the Shellcracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

http://www.sdafs.org/flafs

April, 2009

President's Message:

"Meeting Went Swimmingly, Despite Budget Woes!"

Our annual meeting in February this year was truly a memorable event. First, our symposium tribute to Rich Cailteux allowed many of his friends and colleagues to voice their respect, humor, and friendship while in the company of his fisheries family. I would especially like to thank Charlie Mesing and Mike Allen for their help with the symposium, as well as the many participants that shared their appreciation for Rich's passion and breadth of knowledge in a vast array of aquatic systems.

Secondly, most of our agency colleagues and others were facing extreme travel restrictions and, at one point, we thought that we may have to consider reducing the conference to one day or altogether cancelling it! Many presenters, however, said that they were coming regardless of the economy and travel restrictions and ended up coming under their own steam. Some of our agencies made arrangements for day-tripping, and other presenters were able to come for at least one of the three days. We were also able to fund all of the students that applied for travel awards and so lightened their financial burden. So despite the economy and cut-backs to all of our budgets, we all made an extra effort to attend the meeting this year. Maybe it's because we are a stubborn lot by nature; tackling inclement weather, obstinate boat motors, and trailer lights that never seem to work, with perseverance that is not easily set aside. Whatever hurdle you personally encountered, thanks for overcoming it and making the Florida Chapter meeting a success!

Again this year, we heard many great talks, saw spectacular posters, and I asked over a dozen colleagues to help score all the presentations for the various awards that our Chapter presents each year (see page 10 for award winners). This was a difficult task...mostly because there were so many deserving presentations! Thanks to everyone that helped out this year and for those that could not, maybe next year you can volunteer….don't be shy….and students, this is a great way to put all of your accumulated presentation skills to use in constructively critiquing presentations by the rest of us, so you can also volunteer!

In the seemingly ever-increasing pace and demand on us in our work in fisheries, whether in government agencies, NGOs, or academia, it is a breath of fresh air to go back to Altoona each year and catch-up with colleagues that may be far flung across the state (or out of the state), whether sipping coffee, watching fish from the dock, or chatting around the bonfire….hope *you* can make it next year!

Cheers, Deb Murie
FL Chapter President

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Upcoming Events

Apr 17 – 19: Fisheries and Marine Ecosystems (FAME) graduate conference. Camp Alexandra, Crescent Beach, British Columbia, Canada. www.fameconference.org

May 22 – 26: Third and Last GLOBEC Open Science Meeting. Victoria, British Columbia, Canada. www.globec.org

May 25 – 29: World Aquaculture 2009. Veracruz, Mexico. www.was.org

June 16-17: Sustainable Ocean Summit. Belfast, Ireland.

June 16 – 18: 2009 Hydroacoustic Lake Survey Workshop. Utah State Univ. Conference Center, Bear Lake, Utah.

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

New Titles

Balancing Fisheries Management and Water Uses for Impounded River Systems. Micheal S. Allen, Steve Sammons, and Michael J. Maceina, editors. 697 pages, Symposium 62. Published by the American Fisheries Society. January 2009.

Interested in contributing something to the Shellcracker? Email Kevin Johnson at *kevin.johnson@myfwc.com* with any articles or information that you would like to be included in the next issue. The deadline for the next issue is June 30th, 2009, so start fishing...

Feature Article

A Goliath Success Story for Marine Conservation in Florida

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Amid all the foreboding news of declining marine resources (Dayton et al. 2002, Myers and Worm 2003, Pew Oceans Commission 2003, US Commission on Ocean Policy 2004) worldwide shines a bright spot in the southeastern U. S. for an impressive beast. The goliath grouper (*Epinephelus itajara*)—still critically endangered throughout the Tropical eastern and western Atlantic (IUCN 2007). -- is making a comeback after 18 years of protection (Kinglsey 2004, Porch et al. 2006, Cass-Calay and Schmidt 2008). This is the good news.

The not-so-good news is the continuing uncertainty about the impacts of illegal fishing, catch-release mortality, and habitat loss (particularly juvenile mangrove habitat). The fishery closure reduced fishing mortality by somewhere between 50% and 90% (Kingsley 2004, Porch et al. 2006). A good start, but it makes it difficult to determine the actual status of the adult population, and nearly impossible for the National Marine Fisheries Service (NMFS) to develop management measures aimed at either rebuilding the fishery, ending overfishing, or both, as required by the Sustainable Fishery's Act (SFA). Thus, goliath grouper populations remain listed as overfished.

A meeting of scientists, managers, and user groups convened in March 2003 by NMFS and the Florida Fish and Wildlife Research Institute (FWRI) to address these issues (Kingsley 2004) resulted in the development of a list of research areas required to meet the SFA mandate. Among the key issues identified were: (1) defining age structure of existing populations; and (2) estimating population size through regional surveys around the state using visual techniques and tag and re-sight methods. A follow-up meeting on 6 August 2007 (FWRI, St. Petersburg, FL) focused on identifying data gaps needed to develop an adequate stock assessment. Stock assessment models rely heavily on regional demographics, particularly on age structure. A key issue resulting from that meeting was the importance of addressing the data quality of non-consumptive sampling. A group of scientists from universities (Florida State University, University of Florida, and University of South Florida), a state agency (FWC), and a federal agency (NMFS) joined forces to provide stock assessment biologists with the data they need to reduce uncertainty about population status and to evaluate the ecological role of goliath grouper in Florida. Much of the information presented here results from that body of work.

From 1999 to 2001, Koenig et al. (2007) used non-destructive sampling of juvenile goliath grouper in southwest Florida to determine the age structure, as well as the absolute population density, survival, home range, and recruitment patterns to the adult population, and confirm the critical importance of man groves as nursery habitat for goliath grouper. We modified these methods for adults, recognizing that adults are somewhat more difficult to catch and sample, and demonstrated that the method can be used throughout the species range, and has broad applicability for use on other threatened species, such as Nas sau grouper. Thus, we demonstrated that dorsal fin spines could be used effectively for non-consumptive ageing of juveniles (Brusher and Schull 2008) and dorsal fin rays were reliable for adult ageing, at least up to the late teens, the oldest ages we sampled (Murie et al. 2008). Also, using lasers to estimate fish sizes underwater, we found that regional size distributions are similar, with mean sizes ranging from 132 cm to 152 cm and maximum sizes per region from 160 to 220 cm. The maximum size for goliath grouper is thought to be 240 cm, but larger sizes are likely (Robins and Ray 1986).

Fecundity estimates are a bit more difficult to obtain non-destructively. Traditionally, the gonads are excised from dead fish and processed histologically to derive the appropriate estimates. However, we recently determined the diel timing of spawning and there is a chance that sampling the spawning aggrega tions will give us the necessary estimates directly. In 2005, we decided to try the novel approach of using

sound, rather than direct observation to pinpoint spawning time (Mann et al. 2008). Using both active and passive acoustics, we found strong evidence that the aggregated goliath grouper spawned on dark nights between the hours of 10 PM and 4 AM. We subsequently (September 2008) verified this nocturnal spawning pattern by collecting goliath grouper eggs from Atlantic and Gulf spawning aggregations and verifying their identity genetically. We intend to continue this work in the future and to use the information to make direct fecundity estimates.

Much of the goliath grouper recovery in Florida appears to have its origins in southwest Florida, where there is extensive high quality mangrove habitat inshore to support juveniles, especially in the Ten Thousand Islands (Koenig et al. 2007) and relatively abundant spawning aggregations offshore (Figure 1, Koenig unpublished data). The juvenile abundance increased throughout the Everglades National Park (which includes much of the Ten Thousand Islands) steadily in the late 1990s, and them dramatically between 2002 and 2006 (Cass-Calay and Schmidt 2008). This trend is likely to continue due to the dual recoveries of the adult population and the quality of mangrove habitat resulting from habitat restoration of the Everglades and Florida Bay.

Juvenile fish migrate outward from the nursery habitat as they mature. The juveniles from the Ten Thousand Islands moved either to reefs in the immediate area offshore, toward the Florida Panhandle, or toward the east coast of Florida (Koenig et al. 2007, and unpublished data). This pattern is born out in surveys of adult goliath grouper abundance, based on a compilation of our own diving surveys conducted throughout Florida coastal waters and those of volunteer-reported surveys compiled by REEF (Reef Environmental Education Foundation). These surveys (which had very similar results) indicate a regional pattern of abundance in which fish are relatively abundant in the southwest and the south central eastern region (Palm Beach Co.), but relatively sparse elsewhere (Figure 2). While adults exhibit very strong site fidelity, with 86% (138/160 total) of adult recaptures moving less than 1 km (Koenig unpublished data), this suggests that density-dependent factors may act to drive adults out from the southwest region to other areas.

Regardless of these data, some commercial and recreational fishermen want NMFS to reopen the fishery at some level, while other interested parties (including Environmental Defense, Gulf Restoration Network, the Ocean Conservancy, Ocean Futures Society, and Reefkeeper International, and various ecotourism diving interests) want NMFS to adhere to the SFA mandate and keep the fishery closed and manage it at 50% SPR (Spawning Potential Ratio), the designated level for fishes like goliath grouper that are highly vulnerable to fishing.

Most of the call to reopen the fishery is based on the perception that goliath grouper predation on reef fish—particularly grouper and snapper-- negatively impacts the resource. Because goliath grouper are large, goes the perception, they must consume overwhelming quantities of prey. There are no scientific data to back up this assumption and a considerable amount to contradict it. Our data, based on sampling the diet of about 250 goliath grouper (mostly large juveniles and 30 adults), show that despite their size, goliath grouper feed at a rather low trophic level, largely composed of crustaceans (crabs and shrimp) and slow-moving fish such as toadfish (Figure 3), with an overall isotopic signature (mean ^{13}C values -10.3 ‰ and mean ^{15}N values = 11.0 ‰) closer to that of pinfish than to top-level predators. This agrees with historical accounts of adult goliath grouper diets in the Bahamas, the West Indies, and the Gulf of Mexico (Beebe and Tee-Van 1928, Erdman 1956, Randall 1967, and Bullock and Smith 1991), which include primarily crustaceans with fish species such as catfish, angelfish, filefish, burrfish, parrotfish, stingray, spadefish, cowfish, and porcupine fish, but no groupers or snappers. Also, the large size of a goliath grouper is not *prima facie* evidence of a high rate of food intake. All else being equal, large fish eat more than small fish, but, a single large fish requires lower daily food intake than an equivalent mass of smaller fish of the same species. This pattern exists for all fish because both growth rate and metabolic rate decline with fish size (Brett and Groves 1979). Although food-intake rates have not been directly estimated for goliath grouper, we can safely assume that they are low based on the fish's sedentary life style.

Goliath grouper have likely been a dominant component of the reef communities of Florida for millions of years, but fishing and habitat destruction have taken their toll since the early part of the 20th Century (McClenachan 2009). The historical influence of these once abundant, large secondary consumers on the reef systems of south Florida can only be imagined (Zabel et al. 2003) primarily because we have virtually no knowledge of the state of Florida's reef ecosystems prior to man's influences on habitat (Ogden 2005) and fish populations. In the interest of conjecture, then, we suggest that there are two primary ecological influences that goliath grouper might have: first as a natural control of invasive species, such as lionfish, and second as an architect of reef design. As a recovered population, they may also have a positive economic effect on diver ecotourism.

Trophic patterns suggest that goliath grouper exerts predation pressure on both crustaceans and slow-moving fish species whose major defenses are venomous spines. Such food preferences are pre-adaptive for foraging on invasive venom-spined species such as lionfish. There is anecdotal evidence that lionfish populations on the east coast of Florida decreased as goliath grouper populations increased, and there are reef surveys showing a negative correlation between lionfish abundance and goliath grouper abundance, but as yet there are no experimental data supporting this conjecture. Goliath grouper might also be important in their ability to uncover storm-smothered reefs and ledges, because they are capable of limited excavation (Koenig, unpublished data). Because of the altered state of Florida reef communities and the early stage of goliath grouper recovery, their ecological influence remains unclear.

What is clear, however, is the great opportunity bestowed on Florida's diving ecotourism industry by the presence of these huge reef fish that can be viewed at close quarters in the natural environment. It seems that the economic benefits of goliath grouper have not been realized yet. Nowhere in the world can dozens of huge, but harmless reef fish be viewed at arm's length. The diving industry of Florida is just beginning to realize the enormous resource available to them. And, although valuation of tourist-related diving activities in Florida is unknown at this time, it is likely that the industry will grow and realize that live goliath grouper are economically more valuable than dead ones. Therefore, management for goliath grouper should consider, in addition to fishing, the benefits to the diving industry.

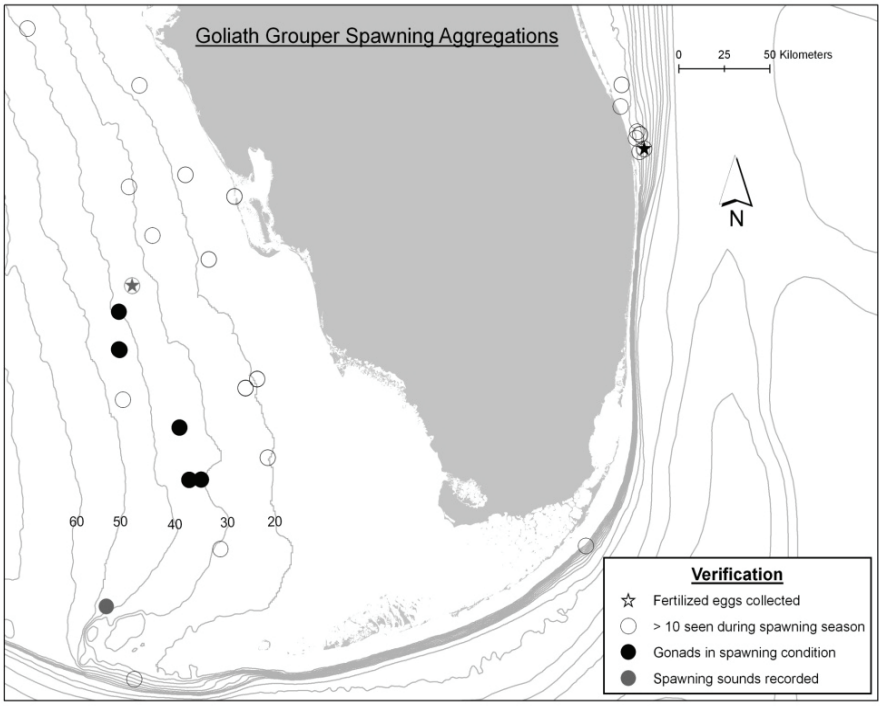

Figure 1. Distribution of actual and presumptive goliath grouper spawning aggregations in south Florida.

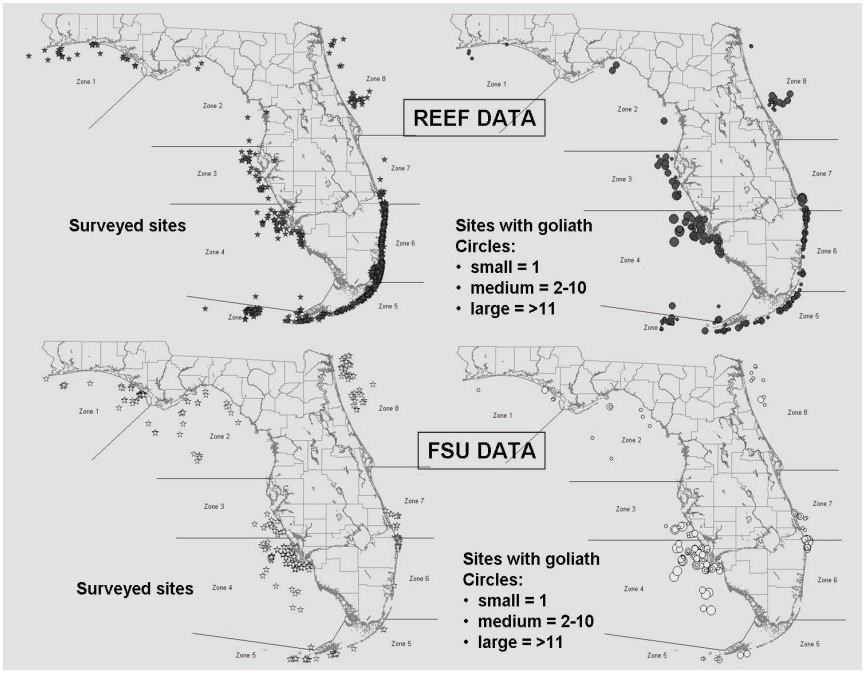

Figure 2. Regional site densities of goliath grouper in Florida. Surveyed sites are on the left and densities are on the right. REEF's (Reef Environmental Education Foundation) data in upper right image and FSU's (Florida State University) data in the lower right image show similar patterns of abundance.

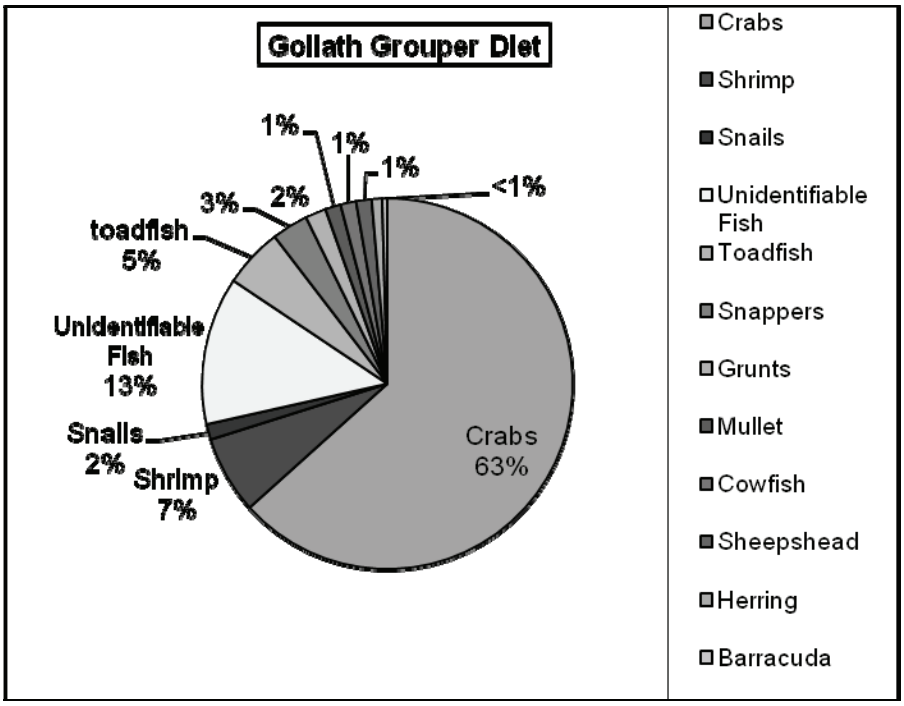

Figure 3. Goliath grouper diet by percentage of prey items. This diagram represents stomach samples from about 250 individuals from south and southwest Florida.

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Thanks to the following 2009 meeting raffle prize donors:

Rivermen Whitewater 1800-545-7238, Webster's Marine (Tallahassee) (850) 562-1052, Lake Talquin Lodge (850) 627-3822, Lazy Daze Campground (850) 575-2267, Crum's Bait and Tackle (Panacea) (850) 984-5501, Ingram's Marina (850) 627-2241, www.hookedupcharters.us, www.laidbackcharters.com, www.smith-root.com, American Fisheries Society (www.fisheries.org),

Cabela's, PowerPro, Tru-Turn, Talquin's First Cast (850) 627-5873, U.S. Fish and Wildlife Service, FL. Landscaping Brokers – Jamie Brown – Groveland, FL (352) 429-5380, www.Profishchum.com, Fred Fisher (www.aquatic-impressions.com), Joe Budd Aquatic Education Center, Gulf States Marine Fish Commission, USGS (Clemson), Canoe Shop (Panama City), Capt's Table Restaurant (Panama City), Panama City Marina, Paul Brent, Artist (Panama City), Half Hitch Tackle (Panama City Beach), Wal-mart (Panama City Beach), West Marine (Panama City Beach), Capt. Anderson's Restaurant (Panama City Beach), J. Micheal's Bar and Grill (Panama City Beach), Sunjammer's Sports (Panama City Beach), Anderson Fishing Fleet (Panama City Beach), "Jubilee" Deep Sea Fishing (Panama City Beach), Bill Jackson Outdoors (St. Petersburg), Angie's Marine Supply (Medart, FL), Florida FWCC, FSU Coastal and Marine Lab, Gander Mountain, Gheenoe Inc. (Titusville, FL), University of Florida (Dept. of Fisheries and Aquatic Sciences), NOAA Fisheries (Panama City), Larry Conner, Daine Peebles (Artist)

Minutes of the 29th Annual Meeting of the Florida Chapter American Fisheries Society
Business Meeting
February 18, 2009
4-H Camp Ocala, Altoona, Florida

The Florida Chapter Business meeting commenced at 7:10pm on Wednesday, February 18, 2009 at the Ocala 4H Camp in Altonna, FL.

Will Patterson (President) began the meeting by introducing the Southern Division American Fisheries Society (SD AFS) past-president Steve McMullin (Virginal Tech, Department of Fisheries and Wildlife Services). Steve provided a brief description of the 2009 SD AFS Spring Meeting that was held in New Orleans, Louisiana, January 15-18, 2009. The meeting was a great success and had over 400 participants. Steve's primary concerns during his tenure as the President of the SD AFS were financial matters such as the Southern Division Disaster Relief Program that was initiated in 2006 and setting aside monies to assist in 'rainy day' expenses. The SD AFS income is collected through two means (1) rebate monies from national AFS membership and (2) annual spring meetings. Southern Division AFS has begun a membership challenge for all chapters that consists of a traveling plaque that is awarded to the chapter with the highest number of chapter members that are also members of the parent society. The chapter that receives this award also receives a donation from SD AFS to a charity of the chapter's choice. Southern Division AFS also maintains a huge commitment to students and annually spends ~$5,500 of the SD AFS budget to support student travel expenses to the annual Spring SD AFS meeting, annual Student Colloquium, and to the annual Fall meeting of the Southeastern Association of Fish and Wildlife Agencies. Steve reminded us that selected presentations (including business meeting) from the spring 2009 meeting will be available via podcast through the SD AFS website (http://www.sdafs.org/). Finally, the SD AFS has had another successful electronic election (Vice President – Steve Lochmann, Secretary/Treasurer – Dave Coughlan, and SDAFS Representative to the AFS Nominating Committee – Mark Oliver).

The SD AFS is hosting the 2009 AFS parent society meeting in Nashville, TN (Aug 30 – Sept 3) and the 2010 Southern Division Spring meeting will be held in Ashville, NC.

Steve then thanked the FL chapter for inviting him to our meeting and was fortunate that other business brought him to central Florida. Will continued the meeting by acknowledging the current Executive Committee of FL AFS (President-Elect- Debra Murie and Secretary/Treasurer- Linda Lombardi), Past Presidents of the American Fisheries Society Southern Division: John 'Jack' Dequine, Marty Hale, Larry Connor, Past Presidents of the Florida Chapter: 1986-87 Marty Hale, 1988-89 Wes Porak, 1992-93 Ron Taylor, 1995-1996 Steve Miller, 1997-98 Larry Connor, 2005-06 Rich McBride, 2006-07 Chuck Cichra, 2007-08 Eric Nagid and past Presidents of American Fisheries Society Sections: Marine Fisheries Debra Murie and Introduced Fish Jeff Hill that were present during the 29th Annual Meeting of Florida Chapter of the American Fisheries Society.

The 2008 Business Meeting Minutes were printing in the 2008 April issue of the FL AFS newsletter and were approved by all attending FL chapter members.

Linda Lombardi (Secretary/Treasurer) presented the 2009 Treasurer Report (appearing in this newsletter) and was approved by all attending FL chapter members.

Andy Strickland, Raffle Coordinator, provided an update on raffle sells, silent auction items, and acknowledged those present that assisted in gathering merchandise for the raffle: Nick Trippel ($350 guided bass trip), Kathy Guidon (Diane Pebbles print and frame), and Alan Collins (numerous items from tackle, marinas, and department stores). Andy requested anyone that brought items for the raffle to provide the names of businesses to him so that the FL Chapter could appropriately express our gratitude to those individuals.

Chuck Cichra presented this year's Student Travel Grants and Rottmann Scholarship awards.
The FL Chapter was able to provide student travel grants, from 2008 raffle profits, to 18 recipients (nine students from the University of Florida – Christian Barrientos, Edward Camp, Stuart Carlton, Felipe Carvacho, John Hargrove, Matt Lauretta, Patrick O'Rouke, Geoffrey Smith, Jake Tetzlaff, eight students from NOVA Southeastern University – Bryan Armstrong, Shannon Bayse, Kerri Bolow, Cheryl Cross, Heidi DaSilva, Ethan MacHemer, Mae Taylor Gabriela Wisniewski and one undergraduate student from Eckerd College – Caroline Storer). Chuck provided a historical perspective of the Rottman Scholarship and presented certificates and monetary awards ($500 each) to this year's recipients: Doctor of Philosophy Stuart Carlton (UF, SNRE) and Master of Science Patrick O'Rouke (UF, FAS).

Larry Connor provided a summary of current balance in the Rottmann Scholarship (as of December 2007: $27,468 and as of December 2008: $17, 828). Larry discussed either increasing the number of Rottmann Scholarships awarded each year and/or increasing the value of the award, but due to the huge loss of this fund in 2008 this subject was dismissed with no opposition from attending FL chapter members. Larry also provided an update to our membership and as of December 2008, the Florida Chapter of American Fisheries Society has a total of 229 members including 44 students and, of which, 145 (63%) are members of the parent society. This is an overall increase in membership by 6.5% and a 46.7% increase in student memberships from 2007.

Stuart Carlton (Student Sub-unit 2008 Vice President/Treasurer) provided the Student Sub-unit meeting summary and expressed his appreciation to both the chapter and to the Southern Division AFS for their commitment to students. The Student Sub-unit held elections and 2009 officers were elected: Alicia Adamson (UF/ FAS) President, Karrie Bolow (NOVA) Vice President, and Heidi DaSilva (NOVA) Treasurer.

Eric Nagid revisited past business relating to the Florida chapter's hosting of the 2011 Southern Division Spring Meeting. Last year after the 2008 FL AFS annual meeting an ad-hoc committee was organized (Eric Nagid- FWC, Kevin Johnson- FWC, and David Kersetter- NOVA). The committee has used information provided by the SD AFS to start planning this meeting. The chapter's main responsibility is to find an appropriate location given such criteria as location (some where sunny and warm in February), night life, cost, and distance to and from a major airport. The feasibility of the chapter being able to fulfill this task was put to vote (1st by Larry Connor and 2nd by C. Bradshaw) and was approved by all attending FL chapter members.

2009 FL chapter elections were presented by Eric Nagid. The nominations were President-Elect: Linda Lombardi (NOAA Fisheries) and Dennis Renfro (FWC) and Secretary/Treasurer Travis Tuten (FWC). Nominations were opened to the floor but no new candidates were presented therefore, nominations were closed by Larry Connor and seconded by Will Patterson. Florida chapter members nominated Linda Lombardi as the 2009 President-Elect and Travis Tuten as the 2009 Secretary/Treasurer.

Executive Committee for 2009 will be Debra Murie (President), Linda Lombardi-Carlson (President-Elect), Will Patterson (Past-President), and Travis Tuten (Secretary-Treasurer).

The meeting was then handed over to the 2009 President, Debra Murie.

New business
Deb Murie presented plaques to Will Patterson (2008 President) and to Aaron Bunch (2008 Student Sub-Unit President).

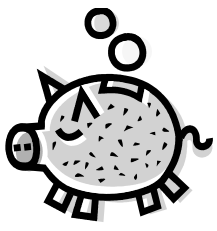
Eric Nagid provided an update regarding the two new awards were approved by members in 2008: Outstanding Achievement Award and Career Excellence Award. The descriptions of both of these awards were presented in the 2008 January issue of the FL chapter newsletter and continued efforts by the Ex-Com have edited the descriptions to the present language. The Career Excellence Award has been renamed as the Rich Cailteux Award and it was suggested to add 'mentorship' to the description (suggested by A. Strickland, approved by all members). A small committee (including Chuck Cichra and two other FL AFS members) will be formed to review future nominations to these awards.

This year's meeting had record attendance at 93 participants including 28 students from all degrees of education (undergraduate, masters and PhD). Students also accounted for 11 of the 40 symposium presentations and 8 of the 12 poster presentations.

The 2009 Florida Chapter Business meeting adjourned at 8:15 pm (1st by Larry Connor and 2nd by S. Carlton).

2008 Treasurer's Report Florida Chapter AFS

1 January 2008 to 31 December 2008



	Checking	Mutual Funds	Total
January 1, 2008	$ 5,411.90	$ 11,520.48	$16,932.38
December 31, 2008	$10,593.95	$ 7,365.37	$17,959.32
Difference:	$ 5,182.05	$ (4,155.11)	$ 1,026.94

Credits:

Deposits		$ 19,990.08
Dividends & Interest		$ 483.10
Other credits: capital gain		$ 180.43
	Total:	$ 20,653.61

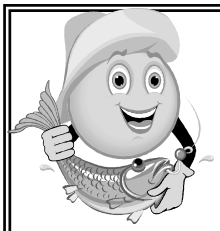
Debits:

Annual Meeting vender & supplies		$ (12,216.43)
Rottmann Scholarship		$ (1000.00)
Newsletters & mailing		$ (839.73)
Raffle costs		$ (583.64)
Funds to Purchase Securities		$ (416.75)
Annual bank fees		$ (330.00)
AFS Liability Insurance		$ (150.00)
	Total:	$ (15,536.55)

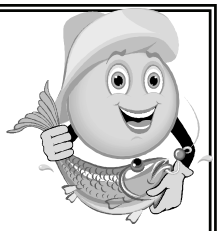
2008 Balance	**$ 5,117.06**

Major Expense Categories:

Annual Meeting, including Raffle	82%
Student scholarships	6.5%
Newsletters	5.5%
Securities purchased	3%
Other: banking fees, insurance etc.	3%



2009 Annual Meeting Presentation Awards



Student Paper

Best: Matt Catalano (PhD Candidate, University of Florida). Bonvechio, K., M. Catalano, R. E. Sawyers, and S. Crawford. Determining Electofishing Sample Size for Monitoring Fish Communities in Three Florida Lakes.

Honorable Mention(s): Caroline Storer (Undergraduate, Eckerd College). Storer, C.G., R.C. Harbeitner, A. Rickli-Rahman, N.W. Van Bibber, and W.A. Szelistowski. Molecular population structure and biogeography of the Gulf Pipefish, *Syngnathus scovelli*, in Florida waters.

Jake Tetzlaff (PhD, University of Florida). Tetzlaff, J.C, W.E. Pine,III, and T.K. Frazer. Movement and Habitat Use of Three Florida Riverine Fish Species.

Professional Paper

Best: Angela Collins (Florida Fish and Wildlife Conservation Commission, St. Petersburg). Goliath Grouper in the Gulf: A Goliath survey of reefs and wrecks off Florida's central west coast.

Honorable Mention: Jessica Carroll (Florida Fish and Wildlife Conservation Commission, St. Petersburg). Carroll, J., and S. Lowerre-Barbieri. Assessing Sex Specific Growth and Mortality in Spotted Seatrout, *Cynoscion nebulosus*, in Tampa Bay, Florida.

Student Poster

Best: John Hargrove (MS, University of Florida). Hargrove, J., D. Parkyn, D. Murie, and J. Austin. Use of polymerase chain reaction to aid in visual analysis of stomach contents of French grunts.

Honorable Mention: Heidi Da Silva (MS, Nova Southeastern University). Da Silva, Heidi, Cheryl Cross, and David W. Kerstetter. Combined stomach content and stable isotope analyses of three mesopelagic teleost fishes.

Professional Poster

Best: Derek Tremain (Florida Fish and Wildlife Conservation Commission, Melbourne). Mercury levels in ichthyotrophic resources in the eastern Gulf of Mexico – a preliminary overview.

2009 Meeting Survey Results

I appreciate the feedback that I received from the 2009 Annual Meeting Survey. I received 71 (from 93 participants) surveys. The facilities and food were rated good/fair and the symposium/presentations were given an excellent mark. I received many helpful suggestions to assist in making next year an even better experience. I will attempt to resolve any issues brought to my attention with the 4H Camp Ocala event co-ordinator. If there are any other issues or comments, please do not hesitate to contact me.

Thanks again,

Linda Lombardi-Carlson
FL AFS President-Elect
Email: linda.lombardi@noaa.gov

FACILITIES	Excellent	Good	Fair	Poor	Not applicable
BEDROOM	19%	**36%**	13%	3%	29%
BATHROOM	17%	**34%**	31%	6%	13%
CAFETARIA	16%	**54%**	28%	1%	1%
POSTER AREA	7 %	**62%**	27%	4%	0%
GROUNDS	40%	**57%**	3%	0%	0%

Comments/Suggestions: see website for complete results

FOOD	Excellent	Good	Fair	Poor	Not applicable
BREAKFAST	6%	22%	**30%**	15%	27%
LUNCH	4%	25%	**38%**	17%	15%
DINNER	10%	**36%**	22%	13%	18%
SNACKS	22%	**48%**	14%	5%	12%

Were there enough beverages provided throughout the meeting? 100% YES, 0% NO

Comments/Suggestions: see website for complete results

SYMPOSIUM	Excellent	Good	Fair	Poor	Not applicable
RELEVANCE	**70%**	28%	1%	0%	0%
ARRANGEMENT	42%	**47%**	7%	0%	4%
TIMELINESS	**55%**	38%	3%	0%	4%

Comments/Suggestions: see website for complete results

Would you be interested in having vendors (i.e. consulates, equipment) present during our annual meetings? 51% YES, 49% NO

Student Section

Student Research Highlight

Alecia Adamson

Graduate Research Assistant
Program of Fisheries and Aquatic Sciences
University of Florida, Gainesville, FL

Marine Protected Areas (MPAs) are habitat conservation areas designated with varying levels of use restrictions aimed at reducing anthropogenic impacts. One of the primary goals of MPAs is to sustain or increase the biomass of economically important fisheries. The Florida Keys National Marine Sanctuary (FKNMS) is an MPA encompassing 9500 km^2, however, fishing is permitted throughout much of this area. In 1997, 18 non-extractive use areas, each covering an area of approximately one square kilometer, were established along the reef tract in the FKNMS. These Sanctuary Preservation Areas (SPAs) were created to protect prime coral reef habitats and their associated organisms but their effectiveness has been questioned due to the small area of protection.

Large resident fish, such as the hogfish, *Lachnolaimus maximus*, may have a home range that extends past the boundaries of these SPAs, subjecting them to fishing pressure. A long-term creel survey of Biscayne National Park revealed that relatively few hogfish are caught by hook and line when compared to those (85%) harvested by spear. Spearfisherman specifically target hogfish because they are highly palatable and can be easily approached while snorkeling or diving. Hogfish are believed to exhibit strong site fidelity on a daily scale. However, when movement was examined on an hourly basis, site fidelity of acoustically tagged juveniles was not strong. If spearfisherman hunt the peripheries of SPAs, there may be little or no difference in hogfish abundance and distribution within and along the borders of SPAs when compared to non-restrictive areas.

Hogfish are monandric, protogynous hermaphrodites (i.e. fish all begin life as females with the ability to transition into males as they grow larger). Hogfish form harems of 2-15 females per large male, which are highly prized by spearfishermen for their size. Upon removal of these harem-dominating males, spawning activity is disrupted. There is strong size-structure evidence showing that hogfish are currently growth overfished in the Florida Keys. Furthermore, egg per recruit models for south Florida indicate hogfish are in danger of recruitment overfishing at the current minimum size limit of 12" forklength. Research suggests a six inch increase in minimum harvestable length to maximize sustainable yield for hogfish in south Florida. It is likely that stakeholders would oppose such a drastic change in size regulation. Without more conservative regulations, protected habitat areas large enough to allow population growth, survival, and reproduction are essential in providing sufficient recruitment compensation for the fishery.

It is my goal to determine whether SPAs protect hogfish, using tagging and visual surveys, to measure abundance, mean size, spawning harem size, sex ratio, and site fidelity relative to unprotected areas outside the SPAs. Hogfish will be captured at replicate sites within the non-extractive use SPAs, on the periphery of SPAs, and considerable distance outside the SPAs. Data for each specimen will be recorded prior to implanting a spaghetti tag at the base of the dorsal fin. By revisiting established sites to perform visual surveys of tagged fish, specific harems will be monitored over the course of a year. The maintenance or fate of these harems after removal of the dominant male is largely unknown. Through reported recaptures of tagged hogfish and diving surveys, I hope to gain insight on the fate of both individual hogfish and collective harems relative to site zoning.

ROTTMANN SCHOLARSHIP RECIPIENTS!!!

The Masters-level recipient is Patrick O'Rouke (left). He is a MS student at the University of Florida, School of Forest Resources and Conservation, Program in Fisheries and Aquatic Sciences. His advisor is Mike Allen.

The Doctoral-level recipient is Stuart Carlton (right). He is a PhD student at the University of Florida, School of Natural Resources and the Environment. His advisor is Susan Jacobson.

Student Travel Grant Recipients:

Armstrong, Bryan	Nova SE	MS	Hargrove, John	UF	MS
Barrientos, Christian	UF	PhD	Lauretta, Matthew	UF	PhD
Bayse, Shannon	Nova SE	MS	Machemer, Ethan	Nova SE	MS
Bolow, Kerri	Nova SE	MS	O'Rouke, Patrick	UF	MS
Camp, Edward	UF	MS	Smith, Geoffrey	UF	MS
Carlton, Stuart	UF	PhD	Storer, Caroline	Eckerd	BS
Carvalho, Felipe	UF	MS	Taylor, Mae	Nova SE	MS
Cross, Cheryl	Nova SE	MS	Tetzlaff, Jakob	UF	PhD
Da Silva, Heidi	Nova SE	MS	Wisniewski, Gabriela	Nova SE	MS

Student Sub-unit News

Your new officers:

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