

Title: Assessment of Infrared Fish Counting System

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Infra-red type fish counters have been installed semi permanently at Easton Dam and seasonally in Deep Creek in 2002 and 2003. This *in situ* fish counter provides: two silhouettes of each fish counted, direction, calculated length, and a time and date of each fish counted. Triggered video images of fish are also collected at the Easton Dam counter, with proper underwater lighting being a challenge. The system operates on battery power with data transfer through phone modem or onsite laptop. The counted fish cannot sense the counter beams (consequently there is no avoidance bias) because it uses infrared light emitters and the counter is modifiable to operate in a variety of turbidities. At Easton Dam, the counter is placed in the ladder orifice, and at Deep Creek a fence weir and opening guide fish through the counter.

The Easton Dam counter has many smaller fish that reside and pass through the counter many times a day. Large fish pulsed through in 2002 and 2003 primarily during June- August, with much of the passage through the counter during the day. The Deep Creek counter is primarily installed to monitor bull trout moving up and down, to and from spawning. The counter shows the large fish move almost exclusively at night, with between 25 and 30 large (presumed bull trout) moving past in 2003.