Using an Acoustic Camera to Monitor Fish Passage at the Leavenworth National Fish Hatchery

Mathew Hall
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Problem?
DIDSON – Dual-frequency IDentification SONar

Photo courtesy Sound Metrics

Photo courtesy CRITFC
DIDSON Specs:
- Models: 300m, 1000m, 3000m
- 17.4lbs
- 100ft cable (500ft or less)
- Must be tethered to a CPU
- Creates a .ddf file
- Projects a field at 30 degrees horizontal and 14 degrees vertical
- Up to 20m, other lenses available

Photos Courtesy Sound Metrics
Literature Review

Site selection
Use of weirs
Power
Camera Performance
Personnel
Data management

Photo Courtesy Cariboo Envirotech Ltd.

Photo Courtesy Fairbanks Fish and Wildlife Field Office, USFWS
Site Selection
Site Selection
2010-07-07

2010-07-19
Site Selection
Use of Weirs
Use of Weirs

Structure 2
Power
Camera Performance

Icicle Discharge 2011

Graph showing the discharge of icicles from 5/2/2011 to 8/10/2011.

Images of a dam and flowing water.
Personnel

“You watched this stuff for 6 months?”

8fps recording – up to 40fps viewing

CSOT – Convolved Samples Over Threshold removes up to 90% of the frames

“At present we do not use any form of automated counting...”
- Enzenhofer et al 2010
Personnel

“Reviewing of DIDSON-LR files is a tiresome and boring task...”
– CRITFC 2005
Data Management

1.2GB/hrs. x 24hrs. x 120days = 3456GB or 3.45TB

“Data storage is cheap.” – Sound Metrics
Data Management
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The Team

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