

**Title:**

Assessment of An In-Situ, Infrared Fish Counting Device

**Author :**

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**Summary of Presentation:**

Quantifying fish is important to the operations of most USBR facilities and the data needs include: assessing the use and effectiveness of fish by-pass facilities; estimating entrainment at canals and dams; and providing fish movement, counts and sizes to fishery managers at multiple points along migration routes. Knowledge of numbers, size, species of fish and migration times is essential to managing the fishery and operations of projects.

Technology to count fish, trigger a camera, and software for analysis have been developed and consists of arrays of infrared photo diodes and detectors assembled into a submersed, site-specific dimension 'tunnel' that counts and determines size and direction of fish passing through the array. This project objective is to determine the accuracy and reliability of this type in-situ fish counter, and use this counter to quantify fish using a ladder at Easton Dam, Washington and incorporate it into bull trout projects.

The counter has successfully operated at Easton Dam Fish Ladder in 2001 and 2002 with software upgrades installed by the manufacturer via phone modem connection. Data shows thousands of fish pass through the counter (upstream and downstream) in a year. These high numbers of fish are primarily smaller size fish that continually pass back and forth through the counter and do not represent true populations. Larger size fish passing the counter are primarily salmon and they have a distinct pattern of high passage between 6AM and 6PM between May and October. Data from a remote weir site counter on Deep Creek indicated that bull trout pass through the counter during the dark. Size estimates are taken using body depth profile measurements and factors for accurate estimates need to be developed further.