# Imnaha Weir – Installation and 2016 Operations

LSRCP Annual Meeting – Boise, ID March 14, 2016

# Presentation Overview

- Installation

- Permitting
  - USFWS Biological Opinion

- 2016 Operations

# BEFORE THE BRIDGE WEIR

Facility operators had to contend with installing and maintaining a picket weir within a wide range of flows.

Consequently, weir installation dates ranged from early JUN to late JUL.

Flows had to be low and safe for personnel to enter the river to install the picket wier.

# HOW LONG?

Co-managers have been suggesting safety and operational upgrades to the weir at Imnaha, since the early 1990's.

A new weir was a significant component of the proposed NEOH program.

A bridge weir, that could safely become operational without employees entering the river, was installed at the South Fork Salmlon facility in Idaho (2007).

# I WANT ONE

**The South Fork Bridge Weir could be installed and operated during higher flows. Installation occurred with no on in the river. After observing this for a couple of years, Imnaha facility operators in Oregon requested this style of weir. LSRCP approved funding in FY12. Installation was completed in 2015. Initial operations commence 2016**

# SITE CHALLENGES

Installation of the SF weir was done with the use of a big crane. This method could not be used at the Imnaha site due to the presence of high voltage electric wires.

Installation would need to be via other means.

# TRAINING WHEELS

Since there was a concrete sill in place, this is how the contractor addressed the installation. The bridge was completely in place over the abutments, all that was left was to lower it to the abutments. Something happened which caused the bridge to role onto its side; presenting a new challenge to the contractor.

# NOW WHAT?

**A major dose of ingenuity and some heavy duty rigging, along with a bit of luck…. And we're back in business.**

**Both when the bridge rolled and when it was set upright, no one got hurt and no significant damage was done to either the abutment or the bridge itself.**

# USFWS – Biological Opinion (Bull Trout)

- *"Not likely to jeopardize bull trout or destroy or adversely modify critical habitat."*
  - Magic words

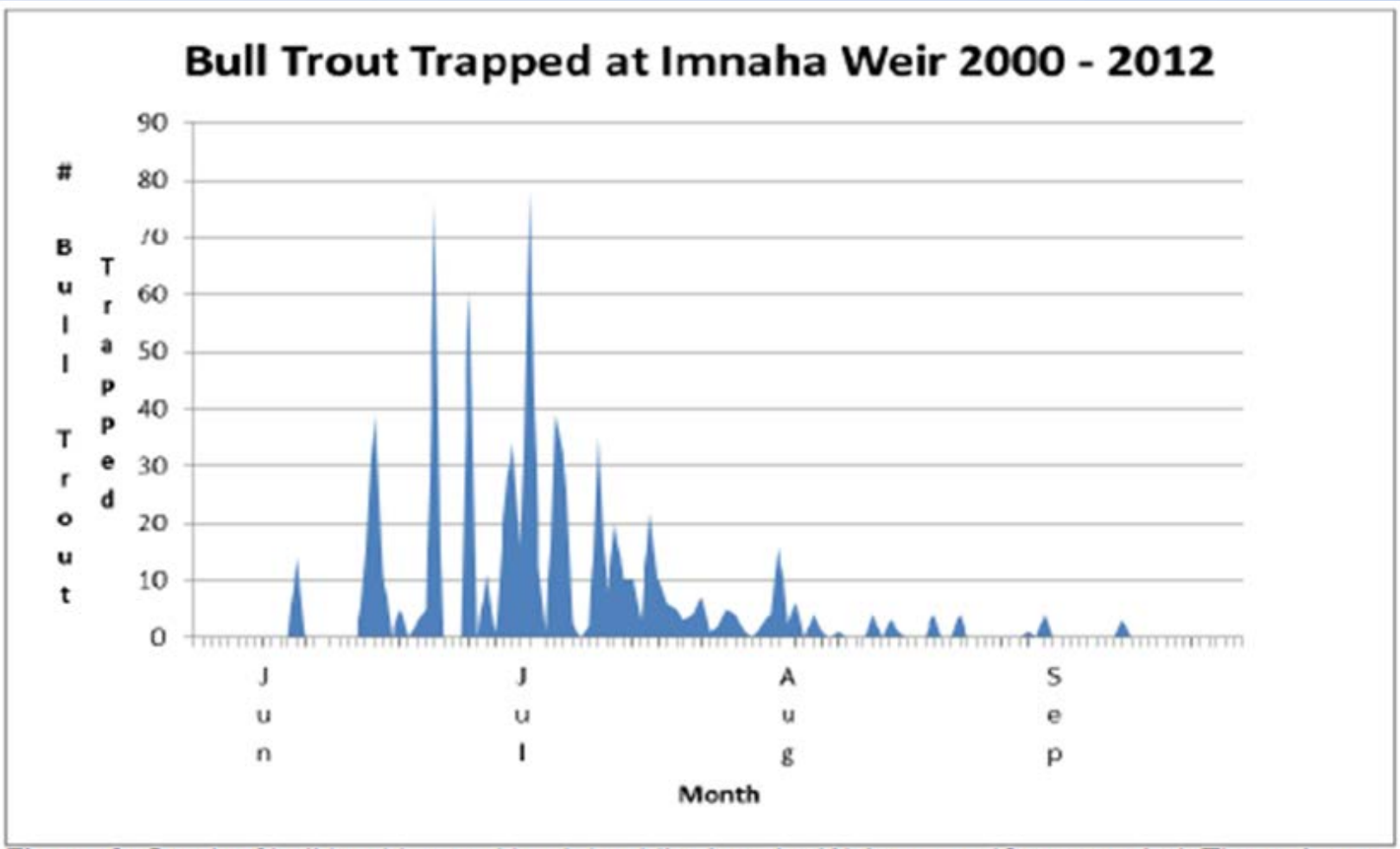



**Figure 3.** Graph of bull trout trapped by date at the Imnaha Weir over a 13-year period. The weir was often not installed until late-June so these data reflect greater sampling effort in July, August, and early September. On the x-axis, the month name is listed by the first day of that month (ODFW, unpubl. data).

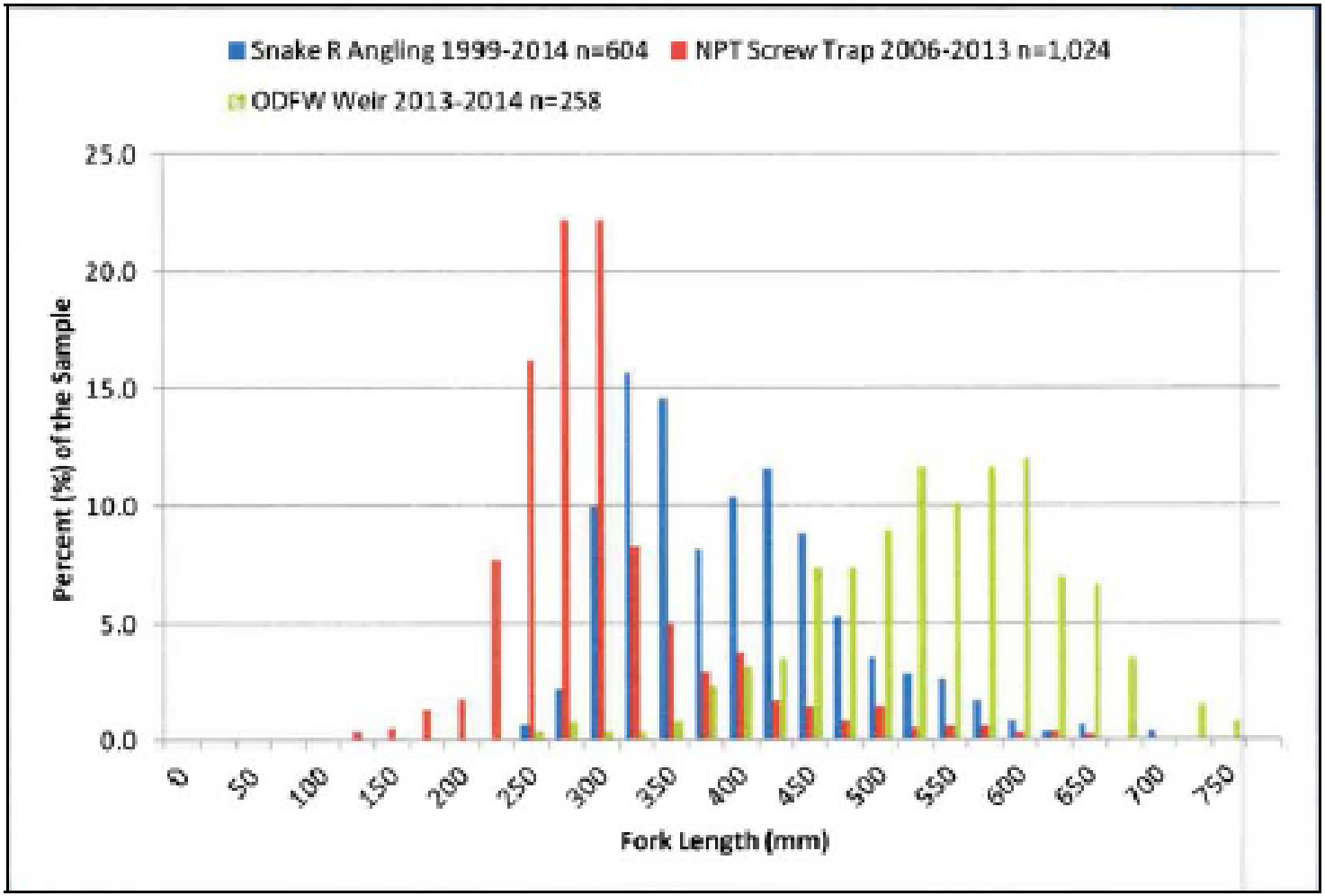



**Figure 4**. Graph of size distribution of migratory bull trout in the Imnaha River sampled by angling in the Snake River (blue), screw trap captures in the lower Imnaha (red), and captures at the Imnaha weir (green). Smaller fish are prevalent in the lower river, but rarely caught at the weir (Idaho Power 2015).

# Reasonable and Prudent Measures

- RPM #3
  - *"The LSRCP Office shall monitor the effect that adult fish collection operations at this facility are having on bull trout and use an adaptive management approach, as needed, to modify structures and activities to minimize impacts to bull trout."*

# Terms and Conditions

- Evaluate **passage** and assess incidental take during operations.
  - Robust to sub-adults
  - With serious problems, adaptively manage weir operations.

# Terms and Conditions

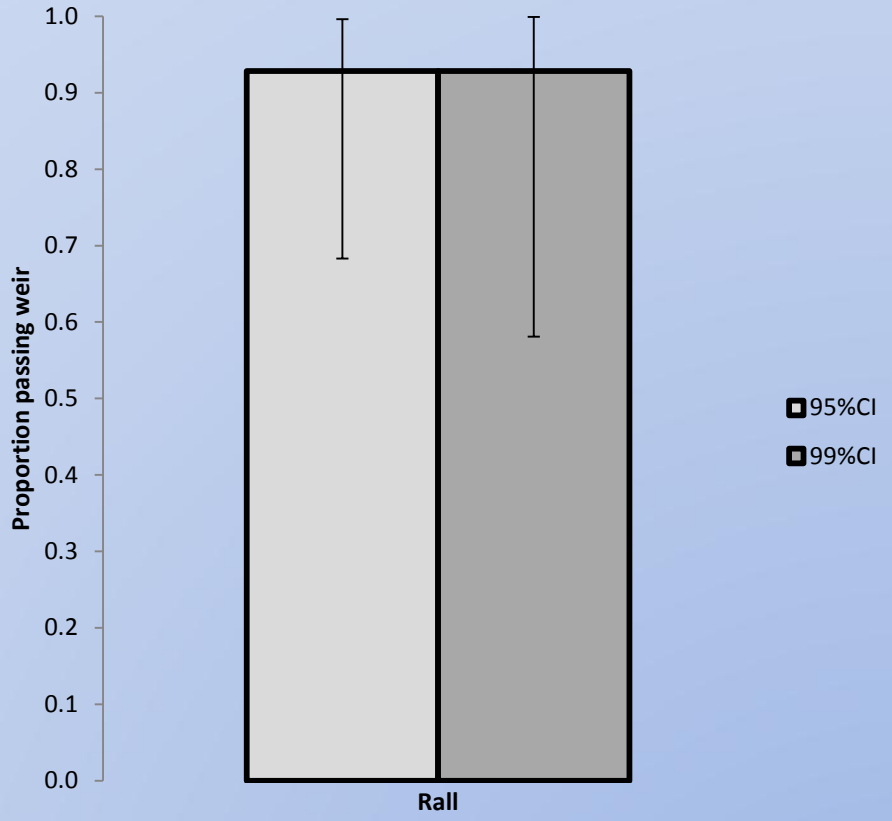
- Implement feasible sampling strategy for identifying impacts to bull trout during operations
  - Use existing PIT tagging
  - Assess migration **delays**
  - Convene subject matter experts (last summer).

**Table 2.** The number of Imnaha River bull trout PIT-tagged each year since 2006. In 2011, NPT staff started tagging bull trout caught in their screw trap, and in 2013 ODFW started tagging them at the Imnaha Satellite Facility (Idaho Power Company 2015).

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|
| Bull Trout Tagged | 17 | 24 | 41 | 40 | 32 | 139 | 130 | 188 | 217 |

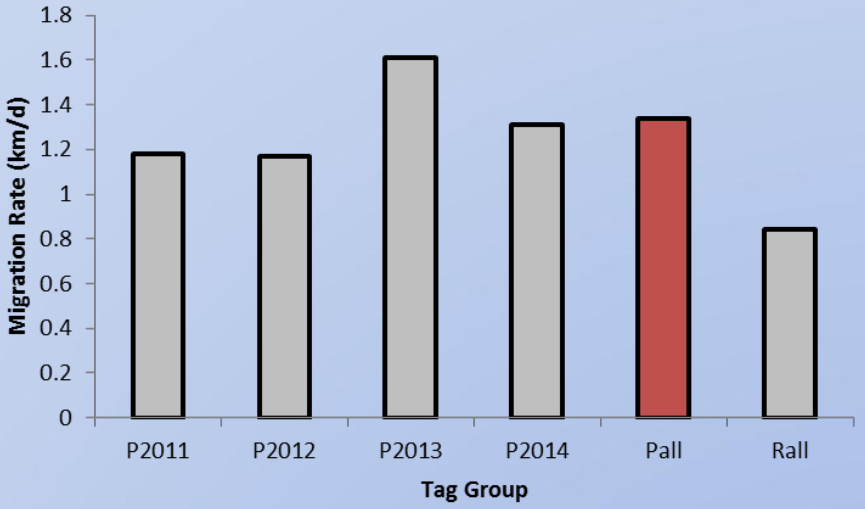
# Expert Analysis - Criteria

- Passage
  - 92.9% pass in 2 days, 4 year running average.
  - Based predominantly on previous radio tag studies (n=14)



# Expert Analysis - Criteria

- Delay
  - May: median < 8 days
  - June: median < 6 days
  - July: median < 4 days
  - August: median < 2 days
  - September: < 2 days
  - No fish >8 days
- Based on PIT tags (n = 100s), past existing arrays in lower river.



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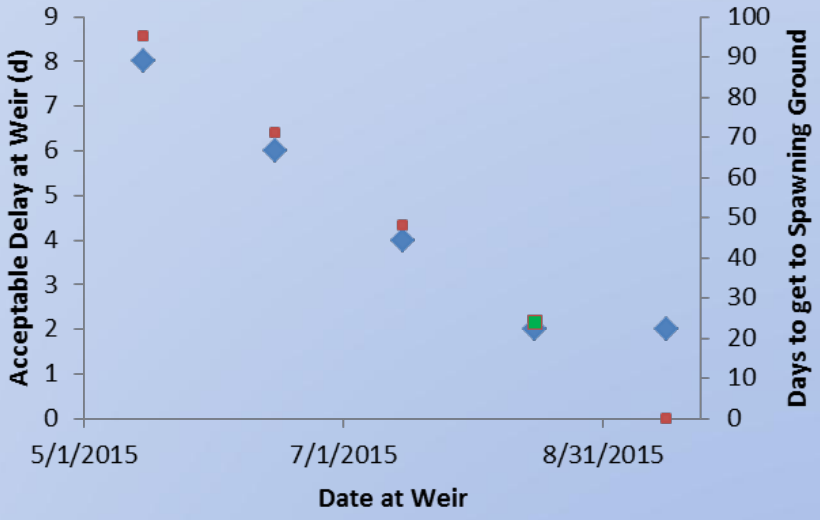


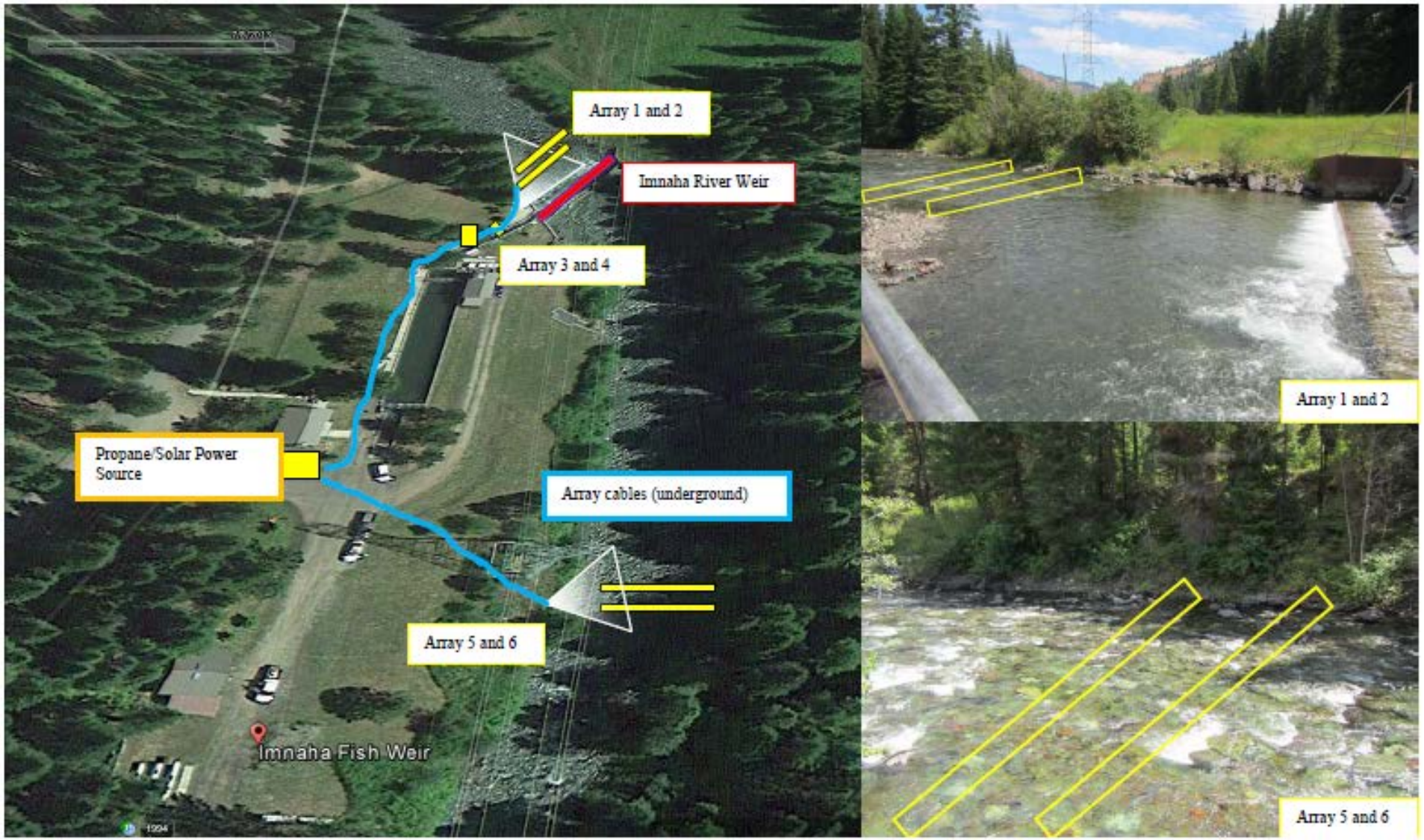
# 2016 Operations

- Guided by Standard Operating Procedures (Draft).
  - How are fish processed to minimize mortality?
  - Key Facets
    - Mid-May start date
    - Steelhead passage
    - 24 Hour trap processing.
    - EN Criteria
    - Specific handling and release protocols.
    - TBD – In-trap grader, MS-222 use, holding, release location.

# 2016 Monitoring

- M&E Plan
  - Passage and delay through PIT tag detections.
  - Oversight/Analysis by subject matter experts annually.
    - Adaptive management.
  - PIT Array installation at site April/May.
  - Configuration of arrays and patterns of detections key.

Pic from J. White of Biomark – PIT Array


Array 1 and 2
Imnaha River Weir
Array 3 and 4
Propane/Solar Power Source
Array cables (underground)
Array 5 and 6
Imnaha Fish Weir
Array 1 and 2
Array 5 and 6

# Summary

- Completing Imnaha Program while addressing impacts to bull trout.
- Bi-Ops (USFWS and NMFS) must be compatible and co-exist with the program.
- LSRCPO will always work with cooperators on these issues.