the Shellcracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY *http://www.sdafs.org/flafs*

January, 2009

President's Message:

Dear Florida AFS members,

By the time you receive this issue of the *Shellcracker*, 2009 will be in full swing. However, as I sit down to write this 2008 is hanging on by a thread. I hope the past year has been a productive and happy one for all of you, although I know it has not been without disappointment or heartache for many.

This issue of the newsletter contains the call for papers put together by Deb Murie as part of her planning for the 2009 annual chapter meeting. I look forward to seeing all of you in a few short weeks as I know that Deb has put together a great symposium honoring the life's work of Rich Cailteux, and also has planned for myriad contributed talks on Florida fishes and fisheries, both the fresh and salty varieties. Please endeavor to register early and get your abstract submitted to Deb ahead of the deadline as I know from experience that much of the meeting's organization, especially the program, comes together in just a matter of weeks before the meeting and any help we can provide Deb will make a tough job that much easier.

I spent a bit of time reflecting on professional productivity, both from a personal as well as a lab-wide perspective, as 2008 advanced toward year's end. Whether your current position as professional fisheries biologist (or other discipline within our field) takes the form of agency scientist, private consultant, academic scientist, or even graduate student, the concept of productivity has some common themes for all of us. We all are responsible for generating new projects and/or streams of revenue for our various institutions/employers. We all have daily or longer-term tasks that our employers expect us to accomplish. And, we all produce deliverables from the various projects we complete. Many times those deliverables are directly consumed by managers or regulatory bodies or clients, and often times our employers consider that the most significant contribution we make to the process of wise management and usage of fishery resources. However, regardless of the type of position one holds, a greater emphasis has been (rightly) placed in recent years on publishing study results in the peer-reviewed literature. As an academic scientist, publication rate is a metric that I am well-accustomed to being evaluated by. However, we can all relate to that concept and almost all of us can improve our performance in disseminating our work in the literature such that it will find its greatest audience and funds committed to our studies will bear their maximum fruit. It is certainly an area in which I will seek improvement, individually and by folks in my lab, in 2009.

I have adopted an approach first proposed to me and others as graduate students in fisheries courses taught by Dr. Cynthia Jones at Old Dominion University in beginning the effort indicated above. Cynthia warned us that we would need to find a way to maintain, or build and then maintain, publication productivity as we moved into PhD programs or careers. Her advice was to commit to working on a manuscript for journal submission for at least two hours of every work day. She warned there would be times when other tasks would be pressing, and others when we would feel the need to commit more than just two hours a day to paper writing, but the approach she advocated carries with it the idea that while it is always easy to push the paper(s) aside for whatever else is on our plates, we needed to keep writing as a priority. I began employing Cynthia's method at the end of fall 2008 and thus far it is working quite well for me. Maybe it would be worth a shot for others out there as well who also seek improvement in this area.

For now, let's not forget that February is right around the corner. Get your stuff to Deb and Linda Lombardi-Carlson as quickly as possible, and make sure graduate students are aware of and apply early for both the Rottman Scholarship and travel awards. There will be a new format for providing feedback to graduate students about their presentations at this year's meeting, which was instigated by the students themselves, so please aid their professional development if asked to participate in critiquing talks. Lastly, I will speak for the entire chapter in thanking both Linda Lombardi-Carlson and Jackie Debicella for their many years of service as Secretary-Treasurer and Newsletter Editor, respectively. I am hopeful we will be able to find willing individuals who can commit as much time and energy to those positions for the coming year, but whoever steps up will have enormous shoes to fill, for sure.

I hope you all enjoyed the holiday season and are back at work, refreshed and already diving into the New Year. See you in Altoona!

Best Regards,
Will

Getting in Touch

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Upcoming Events

Jan 15 – 18: Spring Meeting of the Southern Division and Louisiana Chapter of the AFS. New Orleans, Louisiana. www.sdafs.org/meetings

Jan 27 – 31: Texas Chapter of AFS and Texas Parks and Wildlife Department—Fisheries and Harmful Algae: Can They Co-Exist? Fort Worth, Texas. Fred.Janssen@tpwd.state.tx.us

Feb 15 – 18: Aquaculture America 2009. Seattle, Washington. www.was.org

February 17-19: Florida Chapter of the American Fisheries Society Annual Meeting. Altoona, Florida.

Mar 10 – 13: 25th Wakefield Fisheries Symposium: Biology and Management of Exploited Crab Populations under Climate Change. Anchorage, Alaska.

Mar 30 – Apr 3: The Ecological Status of Fish Communities in Inland Waters: International Symposium and EFI+ Workshop. Hull, United Kingdom. www.hull.ac.uk/hifi/events/index.html

Check out our Parent Society's calendar at http://www.fisheries.org/Calendar.shtml for other events not listed here!

Interested in contributing something to the Shell-Cracker? Email Jackie Debicella at *jackiedebo@hotmail.com* with any articles or information that you would like to be included in the next issue. The deadline for the next issue is March 30th, 2009, so start fishing...

Feature Article

Lake Griffin Black Crappie: Management through Mortality

Jason Dotson and Bill Johnson
Florida Fish and Wildlife Conservation Commission

Historical Perspective

Lake Griffin, Florida is a 9,400 acre hypereutrophic system located in the Upper Ocklawaha River basin of Central Florida. Lake Griffin has experienced a rapid decline in water quality and clarity over the past 50 years due to nutrient loading via agricultural sources and residential development, which resulted in a loss of suitable habitat (e.g. submersed aquatic vegetation) for sport fish, and quality fishing opportunities have declined. The St. Johns River Water Management District (SJRWMD) has attempted to reduce non-point source nutrient loading by restoring adjacent agricultural land to wetlands, and to reduce re-suspension of internal nutrients by experimentally removing adult gizzard shad *Dorosoma cepedianum* via commercial gill nets annually since 2002. Gill nets are size selective and not species specific; thus, adult sport fish bycatch (e.g. black crappie *Pomoxis nigromaculatus*) associated with the commercial gill net fishery for gizzard shad is of concern to FWC biologists and recreational anglers because of potential population-level impacts. Age-structured model simulations at Lake Dora, Florida suggested that overexploitation was of concern due to recreational fishing mortality combined with commercial bycatch mortality (Catalano et al. 2007). Additionally, the greatest risk for recruitment overfishing via bycatch occurs when recreational exploitation is already high.

Creel survey information for Lake Griffin indicated that black crappie recreational landings have declined substantially from approximately 350,000 (37 fish/acre) in 1975 to the present levels of about 50,000 fish (5 fish/acre) (Figure 1). Commercial bycatch landings estimated from onboard observation data range from approximately 5,000 to 30,000 with a mean around 15,000 black crappie per year (2002-2007). There is potential black crappie population -level impacts at Lake Griffin due to recreational fishing mortality and/or commercial bycatch mortality; thus, there is a need to estimate total exploitation from the recreational and commercial bycatch fisheries in order to evaluate the sustainability of current harvest levels and explore the potential of other harvest policies.

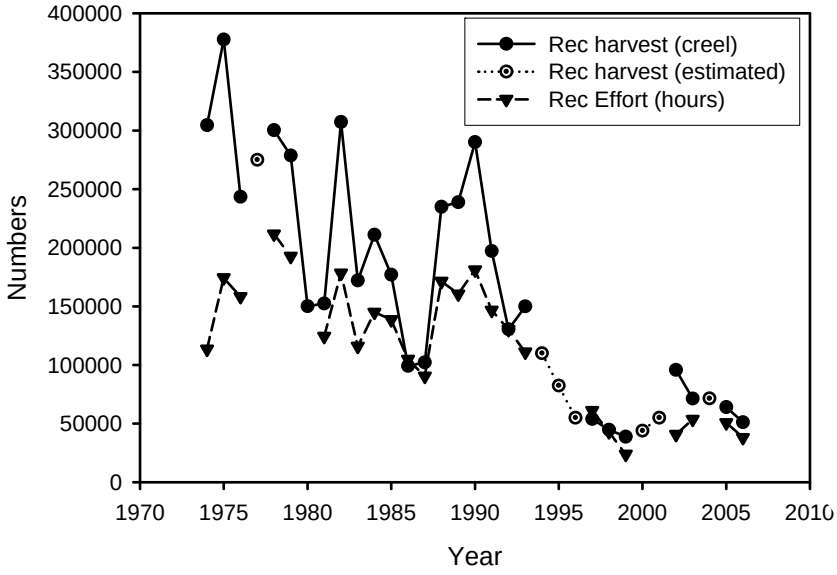

Figure 1. Historical estimates of recreational harvest and effort from creel survey data collected from 1975 – 2006 (years missing creel survey data were estimated based on the current trend and are indicated with an open dot).

Current Research

Crappies *Pomoxis* spp. are some of the most heavily recreationally harvested freshwater fishes in the United States (Miranda and Dorr 2000), and thus managers often utilize harvest restrictions (e.g. bag, length limits) in order to prevent overexploitation and sustain yields (Miranda et al. 2002). Catch rates and size structure information are

most commonly used to evaluate the need and success of potential regulations (Crawford and Allen 2006), although these metrics can be greatly influenced by variables other than fishing mortality (e.g. size selectivity to capture, variable capture probability). The success of harvest restrictions relies on mortality being mostly from fishing (Allen and Miranda 1995); therefore, managers commonly estimate fishing mortality through tagging studies. The exploitation rate of a fishery is estimated by releasing a known number of tagged fish and determining the proportion harvested by fishers, after accounting for tag loss, tagging mortality, and non-reporting by anglers (Miranda et al. 2002).

We used a reward-based tagging design with high ($200) and low ($5) value tags to estimate exploitation at Lake Griffin. Fish were collected for tagging with a haul seine (N = 333) and boat electrofisher (N = 113) from November 20 – December 10, 2008.

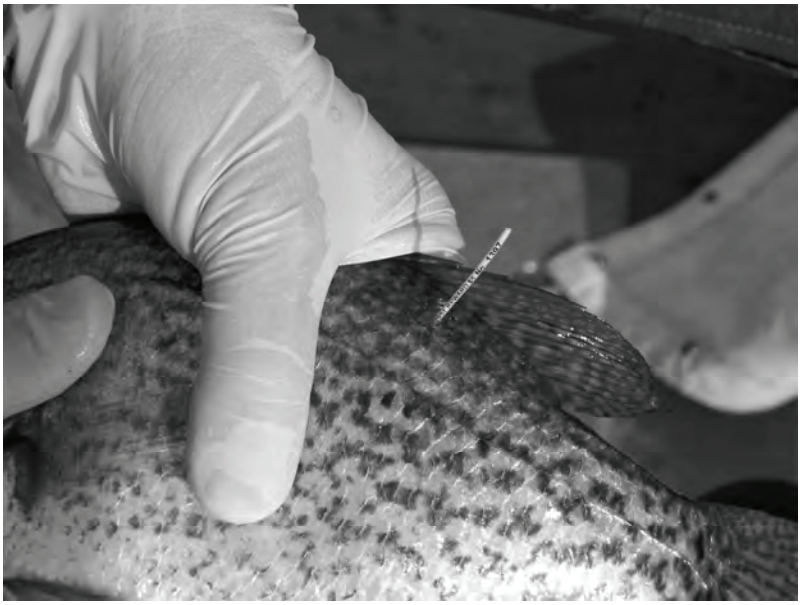

Figure 2. Photograph of dart tag inserted below the dorsal fin rays of a black crappie at Lake Griffin (Photo by Jason Dotson; November 2008).

In order to account for non-reporting by anglers we assumed that high (N = 74) and low (N = 372) value tags have an equal probability of recapture by anglers and that the reporting rate of high value tags is 100%. Therefore, we can estimate the reporting rate of low value tags based on the return rate of high value tags. We double-tagged 121 fish (37%) in order to account for tag loss and we conducted a cage experiment in which equal numbers of single-tagged, double-tagged, and control fish were placed in cages in the lake for a 24-h treatment period to account for tag-related mortality. Mean total tag-related mortality (single and double-tagged) was 16% for 8 cage replicates, and no control mortality was observed.

In addition to exploitation estimates for the recreational and commercial bycatch fisheries, we are conducting field sampling in order to estimate other important population metrics. Age-and-growth information is being collected from recreationally harvested carcasses, recreational harvest and effort is being estimated with a roving creel survey, commercial bycatch is being estimated with onboard observations, and recruitment strength is being estimated with catch rates of age-0 black crappie captured with a bottom trawl. We will use these population metrics and mortality estimates to construct an age-structured population model in order to explore the sustainability of different harvest policies and the potential benefits of harvest restrictions.

Literature Cited

Allen, M. S. and L. E. Miranda. 1995. An evaluation of the value of harvest restrictions in managing black crappie fisheries. North American Journal of Fisheries Management 15:766-772.

Catalano, M. J., J. R. Dotson, L. Brabandere, M. S. Allen, and T. K. Frazer. 2007. Biomanipulation impacts on gizzard shad population dynamics, lake water quality, and a recreational fishery. University of Florida, Final Report #SI40613, Gainesville.

Crawford, S., and M. S. Allen. 2006. Fishing and natural mortality of bluegills and sunfish at Lake Panasoffkee, Florida: Implications for size limits. North American Journal of Fisheries Management 26: 42-51.

Miranda L. E. and B. S. Dorr. 2000. Size selectivity of black crappie angling. North American Journal of Fisheries Management 20:706-710.

Miranda, L. E., R. E. Brock, and B. S. Dorr. 2002. Uncertainty of exploitation estimates made from tag returns. North American Journal of Fisheries Management 22:1358-1362.

Annual Meeting and Symposium Announcement – 2nd Call for Papers
29th Annual Meeting of the Florida Chapter of the American Fisheries Society

February 17-19, 2009
Ocala 4H-Camp, Altoona, Florida

The 2009 meeting is now less than two months away, and it is time to submit your abstract, register, and otherwise make your plans to come to the meeting! The meeting format will consist of both invited and contributed oral presentations and posters. This year, the symposium on Wednesday morning will be a dedication honoring the life works and activities of Rich Cailteux. Rich was President of our Florida Chapter in 1994-95 and an active member in the AFS. Many of us, in both work and academics, were touched by Rich's knowledge, enthusiasm, and kindness. Colleagues of Rich will be presenting their collaborative research activities that extend into many facets of freshwater fisheries that fascinated Rich. If you would like to present some research or activity that you did with Rich (if even for only a few minutes), or even contribute a personal fish tale, please contact me at dmurie@ufl.edu .

All abstracts are due Friday, January 9, 2009, for full consideration in the symposium or contributed sessions. Please send your abstract (<300 words) and associated information (following the format given below) to dmurie@ufl.edu; in the subject line of your email, please list the author(s) as they will appear in the program (e.g., SchaubMooreMajikowski.doc). Platform presentations will be 20 minutes (15 minutes for presentation and 5 minutes for questions or discussion). We will have PowerPoint 2003 loaded on a laptop capable of accepting your presentation on a CD, DVD or flashdrive. All posters will be formally presented on Tuesday evening, February 17, and can be left up for the entire meeting. Posters should be no larger than 150 X 100 cm (60" X 40"), but they can be set up either as portrait or landscape format on an easel. If you require other options for projection or poster formats, please contact the annual meeting's Program Chair, Deb Murie, at dmurie@ufl.edu.

The 2009 meeting will be held at the Ocala 4-H Camp, on beautiful Sellers Lake in the Ocala National Forest. This venue is located east of Ocala, south of SR 40, just off SR19. Map and directions are in this issue and on the Chapter's website at http://www.sdafs.org/flafs/doc/ocala4h.html.

Please find a draft program schedule on p.6. Also, a registration form is given in this issue and is also available on the Chapter's website: http://www.sdafs.org/flafs/PDF/2009%20FL%20AFS%20registration%20form.pdf
Please note the savings available if you register on or before **January 9, 2009**. This helps in many ways: reduces everyone's registration time, gives us a head's up on the count for meals, saves money, gets you the correct size of the meeting t-shirt, and you don't miss any talks. Therefore, please send in your registration form and deposit to the Chapter's Secretary-Treasurer, Linda Lombardi-Carlson, by January 9, 2009. Lastly, you should plan to bring your own linens or sleeping bag if you are planning to sleep at the camp. Linens will only be available in limited supplies and for a small fee.

Students: Several student travel awards will be available. The application form is available on the Chapter's website at http://www.sdafs.org/flafs/PDF/travelap.pdf. Master's and doctoral students are also eligible for the Roger Rottmann Memorial Scholarship, for which the recipient(s) will be announced at the Annual Meeting. More information and application materials are available at http://www.sdafs.org/flafs/doc/rottmann.html

We're looking forward to our 2009 annual meeting, and hope to see you there!

Abstract Format:

Limit abstracts to ≤ 300 words and follow this format (WORD is preferred):

Presenter: Schaub, M.; Tel. 888-123-4567; Email: MattShaub@HoustanTexans.nfl;
Author(s): Schaub, M.[1], S. Moore[2], and D. Majikowski[3]. Affiliation. Address. Telephone. [1]Shaub's email; [2]Moore's email; [3]Majikowski's email.

Title: The Sometimes Rocky Road of a University of Virginia Quarterback

Abstract: You know how this works: <300 words (MS Word will count it for you!)

Student Presentation: no (versus yes, to indicate work reported was completed while a student).

Presentation type: oral (versus poster)

DRAFT PROGRAM SCHEDULE

29th Annual Meeting of the Florida Chapter American Fisheries Society
February 17-19, 2009
4-H Camp Ocala, Altoona, Florida

Tuesday, February 17

1100-1800 h Registration
1200-1300 h Lunch
1300-1700 h Contributed Papers
1700-1900 h Poster Setup
1800-1900 h Dinner
1900-2000 h Formal Poster Session ….Followed by the ***Bonfire Social***

Wednesday, February 18

0700-0800 h Breakfast
0730-1800 h Registration
0800-1200 h **Symposium:** *Tribute to Rich Cailteux*
1200-1300 h Lunch
1300-1700 h Contributed Papers
1700-1800 h Student Subunit Meeting (all students); Time to relax (all others)
1800-1900 h Dinner
1900-2000 h **Chapter Business Meeting**
Awards presentation: Student Awards – Travel and Roger Rottmann Scholarship
Followed by **THE RAFFLE, AUCTION,** and the ***Bonfire Social***

Thursday, February 19

0700-0800 h Breakfast
0730-0900 h Registration
0800-1200 h Contributed Papers
1200-1300 h Lunch
1300-1310 h **Awards Presentation**: Best Papers/Best Posters; Power Tie and Lampshade Awards

Directions to Ocala 4-H Camp

The Ocala 4-H Center is located in the Ocala National Forest on Sellers Lake. Directions are provided below for those traveling from different parts of the state. Mileage estimates are to be used for general reference only.

From SW:
Take I-75 N to 44 E, head towards Leesburg, turn right onto 441 S, in Eustis, take exit for 19N (on right), turn left at light and head north on 19 N for ~19 mi., turn left onto NFS 535 at the Fire Control Center/Camp Ocala 4-H Center sign. Center will be on the right about 1/2 mi.

From SE:
Take Turnpike N to 429 N towards Apopka, turn left onto 441 N, once in Eustis, take a right onto 19 N., go for ~19 mi. and turn left onto NFS 535 at the Fire Control Center/Camp Ocala 4-H Center sign. Center will be on the right about 1/2 mi.

From NW:
Take I-75 S to Ocala, take the exit for 326 E, when 326 ends, turn left onto 40 E, turn right onto 19 S, go for ~4.5 mi. and turn right onto NFS 535 at the Fire Control Center/Camp Ocala 4-H Center sign. Center will be on the right about 1/2 mi.

From NE:
Take 17 S to Palatka, turn right onto 19 S, go for ~42 mi. and turn right onto NFS 535 at the Fire Control Center/ Camp Ocala 4-H Center sign. Center will be on the right about 1/2 mi.

Candidates for Upcoming Election for Florida Chapter Officers

This year's candidates for President-Elect are Linda Lombardi-Carlson and Dennis Renfro . The candidate for Secretary-Treasurer is Travis Tuten . Each candidate's biography is included here, so please read each and be prepared to vote at the Business Meeting to be held during the Florida Chapter's Annual Meeting in February.

Candidates for President

Linda Lombardi-Carlson. It is truly an honor to be nominated for the President-Elect of the American Fisheries Society-Florida Chapter Executive Committee. I have enjoyed my tenure (2006-present) as Secretary/Treasurer of the American Fisheries Society-Florida Chapter and look forward to my new duties, if elected. As a researcher for NOAA, I have attended almost all annual Florida Chapter AFS meetings since 2002 and I am familiar with the issues related to the AFS-Florida Chapter both as a member and an executive committee member. Since AFS-FL Chapter annual meetings provide a relaxed atmosphere, I have been able to intermingle with Florida state and federal biologists, and Florida university faculty and students to learn more about all the outstanding research and problems specific to our state chapter. My first involvement with the American Fisheries Society was during my undergraduate studies at the University of North Carolina–Wilmington. My graduate (master's) advisor, Glenn Parsons (past president AFS Mississippi Chapter) furthered my involvement with the AFS by attending and presenting at my first professional meeting (Mississippi Chapter). Once I completed my master's degree and moved to Florida, I became a member of the American Fisheries Society-Florida Chapter. Since 2002, I have worked as a research fishery biologist at the NOAA Fisheries Laboratory in Panama City, FL. My research is directed on the conservation and management of Serranid species from the Gulf of Mexico. Currently, I am a PhD candidate at the University of Florida, Fisheries and Aquatic Sciences, broadening my knowledge in population dynamic modeling. If elected as President-Elect, I will do my best to plan a well organized annual meeting including both informational and social aspects. Thank you for this consideration.

Dennis J. Renfro. I have been affiliated with the Florida Chapter of American Fisheries Society since 1983. During the early years of the chapter I frequently served on the Florida Chapter's raffle committee to support student travel. In 1995, I served on the committee hosting the Annual International AFS meeting (Tampa). After receiving my Masters at Tennessee Tech University, I began my career looking at the impacts of commercial fishing on Florida's sport fisheries. My early work was in developing a mathematical model that was able to estimate the annual sportfish by-catch mortality from commercial gear.

My next 10 years were spent on largemouth bass research. I authored or coauthored numerous publications on exploitation, dart tagging and coded micro wire tagging. I served on the steering committee to conduct the Largemouth Bass Symposium in 1992 and the Largemouth Bass Stocking Symposium in 2005. My current work as the Statewide Special Projects Field Coordinator for the Division of Freshwater Fisheries Management, Florida Fish and Wildlife Conservation Commission (FWC) has allowed me to present publications at two recent AFS Annual meetings, Anchorage, Alaska and Ottawa, Canada. The past few years have been challenging coordinating six Freshwater Fishing Summits and two Fisheries Roundtables. The program goal was to generate public input and commitment to freshwater fisheries management.

If elected Chapter president-elect, I will bring that knowledge of working with our stakeholders to lead a symposium relative to both salt and freshwater fisheries on the future development of Partnerships in Florida. Together with state and federal agencies, sportsmen, industry and academia we can forge partnerships to enhance the fisheries in Florida. I will encourage the Florida AFS Chapter to take a proactive role to make a difference in the future of Florida's resources.

Candidate for Secretary-Treasurer

Travis Tuten. I am a biological scientist with the Florida Fish and Wildlife Conservation Commission. For the past six years I have worked out of the Gainesville Freshwater Fisheries Office, which is part of the Fish and Wildlife Research Institute. During this time, I received a Master of Science degree from the Department of Fisheries and Aquatic Sciences at the University of Florida and have been an active member of the Florida Chapter of AFS. My work experiences have included a wide variety of projects at aquatic systems throughout Florida.

Each year I attend the annual meeting of the Florida Chapter, where I meet new people, see familiar faces, learn new techniques, and broaden my knowledge of what has happened and is happening with fisheries sciences in Florida. These meetings provide valuable information and contacts, which helps me with job related activities throughout the year.

I would like to serve as Secretary-Treasurer of the Florida Chapter of AFS, as a way to assist the organization that I consider to be extremely important for the cooperation and communication of fisheries sciences in Florida. This experience will allow me to give back to the organization that I receive from. I understand the duties of this position and if elected, I will strive to do the best job possible and help the Florida Chapter continue to roll smoothly and assist others for the future.

Florida Chapter of the American Fisheries Society
4H Camp Ocala, Florida
Annual Meeting Registration: February 17-19, 2009

Official Use Only:
Postmarked:_____
Entered:_____
Deposited:_____

First: _____Last: _____ Student (please check) ____

Affiliation:_____
This address will be used in our mailing list and should be the one where you want to receive newsletters and other materials.

Street Address:_____

City:_____State:_____Zip Code:_____

Work Phone: Ext: Email:

T-Shirt Size: (Select One)	Small	Medium	Large	X-Large	XX-Large	XXX-Large

Arrival Time: (Select One)	Tue Noon	Tue PM	Wed AM	Wed Noon	Wed PM	Thur AM

Please check the appropriate lines below.

PRE-REGISTRATION: registration form postmarked by Friday, January 9, 2009
_____$ 30.00 One-day Registration _____$ 40.00 Full Registration

LATE-REGISTRATION: registration form postmarked after Friday, January 9, 2009
_____$ 35.00 One-day Registration _____$ 47.00 Full Registration

Meals and Lodging

Tuesday, February 17, 2009	Wednesday, February 18, 2009	Thursday, February 19, 2009
_____$7.00 Lunch	_____$6.50 Breakfast	_____ $6.50 Breakfast
_____$14.50 Dinner	_____$7.00 Lunch	_____ $7.00 Lunch
_____$26.00 Lodging	_____$14.50 Dinner	
	_____$26.00 Lodging	

Full Meals and Lodging _____$115.00

Linens (please bring own, limited supply) _____$ 6.00

Dietary Needs:
Vegetarian _____
Low Fat _____
Other: _____

Florida Chapter dues (calendar year 2009) _____$10.00 _____FL Chapter dues paid via AFS annual membership.

Total Amount: _____

Total Enclosed: _____ __ Cash __ Check
(minimum $10.00)

Balance Due: _____ __ Cash __ Check __ Credit

Please Make Checks Payable to **Florida Chapter, AFS** and mail to**:**

Linda A. Lombardi-Carlson
NOAA Fisheries Service
3500 Delwood Beach Road
Panama City, FL 32408
Phone: (850) 234-6541 ext. 213
Fax: (850) 235-3559
Email: Linda.Lombardi@noaa.gov

*****Checks not payable to 'Florida Chapter, AFS' will be returned to sender.
Registration Forms may be sent via fax (attention: Linda) or via email: (subject: 2009 AFS FL, save as last name.pdf).
A minimum amount of $10 must be mailed to validate your registration.

Note: This is a cafeteria-style service and food must be ordered a week in advance.
Since meals are pre-paid, **please** submit your registration form by ***Monday, February 6th, 2009***.
Registrations will still be accepted at the meeting.
We can only accept **non-FWC VISA** or **MASTERCARD** on the meeting date**.**
Credit card charges are submitted by our parent organization, AFS, after the meeting.
If you would like to pay your meeting fees with a credit card, then please send a $10 check for your deposit.

Student Section

Student Research Highlight

Molecular population structure and biogeography of the Gulf Pipefish, *Syngnathus scovelli*, in Florida waters

Caroline Storer
Undergraduate Student
Galbraith Marine Science Laboratory
Eckerd College

A Gulf of Mexico-Atlantic Ocean division in molecular population structure is shared by an array of marine and estuarine species including invertebrates such as the American oyster, the horseshoe crab, and the long-wristed hermit crab (Young et al. 2002; Avise 1992), bony fishes such as the Atlantic sturgeon and a variety of teleosts (Tringali & Bert 1996; Avise 1992), and the blacktip shark (Keeney et al. 2005). These species differ greatly in range, reproductive strategy, and life history. The similar population structure of these independently evolving lineages has been attributed to changes in sea level and climate caused by glacial advances and retreats during the Pleistocene epoch which may have geographically isolated populations of marine coastal species restricted by salinity, temperature, and/or habitat (Avise 1992). Current boundaries to dispersal continue to maintain population structure for most of these taxa.

Unlike many of the previously studied species, the Gulf pipefish, *Syngnathus scovelli*, is not restricted along the southeast US coast by salinity or high temperature, occupying warm coastal marine to freshwater habitats on the Atlantic coast from Georgia to the southern tip of Florida, throughout the Gulf of Mexico, and south along Central America to Brazil. However, *S. scovelli* may have limited dispersal capabilities due to its lack of planktonic egg and larval stages and its reliance on submerged aquatic vegetation in all life history stages, as evidenced by its absence throughout the West Indies. This combination of characteristics makes *S. scovelli* especially interesting from a biogeographical perspective. In collaboration with three student colleagues, Rachel Harbeitner, Aisha Rickli-Rahman, and Nathan Van Bibber, and my faculty mentor, Dr. William Szelistowski, I am investigating the molecular structure of Gulf pipefish in Florida waters. Preliminary results are presented here.

To date, we have sequenced a 487 base pair portion of the mitochondrial DNA control region for 216 specimens collected during 2007 and 2008 from eight different locations, three from the Atlantic including St. Johns River (2007), Merritt Island (2007, 2008), and Fort Pierce (2008), four from the Gulf of Mexico including Pensacola (2008), Apalachicola/St. Joseph Bays (2007, 2008), Tampa Bay (2007, 2008), and Charlotte Harbor (2007, 2008), and one from the upper Florida Keys (2008). DNA was isolated from each specimen and the control region was amplified in PCR using a protocol and primers from Teske et al. (2003). Successfully amplified PCR products were purified and sequenced at the University of Florida Core Sequencing Lab. The resulting sequences were edited and aligned using Sequencher and ClustalX. Pairwise genetic divergences F_{st} between sampling locations and between years at individual sampling locations were calculated using ARLEQUIN version 2.000. *P*-values of pairwise F_{st} comparisons were adjusted using Sequential Bonferroni corrections (Rice 1989).

Twenty-seven polymorphic loci were found resulting in 41 haplotypes. In each of the four locations sampled during both years, pairwise F_{st} *P*-values indicated that there was no significant genetic difference between years therefore data for both years were combined for each location. In all pairwise F_{st} comparisons Atlantic locations differed significantly from all Gulf locations ($P << 0.01$) and there were no shared haplotypes between Gulf and Atlantic populations (Figure 1). In the Atlantic region, the St. Johns River, Merritt Island, and Fort Pierce locations did not differ genetically ($P > 0.05$). There were, however, significant differences among some Gulf populations. A single haplotype dominated both Tampa Bay and Charlotte Harbor and these two locations did not differ genetically ($P = 0.93652$), but they were both significantly differentiated from the Florida Keys and Florida panhandle populations ($P< 0.01$). The Florida Keys population shared haplotypes with all four Gulf populations and was not significantly different from the Pensacola and Apalachicola/St. Joseph Bays populations ($P > 0.05$).

Genetic differences among some Gulf populations, and particularly, between the Gulf and Atlantic regions suggest historical limits to dispersal and gene flow in this species. The existence of a major barrier to gene flow is further indicated by the lack of a single shared haplotype between the Gulf and Atlantic populations. The similarity of

pipefish in the Upper Keys to those in the Gulf suggests that this break occurs in SE Florida. This Gulf-Atlantic population separation in SE Florida is characteristic of other previously-studied marine species, however the biogeographical history giving rise to this pattern may be different for *S. scovelli*. A preliminary phylogeny constructed from the haplotypes suggests an Atlantic clade derived from Gulf relatives. This could have occurred after the most recent Pleistocene cooling forced the species into a southern refugium in the southern Gulf of Mexico or the Caribbean. Then, as the climate warmed, the species may have expanded northward along the Gulf coast and around Florida, followed by the isolation of the fish that gave rise to those presently found on the Atlantic coast. The absence of *S. scovelli* in the West Indies suggests that it is incapable of open-water dispersal and supports this scenario of re-establishment along a coastal route through the Gulf of Mexico.

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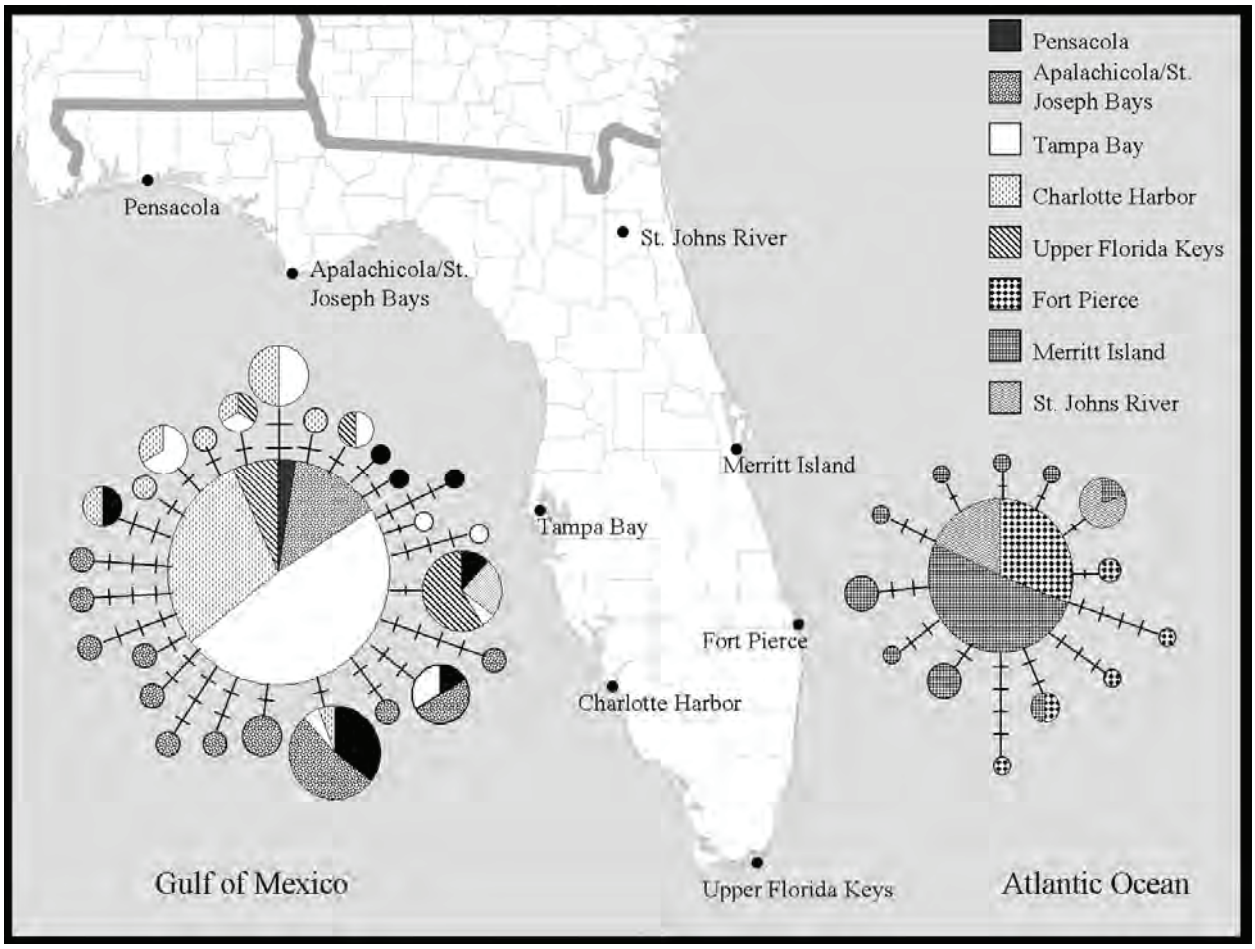

Figure 1. Sampling locations and haplotype networks for Gulf and Atlantic populations of *Syngnathus scovelli*. Circles represent individual haplotypes. Sizes of circles indicate haplotype frequencies. In each case, the central circle is the most abundant haplotype with hatch marks representing single nucleotide polymorphisms. Map from**:** www.nps.gov

Student Sub-unit News

At this year's Florida Chapter meeting, students will be able to enhance their public speaking skills and improve their presentations for future talks. Each student's presentation will be video recorded, and a copy will be provided to them. Judging forms will also be given to the students. We hope that these resources will enhance the experience that students gain from attending the Florida Chapter meeting. Students will have the tools to improve their skills as a presenter. I encourage all fisheries students to present their research either as an oral or poster presentation. Please make sure you apply for a student travel grant. Also, you are welcome to apply for the Roger Rottman Memorial Scholarship. Information is located in the awards and scholarships section on the Florida Chapter's website, http://www.sdafs.org/flafs/awards.html. Student help will be needed during the meeting (i.e., videoing student presentations, uploading presentations, and selling raffle tickets). Those receiving travel grants will be expected to help. So, be ready to lend a helping hand! It should be a great meeting, and as always, keep working hard at whatever you do.

Happy Fishing,
Aaron Bunch
President, Florida Student Sub-unit

Scholarships

NOAA is pleased to announce the availability of scholarships to students majoring in disciplines related to oceanic and atmospheric science, research, or technology, and supportive of the purposes of NOAA's programs and mission, e.g., biological, social and physical sciences; mathematics; engineering; and computer and information sciences.

Undergraduate Scholarships (for students who are currently sophomores)
Educational Partnership Program Undergraduate Scholarship: http://www.oesd.noaa.gov/epp_uspa/ .
The deadline is February 2, 2009.

Ernest F. Hollings Undergraduate Scholarship Program:
http://www.oesd.noaa.gov/Hollings_info.html .
The application will become available November 1, 2008 and will be due by January 30, 2009.

Graduate Scholarships (for seniors who are applying to graduate school and current graduate students):
Graduate Sciences Program: http://epp.noaa.gov/grad_science/welcome.html . The application deadline is January 30, 2009.

Dr. Nancy Foster Scholarship Program: http://www.fosterscholars.noaa.gov/ . The application will be available January 1, 2009 and will be due by March 31, 2009.

Eligibility requirements are:

* US Citizenship
* 3.0 GPA
* Studying a NOAA science: atmospheric science, biology, cartography, chemistry, computer science, engineering, environmental science, geodesy, geography, marine science, mathematics, meteorology, physical science, photogrammetry, physics, etc.

If you have any questions, please do not hesitate to contact:
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