



Offering the Widest Range of Hydroacoustic Solutions

Quinault River Automated Salmon Counter

AUTOMATED SYSTEM IN A REMOTE, RUGGED LOCATION

OBJECTIVE: Count adult sockeye salmon during upriver migration to Lake Quinault

Over 20 sites were reviewed to find optimal monitoring location

Unmanned location with no available power source

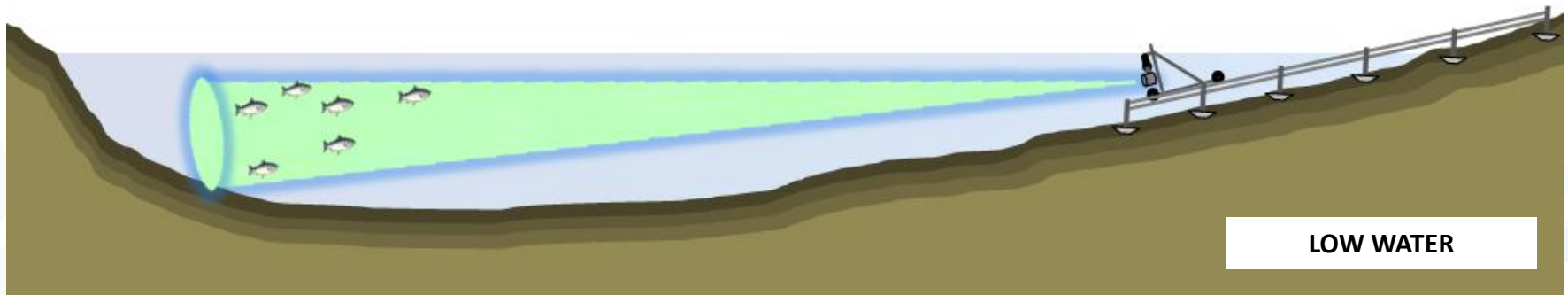
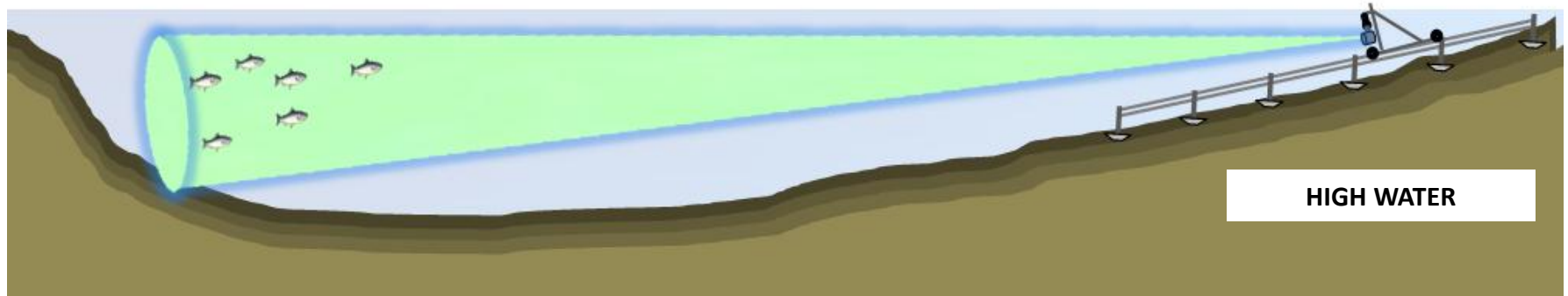
Fluctuating water levels



CONCEPT OF OPERATION

Split beam transducer on rotator mounted on adjustable track and trolley

Raises, lowers, and rotates to accommodate variable water level while maintaining proper aim



CONCEPT OF OPERATION

Custom fabricated aluminum track
Gravity mounted with cement pier
blocks. Required no pile driving and
minimal river bank disturbance



CONCEPT OF OPERATION

Transducer with Integrated
Orientation Sensor

Dual-axis ROS PT25 rotator

BioSonics software integrates
positional information and provides
100% accurate aiming



CONCEPT OF OPERATION – AUTONOMOUS POWER SYSTEM

Customized trailers each outfitted with deep cycle batteries and inverter charger
2 trailers rotated weekly provide 24/7 power



CONCEPT OF OPERATION – REMOTE OPERATION

Surface electronics housed in equipment trailer

DT-X echosounder & control computer with RAID data storage

Modem for wireless communication



CONCEPT OF OPERATION – AUTOMATION

Automatic data processing

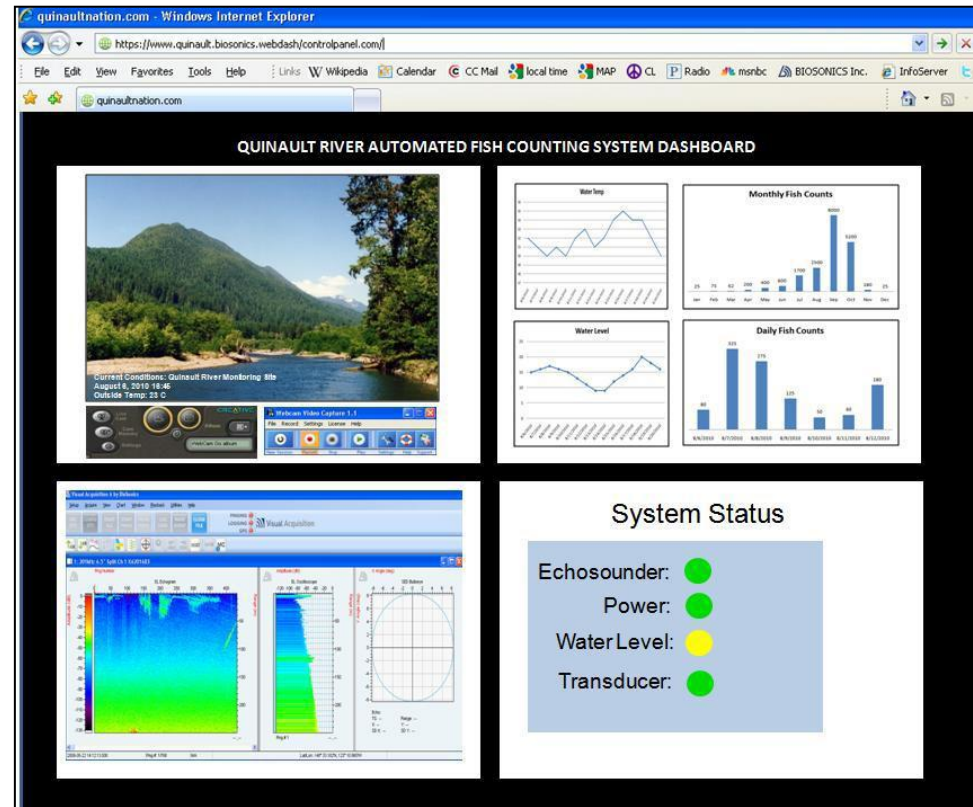
Fish count reports emailed daily

Managers receive real time info

Minimal manpower and no physical sampling

Watchdog software monitors system parameters:

- Power
- Data storage capacity
- Aiming and water level



BIOSONICS UNIQUE ADVANTAGES

Experience with tidal energy projects and other remote, rugged environments

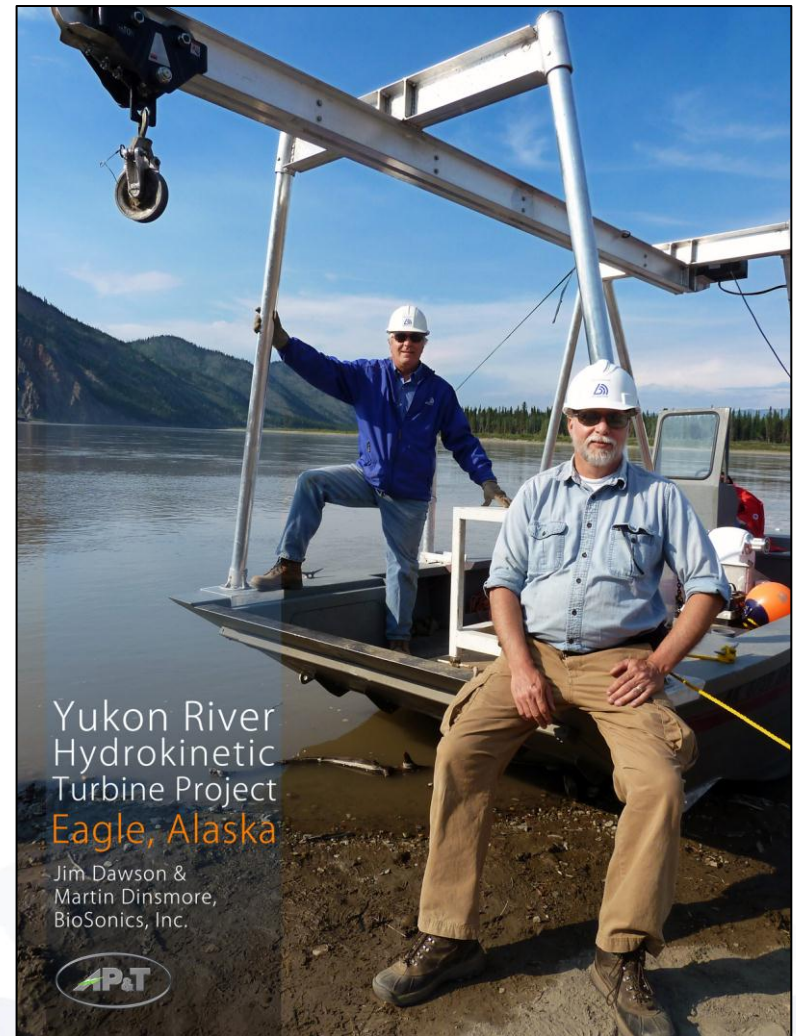
Proven, scientifically defensible results

True 3-D tracking capabilities

Unique software for classification and automated pre-processing

Comprehensive solutions can include:

- System design
- Installation
- Data processing
- Analysis & reporting





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BioSonics is...

A consulting, engineering and manufacturing firm with over 30 years experience.

Specialized in the application of hydroacoustic technology for monitoring and assessment of aquatic biological resources.

A turnkey solutions provider of sonar systems and technical services including survey design, installation, data processing, analysis and reporting.

Replied upon by hundreds of resource managers, researchers, regulatory agencies, power producers and private industry users worldwide.