

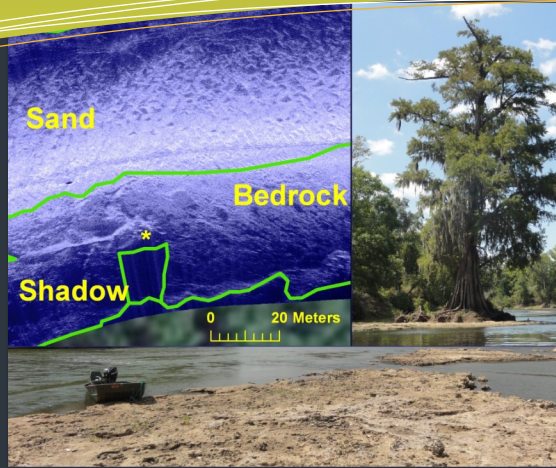
Upcoming Events

Short Courses

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Best Student Poster Award

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President's Byte

Submitted by Jodi Whittier

Hello FITS members!

The field of fisheries and information technology continues to advance at an increasingly rapid pace. Our section's role has been to filter and pass-through those advances to the AFS membership. To that end, an effort was initiated several years ago to improve the electronic services provided to AFS membership. In 2006, Fred Janssen raised concerns to the AFS Governing Board about the inadequacy of electronic-based services being provided to the AFS membership. His comments went unheeded... until the AFS server crashed a few months later. Had the server been backed up adequately? No. Several websites and listserves were lost. This resulted in a lengthy process to re-evaluate how AFS manages its online services.

In 2010, funds were allocated by AFS for an independent review of

the AFS website and electronic services. The review was presented to FITS, the Electronic Services Advisory Board, and the Governing Board, at the 2011 meeting in Seattle. The great news is that several of the recommendations have already been implemented and we are optimistic about the future utility of our society's online services. The independent review will be posted on the FITS website in the near future. Jeff Kopaska has assumed the chair of the ESAB with the main charge to develop an implementation plan for the additional recommendations provided in the review. Watch for future revisions!

As for future directions for FITS, we plan to develop closer ties with other AFS and outside groups such as the Organization of Fish and Wildlife Information Managers (OFWIM). I recently attended the annual meeting of OFWIM to talk to their Executive Board about renewing interactions with their organiza-

Using Hydroacoustics for Fisheries Assessment

February 9—10, 2012
9 AM—5 PM

University of Washington School of Aquatic Fishery Sciences, Seattle, WA

The hydroacoustic short course covers mobile and fixed-location survey techniques, and subjects include basic hydroacoustic theory, deployment logistics, data collection and processing, as well as typical results. Split-beam, single-beam, and multi-beam frequency techniques are discussed in detail.

Lunch is provided. For more information or to save a seat, email support@HTIsonar.com.

Website: http://www.htisonar.com/ha_short_course.htm

President's Byte

Continued...

tion. OFWIM's role is very similar to ours and interactions between our two organizations used to be more frequent. We were all in agreement that closer ties would benefit both groups in learning about and disseminating information and resources to our respective organizations. Our intention for the next year is to continue to build collaborations to serve the needs of the AFS membership.

Happy Holidays!



Opportunity to get involved!!

The Fish Culture Section of AFS is looking for someone to redesign their website (<http://www.fishculturesection.org/index.html>). They would like a more user-friendly site that also includes a secure way to make electronic payments. If you can help, contact Jim Bowker at jim_bowker@fws.gov.

Non-Credit Online Course - R Essentials for Natural Resource Professionals

The Quantitative Fisheries Center (QFC) at Michigan State University has launched a non-credit, on-line course entitled "R Essentials for Natural Resource Professionals." R is a powerful and free software environment for data analysis and graphing, and this course will introduce students to some of its capabilities. Topics covered include data importing, writing functions, graphing, the use of common statistical functions, looping, random number generation, and optimization. Worked exercises using ecological and fishery related data occur throughout the course. Progress through the course is self-paced and self-directed.

Registration Cost:

Regular - \$250 (USD)
Students and employees of QFC Supporting Partners receive a \$100 discount

To Register:

Please visit the QFC website (<http://qfc.fw.msu.edu/>) and click on the Introduction to R online course web link.

Another R Resource

Don't forget [fishR](#), which was featured in the [last newsletter!](#)

<http://www.ncfaculty.net/dogle/fishR/>

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Western Native Fishes Database Project Needs Your Input

Submitted by Eric Wagner, Western Native Fishes Committee

Through the efforts of Jeremiah Osborne-Gowey at his former job at the Conservation Biology Institute (CBI) in Oregon, and in coordination with the Western Native Fishes Database Committee (WNFDC) of which Jeremiah is a member, 155 of the 298 western native fishes have been entered in the mapping interface at Data Basin (www.databasin.org). Data Basin, created and managed by CBI, is an online site where users can make maps from spatial data using live, online GIS mapping technology. There are currently over 5,500 datasets now housed on Data Basin and it is a great place to also house the spatial datasets contained in the WNF database. On Data Basin, additional datasets can be added/visualized to provide more a richer context and additional data against which to query. For example, to a user-created Data Basin map of a particular species of interest, one could add additional fish species, wildlife layers, vegetation data, land use data, socioeconomic information, etc. Given the funding available in the last effort, we were able to get 155 (of the original 298) western native fish species from the original database uploaded into Data Basin and we'd like to get the remaining species uploaded as well. The data in the database were last updated in 2007, compiled by our past president Leanne Roulson, who was at Garcia and Associates at the time. We are now at the point where we need your input. Are the data accurate? Are the data in need of updating? If you have any knowledge about the distribution of a particular native fish and its status, please help us review the data. If you find that everything is okay, let me know (ericwagner@utah.gov). If any of the data need updating, please send

along the reference/s with the new information. All updates to the database must be based on published information, such as a report, journal article, book, etc, where the data source can be traced to.

To get into Data Basin, you will need to sign up at the site (it is free) and request to join the **Western Native Fishes Database Working Group** (see figure below, for instructions on how to join the group). Once approved, you'll be able to start navigating around the datasets (see the "bookmarks" section of figure below) and evaluating the data and generating your own maps. Thanks for your help!

- <http://databasin.org/>
- Search: "Western Native Fishes"
- Click the result in "Groups"
- Click the "Join Group" button
- Login using your existing ESRI Global Account OR create one
- Navigate the datasets, maps, and more via the "Bookmarks"

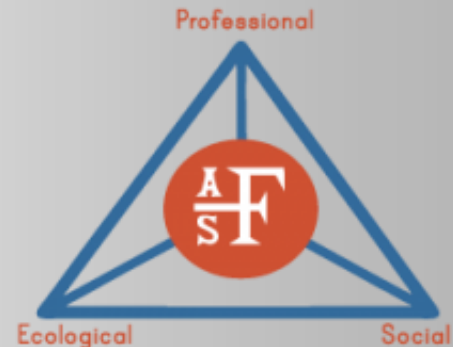
The figure consists of three screenshots from the Data Basin website. The first screenshot shows the 'Groups' section with 'Western Native Fishes Database' highlighted. The second screenshot shows the 'Join Group' button circled in red, with a red arrow pointing to a 'Login required...' dialog box. The third screenshot shows the 'Group Bookmarks' section with a red arrow pointing to the 'Bookmarks' link in the left sidebar.

First Call for 2012 Best Student Poster Submissions!

Announcing the 2011 Winner Ryan Lokteff!



Congratulations to Ryan Lokteff, this year's winner of the FITS Best Student Poster Award. Ryan is a Graduate Research Assistant at Utah State University and advised by Joe Wheaton for his Master's degree in Watershed Science. Ryan's poster was titled "Spatial Distribution and Species Segregation of Bonneville Cutthroat Trout, Brown Trout, and Brook Trout". Ryan will receive \$250 and a plaque as the winner of the 2011 FITS Best Student Poster Award.



Twin Cities - 2012

Announcing the 2012 Best Student Poster Award from AFS FITS!

The Best Student Poster Award will be given to a student who demonstrates innovative use of technology in their undergraduate or graduate fisheries research. The award is designed to encourage the dissemination of knowledge gained from the use of cutting-edge information-technology in fisheries management and science. Examples of previous winning submissions can be seen at: <http://www.fishdata.org/PosterAward.htm>.

Receive \$250 and an honorary plaque!

Students presenting posters at the 2012 AFS Annual Meeting in Twin Cities, MN who wish to be considered for the award are encouraged to submit your poster's title and abstract by 9 March 2012 (same deadline as the AFS meeting) to President Jodi Whittier at whittierj@missouri.edu.

Smith-Root Announces New Office in Australasia

Equivalent U.S. Pricing for All Electrofishing Products

Smith-Root, Inc., an employee-owned small business in Vancouver, Washington, USA, has just opened a new office in Australia. The new company (Smith-Root Australasia) will focus Smith-Root's 45-year history of electrofishing product excellence on the needs of customers in the Southern Hemisphere. Further details may be found at: <http://www.smith-root.com/news/company/smith-root-australasia/>

Smith-Root Australasia will be led by Smith-Root, Inc., whose sales and repairs in Australasia will be represented by Mr. Les Ohlbach in the Wollongong area of New South Wales. Thus, users will enjoy the consistent oversight of Smith-Root headquarters in the U.S., with competent sales and repair assistance in their homeland. Les is a degreed and qualified Electronics Engineer with several previous years of experience in the testing and repair of Smith-Root electrofishing products. Les and Smith-Root Australasia may be contacted at:

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Of interest to international customers, Smith-Root's U.S. pricing structure will be maintained for all future sales in Australasia (via equivalent U.S. pricing in Australian dollars plus actual shipping and GST costs). The U.S. equivalent-based pricing model will result in considerable cost savings for fisheries scientists who are Smith-Root product users in Australia, New Zealand and beyond.



Using Acoustic Tags to Track Fish

February 2—3, 2012
9 AM—5 PM
Seattle, WA

This short course addresses all aspects of tracking fish movement with acoustic tags, including three-dimensional tracking with sub-meter resolution. The course includes hands-on-operation and a variety of applications are covered. Lunch is provided.

For more information or to save a seat, email support@HTIsonar.com.

Website: http://www.htisonar.com/at_short_course.htm

Hosted by the U of Washington Student Chapter of the AFS!

Press Release from BioSonics

Quinault River Automated Salmon Counter is First of its Kind—BioSonics Takes Small Step for Sockeye, Giant Leap for Hydroacoustics
Submitted by Eric Munday, BioSonics, Inc.

Fisheries managers at the Quinault Indian Nation (QIN) have a long history working with BioSonics on management of the salmon resources of the Quinault River. Since the early 1980's, BioSonics has assisted tribal biologists in developing systems and procedures to enumerate adult salmon in Lake Quinault.

Salmon are a main staple of income and subsistence for the Quinaults. While the river supports several viable runs, the blueback sockeye, a highly prized delicacy, represent the most culturally significant salmon run in the river. Accurate and timely measure of salmon escapement is foundational to a successful sockeye harvest management strategy. Historically, sockeye escapement has been estimated by counting adult salmon in Lake Quinault using a BioSonics mobile scientific echosounder. Tribal harvest managers have expressed concerns about using estimates from lake surveys because of an apparent relationship between distribution (depth) of the fish and precision of the estimates, the potential for overestimation due to resident fish, and due to lag between the time fish enter the river and the time they enter the sampled population in Lake Quinault. QIN harvest managers therefore sought a more timely and precise index of

salmon counts to properly manage their fisheries resources. It was widely believed that such an index would most likely be obtained from sampling in the lower river.

The Need for Timely Estimates of Escapement

The need for accurate estimates of salmon escapement has long been recognized. The QIN membership realized that wise stewardship of their salmon runs and achieving the maximum sustainable yield was dependent on access to the number of fish entering the river as soon as possible. In 2009 BioSonics completed an evaluation study to determine if a suitable site exists for counting salmon with sonar. Several candidate sites were evaluated by personnel from the QIN and BioSonics and an ideal site was identified. In 2010 QIN contracted with BioSonics, Inc. to study the feasibility of establishing an automated, real-time fish counting station in the lower river.

Defining the Vision of an Automated Salmon Counting System

Existing methods for counting salmon in rivers vary widely in complexity and scale. Counting salmon via visual observation, weirs, fish traps, and conventional sonar systems are all relatively common. Such operations can be labor intensive however, and are often manned 24/7 or require frequent

Press Release from BioSonics

Continued...

visits for maintenance, analyzing data, and reporting of results. BioSonics and QIN envisioned an automated acoustic system that could collect and analyze data in real time, with a communications network that received daily fish counts from a remote station on the river and published results to a web page “dashboard”. BioSonics scientists believed such a system with a high degree of automation would provide data to the most people in the shortest amount of time, and have the highest degree of scientific and legal defensibility.

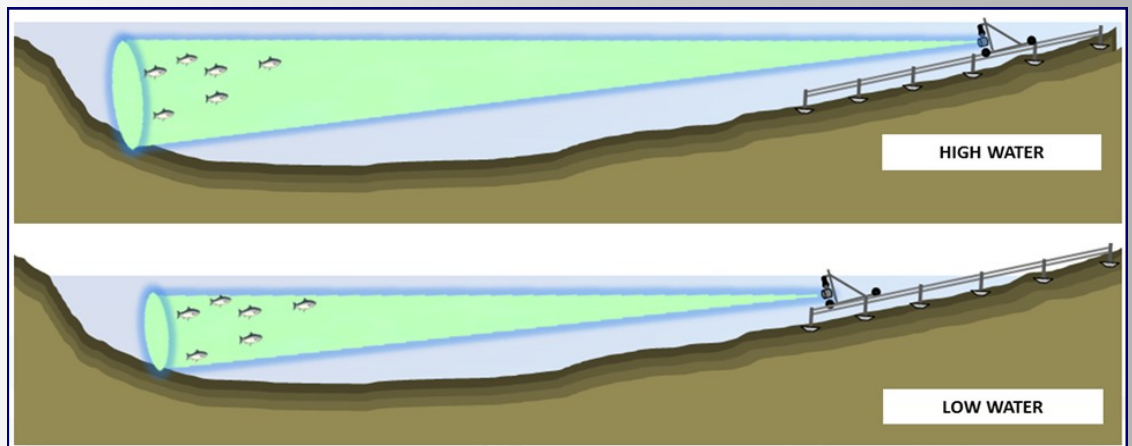
In recent years, BioSonics has pioneered the advancement of Automated Hydroacoustic Monitoring Systems centered around their digital DT-X split beam technology which allows for the detection, sizing,

and 3-D tracking of targets at ranges in excess of 200 meters. BioSonics software systems provide watchdog functionality that monitor and communicate system status parameters to project managers in real-time. BioSonics data processing software uses advanced algorithms to automatically generate fish tracks and create fish count reports. The QIN’s desire for a remote, riverine fish counting system was an ideal opportunity to leverage BioSonics latest technology and create a completely autonomous fish counting system that operates 24 hours a day with minimal manpower and transmits fish count information in real time.

Innovation to Overcome Challenges

Once an ideal location was selected, engineering of the automated counting system began in

earnest and several logistic issues were quickly identified. First of all, the location for installing the salmon counting station is on a remote stretch of the river with no available power source or communication link. This meant that a reliable autonomous power source would be needed. Custom power modules were engineered to provide continuous electricity. Two heavy duty trailers were configured each with a bank of deep cycle batteries and an integrated inverter/charger. By rotating the trailers every 3-4 days for recharging, the system could be



Conceptual drawing of transducer/rotator assembly on adjustable track mount for variable water levels

continuously powered with relatively little effort and at low cost. The entire system had to be extremely robust to withstand river flow and long term exposure to the elements, yet also be easily removable to avoid extreme high flows in the fall and winter when water levels rise and inundate the entire location. Therefore, all surface electronics and components were housed on trailers for quick and easy demobilization. Lastly, an adjustable mount for the transducer was necessary to accommodate water levels in the river that fluctuate several feet depending on precipitation and runoff rates. To facilitate transducer positioning, a track and trolley system was designed to allow for adjustment of the split beam transducer. A mechanical rotator was integrated to provide additional fine adjustment capability and ensure accurate transducer aiming.

First Call for Articles

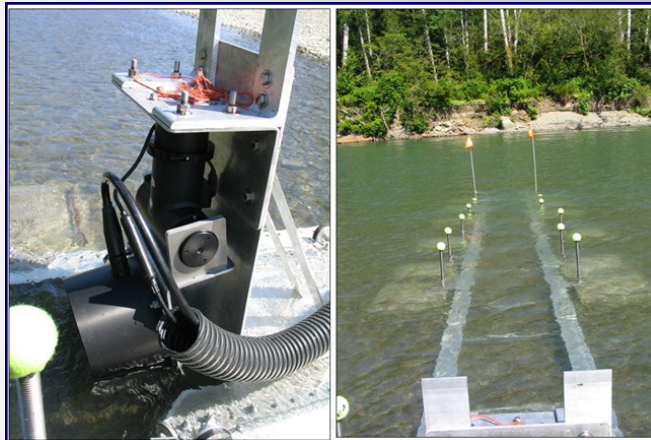
If you did not get a chance to submit something to this newsletter, please send us your submission for the next publication. We are preparing the next newsletter for April/May 2012.

Submit your articles for the next newsletter by sending us an email at afsfits@gmail.com.

Thank you! Your participation in the Section is greatly appreciated by your fellow members (and editors)!

Press Release from BioSonics

Continued...



Transducer/rotator assembly, aluminum track installed in river

Successful Trial Deployment

In May 2011, the automated salmon counting system utilizing BioSonics scientific sonar was deployed in a remote stretch of the Quinault River in Grays Harbor County, Washington. The system consists of 120 kHz split beam transducer and ROS PT 25 rotator mounted to an adjustable track trolley system custom fabricated from anodized aluminum. The track was gravity mounted with cement pier blocks for minimal bank disturbance and easy demobilization. A DT-X echosounder and control computer were housed in a mobile office trailer with a satellite modem for communication. The system operated for several months during which time, data was collected and processed for algorithm refinement and tuning for site-specific conditions. By the end of the deployment phase, the system was automatically transmitting daily salmon count reports to project managers. BioSonics President Tim Acker

expressed the significance of the project; "This pilot stage deployment was monumental. To our knowledge, there is nothing else like this in the world. Completely autonomous, completely automatic fish counting represents a shift in the way fisheries managers work. Imagine sitting at your desk and receiving a fish count report from an unmanned monitoring station twenty miles away."

About BioSonics

BioSonics is a manufacturing, consulting, and engineering firm specializing in the application of hydroacoustic (sonar) technology for monitoring and assessment of aquatic biological resources. For over thirty years, BioSonics scientific echosounders have been used for accurate assessment of fish abundance, distribution and behavior. Versatile and rugged design allow for installation in every aquatic environment imaginable. BioSonics offers a range of technical services including survey design, installation, data collection, environmental monitoring, data processing, analysis and reporting.

Contact:

Eric Munday
General Sales Manager, BioSonics, Inc.
(206) 782 2211
emunday@biosonicsinc.com

Mapping Aquatic Habitat Using Low-Cost Side Scan Sonar and GIS

January 27, 2012
8 AM—5 PM
Biloxi, MS

This short course addresses the need within the natural resource community for an inexpensive and rapid technique to map and quantify aquatic habitat features in navigable waterways. Using ArcGIS to transform Humminbird® images into georeferenced sonar image maps (SIMS), you will learn to develop maps showing underwater habitat in a spatial context.

To view more information about the workshop at the SD meeting, visit <http://www.sdafs.org/meetings/2012/workshops.html>.

Low-Cost Side Imaging Sonar Applications in Benthic Habitat Mapping

Submitted by Tanner Williamson, Georgia DNR

What is low-cost side imaging sonar?

Side imaging sonar uses sound to produce two-dimensional digital imagery of submerged aquatic features. These images can also be geo-referenced to provide spatially accurate information on the location and extent of substrates and other features (i.e., large woody debris) found in these systems. In turbid, or non-wadeable systems side imaging provides an efficient method to collect seamless habitat data across large (or small) extents. Recent technological advancements, and the low cost of “off-the-shelf” side imaging units (e.g. Humminbird®), have put quality side imaging sonar within the budgets of natural resource managers and researchers (\$1700 USD (Humminbird® 998c SI) – \$2500 USD (Humminbird® 1198c SI). Processing tools for use within the ArcGIS platform have been developed, tested, and validated by the Georgia Department of Natural Resource (GDNR), and are freely available (Kaeser-Litts method). The Kaeser-Litts method enables users to process sonar image snapshots with easy-

to-use, ArcGIS based tools and create spatially accurate sonar image maps (SIMS) representing benthic habitat.

The genesis of low-cost sonar habitat mapping:

The genesis of low-cost side scan sonar mapping in Georgia began through efforts to develop a permitting process to harvest deadhead logs from Georgia waterways. During the nineteenth century it was common practice to “raft” or float cut timber downriver from the harvest site to major ports, where it could be processed and easily shipped elsewhere. Frequently, these logs sank en route, becoming permanently embedded within the habitat matrix of the river. Today, the characteristics of this sunken old growth timber make it valuable both culturally and ecologically (Kaeser and Litts 2008). At the time of the deadhead logging initiative the number of deadhead logs in Georgia’s streams and rivers was unknown. Uncertainty regarding the extent of this valuable resource prompted the GDNR to use inexpensive side imaging sonar to assess deadhead log prevalence and distribution.

Habitat Mapping with Side-Scan Sonar

Continued...

In 2007, a pilot project was implemented with great success on Ichawaynochaway and Chickasawhatchee creeks, two small streams in southwest Georgia (Kaeser and Litts 2008). While the objective of this study was to assess the utility of side scan sonar to quantify dead-head logs and large woody debris, it became quickly apparent that low-cost side imaging technology had great potential in benthic habitat mapping. As such, a proof-of-concept study to map benthic substrates and habitat on Ichawaynochaway Creek was initiated in 2008

(Kaeser and Litts 2010) using a unique methodology developed for Humminbird SI system imagery by these authors. Early success on these small waterways prompted expanded work, and soon efforts were underway to test the scalability of this technology to larger river systems. This resulted in the successful mapping of 124 kilometers of the lower Flint River in 2008, with a particular emphasis on critical shoal bass, gulf sturgeon and Alabama shad habitat (Kaeser et al., in review).

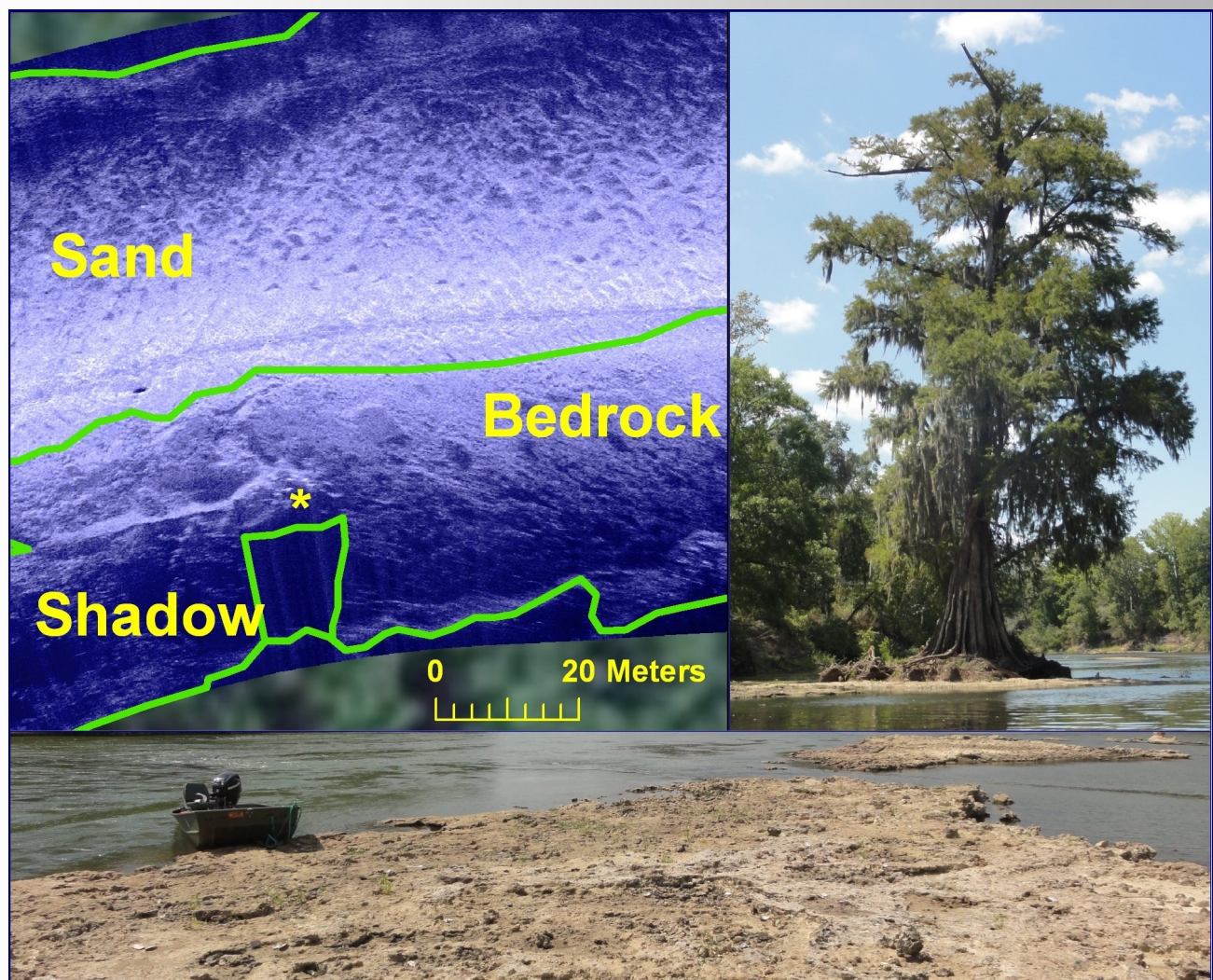


Fig 1: Sonar image with slant range correction (i.e. water column removed) from the Oconee River, GA, USA. Three features are delineated (green lines) in this image, sand, bedrock, and an area of sonar shadow. A large Cypress tree (asterisk on the sonar image, and shown in the right-hand photo) is responsible for this sonar shadow. The bedrock photo below the sonar image is an example of a common type found in this system.

Habitat Mapping with Side-Scan Sonar

Continued...

Current projects:

Currently, the GDNR is engaged in a large habitat mapping project on four major river systems in southeast Georgia; the Altamaha, Ocmulgee, Oconee, and Savannah rivers. This project specifically targets the identification of critical Atlantic and shortnose sturgeon habitat, though the resultant habitat maps will have application to other fisheries and management activities. At the time of the writing, survey efforts are near completion on the Ocmulgee, Oconee, and Altamaha Rivers, with a total of 709 river kilometers surveyed between these three rivers. Approximately 300 kilometers of the Savannah River is scheduled for survey during 2011-2012. Additional research applications of low-cost, sonar habitat mapping include ongoing studies of habitat use of radiotagged fish and turtles, and detection of changes in substrate deposition following a 10-year flood event. We've also begun preliminary testing of side-scan sonar in lakes and reservoirs. These lentic systems offer new avenues for side-scan sonar applications. Examples include the identification and use of spawning sites, macrophyte distribution mapping, siting of artificial habitats, and the assessment of human shoreline modifications.

Advancements and Outreach:

The methods and technology used in low-cost side-scan sonar habitat mapping are always evolving and improving; this initiative, now a partnership between GDNR and US Fish and Wildlife Service (USFWS), is dedicated to keeping resource managers, researchers, and others up-to-date on the technological advancements. Recently, Humminbird® included

on-the-fly slant range correction, which is available via a free firmware upgrade that removes the water column from sonar imagery. This significantly improves the "viewability" of the imagery, greatly easing interpretation. Improvements continue to be made to the Kaeser-Litts data processing method as well, the latest of which includes using geodatabases to create and manage sonar image mosaics, a step that significantly reduces data processing time. These details and much more are explained in workshops, which are available to those interested in starting sonar mapping projects of their own. The workshop details all aspects of sonar habitat mapping; and hands-on image processing exercises are provided. The next workshop will held at the Southern Division of the American Fisheries Society Spring 2012 meeting in Biloxi, Mississippi. The full-day workshop, entitled, Mapping aquatic habitat using low-cost side scan sonar and GIS is scheduled for January 27, 2012. Please see <http://www.sdafs.org/meetings/2012/workshops.html> for more details.

Literature referenced:

- Kaeser, A.J., T.L. Litts (2008) Assessment of dead-head logs and large woody debris using side scan sonar and field surveys. *Fisheries* 33:12 589-597.
- Kaeser, A.J., T.L. Litts (2010) A novel technique for mapping habitat in navigable streams using low-cost side scan sonar. *Fisheries* 35:4 163-174.
- Kaeser, A. J., T. L. Litts, T. W. Tracy (in review) Using low-cost side scan sonar for benthic mapping throughout the lower Flint River, Georgia, USA. *River Research and Applications*.

Electronic Services Advisory Board Completes Review of AFS Website

Submitted by Andy Loftus

At the 2010 AFS Governing Board Meeting, the Electronic Services Advisory Board (ESAB) was charged with coordinating an outside professional review of the AFS website and associated electronic services. The ESAB is composed of webmasters from each AFS Division and representatives of FITS, the Education Section, and the AFS president-elect.

The ESAB initiated the review with a questionnaire to a subset of AFS members regarding their experiences with the website. Following this, an RFP was issued to solicit firms to conduct the review, with the Canton Group, a Baltimore based web systems design and engineering firm, chosen for the job. Over several months, a diversified team of professionals evaluated the design, operability, usability, and technology of the AFS systems and combined it with information on AFS members' desires to provide a comprehensive 94-page review of the current situation and recommendations for the future.

A number of the recommendations can be quickly implemented, including features of the web page design to increase the visibility of the most important information on each web page, improve the search function, improving titles of links to clarify where they are leading, and other design aspects. The AFS webmaster has been making some of these changes as time and resources allow.

Some of the major sources of discontent from web users related to issues over access to electronic journals. The switch earlier in the year to a new vendor for the journals, created problems for some users. AFS officers and staff are aware of these issues and have worked with the vendor to rectify the problems.

Many of the problems identified by users of the current system relate to the integration between the membership database and other

AFS web services. Currently, the membership database is managed by a third party vendor that, due to security concerns, will not allow this integration to occur. The Canton evaluation recommends that AFS change to a new Content Management System (AFS currently uses WordPress) that will allow greater integration with available membership database add-ons. Doing so will incur costs associated with staff training, as well as redesign of the current system, but ultimately provide greater integration between the breadth of electronic services that AFS offers, including member information updates, membership renewal, electronic journals access, on-line bookstore and others.

The Canton review found that the AFS website was fully "508 compliant" meaning that it was compatible with assistive technologies that allow visually impaired users access to, and use of, the site. This has been a focus of the AFS webmaster in the past.

The full report can be downloaded from the FITS website, www.fishdata.org.

During the ESAB meeting held in conjunction with the AFS Annual Meeting in Seattle, committee members discussed these recommendations and began to outline elements of an implementation plan that will set the course for future improvements to the AFS website. FITS past-president Jeff Kopska will be leading this as chair of the ESAB in the coming year, with a draft plan scheduled to be presented to the Governing Board at the midterm meeting.

For more information about the 2011 review process and outcomes, contact Andrew Loftus at aloftus@andrewloftus.com.

MARIS Site Redesign Resulting from FITS Efforts

Submitted by Andy Loftus

For the past seven years, AFS/FITS has partnered with federal (primarily the U.S. Geological Survey and U.S. Fish and Wildlife Service) and multiple state agencies to improve the design and operability of the Multistate Aquatic Resources Information System (MARIS). MARIS provides a single web-based platform for accessing select elements of databases provided by state natural resources agencies.

In the most current phase, with the assistance of FITS, the MARIS platform has been redesigned and migrated to USGS servers. The initial version of the newly-redesigned system allows users to download databases from nine states, with several additional states scheduled to be added in coming months. The ultimate goal of MARIS is to provide access to data through an on-line query based mechanism such as was part of the previous platform hosted by Iowa State University. In the coming months, queries will be designed, tested, and implemented to allow users access to the data from a simple query rather than having to download the data and manipulate it themselves. To view the new MARIS platform, visit www.marisdata.org.

In projects such as these, FITS provides two primary services: 1) administrative capabilities allowing for coordinated program management and funding, and 2) a conduit to the network of professionals familiar with collection and management of aquatic resources information. Leveraging funding provided by federal agencies with the time and talents of state agency personnel, FITS coordinates and sponsors meetings of the MARIS steering committee, provides needed funding to state agencies to improve their information management systems, and provides technical assistance to help agencies prepare their data for contribution through the MARIS infrastructure.

Other projects administered through FITS, such as the *National Fisheries Data Summit* ([link to http://www.fishdata.org/FisheriesDataSummit2006FinalReport.pdf](http://www.fishdata.org/FisheriesDataSummit2006FinalReport.pdf)) complement the development of MARIS by providing access to, and advice from, a wide breadth of professionals experienced in information management related to aquatic resources. For information on any of the partnerships coordinated through FITS, contact Andrew Loftus, Secretary/Treasurer.



President Jodi Whittier presents Past-President Jeff Kopaska with an honorary plaque for his hard work. Thanks, Jeff!

Next Issue!

Read a full summary of the annual business meeting in the next issue of the AFS FITS newsletter!