conceptual design



Prosser Dam, Yakima River WA Conceptual Design



Questions?



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