

# the shell-cracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY



<http://www.sdafs.org/flafs>

**October, 2003**

If you're anything like me, then your professional career is an endless string of overlapping projects, the pile of which never appears to get any smaller. Indeed, it would seem that every time I clear away one task, two more come to take its place. And yet, it's hard for me to turn down a request to show a student around campus or review a manuscript. Each year my days seem to start a little earlier and end a little later, with no appreciable shrinkage of the pile on my desk. When the load gets especially heavy I find myself wishing for the modern-day equivalent of the shoemaker's elves... you remember... the little mutants of Brothers' Grim origin that came in the dead of night to finish the shoemaker's work. It is usually during these times that I take a few minutes to be especially grateful for the team of people that help and support me. Without the help of colleagues, office staff, and of course, my students, work would creep out of my office at a snails pace. To be sure, teamwork isn't unique to human beings, but we certainly have elevated it to a status unparalleled in other groups. Nowhere is this more apparent than in our own profession. We are a union built on a foundation of helpful cooperation and mutual assistance. Whereas, many professional societies tend toward exclusivity, our meetings include academic, professional, commercial and recreational interests. We come together as a diverse but determined group with the aim of discussing problems, reaching decisions and defining policy. Ours is the amalgamation of viewpoints, education and experience that makes Florida one of the most innovative and progressive states in the nation at protecting its marine and freshwater fisheries resources (eat your heart out California). Hardly a day goes by that my students or I are not involved in professional, community, or education projects that ultimately benefit or improve the quality of Florida's aquatic resources. My guess is that your schedules are likewise littered with events such as judging science fairs, promoting fisheries at high school career days, or hosting workshops. Standard fare for most of us. By themselves, each event may reach only a few people, however, their cumulative effect is enormous. The system works because each of us believes in it and gives our time gladly to be part of a team effort to see that Florida will always have pristine and well-managed coasts, lakes and rivers. If for but for a moment you think your efforts have been unprofitable, go to the nearest natural body of water to see the very tangible result of your works. It can be difficult, I know, but stay the course friends, colleagues and students, for in the end I suspect that together we are the shoemaker's elves.

All the Best,  
Wayne A. Bennett, President



# Getting in Touch

## *President*

Wayne Bennett, Ph.D.  
University of West Florida  
Department of Biology  
11000 University Pkwy.  
Pensacola, FL 32514  
phone: (850) 474-3362  
email: wbennett@uwf.edu

## *President-Elect*

Mike Allen, Ph.D.  
University of Florida  
Department of Fisheries and Aquatic Sciences  
7922 N.W. 71st St.  
Gainesville, FL 32653  
phone: (352) 392-9617 ext. 252  
email: msal@mail.ifas.ufl.edu

## *Secretary/Treasurer*

John Benton  
FWC  
601 W. Woodward Avenue  
Eustis, FL 32726  
phone: (352) 742-6438  
email: john.benton@fwc.state.fl.us

## *Newsletter Editor*

Kim Tugend  
FWC  
1601 Scottys Rd  
Kissimmee, FL 34744  
phone: (407) 846-5300  
email: kimberly.tugend@fwc.state.fl.us

## *Past President*

Kathy Guindon-Tisdell  
FWC - Florida Marine Research Institute  
100 8th Ave. SE  
St. Petersburg, FL 33701  
phone: (727) 896-8626 ext. 1514  
email: kathryn.tisdell@fwc.state.fl.us

## *Upcoming Events*

Oct. 30-31, 2003 - Ecosystems: Restoration and Creation, Tampa, FL.

Nov. 4-8, 2003 - North American Lake Management Society 2003: Protecting Our Lakes' Legacy, Mashantucket, CT.

Nov. 5-7, 2003 - 23rd International Symposium of the North American Lake Management Society, Mashantucket, CT.

Nov. 7-9, 2003 - 3rd Annual American Fisheries Student Colloquium, Morgantown, WV.

Nov. 9-11—Fifth William R. and Lenore Mote Symposium in Fisheries Ecology, Sarasota, FL.

Nov. 13-15, 2003 - Nation's Federal Marine Fisheries Managers to Host Fisheries Conference: Managing Our Nation's Marine Fisheries - Past, Present, and Future, Washington, DC.

Feb. 15-20, 2004 - American Society of Limnology and Oceanography and The Oceanography Society 2004 Ocean Research Conference, Honolulu, HI.

February 23-25, 2004 - Annual Meeting of the Florida Chapter AFS, Brooksville, FL.

May 2-6, 2004 - 4th World Fisheries Congress, Vancouver, British Columbia.

### **Did we miss an event?**

Email your event information to [kimberly.tugend@fwc.state.fl.us](mailto:kimberly.tugend@fwc.state.fl.us) for inclusion in the next issue!

Also, check out our Parent Society's calendar at <http://www.fisheries.org/Calendar.shtml>

## Economic Valuation of Fisheries Habitat Using Known-Cause Fish Kill Data

**J. Beacham Furse**  
**Fresh Water Fisheries Division**  
**Florida Fish and Wildlife Conservation Commission**

Macrophytes form important habitat components of aquatic ecosystems by playing an integral role in nutrient and energy cycling, supporting intricate food webs and providing important habitat for macroinvertebrates, fish, and wildlife. Aquatic macrophytes influence fish species diversity and recruitment by providing spawning substrate and cover (Loftus and Kushlan 1987), foraging areas (Janacek 1988) and protective habitat for larval (Conrow et al. 1990) and sub-adult fishes (Barnett and Schneider 1974). The role of aquatic vegetation in aquatic ecology is especially important in Florida where more than one million surface hectares of freshwater habitat and several hundred miles of coastal marine habitat are characterized by shallow depth and extensive vegetated habitat.

Increases in the demand for water use and aquatic habitat have led to a number of problems associated with aquatic system management throughout Florida. Eutrophication, which is accelerated by excess nitrogen and phosphorus loading, and the stabilization of water levels has resulted in changes in water quality (Phlips et al. 1995), aquatic macrophyte assemblages (Richardson et al. 1995), and fish community dynamics (Gelwick and Matthews 1990, Fox et al. 1992). Native aquatic macrophytes are especially sensitive to these changes and are often displaced by undesirable exotic and invasive native plant species. Water managers often place a monetary value on an acre-foot of water within a system in terms of the water's agricultural and urban uses outside the system and then employ these values to justify the need for regulation of water-level regimes and other changes to the water system. Wegener and Holcomb (1972) recognized the need for assigning monetary values to natural resources within the system, such as its fishery, that are dependent on water resource demands of that system. These demands include the need for a vegetated littoral zone characterized by native aquatic macrophytes, improved water quality, and a more natural hydrologic regime, all of which are interdependent.

Disagreement regarding the management of aquatic vegetation continues among government agencies that have varying regulatory authority over aquatic plant management, water quality and supply, flood control, and fish and wildlife management. These regulatory questions are especially evident when discussing the management of exotic versus native vegetation. Resource managers must balance the advantages and disadvantages of both native and exotic vegetation communities and determine management strategies that may affect the health of native vegetation communities. Determination of economic impact of vegetation communities and other habitat from recreational, commercial, and ecological standpoints would allow biologists to express fisheries data in terms of economic worth when considering issues affecting aquatic habitat (Wegener and Holcomb 1972).

The method we have used to evaluate the economic value of aquatic vegetation from a fisheries viewpoint is the use of abundance and biomass from known-area samples (block-nets, Wegener rings, etc. [Wegener et al. 1973]) in conjunction with economic impact data of known-cause fish kill events, Rule 17-11.01 (Animal Damage Valuation), Chapter 403, Florida Statutes. These values provide market prices for all species of freshwater and marine fishes found in Florida, assuming a live fish has equal value of a fish killed in a pollution event. Similar evaluations have been utilized in fishery assessments of littoral and limnetic areas (Wegener and Holcomb 1972), aquatic vegetation loss (Haller et al. 1980), and recreational fisheries loss due to commercial fisheries (Ryan and Janssen 1993).

Economic value, expressed as total impact in US dollars per hectare, can be calculated by adding the replacement value, recreational value, and commercial value for each fish species (Amer. Fish. Soc. Pollution Comm. 1993). Replacement economic values, which may be equated to the ecological values of the fishery, is defined as the costs to restore a fishery to its previous condition prior to the fish kill or removal event. These values are non-traditional forms of economic value and are not based on direct monetary benefits to recreational or commercial users. Values were based on production costs for each fish species as determined by the Florida Fish and Wildlife Conservation Commission (FFWCC) upon surveying federal, state, and private fish hatcheries in the southeastern United States. Recreational values, defined as costs of fishes lost that may be utilized by recreational fishermen, is derived from the product of the amount of recreational use lost and the US dollar value

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of that use. Commercial values, defined as costs of fishes lost that may be utilized by the commercial market, is derived from the product of the biomass of fishes lost expressed in kilograms and the US dollar value per kilogram. Economic values calculated for each species is dependent on abundance and size (length and weight). For example, poeciliids, such as eastern mosquitofish (*Gambusia holbrooki*), are worth US\$0.10 each in replacement value with no recreational or commercial value added, so 25,000 mosquitofish per hectare would equal US\$250.00 per hectare of aquatic vegetation. On the other hand, one 4.5-kg (10-lb) largemouth bass (*Micropterus salmoides*) per hectare would be worth US\$2,310.90 (US\$92.59/kg in replacement value and US\$416.85/kg in recreational value). Economic valuation of fisheries in marine habitat can also be calculated. Snook (Centropomidae) are worth US\$100.00 per fish, regardless of size.

In freshwater systems, vegetation communities are usually dominated by three fish families: Cyprinodontidae (killifishes), Poeciliidae (livebearers), and Centrarchidae (sunfishes); however, abundance of each species with these fish communities, especially centrarchids and cyprinodontids, are highly influenced by vegetation type (structural complexity), vegetation biomass, lake level, and water quality (e.g., dissolved oxygen concentration). For example, the high replacement values derived from *Lepomis* sunfishes  $\leq 2$  cm in eel-grass (*Vallisneria americana*) and Illinois pondweed (*Potamogeton illinoensis*) is indicative of the importance of these vegetation types as nursery areas for sunfishes and other fish species, while high recreational values derived from largemouth bass and other adult centrarchids in bulrush communities recognize its importance as excellent sportfishing habitat. These variations in fish population structure are indicative of changes occurring in response to biological and physical changes throughout the ecosystem. Development of economic fishery values quantifies the role of vegetation communities as fish habitat and enables scientists to express fisheries dynamics in terms the general public can more easily comprehend.

Exhaustive discussion and debate over the merits of various methods of fisheries resource assessment and valuation have occurred over the years (Talhelm et al. 1987). Advantages and disadvantages of this valuation method could also be debated at length. However, this valuation method's ease in understanding and calculation, as well as, its use by Florida's Department of Environmental Protection to penalize offenders of known-cause fish kill events as specified by the American Fisheries Society (Amer. Fish. Soc. Pollution Comm. 1993) justify its use in determining the economic fisheries worth of vegetation communities and other aquatic habitat. Also, management implications of this economic fishery valuation technique in both freshwater and marine systems include, but are not limited to: expression of fisheries data in more public-

friendly monetary terms, counterbalance against claims of water's economic value outside the system when changes in water and habitat management within the system are being considered, mitigation of habitat loss due to development or destructive water management practices, and justification of economic benefits due to aquatic vegetation restoration.

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(Cont'd...Page 7)

# Florida Chapter of the American Fisheries Society

## Symposium Announcement & Call for Papers

### *Improving Recreational Fisheries with Bag Limits and Size Limits: Effective Fisheries Management in Florida?*

24th Annual Meeting  
February 23-25\*, 2004  
Withlacoochee Training Center  
Brooksville, Florida

Marine and freshwater fisheries management strategies have changed greatly over the last 15-20 years. Prior to the late 1980's, simple harvest restrictions were used to manage most of Florida's recreational fisheries (e.g., statewide size limits and liberal bag limits). In response to increased fishing effort, diverse harvest restrictions have been implemented including species-specific bag limits, size limits, and fishing seasons. The Florida Chapter of the American Fisheries Society will be hosting a symposium to assess the effectiveness of the state's harvest restrictions. Topics will include:

- How do stock assessment methods differ between marine and freshwater fisheries managers?  
What can we learn from each other?
- Have fish population parameters such as abundance, growth, mortality, recruitment, and population size structure changed in response to changes in harvest restrictions?
- Have harvest restrictions reduced the extent of overfishing in Florida?
- What factors influence the success/failure of a harvest restriction?
- From the recreational angler perspective, how should regulations be used in marine and freshwater systems?

This will be a half-day session with invited speakers from marine, freshwater, and the recreational angler groups. Presenters will describe examples of how changes in harvest restrictions influenced, or failed to influence, Florida's fish populations and fisheries.

*\*We are meeting on Monday-Wednesday this year due to the Southern Division Meeting in Oklahoma City, Oklahoma, February 26-29, 2004.*

In addition to invited speakers, contributed paper sessions addressing a range of fish ecology, biology, and management topics will be presented. The technical sessions will provide professionals of all levels an opportunity to discuss new concepts, directions and strategies in fisheries biology, as well as the current state of Florida's fisheries habitats and resources. Organizers are looking for papers and posters.

### **PROCEDURES FOR SUBMITTING CONTRIBUTED PAPERS AND POSTERS**

Individuals desiring to present research and management results or progress with ongoing work should submit abstracts to Mike Allen, Program Chair, Department of Fisheries and Aquatic Sciences, The University of Florida, 7922 NW 71<sup>st</sup> Street, Gainesville, FL 32653 (352) 392-9617 ext. 252 [msal@ufl.edu](mailto:msal@ufl.edu). DUE DATE for submitting abstracts: January 10, 2004

Platform presentations will be scheduled for 20 minutes; anticipating a 15-minute presentation followed by a 5-minute question/answer period. Moderators will encourage a lively discussion during the 5-minute period after each presentation, and time limits will be strictly enforced. PowerPoint presentations are preferred, however slide presentations (2×2 inch, horizontal orientation) can be accommodated. We encourage authors to submit abstracts early. After all platform presentation slots are filled, abstracts will be accepted as poster presentations only.



## **ATTENTION ALL STUDENTS!!!**

### **Roger Rottmann Memorial Scholarship**

The Florida Chapter is pleased to announce the availability of the Eighth Annual (2004) Roger Rottmann Memorial Scholarship! This scholarship was established to recognize outstanding students enrolled in Florida universities and colleges. All students working toward a graduate degree related to freshwater or marine fisheries sciences are encouraged to apply. Two awards will be given, one at the M.S. level and one at the Ph.D. level. Applications must be received by December 19, 2003. The recipient of the scholarship will be notified prior to the Chapter's Annual Meeting scheduled for Feb. 23-25, 2004 in Brooksville. The scholarship will be presented at this meeting.

### **Student Travel Grants**

The Florida Chapter will again be providing the opportunity for students to obtain free room and board for this year's annual meeting. In the past, 8 to 18 student travel grants have been awarded each year to upper level undergraduate and graduate students. To be eligible for one of these grants, individuals must currently be registered in a Florida school during the spring semester and apply for the grant. Applicants must 1) indicate if they have ever attended an AFS meeting, 2) describe any past involvement that they have had with AFS, 3) describe any other professional and educational activities that they have been involved with, and 4) explain why they want to attend the annual Florida AFS meeting. Awardees will be selected and notified prior to the meeting. Students are not required to be presenting a talk or poster to be eligible. Applicants must be a member of the Florida Chapter or become a member when they register at the annual meeting. The deadline for submission of applications is January 23, 2004.

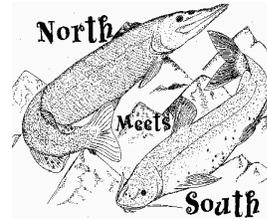
*For more information or application materials, please contact Dr. Cichra at 352-392-9617 ext. 249 or by email at [fish@ifas.ufl.edu](mailto:fish@ifas.ufl.edu) or check out the FAFS website at <http://www.sdafs.org/flafs>.*

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If you would like to contact Beacham Furse, he can be reached via email at [john.furse@fwc.state.fl.us](mailto:john.furse@fwc.state.fl.us).

### 3rd Annual AFS Student Colloquium



All students from the Southern and Northeastern Divisions of the American Fisheries Society are welcome to a weekend of talks and socials! This will be a wonderful opportunity for fisheries students to learn more about current research in their field. The meeting will start on Friday with a social in Morgantown. We will have student presentations on Saturday and potentially Sunday at the Westvaco Natural Resources Center. All undergraduate and graduate students are encouraged to present proposed projects, preliminary data, or completed research. For more information, refer to:

<http://www.forestry.caf.wvu.edu/wvuafs>.

Dear Fellow Florida Fishes (and student wanna-be fishies):

As I mentioned at last year's meeting, this will most likely be the last year that I am volunteering as Raffle Chairman. I just wanted to remind each and every member to attempt to secure a raffle donation prize from a local merchant such as Wal-Mart, Sports Authority or a bait and tackle shop.

**If everyone attending the 2004 meeting brings a donation, just imagine how BBBBIIIIIIIIIIIGGGGGGGGG the raffle could be this coming year!!!!**

Additionally, if anyone would like to volunteer to assist Bridget in next year's raffle, I'm sure that she would appreciate the help.

Sincerely,  
Thomas Maher, Raffle Chairman

# ANNOUNCEMENTS

## ➔ The Hutton Junior Fisheries Biology Program

The third year of the Hutton Program was a resounding success! Fifty-four high school students throughout the United States and in Puerto Rico spent an exciting summer experiencing the worklife of a fisheries biologist. Although it is a relatively new program for AFS, the Hutton is important to the future of the profession. The ultimate goal of the program is to recruit young people into a career in fisheries, particularly those groups underrepresented in the profession. These students would eventually be able to fill some of the vacancies created by a retiring workforce. The Hutton has enhanced the lives of the students and mentors it served over the past three years, and it has the potential to provide the profession with a new generation of fisheries biologists.

Mentor applicants for the 2004 Hutton Program are encouraged to apply as soon as possible. This is your chance to contribute to the development of the youth in your area and to your profession. For more information on the Hutton Program and to download 2004 mentor and student applications, visit the AFS website at <http://www.fisheries.org/Hutton.shtml>. If you need additional information, please contact Jan Lubeck at [jlubeck@fisheries.org](mailto:jlubeck@fisheries.org)

## ➔ New Book Releases

*Investigation and Monetary Values of Fish and Freshwater Mussel Kills* by Robert I. Southwick and Andrew J. Loftus, editors.

*Fisheries, Reefs, and Offshore Development; Published by American Fisheries Society* by David Stanley and Ann Scarborough-Bull, editors.

Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens (Bluebook), 5th Edition by American Fisheries Society/ AFS Fish Health Section

Biology, Management, and Protection of Catadromous Eels by Douglas A. Dixon, editor.

Biodiversity, Status, and Conservation of the World's Shads by Karin E. Limburg and John R. Waldman, editors.

To purchase these or other AFS books, visit the AFS Online Bookstore at:  
<http://www.fisheries.org/cgi-bin/hazel-cgi/hazel.cgi>

## CONGRATS TO SOME OF OUR 2003 GRADUATES



**Tim Bonvechio**, Master of Science, University of Florida, Thesis title: *Relations between hydrological variables and year-class strength of sportfish in eight Florida waterbodies*; currently seeking a fisheries management position with FWC.

**Julianne Harris**, Master of Science, University of Florida, Thesis title: *Distribution of Gulf of Mexico sturgeon (Acipenser oxyrinchus desotoi) in relation to environmental parameters and the distribution of benthic invertebrates in the Suwannee River estuary, Florida*; currently working under the direction of Richard McBride at FMRI on two projects, one looking at the biology of shad species in the St. Johns River and the other summarizing information on three diadromous fishes in the St. Johns River in relation to water flows and levels.

**Jodie Rummer**, Master of Science, University of West Florida; Thesis title: *Physiological Effects of Catastrophic Decompression on Red Snapper, Lutjanus campechanus*; currently enrolled in a Ph.D. program at the University of British Columbia and plans to continue studying fish physiology on a mechanistic level.

**Troy Thompson**, Master of Science, University of Florida, Thesis title: *Distribution and habitat selection of largemouth bass in a Florida limerock pit*; currently seeking a fisheries management position with a state agency.

## JOB LISTINGS

**AFS Job Center Online:**  
<http://www.fisheries.org/jobs.html>

**ASLO Job Listings:**  
<http://www.aslo.org/jobs.html>

**Texas A & M University Job Board:**  
<http://wfscnet.tamu.edu/wfscnet/jobs/jobs.htm>

**USA Jobs - Federal Job Listing:**  
<http://www.usajobs.opm.gov/>



At this past year's annual meeting, a student subunit of the AFS Florida Chapter was proposed. Below is an overview of the proposed subunit. The by-laws will be printed in the next newsletter and will be voted on at the annual meeting to be held Feb. 23-25, 2004.

## **An Overview of the Components of the Proposed Subunit Submitted by Jeff Grim**

### **ORGANIZATION:**

The hierarchy of the proposed student subunit will be organized in a manner which parallels the parent organization and the Florida chapter by electing, a: President, President-Elect, Treasurer, and Secretary/Historian. The duties of each of these officers will be detailed in the by-laws. The terms of these offices will run parallel to the terms for the same office at the Chapter level. Pursuant with the AFS-Unit Survival Manual, the President of the student subunit will be a voting member of the Chapter's Executive Committee (EXCOM).

### **RECRUITMENT:**

Recruitment for student activity is always a challenge, but I feel that the establishment of this student subunit will greatly increase our success in this area by offering more to the students. I would like to see recruitment on a variety of levels beginning with statewide recruitment efforts by the student subunit through direct communication with the various colleges and universities who offer fisheries related degrees. To aide this, I would call on the subunit to create a "packet" of information detailing both the parent organization, the Florida Chapter and the subunit's activities to be sent to the appropriate academic departments across the state. Additionally, I believe we can call on current members to recruit colleges and universities from their area in personal communication as well as the continued recruiting at their own institutions.

### **MEMBERSHIP REQUIREMENTS:**

To be eligible for membership in the student subunit, students are required to be members in good standing of the Florida chapter and will be strongly encouraged to be members in good standing of the parent organization.

I would ask for the \$5.00 annual due that will be used exclusively to fund the activities of the student subunit.

### **ACTIVITIES AND INITIATIVES:**

#### Fundraising

As a subunit, directed fundraising will be tough; however, participating individuals/institutions will be called on to fundraise from their "home location" on behalf of the subunit. A blanket list of fundraising ideas will be provided, but originality will always be encouraged. I would also like to see the student subunit work in conjunction with the raffle coordinator to assist in gathering items for the annual raffle to support student travel. Ideally, even if each student or group of students was able to obtain one item through a local donation, the size and duration of the raffle can be greatly increased.

The student subunit will also work with The Roger Rottmann Committee to raise funds for this scholarship.

#### Newsletter Contributions

I would like to see each of the universities contribute to the newsletter updating members on events, progress, research, or other items or note. Additionally, the newsletter could be used for shorter contributions of research or literature by students.

#### Meeting Involvement

Students who receive travel support through the Florida Chapter will be required to work shift(s) associated with registration and check-in. In addition to working registration, all students will be asked to participate in the selling of raffle tickets, as the proceeds go directly to support student travel to the meeting.

I would also like to see a student's social hour where the students can mingle and meet. Food and drink for this portion would be sponsored by the annual due proposed in the membership requirements portion of this proposal.

Florida Chapter AFS  
601 W. Woodward Ave.  
Eustis, FL 32726

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