

AFS – Computer User’s Section, Volume XIX, Number II



AFSCUS

Winter 2006

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Inside this issue

<i>President's Byte</i>	2
<i>Web Tools and Websites</i>	4
<i>Annual Meeting Notes</i>	8
<i>Data Summit Summary</i>	10
<i>Awards</i>	11
<i>Finance and Software</i>	12
<i>Miscellaneous Business</i>	17



**New CUS web address: <http://www.fisheries.org/units/cus/>
New software library address: <http://www.fisheries.org/units/cus/cuslib.htm>**



President's Byte Fred Janssen

I ranted long and hard in the last issue about data. A couple of events happened since that newsletter was produced that keeps data on my radar screen, so I'll pick up where I left off. On August 31, Andy Loftus sent me a frantic-sounding email wondering what we did with the CUS web site. We were in the middle of preparation for National Fisheries Data Summit II, and we relied on our web site to be the clearinghouse for all of the essential meeting information, including a crucial link to registration. CUS web guy Mark Rogers and I simultaneously browsed to where the site was supposed to be, and received a "HTTP Error 404 - File or directory not found." A call to Bethesda confirmed that the CUS directory was no longer on the fisheries.org server, along with the directories of many other AFS units.

I am a developer for a few web sites, and I generally develop new pages on my local machine, and then publish the new or edited pages to the server. I was afraid to ask Mark if he used the same technique, but I finally had to. Nope. He generates new pages or edits existing pages right there on the server. My quick reply was "don't panic, SURELY they have a recent backup that we can restore and no one will notice". Another call to Bethesda informed us that the latest backup on hand was from July 2005. Since that was the best we had, we restored the web site to July 2005 edition, and Mark spent his Labor Day holiday weekend reproducing over a year's worth of web site revisions. Needless to say, we are now looking for a new webmaster. Not because

of this incident though. Mark has been working on our web site for years now; he'll soon be finishing up a Ph.D. program, and looking for employment. I'm looking for energetic volunteers!

Back to my story, or at least the moral. Back up your data. Don't rely on others to do this mundane task for you. Everyone reading this article has probably lost some data in the past. Everyone should lose some data in their lives so they can appreciate the moral of the story. In 1997 I had completed a project where I took years of fisheries survey data for each of my management districts and compiled them into our statewide archive. I heard an unusual clicking from my hard drive for days and didn't think anything of it. Of course the drive died after alerting me for a few days and my data was gone. Complete shock turned into calm when I remembered my data was backed up on two different Jazz disks. I pulled out Jazz Disk Number 1 to restore my data. I don't remember the error but it was something to the effect of "Error Reading from Drive E:". Still calm, I reached for Jazz Disk Number 2. I received the same error that I got for Disk Number 1. Calm turned into panic, and after exploring every option available, I pulled my chair up to my desk, put my head down, and started the 6-month process of collecting, verifying, editing, and combining years of statewide data. I now have thirty years worth of data in my archive; do you think I have a backup?

Continued on next page...



President's Byte Fred Janssen

The second data item that I have to talk about is based on a much more positive experience. On October 31-November 2, 85 project or data managers (I'll bet these folks had backups) convened in Salt Lake City, Utah for National Fisheries Data Summit II. We assigned the attendees to breakout groups that focused on the following topics: Data and Information, Data Transfer, Web Services, Scaling, and Integration. I have to thank all of the attendees for their participation and input throughout the Summit, because we ran into issues such as funding, scale, and participation by organizations where there are many unknowns and no clear "right way" to proceed. We were able to identify and describe those issues, and hopefully we will find the volunteer effort we need to explore those issues further.

After all of the input from the attendees was synthesized, some common themes emerged concerning data and information sharing at regional or national levels. These included (but certainly not limited to): 1. determine a reason or mission for national data sharing; 2. recognize the necessity of partnerships across boundaries; 3. develop a working group to examine successful existing data sharing efforts and model a hierarchical data framework; 4. develop a marketing tool to promote data sharing; 5. propose data standards; and 6. unlike the 1998 Summit, technology is no longer the barrier to data-sharing.

The Summit had strong ties with the National Fish Habitat Initiative (NFHI), so I have to mention that a draft report of the NFHI Science and Data Committee is now available for review. It is titled "A Framework for Assessing the Nation's Fish Habitat" and can be downloaded at <http://fishhabitat.org/science/>. The deadline for comments is January 19.

I would like to thank Stan Allen and all of the presenters at the interactive demonstrations. There was tremendous participation during the event, and I'm sure we all left with a lot of new ideas that we'll try to apply in our respective jobs. The Summit Steering Committee led by Stu Shipman, while too numerous to thank here, did an incredible job on short timelines.

I would like to close by congratulating Tom Lang from the University of Arkansas at Pine Bluff. He was the first author on the poster that won the "Best Student Poster Award" for 2006, titled *Evaluation of the Use of Personal Digital Assistants (PDAs) For Collecting Angler Survey Data*. Tom is an active AFS member, and many of you are probably familiar with him as he is the Steering Committee Chair for the 2007 Urban Fishing Symposium in San Francisco. More details on the poster are included later on in the newsletter (page 11).



Web Tools and Websites

Newly developed web tools from Iowa

Iowa is just stepping into the fray as a player in providing fisheries information to the public via the internet. We still trail many of you in this regard, and the constant reminders we get from our fishing public about the great information available on Minnesota's Lake Finder web site (<http://www.dnr.state.mn.us/lakefind/index.html>) is one shining example. But, we have rapidly progressed from being a nobody to being a somebody. The real key to our progress in this area has been our teamwork with the water quality staff in my agency, our agency geographic information systems staff, and Iowa State University. I encourage you all to team up in a similar manner, the results can be astounding!

Many of the products I list below are still under development, and I am bringing them to your attention so hopefully I can get some feedback about how we can further improve these systems. Additionally, in the next year I plan to move forward on a project to develop an online hatcheries data system, which our various hatcheries will use to centrally store information about their daily operations. I envision that this system will also provide the mechanism for centralizing our stocking requests from area management biologists, stocking reports from our hatchery staff, and automatically create generalized stocking reports for the public. I would welcome any ideas, input, or existing systems that any of you would be willing to share with me. The data entry sites we have developed are password protected, so to gain access to those, or to provide any ideas and comments, contact me at Jeff.Kopaska@dnr.state.ia.us

Current Products:

IRIS (Iowa Rivers Information System, <http://maps.gis.iastate.edu/iris/>)

Online repository of river and stream fisheries data. Over 100,000 individual fish records, from over 12,000 sites, detailing collections from 1854 – 2002. Data can be queried via tabular and graphical means.

Biological Assessment Database (<http://sargasso.gis.iastate.edu/bad/>)

Data entry tool, currently under development, which will allow web entry of fish and physical habitat data from wadeable streams. Once completed, this system will serve collected data to the IRIS system for public use and consumption.

Iowa Recreation Map (<http://csbweb.igsb.uiowa.edu/imgate/introduction/home.asp>), click on Recreation Map

Information about boating and fishing is available via this online mapping service. Information has been developed by our Water Trails program, so many attributes shown for the boating and fishing layers cater to canoeists and kayakers. To access site-specific data, turn on a layer, make it active, and select the site with the ID Map tool.



Web Tools and Websites

Iowa Lakes Information System (<http://limnology.eeob.iastate.edu/lakereport/>)

Online reporting tool for water quality, phytoplankton, zooplankton, and other parameters collected starting in 2000 from 130 lakes in Iowa. Additionally, the Lakes Classification portion of this site (http://limnology.eeob.iastate.edu/lakereport/class_default.aspx) integrates fisheries, water quality, socioeconomic, public health risk, and other parameters into a classification system to assess lake restoration potential. This is used in my agency's priority setting exercises as we determine which lakes to restore. The fisheries portion of this site serves relevant fisheries data to the public, providing them with catch-effort data, length-frequency histograms, and other relevant fishery data at <http://limnology.eeob.iastate.edu/lakereport/fishhome.aspx>.

Fisheries Online Data Entry (<http://limnoweb.eeob.iastate.edu/fishweb/>)

Data entry tool, currently under development, which will allow web entry of lake fish survey data. Once completed, this system will serve collected data to the Iowa Lakes Information System for public use and consumption.

Future Product:

Iowa Water Database – will integrate everything shown above, and more!!

Online Access to Research in the Environment

<http://www.oaresciences.org/en/>

Online Access to Research in the Environment (OARE), an international public-private consortium coordinated by the United Nations Environment Programme (UNEP), Yale University, and leading science and technology publishers, enables developing countries to gain free access to one of the world's largest collections of environmental science literature.

Over one thousand scientific journal titles owned and published by over 200 prestigious publishing houses, scholarly societies, and scientific associations are now available in 70 low income countries. Another 36 countries will be added by 2008. Research is provided in a wide range of disciplines, including biotechnology, botany, climate change, ecology, energy, environmental chemistry, environmental economics, environmental engineering and planning, environmental law and policy, environmental toxicology and pollution, geography, geology, hydrology, meteorology, oceanography, urban planning, zoology, and many others.



Web Tools and Websites

United Nations Environment Programme World Conservation Monitoring Centre <http://www.unep-wcmc.org/index.cfm>

The goal is to be an internationally recognized Centre of Excellence for the synthesis, analysis and dissemination of global biodiversity knowledge, providing authoritative, strategic and timely information for conventions, countries, organizations and companies to use in the development and implementation of their policies and decisions.

<http://www.unep-wcmc.org/habitats/freshwater/index.htm>

<http://quin.unep-wcmc.org/GIS/coraldis/about.cfm>

Global Biodiversity Information Facility <http://www.gbif.org/>

Global communication has expanded remarkably since the inception of the Internet. Technical advances have made distribution of data from major centers to remote parts of the world possible, if those data are in digital form.

Biodiversity is found around the world - there are micro-organisms between granules of rock 3 km below the Earth's surface, rootless plants in the Atacama Desert, thousands of species of beetles in a single rainforest tree. However, biodiversity is not distributed evenly across the face of the planet. An estimated 75% of all species are found in the developing world.

Information about biodiversity (natural history collections, library materials, databases) likewise is not distributed evenly around the globe. Three-quarters or more of data about biodiversity are stored in the developed world. However, most of the data that may be needed can't be transferred because either they are not digitized, or capacity to handle digital information is lacking, or both.

Facilitating digitization and global dissemination of primary biodiversity data, so that people from all countries can benefit from the use of the information, is the mission of the Global Biodiversity Information Facility (GBIF).



Web Tools and Websites

GLOBIO - Mapping human impacts on the biosphere **<http://www.unep-wcmc.org/GLOBIO/index.htm>**

The GLOBIO consortium has developed a global-scale spatial model of the impacts of environmental change on biodiversity. The model is designed to produce policy relevant indicators for use in assessments, scenario exercises and exploration of the impacts of policy options. The main indicator produced is the mean abundance of the original species belonging to an ecosystem (MSA): that is, the abundance of native wildlife.

The latest GLOBIO3 model estimates the impacts on biodiversity through time of land use change, climate change, fragmentation, infrastructure and nitrogen deposition. The original GLOBIO2 model considered infrastructure impacts only. A wide range of publications have been produced using both models.

Hydroacoustic Technology, Inc. Workshops

Using Acoustic Tags to Track Fish (<http://www.htisonar.com/Training.htm>)
January 11-12, 2007, 9:00 AM to 5:00 PM

HTI's Seattle offices, 701 NE Northlake Way, Seattle, WA 98105: 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. \$300.00 USD, per person. Seating is limited.

Using Hydroacoustics for Fisheries Assessment (<http://www.htisonar.com/Training.htm>)
January 18-19, 2007, 9:00 AM to 5:00 PM

HTI's Seattle offices, 701 NE Northlake Way, Seattle, WA 98105: 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. Seating is limited.

For more information, refer to their website www.HTIsonar.com or contact Caroline Mercado at (206) 633-3383, cmercado@HTIsonar.com.



CUS Annual Meeting Notes

The AFS Computer User Section held its annual business meeting in conjunction with the September AFS Meeting in Lake Placid. Major topics of discussion during the meeting included:

AFS (parent society) continues to grow. Fred Janssen reported that the society remains financially healthy thanks to the hard work of the officers, staff, and executive director. In the coming year, AFS will begin publishing a new journal for marine and coastal fisheries. This will be online and open access to everyone, and rely on page charges for revenue.

Widespread Concern over the status of AFS web –services. CUS webmaster Mark Rogers explained that the CUS website crash during the past month resulted in wider problems stemming from the parent society's switching to new software and servers. The most recent backup was 1-year old, so Mark and Fred Janssen will be working to restore the most pressing information and material and perhaps look at redesigning the entire site as they progress. CUS may be forced to move the web hosting to a commercial vendor instead of using the AFS server as a result of these changes. AFS incoming president Jennifer Nielson mentioned that AFS will be initiating a new electronic services committee and she would like CUS representation on that. Fred Janssen, Bill Fisher, and Jason Doll agreed to work together on behalf of CUS to develop recommendations and volunteered to serve on the AFS electronic services committee if asked.

Free Student Membership to Continue. After some discussion, the CUS membership agreed to continue the practice of providing free section membership to student members of AFS who check the "CUS" box. Andrew Loftus noted that we needed to have a better idea from AFS of who we get as members through this program.

Software Reviews. Gary Ash reported that he has been working on the reviews of two software packages: an add-on to the FAST software developed by Jeff Slipke (who was the primary architect behind FAST) and the Windows-based version of Microfish developed by Jack Van DeVenter which was demonstrated at the 2005 CUS annual meeting (a demo version is available on www.microfish.org). Both software packages look very promising with only small errors found by the software reviewers, and should be available via CUS within the next 6 months.



CUS Annual Meeting Notes

USGS Cooperative Agreement. CUS past-president Stu Shipman and Andrew Loftus discussed the progress of the ongoing Cooperative Agreement between the USGS and CUS. Through this arrangement, CUS is lending a hand in four primary areas: Implementation of the Fisheries Data Summit (discussed later); implementation of the Multistate Aquatic Resources Information System (MARIS) and coordination of some projects exploring information sharing potential in specific topic areas such as American Eel and the Chesapeake/Delaware region. The projects are proceeding well and the arrangement has been a win-win for CUS and for USGS.

Best Student Poster Award. CUS is continuing the Best Student Poster award given annually at the AFS Annual Meeting. The 2005 winner was Bradley Harris. Fred thanked the volunteer judges for this year that include Bill Fisher, Nancy Nate, and himself. There was a general feeling that CUS needs to make this award more high profile to better serve its original goal. Alison Iles (University of Arizona) indicated that the Education Section is looking at categorizing posters by section objective and judging them and perhaps there was a way for CUS to dovetail on that.

Opportunity for CUS sponsorship of Continuing Education Courses in Japan. Doug Beard announced that the steering committee for the October 2008 World Fish Congress in Yokohama, Japan wants to include some computer training courses. CUS should assemble some courses. Anyone who is interested should contact Beard by **January 1**.



Data Summit Summary

The main focus of the 2006 National Fish Data Summit was to determine the feasibility of developing a national database to address goals of the National Fish Habitat Initiative (NFHI), which was adopted by the Association of Fish and Wildlife Agencies and others. The NFHI developed the National Fish Habitat Action Plan and one of the objectives is to give a report on the status of the Nation's habitat by 2010. To accomplish this objective, data from across the nation would have to be summarized at an appropriate scale. The most reasonable way to do this would be to electronically access agency data across jurisdictions. Representatives from 41 states, 9 federal agencies, and several NGOs and private individuals were present at the meeting and were tasked with the following: 1) define data and information that can be included in a national database to support the NFHI and other system applications; 2) identify key data transfer standards; 3) outline key web services; 4) outline scaling issues for initial development of a national database; and 5) identify mechanisms to integrate regional joint partnership information systems. The conference attendees were assigned to issue teams that discussed each of these topics over the course of the conference.

Agencies and organizations that collect fish and habitat data are at different stages of implementing their own information system, which would be necessary to develop a national database. Some groups already have information systems, some are currently developing, and some have not begun the process. The plan would be to develop a web service that would gather data from other websites (e.g. state agencies, federal agencies, NGO's) that contain data at varying scales and it could be summarized at the appropriate scale. There were many great examples of online databases that agencies and organizations have already developed, which make the feasibility of a national database seem reasonable. For those agencies or organizations that plan on implementing information systems, there are funds available.

Important thoughts collected from discussions at the conference:

- It costs a lot of money to collect data and agencies collect a lot of data. An information system will make agencies more efficient and provide better information for making management decisions.
- A properly developed information system will encourage better communication within and among agencies and other organizations.
- There needs to be a long-term commitment to maintain an information system and should be incorporated into an agency's strategic planning process.
- Information systems should be designed to solve a problem, not just to share data that matches the agency's mission.
- Information systems will help the public get more involved through conservation partnerships that can use the national database to identify areas of greatest concern.



CUS Awards

AFS COMPUTER USER SECTION ANNOUNCES BEST STUDENT POSTER AWARD FOR 2006

The AFS Computer User Section (CUS) has awarded Thomas Lang of the University of Arkansas at Pine Bluff with its “Best Student Poster Award” for 2006. Lang’s poster, *Evaluation of the Use of Personal Digital Assistants (PDAs) For Collecting Angler Survey Data*, was judged to be the best presentation by a student of the application of computer/electronic technology in fisheries management and research during the 2006 AFS Annual Meeting in Lake Placid, New York.

Lang’s research utilized Personal Digital Assistants (PDAs) instead of paper forms for field data collection during an intensive angler survey program involving five separate survey evaluations and five angler count forms. Co-authors for the poster were Cliff Hutt and Wes Neal of the University of Arkansas at Pine Bluff.

The research demonstrated that angler survey data could efficiently be collected in electronic form, thus eliminating field data collection on paper forms as well as subsequent data entry in the office. Lang used Palm® Zire™ PDAs running LokiLogic, LLC QuickFormz PDA survey software to collect approximately 2,150 interviews and 1,850 angler counts in 2005 and 2006. Databases on personal computers were updated quickly after the PDAs were synchronized via USB connection. The hardware and software cost was less than \$150 per unit.

Field biologists interested in streamlining their angler survey data collection could view Lang’s work as a prototype for future data collection efforts. The award-winning poster can be viewed on the Computer User Section web site (<http://www.fishdata.org>), and is also featured on LokiLogic’s web site (<http://www.lokiologic.com>).

Students presenting posters at the 2007 AFS Annual Meeting in San Francisco, California who wish to be considered for the award are encouraged to notify CUS President Fred Janssen by emailing him at fred.janssen@tpwd.state.tx.us.



CUS Financial Report and Software Information

Secretary/Treasurer's Report

Submitted by Andrew Loftus

September 11, 2006

Finances

This statement summarizes the financial activities of the Computer User Section of the American Fisheries Society for the period January 1, 2006-December 31, 2006. Additionally, an updated cash flow statement covering the current year (1/1/06-7/31/06) is included below. These statements also include a summary of the portion of the Section's cash flow in each category that is attributable to the cooperative agreement, which the Section has with the USGS NBII and/or USFWS. In summary, the financial position of the Section improved slightly in 2005. To date in 2006, the cash position of the Section has also continued to increase slightly.

Membership

As of June 2006, AFS records indicated that CUS membership stands at 220 individuals. Below is a comparison of membership for the past years:

	<u>March 2002</u>	<u>June 2003</u>	<u>May 2004</u>	<u>September 2005</u>	<u>June 2006</u>
U.S. Members	246	251	219	229	198
Foreign Members	38	34	38	29	22
TOTAL	284	285	257	258	220

Other News

- ◆ The cooperative agreement with the USGS National Biological Information Infrastructure (NBII) program which the Section entered in May 2004 continues to proceed well. This agreement allows CUS to aid the NBII with administering three information-related projects. The agreement is actually in effect for 5 years, providing more opportunities to assist them in the future.
- ◆ Beginning in January 2006, CUS entered into a 1 year agreement with the U.S. Fish and Wildlife Service Division of Federal Assistance for the Multistate Conservation Grant to support the Fisheries Data Summit in October 2006.
- ◆ CUS is also administering agreements with the U.S. Fish and Wildlife Service Office of Management Assistance and NOAA Fisheries to support the Fisheries Data Summit.
- ◆ CUS has received grants from the Organization of Fish and Wildlife Information Managers and the AFS Fisheries Management Section to support the Fisheries Data Summit.
- ◆ In 2006, CUS will be entering into an agreement with Jeff Slipke to distribute copies of his FAST add-on package.
- ◆ No formal gatherings of the CUS Executive Committee to discuss CUS business have occurred in the past year, although a majority of Executive Committee members was present for a Data Summit Steering Committee meeting.



CUS Financial Report and Software Information

AFS CUS Ledger Comparison 2005-2006 January 1-July 31

	1/1/05- 7/31/05	1/1/06- 7/31/06	Difference 2004-2005	2006 Amount NOT Attributable to Contracts
<u>INFLOWS</u>				
Contract & Grant Income	7,573	28,111	20,538	
Dues Payment	477	611	134	611
Gift Received	0	1,000	1,000	
Interest Income	6	6	0	6
Software Sales	3,222	1,874	-1,348	1,874
TOTAL INFLOWS	11,279	31,602	20,324	2,491
<u>OUTFLOWS</u>				
Bank Charge	10		10	
Contract & Grant Expense	5,595	20,164	-14,569	84
Meeting Expense	116	1,211	-1,095	
Office	7		7	
Postage	117	73	44	71
Software Comm-Auburn	1,430	1,755	-325	1,755
Software Commission	234	90	144	90
Supplies	70	24	46	24
Travel	1,466	3,502	-2,036	
per diem	386	763	-377	
TOTAL Travel	1,852	4,265	-2,413	
TOTAL OUTFLOWS	9,431	27,581	-18,151	2,024
OVERALL TOTAL	1,848	4,021	2,173	467

CLOSING BALANCE 7/31/06: \$14,765

Account Balances

M&T Checking \$ 10,250

M&T Savings \$ 4,515



CUS Financial Report and Software Information

AFS CUS Ledger Comparison 2004-2005

Category Description	1/1/04- 12/31/04	1/1/05- 12/31/05	Difference 2004-2005	2005 Amount NOT Attributable to USGS Contract
<u>INFLOWS</u>				
Continued Educ.	0.00	4,125.00	4,125.00	4,125.00
Contract & Grant Income	5,193.98	14,541.87	9,347.89	
Dues Payment	1,506.00	987.00	-519.00	987.00
Interest Income	12.01	11.07	-0.94	11.07
Software Sales	2,118.68	4,481.69	2,363.01	4,481.69
TOTAL INFLOWS	8,830.67	24,146.63	15,315.96	9,604.76
<u>OUTFLOWS</u>				
Award	0.00	125.00	-125.00	125.00
Bank Chrg	0.00	10.00	-10.00	10.00
Continued Education	0.00	910.91	-910.91	910.91
Contract & Grant Expense	0.00	10,550.00	-10,550.00	
Meeting Expense	882.07	115.88	766.19	
Office	11.66	38.06	-26.40	16.94
Postage	102.46	179.50	-77.04	176.55
Software Comm-Auburn	2,145.00	2,145.00	0.00	2,145.00
Software Commission	384.00	450.00	-66.00	450.00
storage space-web hosting	200.00	0.00	200.00	
Supplies	0.00	69.53	-69.53	69.53
Travel	3,173.75	5,330.14	-2,156.39	3,180.90
per diem	807.00	1,343.30	-536.30	938.50
TOTAL Travel	3,980.75	6,673.44	-2,692.69	4,119.40
TOTAL OUTFLOWS	7,705.94	21,267.32	-13,561.38	8,023.33
OVERALL TOTAL	1,124.73	2,879.31	1,754.58	1,581.43

AFS Computer User Section Finances

M&T Bank Account Summary 12/31/05

Business Checking: \$6,310.43

Business Savings: \$4,433.30



CUS Financial Report and Software Information

American Fisheries Society, Computer User Section Software Sales Through July 31, 2006 (Number of Copies Sold)

FAST

1/1/06 – 7/31/06	29
1/1/05 – 12/31/05	33
1/1/04 – 12/31/04	33
1/1/03-12/31/03	33
1/1/02-12/31/02	60
1/1/01-12/31/01	45
Total Sold December 1, 2000-July 31, 2006	235

FishBC

1/1/06-7/31/06	3
1/1/05-12/31/05	15
1/1/04 – 12/31/04	16
10/27/03 (inception) – 12/31/03	6
Total Sold October 27, 2003 – July 31, 2006	40

Age and Growth DVD

1/1/06 -7/31/06	5
3/1/05 (inception) – 12/31/05	15
Total Sold March 1, 2005 – July 31, 2006	20

Other

	<u>1/1/05-12/31/05</u>	<u>1/1/06 – 7/31/06</u>
Microfish.	1	1
MocPop	3	2
FishProg	1	
FishParm	2	
Trout Dynamics	1	
Fish Hatchery Mathematics	1	

(A count of additional software downloaded directly from CUS web site is unavailable).



NEW SOFTWARE

S-FAT

ADD-ON AND *BONUS* UPGRADE TO

FISHERIES ANALYSIS AND SIMULATION TOOLS

Available Early 2007

WILL INCLUDE:

- Ability to randomly assign ages to a sample of un-aged fish based on a sub-sample of known-age fish.
- Ability to compute back-calculated lengths-at-age from measurements made from fish bony structures (otoliths, spines, etc).
- Addition of an age-length key menu item to allow users to randomly assign ages to un-aged fish based on a sub-sample of known-age fish.
- Enhanced slot limit option of the Yield-Per-Recruit model to allow users to select a length of interest. This will allow computation of the number of fish in the population reaching a particular length in addition to the number of fish reaching the lower and upper slot limits.
- Additional species and their associated length categories and standard weight equations based on the soon-to-be-released 3rd Edition of *Fisheries Techniques*.

..... and more.!

CHECK

WWW.FISHERIES.ORG/CUS

FOR UPDATED INFORMATION



Miscellaneous AFS Business Items

What is the largest bony fish?

If you are like me, you probably waited until the last minute to renew your AFS Membership for 2007. When you renew, please consider this invitation. The Education Section of the American Fisheries Society invites you to join our Section. Education Section activities, including preparation and revision of textbooks, support of student travel to meetings, and compilation of brochures on academic programs and fisheries career opportunities. One focus of the section is undergraduate and graduate education. However, the Education Section also supports lifelong learning of all fisheries professionals. We encourage all fisheries professionals to expand their minds through the pursuit of new knowledge. To that end, we are sponsoring a “Largest Fish” contest.

What is the largest bony fish known to science? If you think you know the answer, email your response to slochmann@uaex.edu. We will provide a small incentive to some lucky individual, randomly chosen from among the respondents with the correct answer. Take some time, explore the possibilities, and see what there is to learn about really big fish. You must be a member of the Education Section to be eligible for the “small incentive.”

Steve Lochmann, Education Section - Membership Committee