

# FISHERIES INFORMATION AND TECHNOLOGY SECTION

## Volume XXII, Number I

Formerly the Computer User's Section



Summer 2009

### AFS-FITS Officers

#### Past-President

William L. Fisher, PhD  
U.S. Geological Survey  
Oklahoma Cooperative Fish and  
Wildlife Research Unit  
404 Life Sciences West  
Oklahoma State University  
Stillwater, Oklahoma 74078 USA  
405-744-6342 Voice  
405-744-5006 FAX  
wfisher@okstate.edu

#### President

Jeff Kopaska  
Iowa Dept. of Natural Resources  
Boone Wildlife Research Station  
1436 255th St.  
Boone, IA 50036  
515.432.2823 x109 Voice  
Jeff.Kopaska@dnr.iowa.gov

#### Secretary-Treasurer

Andrew J. Loftus  
3116 Munz Drive, Suite A  
Annapolis, MD 21403  
(410) 295-5997 Voice/FAX  
ALoftus@andrewloftus.com

#### Software Review Chairman

Gary Ash  
Golder Associates Ltd.  
300, 10525 - 170 Street  
Edmonton, AB T5P 4W2, Canada  
780-930-8666 Voice  
780-483-1574 FAX  
gash@golder.com

#### Newsletter Editor

Angela Grier  
Indiana Department of Natural  
Resources  
4130 Buesching Dr.  
Fort Wayne, IN 46815  
(260) 244-6805 Voice  
agrrier@dnr.in.gov

#### Webmaster

Kevin Kayle  
Ohio Division of Wildlife  
1190 High St.  
Fairport Harbor, OH 44077  
440.352.4199 Voice  
440.352.4182 FAX  
kevin.kayle@dnr.state.oh.us

### *Inside this issue*

<i>President's Byte</i> .....	2
<i>Help Wanted</i> .....	4
<i>FITS Work Plan</i> .....	5
<i>Logo Contest</i> .....	8
<i>Candidate Bios</i> .....	9
<i>FITS Updates</i> .....	10
<i>Continuing Education</i> .....	14

**Election Ends July 31<sup>st</sup>!**  
**See page 9 for more information.**

**Vote for your Favorite  
FITS Logo!!! Ends August 20<sup>th</sup>;**  
**See page 8 for more information.**

**FITS web address: <http://www.fishdata.org>**  
**Software library address: <http://www.fishdata.org/library.htm>**



## President's Byte Jeff Kopaska

Hello all, and welcome to what I'm sure is a much anticipated (and much delayed) first President's Byte from me. Allow me a few lines to introduce myself. I am a fisheries research biologist with the Iowa Department of Natural Resources, and a graduate of Iowa State University. My research area concerns data management, data analysis, and technological advances in fisheries. As such, I'm a natural fit with the new Fisheries Information and Technology Section (FITS). Additionally, I work across state lines with my activities on the National Fish Habitat Initiative Data Committee, and the Multi-state Aquatic Resources Information System (MARIS).

My first real task as FITS President was to find some people willing to run for the position of president-elect, and I feel we have two fine candidates in Andrea Ostroff and Joanna (Jodi) Whittier. Their biographies, and the election ballot, are included in this newsletter. We also have the entries for the new FITS logo design in the newsletter, and please vote on those as well!

I attended the mid-term governing board meeting in Bethesda in March, and it was a pleasure to meet many of the staff who diligently work for AFS, the other elected volunteers that serve the various sections and divisions, and to visit AFS headquarters. The interesting items that came out of the governing board meeting included passage of the motion to create a Fish Habitat Section, and defeating the motion regarding the Resource Policy Statement on Economic Growth and Fisheries. There was also some

discussion regarding the 2008-2009 Plan of work that I modified from what past-president Bill Fisher had prepared. Most notably, there is substantial interest in our section providing leadership and direction to the rest of AFS regarding what should be on websites, and what guidance FITS can provide to other sections regarding website improvement. Look for a call for volunteers to help in this process in the near future.

My last note is a plea for you to attend the Section meeting in Nashville if you are able to attend the Annual Meeting. Last year we barely reached a quorum, and I'm hoping for a slightly better turnout this year. I will bribe you now, I have already placed the order for cookies and brownies. I know many of you may not be able to attend, due to travel restrictions many agencies are enacting, but if you are in Nashville, please show up.

I will leave you with a photo of a recent fishing trip (on page 2) I made with some of my office mates. I'm the tall one in the wide-brimmed hat. We hit the yellow bass spawn on Clear Lake, Iowa, about perfect on May 6. I think we cleaned around 200 fish that afternoon, each of those stringers or baskets has around 40 fish in/on them.

I hope to see you in Nashville, and remember to get out there and enjoy the resource often – that's why we got into this field in the first place!

Jeff Kopaska



President's Byte  
Jeff Kopaska



## **AFSFITS STUDENT POSTER AWARD SUBMISSION NASHVILLE, TN - SUMMER 2009**

Students presenting posters at the 2009 AFS Annual Meeting in Nashville, Tennessee, and who wish to be considered for the award are encouraged to notify AFSFITS President Jeff Kopaska by e-mailing him at [Jeff.Kopaska@dnr.iowa.gov](mailto:Jeff.Kopaska@dnr.iowa.gov).



## Business Items

### HELP WANTED

The FITS is seeking interested and qualified members to fill two volunteer positions. The work is rewarding and necessary, the benefits are both tangible and intangible, and the experience is invaluable. The time investment for these positions is periodic and minimal.

#### **Position Title:** Software Librarian

**Responsibilities:** Maintain a current list of the software library, keep copies of all software, and distribute software to members as per software distribution rules, coordinate software reviews with the chairman of the Software Review Committee.

**Note:** If you like fisheries software, are interested in running a small business, and would like to explore ways to redefine the responsibilities of this position, then this job is for you.

#### **Position Title:** Newsletter Editor

**Responsibilities:** In charge of producing the Section newsletter, soliciting and collecting newsletter items, and coordinating timely publication of the newsletter. At least one newsletter is published per year.

**Note:** If you have always dreamed about being an editor, creatively preparing a newsletter, and communicating with a readership of over 200 people, then this job is for you.

If you are interested in either of these positions, please contact Jeff Kopaska, FITS President at [Jeff.Kopaska@dnr.iowa.gov](mailto:Jeff.Kopaska@dnr.iowa.gov).

#### **Position Title:** Webpage Contributor

**Responsibilities:** If any member has news items, links, or comments about the AFS FITS webpages, please contact the webmaster Kevin Kayle [kevin.kayle@dnr.state.oh.us](mailto:kevin.kayle@dnr.state.oh.us).

**Note:** This is for all FITS members.



## Business Items

# AFS-FITS WORK PLAN 2008-2009

Jeff Kopaska, FITS President

### Focus Area I: Aquatic Stewardship

*AFS and its members will be leaders in promoting the sustainability and sound stewardship of fisheries resources and aquatic ecosystems.*

1. Continue support of the National Fish Habitat Action Plan
  - a. Collaborators: Doug Beard, Stu Shipman
  - b. Tasks:
    - i. Maintain communication with the NFHAP Science and Data Committee
      1. **Accomplished (ongoing)**
    - ii. Form 4 data sharing work groups identified in post-survey of National Fisheries Data Summit: Data Standards, Biology, Information Technology, Policy
      1. **Not accomplished (2008)**
    - iii. Link NFHAP Science and Data Committee with Data Sharing Work Groups
      1. **Not accomplished (2008)**
    - iv. Invite NFHAP Assessment Status staff to present at the Fish Distributions of North America symposium at the 2009 AFS Annual Meeting
      1. **Accomplished (2009)**
2. Support new and innovative continuing education workshops
  - a. Collaborator: Elize Zipkin
  - b. Task: Help organize and support "Programming in R for Fisheries Professionals"
    1. **Accomplished (2008)**
    2. **Supported workshop "Mapping Aquatic Habitat of Inland Freshwater Systems using Side-Scan Sonar" by Adam Kaeser and Thom Litts.**
3. Continue collaborative relationship with USGS-NBII, OFWIM and other organizations
  - a. Collaborators: Jeff Waldon, Andrea Ostroff, Robin Carlson
  - b. Task: Support OFWIM annual meeting through website announcement
  - c. Administer ongoing projects
    1. **New project initiated "Fisheries Information Systems Convergence and Fish Data Compilation for NFHAP Assessment" with USGS-NBII (2008)**
  - d. Initiate new partnerships with OFWIM



## Business Items

### Focus Area II: Information Transfer and Outreach

*AFS and its members will be recognized by decision makers and natural resource professionals as an important source of science-based information about fisheries and aquatic ecosystems and their conservation, management, and sustainable development.*

1. Replace Software Librarian
  - a. Collaborator: Andy Loftus
  - b. Tasks:
    - i. Identify CUS member willing to serve
    - ii. Rename position?
    - iii. Redefine duties of Librarian
    - iv. Investigate electronic purchase of software via the web
    - v. Promote software availability through various means, including announcements on AFS book website
      1. **In progress.**
      2. **Accomplished - transfer of software sales from CUS to AFS book sales (2008)**
2. Maintain and update CUS website
  - a. Collaborator: Kevin Kayle
  - b. Task: Redesign front page to make it more user friendly (consult with AFS webmaster about design ideas)
    1. **Accomplished (2008)**
    2. **Mirror Web 2.0 site established.**
3. Continue biannual electronic newsletter
  - a. Collaborator: Angela Grier
  - b. Task:
    - i. Contribute President's message to and solicit other items for CUS Newsletter
      1. **Accomplished (2008)**
    - ii. Replace newsletter editor
      1. **Not accomplished, Angie Grier continuing.**
4. Scope out new IT resources useful for fisheries professionals
  - a. Collaborators: Gary Ash, Al Stevens, Rick Lorenzen, CUS members
  - b. Tasks: Identify
    - i. Core source code for common applications
    - ii. Information resources for making decisions regarding handheld field data collection devices.
      1. **In progress**



## Business Items

### Focus Area III: Member Services

*AFS will provide excellent, cost-efficient services, operations, and support for its members.*

1. Change section name
  - a. Collaborators: Executive Committee, Dirk Miller
  - b. Tasks:
    - i. Initiate blog to gather, discuss and vote on name ideas
    - ii. Change bylaws
      1. **Accomplished (2008)**
2. Recruit new members
  - a. Collaborator: AFS Bethesda
  - b. Tasks:
    - i. Confirm free student and Data Summit members (request list from AFS)
    - ii. Communicate with student members
    - iii. Develop “bubbles” ringtone and place on website (Fred has software)
    - iv. Better engage student members by soliciting their help with CUS business
      1. **Partially accomplished.**
      2. **20 students of 236 CUS members (11/2008).**
      3. **FITS article in Fisheries Student Angle (accepted, forthcoming in 2009)**
      4. **Ringtone created by Fred Janssen (2008)**
3. Promote student poster award
  - a. Collaborators: AFS Bethesda, 2009 Annual Meeting Program Committee
  - b. Tasks:
    - i. Clearly describe purpose of award and qualities of research/poster
    - ii. Additional technology poster award being offered in conjunction with ADMB
    - iii. Solicit potential award recipients prior to meeting
    - iv. Promote award after presentation
      1. **Not accomplished (2008)**
4. Support Electronic Services Advisory Board
  - a. Collaborator: Joel Carlin
  - b. Task: Serve on Committee and support their work plan, as required
    1. **Accomplished (2008)**
5. Develop budget plan
  - a. Collaborators: Executive Committee
  - b. Tasks: Review current obligations and plan new initiatives
    1. **Accomplished (2008)**
6. Recruit candidates for President-elect position (now vacant); conduct election
  - a. Candidates: Andrea Ostroff, Joanna Whittier
  - b. Task: Distribute biographies and ballots in next FITS newsletter

Created: 21 September 2007; Revised: 17 December 2007; Updated: 16 August 2008; Updated 16 February 2009



## Business Items

### VOTE FOR YOUR FAVORITE AFSFITS LOGO

With the creation of our new name, the Fisheries Information and Technology Section needs a new logo. Three entries were submitted as seen below. Please submit your vote for your favorite entry by **July 31<sup>st</sup>** to Jeff Kopaska, CUS President at [Jeff.Kopaska@dnr.iowa.gov](mailto:Jeff.Kopaska@dnr.iowa.gov). The winner whose entry receives the most votes will receive a one-year membership to the Fisheries Information and Technology Section.

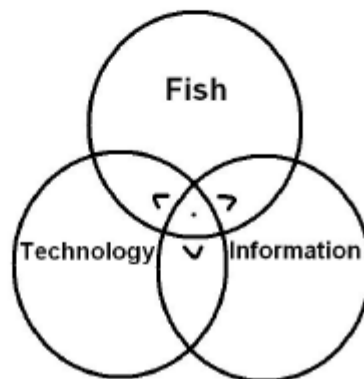
Entry 1 – Walleye FITS



Entry 2 – Salmon FITS



Entry 3 – FITS diagram





## Business Items

### FITS ELECTION

The election for the next President-Elect will close at **4 PM CDT on July 31<sup>st</sup>**. Please submit your vote to Jeff Kopaska, CUS President at [Jeff.Kopaska@dnr.iowa.gov](mailto:Jeff.Kopaska@dnr.iowa.gov).

Candidate: **Joanna Whittier**

Education:

- BS – California Polytechnic State University, San Luis Obispo
- MS – Oklahoma State University

• PhD – Oklahoma State University Joanna is a Research Assistant Professor at Kansas State University in the Division of Biology. She has been a member of AFS since 2001 and is a member of the Arizona/New Mexico and Kansas Chapters. Since 2004, she and Mick Porter were co-instructors of two GIS courses for Fisheries Biologists that have been supported by FITS. Joanna took the lead in teaching the courses beginning in 2008. She has taught/co-taught the GIS courses nine times at state to international level fisheries meetings. She currently serves as webmaster for the Kansas and Arizona/New Mexico AFS chapters and the upcoming Western Division Meeting. Advancements in computer capabilities and more user-friendly programming languages have escalated the production of useful resources for biologists. If elected, Joanna will promote the continued development of workshops to introduce those resources to biologists and work to increase membership awareness of the valuable resources already compiled by FITS members on the FITS website.

Candidate: **Andrea Ostroff**

Andrea Ostroff is the manager of two nodes of the United States Geological Survey's National Biological Information Infrastructure program, Fisheries and Aquatic Resources and Mid-Atlantic Information Node, and the coordinator of the National Aquatic Gap Analysis Program. Her work focuses on promoting conservation of biodiversity by providing increased access to data, information, and online mapping applications. She manages a project portfolio for each of the program areas and collaborates with numerous partners around the United States to help meet program objectives. Prior to her current position, Andrea worked for the Association of Fish and Wildlife Agencies as the National Fish Habitat Liaison to develop an aquatic conservation project database using information provided by state fish and wildlife agencies in support of what became the National Fish Habitat Action Plan. Before moving her family to the DC area, she worked three years for the New Jersey Division of Fish and Wildlife providing data management and geospatial information system expertise to both the Black Bear and Freshwater Fisheries programs. Andrea has served as a member of the National Fish Habitat Action Plan's Science and Data Team since its formation. She also is co-chair of the Data Working Group for the Eastern Brook Trout Joint Venture, a Fish Habitat Partnership. She earned her B.S. from University of Delaware in 1996 and her M.S. from Emporia State University in 2001, where her research focused on river otter distribution and mesohabitat characteristics in Kansas. Andrea has been a member of the Section for a few years and has already gained great value from her involvement with so many dedicated and passionate professionals in the field. She would be proud to serve as President to continue the great work of the Fisheries Information and Technology Section and uphold its high standard for service to students and professionals.



## Business Items

### IMPORTANT AFSFITS UPDATES

#### **Name Change Update**

Andrew Loftus, Secretary/Treasurer

By now, everyone is aware that our section's name has changed to the "AFS Fisheries Information and Technology Section." Without going into the gory details, a number of actions need to be taken to institutionalize this change with banks and multiple registrations connected with the federal grants and contracts process in which the section is involved. I am happy to report that we are making steady progress on this front. The important consideration at this point for all individuals/institutions who conduct business directly with the section is that all checks written (such as for the purchase of software, etc.) must be made payable to the AFS Fisheries Information and Technology Section. If you have any questions related to the name change please feel free to contact me at [aloftus@andrewloftus.com](mailto:aloftus@andrewloftus.com).

#### **Software Sales to Go Online**

In addition to approving the name change during the Annual Business meeting, the section membership approved the move of software sales functions to the AFS Bookstore. Once implemented, this change will affect the sale of FAST, FishBC, S-FAT, the Age & Growth DVD and any other software that we offer for sale in the future. Free downloads of all other software will continue to be made available through the section's website ([www.fishdata.org](http://www.fishdata.org)). This move will necessitate changes to the current software distribution agreements that the section has with various entities. Once these revised agreements are in place, the software packages will be offered through the AFS Bookstore and direct sales from the section will discontinue. This will provide better exposure of our software offerings to a wider, worldwide audience and smooth the distribution and shipping functions. The section membership has periodically reaffirmed that the goal of software sales should be distribution of software, not profitability, and it is expected that the move to the AFS Bookstore will continue this philosophy. In other words, after accounting for software commissions, shipping, and handling charges, the section will net relatively little, if any, from software sales (as has been the case in the past). These changes should be in place by late spring of 2009. The membership will be informed via the list serve and the website once this takes effect.

A side benefit of this change will be the increased flexibility afforded to the Software Librarian position once software mailings from the section are discontinued. We are still seeking volunteers for this position (and have been in discussion with some individuals). The "revamped" duties will allow the software librarian to focus more on exploring new software availability, promoting the current software offerings, and generally expanding the Section's involvement in areas discussed at the Annual Meetings such as code sharing, blogs on various shareware and software advances, etc. In short, the new Software Librarian's position can be almost anything that a dynamic individual wants to make of it while providing an avenue through which to become involved with AFS activities. If you're interested, contact President Jeff Kopaska at [Jeff.Kopaska@dnr.iowa.gov](mailto:Jeff.Kopaska@dnr.iowa.gov).



## Business Items

### Statement of Income and Expenses January, 2009

	1/1/07- 12/31/07	1/1/08- 12/31/08	Difference	2008 Amount Attributable to Grants
Beginning Balance January 1	\$22,681	\$22,545		
<b>INFLOWS</b>				
Continuing Educ.		\$1,345	\$1,345	
Contract & Grant Income	\$35,922	\$81,845	\$45,923	
Dues Payment	\$1,153	\$1,730	\$577	
Interest Income	\$210	\$237	\$27	
Software Sales	\$2,904	\$2,306	-\$598	
<b>TOTAL INFLOWS</b>	<b>\$40,189</b>	<b>\$87,463</b>	<b>\$47,274</b>	<b>\$81,845</b>
<b>OUTFLOWS</b>				
Award	\$100		\$100	
Bank Chrg	\$1		\$1	
Conference/Meeting expense	\$4,994	\$380	\$4,614	\$380
Continuing Education	\$822	\$600	\$222	
Contract & Grant Expense	\$24,278	\$71,961	-\$47,683	\$71,961
Copying	\$40		\$40	
Donation	\$100	\$1,000	-\$900	
Office	\$1,155		\$1,155	
Past Pres Plaque	\$25	\$25	\$0	
Postage	\$290	\$130	\$159	\$2
Software Comm-Auburn	\$2,080	\$1,365	\$715	
Software Commission		\$99	-\$99	
Supplies	\$110	\$68	\$43	
Travel	\$5,291	\$3,076	\$2,215	\$2,949
per diem	\$632	\$544	\$88	\$544
<b>TOTAL Travel</b>	<b>\$5,923</b>	<b>\$3,620</b>	<b>\$2,303</b>	<b>\$3,493</b>
Web services	\$408	\$434	-\$26	
<b>TOTAL OUTFLOWS</b>	<b>\$40,325</b>	<b>\$79,683</b>	<b>-\$39,357</b>	<b>\$75,837</b>
<b>OVERALL TOTAL</b>	<b>-\$136</b>	<b>\$7,781</b>	<b>\$7,917</b>	
Ending Balance December 31	\$22,545	\$30,325		
<b><u>M&amp;T Bank Account Balance 12/31/08</u></b>				
Checking	\$12,885			
Savings	<u>\$17,441</u>			
Total	\$30,325			

Contact Andy Loftus with any questions or concerns [ALoftus@andrewloftus.com](mailto:ALoftus@andrewloftus.com).



## Business Items

### **OBTAINING A NATIONAL VIEW OF FISH PRESENCE: THE USGS NBII NATIONAL FISH DISTRIBUTION INFRASTRUCTURE**

The AFS Fisheries Information and Technology Section, through cooperative arrangements with the USGS National Biological Information Infrastructure and Conservation Management Institute at Virginia Tech, is assisting an innovative program to provide data necessary for the National Fish Habitat Assessment process. The need exists among fisheries managers and decision makers for comprehensive data and information of fish species in the United States to aid fisheries and aquatic resources conservation and restoration efforts. There have been many attempts to fill this need on a local and sometimes regional basis, resulting in numerous datasets that target regional or species specific issues. National programs and initiatives would benefit from having one source where this information is compiled to provide nationwide information for conservation and management decisions.

The National Fish Habitat Action Plan (NFHAP) serves as a catalyst for such an effort. The assessment of the nation's fish habitat status is underway and Fish Habitat Partnerships are already implementing projects to support the goals of the NFHAP. Organizations, agencies, and partners involved in the NFHAP have an increased need for this information to be made available.

One way this need is being fulfilled is through the creation of the USGS National Fish Distribution Infrastructure (NFDI). The goal of this project, now underway, is to create an expandable query framework which will bring together local and regional fisheries information systems. This framework will provide fisheries managers, decision makers, and most importantly, the NFHAP, with a first-ever view of fish presence on a national level.

Four databases are included in the pilot phase of the project.

- AFS Western Division Native Fishes Database (AFSWNF)
- Multistate Aquatic Resources Information System (MARIS)
- Eastern Brook Trout Joint Venture (EBTJV)
- USGS Sturgeon Information Infrastructure.

Each of these databases, though created at differing resolutions, for different purposes, and containing widely variable data, has crucial information which can be aggregated to create a national level view of fish presence. Since 4th level (8 digit) HUC data is available or can be generated for each of the datasets, this is the level the NFDI will use as its native mapping and query resolution.

When the datasets are combined, 3 states will have coverage from 3 of the component datasets, 8 states will have coverage from 2 of the component datasets, 25 states have coverage from 1 of the component datasets, and 14 states are not represented in any of the component datasets. Since the query framework is expandable, a second phase of the NFDI could actively gather fisheries databases for the 14 states not represented, or alternately by updating efforts supported through any of the existing cooperative agreements, which will subsequently be incorporated into the NFDI.

After the NFDI database is complete, data from the system will be provided to the NFHAP project. This data will be used to fulfill the project's crucial need for fisheries data and will greatly aid the assessment process. In addition, a publicly accessible website is being created which will allow users to query the NFDI and export the results to one of several formats for further analysis.

The NFDI project is being funded by the USGS NBII. The anticipated completion date for the first phase of the NFDI is June 30th 2008. For further information or questions, please contact Jeff Smith ([jeff@morrisinformatix.com](mailto:jeff@morrisinformatix.com)) or Andrea Ostroff ([aostroff@usgs.gov](mailto:aostroff@usgs.gov)).



## Business Items

# OFWIM CONFERENCE

## Organization of Fish and Wildlife Information Managers (OFWIM) 2009 Annual Conference in Seattle, Washington



### Conference Highlights:

- New for 2009: **Remote Conference Access!** This year, OFWIM will offer up to 25 remote access seats at the 2009 conference for participants who cannot travel to Seattle.
- **Call for Papers:** all abstracts for paper and poster submissions are due July 17, 2009.
- **Field trip** to Olympic National Park, where we will learn more about the biological monitoring underway as part of the planned dam removal on the Elwha River that will reopen over 70 miles of pristine salmon habitat.
- **Student Scholarship:** Financial support for students to attend the conference and present a paper or poster. Applications are due July 17, 2009.
- **Travel Grants:** Financial assistance for a limited number of professionals to attend the conference and present a paper or poster. Applications are due July 17, 2009.

For complete information about the 2009 OFWIM Annual Conference, visit [www.ofwim.org](http://www.ofwim.org).



## Business Items

### CONTINUING EDUCATION OPPORTUNITIES

#### 1. Using Acoustic Tags to Track Fish - [http://www.htisonar.com/at\\_short\\_course.htm](http://www.htisonar.com/at_short_course.htm)

15-16 October 2009, Seattle, WA USA

24-25 October 2009, Lyon, FRANCE - [http://www.htisonar.com/at\\_short\\_course\\_lyon.htm](http://www.htisonar.com/at_short_course_lyon.htm)

4-5 February 2010, Seattle, WA USA

This short course addresses all aspects of tracking fish movement (and other aquatic life, such as eel, shrimp, crab) with acoustic tags, including three-dimensional tracking with sub-meter resolution. Acoustic tags are effective for estimating survival, monitoring migration patterns, and observing behavior. This course includes a variety of applications and course manual is included. \$300.00 USD and € 200 Euros in Lyon, France, per student. Each class has 15 seats available.

#### 2. Using Hydroacoustics for Fisheries Assessment - [http://www.htisonar.com/ha\\_short\\_course.htm](http://www.htisonar.com/ha_short_course.htm)

\*8-9 October 2009, Seattle, WA USA

11-12 February 2010, Seattle, WA USA

\*Tentative

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. Hydroacoustics are effective tools for enumeration, detecting presence/absence, revealing abundance and distribution, as well as trajectory patterns. Split-beam, single-beam, and multi-beam frequency techniques are discussed in detail. Each class has 15 seats available.

#### 3. Advanced FAST (Fishery Analyses and Simulation Tools) - <http://dnr.state.il.us/midwest/>

7 December 2009, Springfield, IL

This course will be taught by Dr. Michael Maceina. The purpose of this short course is to provide registrants with advanced training in the use of the FAST software. Registrants should have a basic working knowledge of FAST and be familiar with computations to estimate growth, mortality, and recruitment. During the eight-hour short course, simulation modeling of specific fisheries will be conducted and discussed. Case histories of fisheries that have been published will be covered and additional course notes provided. Registration is \$100 and there are only 30 seats available so register early.

**\*If anyone has other courses or workshops that they would like advertised, please send the information to the newsletter editor with the call for newsletter items.**