The Shellcracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

http://www.sdafs.org/flafs

October, 2013

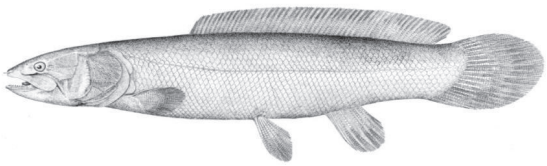
President's Message:

It's official – WE GOT IT!! The Florida Chapter will be hosting the 147th Annual AFS Meeting in Tampa, Florida in August 2017! Kerry Flaherty, Linda Lombardi, Tammy Lamm (Tampa Bay representative), and myself presented the bid to the Time and Place Committee in Little Rock, Arkansas on Sunday September 8th. Tammy Lamm and the Tampa Bay Visitors Bureau put a lot of effort in the bid and made the City of Tampa stand out. The Time and Place Committee made multiple comments about how well prepared the bid was and they were particularly impressed by the Chapter support, with 40 Florida Chapter members already signed up. They were also impressed with the support we have from different agencies. Now it's time to start making some plans. There is some discussion coming from AFS about changes in the way Annual Meetings are managed, with the probability of getting professional meeting planners involved instead of biologist setting up the entire meeting. That's good news for future host chapters and should definitely be a huge help for us. If you're signed up to help on a committee, thanks and we'll get more information to you shortly. If you haven't yet signed up yet and would like to get involved, you can always contact Kerry Flaherty Kerry.Flaherty@myfwc.com or myself Travis.Tuten@myfwc.com and we will get you set up.

The Little Rock Meeting was my first Annual Meeting and was a lot of fun. The Arkansas Chapter did a great job of setting up and running the meeting. Little Rock surprised me a bit - I thought it would be a bigger city for some reason. I met quite a few people from throughout the country and also had the chance to see a bunch of folks I have worked with in the past that have since moved away from Florida. I learned some things too. One of the symposiums was titled 'Using Social Media to Improve Communication in the Fisheries Profession and Engage the Public'. Considering where we are today in terms of technology and where we might be 10 or 20 years from now, there is increasing emphasis on using social media to communicate our work. I made it to a few of the presentations in the symposium and without question, the most impressive presentation I saw throughout the entire conference came from one of our past Chapter members, Patrick Cooney, who now works in Vancouver, Washington. He gave an overview of The Fisheries Blog that he and three others started in order to provide a broader audience a different read about fish related topics on the internet. He highlighted the low number of times some of the most popular articles in AFS Journals have been downloaded and gave examples of how some of the recent posts on 'The Fisheries Blog' have gone viral. One of which, had over 45,000 views, drawing attention from both national news organizations and high school science classes. Overall, it was an entertaining and informative presentation, and encouraged us to think outside the box. The message was to try and communicate information about projects we work on using angles that get people's attention, not only the scientific community within a narrow realm, but to as large of an audience as possible. It's already October and we are a little over four months away from our 34th Annual Meeting in Ocala. Our Chapter Meeting is set for February 18th – 20th and our President-elect Chris Bradshaw is putting together a great symposium titled 'Research and Management: Tag Team Titans', which will emphasize the interactions of research and management. Our Secretary/Treasurer Cheree Steward has already set up online registration and payment methods, which can be found on the Florida Chapter Website. The first call for papers and more information about the meeting and registration can be found on pages 9—11 of this newsletter. If you have any questions about the meeting, or registration and payment options, please contact Chris Bradshaw Chris.Bradshaw@myfwc.com or Cheree Steward Cheree.Steward@myfwc.com.

Enjoy the Fall and see you soon!

Travis Tuten,
Florida Chapter AFS President



Getting in Touch

President
Travis Tuten
FWC/FWRI
7922 N.W. 71st Street
Gainesville, FL 32653
Phone: (352) 955-3220 ext. 113
Email: travis.tuten@myfwc.com

President-Elect
Chris Bradshaw
FWC/FWRI
100 Eighth Avenue, SE,
St. Petersburg, FL 33701.
Phone: (727) 896-8626
Email: chris.bradshaw@myfwc.com

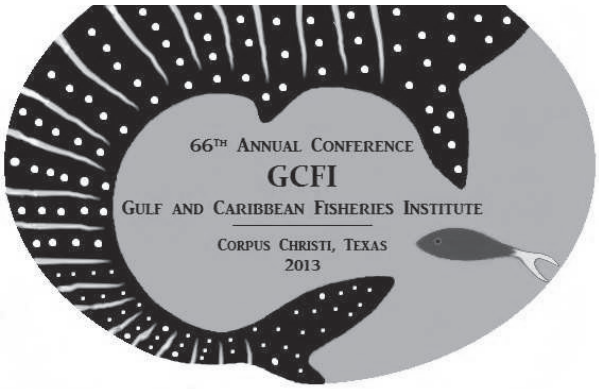
Secretary/Treasurer
Cheree Steward
FWC/FWRI
601 W. Woodward Ave.
Eustis, FL 32726
Phone: (352) 357-2398 ext. 244
Email: cheree.steward@myfwc.com

Student Sub-unit Leader
Ross Boucek, Department of Biology
Florida Coastal Everglades Long Term Ecological Research, Florida International University
11200 SW 8th Street, ECS 119
Miami, FL 33199

Newsletter Editor
Daryl Parkyn
SFRC Program of Fisheries & Aquatic Sciences
University of Florida
Phone: (352) 273-3619
Email: dparkyn@ufl.edu

Past President
President
Kerry Flaherty
FWC/FWRI
100 8th Ave. SE
St. Petersburg, FL 33701
Phone: (727) 896-8626 ext. 2118
Email: kerry.flaherty@myfwc.com

Upcoming Events



4 November 2013 - 8 November 2013

2014 Global Seafood Market Conference. *The Global Seafood Market Conference will be held on January 14-16, 2014 in Miami Beach, FL.* contact Suzanne Arteaga, CMP at 703-725-8898 or sarteaga@nfi.org.

2014 **Florida Chapter American Fisheries Society Meeting.** Altoona, FL. February 18 – 20, 2014.

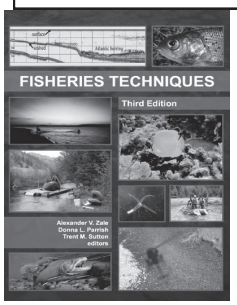
2014. Fisheries Bycatch: Global Issues and Creative Solutions. 29th Lowell Wakefield Fisheries Symposium. Hilton Hotel, Anchorage, Alaska, May 13–16, 2014. Contact: Symposium coordinator, seagrant.meetings@alaska.edu

2014 Ecological and Evolutionary Ethology of Fishes. Corvallis Oregon, June 22-26, 2014

Check out our Parent Society's calendar at http://www.fisheries.org/afs/calendar.html

Answers from page 8. A. Oyster Toadfish B. Mud Sunfish

New Titles



Fisheries Techniques, Third Edition

Alexander V. Zale, Donna L. Parrish, and Trent M. Sutton, editors . Published by the American Fisheries Society. 2012

ISBN: 78-1-934874-29-5

A comprehensive instructional and reference volume on fisheries sampling and analysis methodologies. This new edition has a greater emphasis on quantitative techniques and estuarine and marine systems than previous editions. Several Chapters are authored by Florida Chapter members, including Debra Murie, Mike Allen, Bill Pine, and Daryl Parkyn. The book is intended for practicing fisheries professionals, researchers, professors, and advanced undergraduate and graduate students.

Saving a Million Species: Extinction Risk from Climate Change.

Lee Hanna (editor). Forward vy Thomas Lovejoy. Published by Island Press. 366 p. 2012.

ISBN-10: 1597265705 | ISBN-13: 978-1597265706 *Saving a Million Species* examines the question, how many species (including fish species) will perish as a result of climate change and associated threats? Written by leaders from a wide range of disciplines, it offers detailed and clear explanations synthesizing current literature and elaborating on policy implications and the conservation of species in the light of global climate change science.

Overfishing: What Everyone Needs to Know

Ray Hilborn with Ulrike Hilborn

ISBN: 978-1-934874-28-8 Published by the Oxford University Press, NY. 2012.

Overfishing: What Everyone Needs to Know provides a balanced explanation of the scientific, economic political and ethical issues associated with overfishing. Topics include: historical overfishing, high seas fisheries, recreational fisheries, illegal fishing, climate and fisheries, trawling, economic and biological overfishing, and marine protected areas. To illustrate the effects of each of these issues, they incorporate case studies of different species of fish.

Student Sub-Unit News

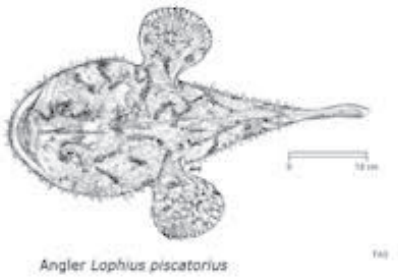
Productive times for the Florida AFS student subunit. The student run Florida Fisheries Science blog is continuing strong with Chelsey Crandall's video post explaining how and why we age fish, found at floridafisheriesscience.blogspot.com. Additionally a collaborative FL AFS student subunit freshwater fish fitness project continues to make substantial progress with preliminary results expected to be presented, by a student, at upcoming AFS events. Janice Kerns will also be leading an experimental study design and analysis workshop at the next SD AFS meeting. We all have plenty of exciting things to look forward to! Congratulations to:

Janice Kerns: Elected AFS student subsection secretary/treasurer. Janice, also just finished her Dissertation! Congratulations Dr. Kerns.

Kyle Wilson: Elected Canada division representative Joy Young: Skinner memorial award honorable mention . Kyle recently finished his Masters's degree and has moved from Gainesville to the great rodeo city of Calgary to conduct his Ph.D. studies. Congrats to Kyle.

Felipe Carvalho has moved to Hawaii to finish the last phase of his dissertation with his wife Julie, who is working on Reef Ecology at the Hawaii Institute of Marine Biology.

Joshua Kilborn: Awarded a travel grant for the ICES meeting



Angler *Lophius piscatorius*

Interested in contributing something to the Shellcracker? Email Daryl Parkyn dparkyn@ufl.edu with articles or information that you would like to be included upcoming issues. The deadline for the next issue is Sept 28, 2013, so start writing.

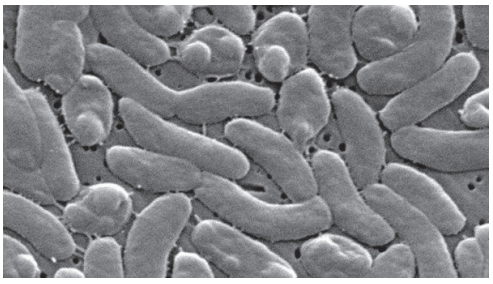
Editorial

Waterborne-disease in Florida

With the recent death of an otherwise healthy recreational fisher In Florida from *Vibrio vulnificus,* we at the Shellcracker felt it was prudent to remind everyone of the risks of waterbourne illness. It is important as researchers working on the water that we have some understanding of the risks to which our jobs expose us. As of October 26, 36 people have contracted this disease in Florida and 10 have died.

According to State Epidemiologist in Hillsborough County, Amy Pullman, more people have contracted *Vibrio* infections from exposure than from consumption of contaminated, raw seafood such as oysters.

Be aware of skin lesions exposed to water. See medical attention if they show signs of expanding or spider shaped marks leading away from the wound.



Vibrio vulnificus. Photo credit: Wikipedia

In Freshwater, a similar risks exist. A 12 year old Florida boy and 4-year-old boy from Louisiana both died in August from amoebic encephalitits, a rare brain infection caused by *Naegleria fowleri* . Recently a 12 year old girl in Arkansas survived an infection by this amoeba. She is one of only two known survivors of this type of infection.

A few years back two men in Louisiana died from an amoeba infection contracted though the use of contaminated tap water during nasal lavage, a method rinsing the sinuses to reduce the severity of allergies.

Florida Lakewatch, a University of Florida—based research initiative directed by limnologist Mark Hoyer recently published an article on this latter disease, which we would like to reprint here to help you to be able to respond better to questions about the risks of type of infection, however small the chances of contracting this disease.

Feature Article

Amoebas in Lakes —Reprinted with permission from Florida Lakewatch

With the recent death of a 12 year old south Florida boy we decided to reacquaint ourselves with the aquatic amoeba with a bad reputation, *Naegleria fowleri*. Of 128 known cases in the United States past half<century, just two patients have survived, according to the Centers for Disease Control and Prevention. Fortunately, the chances of coming in contact with *Naegleria*, or contracting the resulting illness (Primary Amoebic Meningoencephalitis—PAM, for short) are quite slim. "In Florida, health officials estimate that there is only one case for every 2.5 million hours that people spend in freshwater. Drowning and boating accidents pose a much greater threat to our state's water enthusiasts.

With the recent death of a 12 year old south Florida boy we decided to reacquaint ourselves with the aquatic amoeba with a bad reputation, *Naegleria fowleri*. Of 128 known cases in the United States past half<century, just two patients have survived, according to the Centers for Disease Control and Prevention. Fortunately, the chances of coming in contact with *Naegleria*, or contracting the resulting illness (Primary Amoebic Meningoencephalitis—PAM, for short) are quite slim. "In Florida, health officials estimate that there is only one case for every 2.5 million hours that people spend in freshwater. Drowning and boating accidents pose a much greater threat to our state's water enthusiasts.

In Florida, health officials estimate that there is only one case for every 2.5 million hours that people spend in freshwater. Drowning and boating accidents pose a much greater threat to our state's water enthusiasts. With that said, there are a few precautions swimmers can take to decrease their chances of exposure even more. The first thing you should know is that, with the exception of Antarctica, this amoeba is believed to exist in virtually every lake and river around the world. It is also found in spas, hot tubs, thermally enriched waters and poorly chlorinated swimming pools. So, if you're thinking of sampling avoiding

water bodies with containing this organism, you might get a little lonely.

Everyone can be further protected by wearing ear plugs and a nose clip (or a dive mask that covers the nose) when swimming. Photo Credit Joe Richard

What is an amoeba?

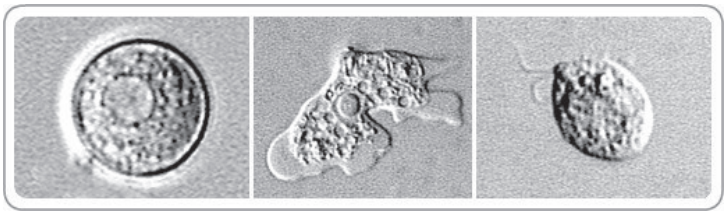
Several types of free living amoebas are found in soils, but only certain species cause disease. *Nagleria* is one of those species. It has three life forms, including cyst, trophozoite and flagellate. The cyst permits the amoeba to overwinter in the lakes. The flagellate is the mobile form that can move from one place to another. The trophozoite is the feeding form that is infectious.

So, how does one avoid the amoeba?

The best way to prevent exposure to Naegleria*is to avoid stirring up bottom sediments, as this is where the amoeba lives and feeds on bottom sediments composed of fallen leaves and dead plants. Once sediments are mixed into the water column, the amoeba could be forced up the nose of a swimmer who jumps or falls into the water. This increases the chance for it to enter into an ear or nasal passage where it can follow the olfactory nerve and gain entry into the brain, where it has been known to cause problems. It's important to note that swimmers who have contracted PAM usually got it after rooting around the lake bottom, in heavy silt where the amoeba lives. Therefore, keeping one's face away from the bottom of a lake, river, canal, etc. and keeping swimmers from jumping off a dock into shallow water—or any other scenario that would result in the disruption of bottom sediments—will significantly reduce the risk of exposure to *Naegleria*. Young children are at the highest risk of exposures they tend to engage in such activities. Everyone can be further protected by wearing earplugs and a nose clip (or a dive mask that covers the nose) when swimming. Remember, exposure to bottom sediments is the single MOST important factor that increases chances for infection. During most of the year, concentrations of *Naegleria* are rarely high enough to cause public health problems. However, as water temperatures rise during the summer (82—86 degrees Fahrenheit), it provides amore accommodating environment for the amoeba to feed and multiply. So, if possible, avoid swimming in warm shallow waters during this time.

Diagnosis

Early diagnosis is the best bet for survival. In the two known cases where patients survived infection from *Naegleria*, the family doctor recognized the symptoms immediately and was quick to react with appropriate antibiotics. Persons who complain of severe headaches, rigidity of the neck, impaired sense of smell and taste, nausea, vomiting and/or a high fever, and who have been swimming in a lake should be taken to a doctor. If the treatment is going to be effective, it needs to be administered quickly.



Left: EM image of *Naegleria fowleri* in its cyst stage. Center: EM image of Naegleria fowleri in its ameboid trophozoite stage. Right: EM image of *N. fowleri* in its flagellated stage. Photo Credit: **DPDx** and GS Visvesvara.

Annual Student Raffle and Auction

Things are looking good for the February 2014 meeting Raffle and Silent Auction. We will try to increase our effort and results in each of the next 3 years in order to be ready for a huge Raffle at the 2017 AFS Meeting in Tampa. Three recent developments should really help. The Student Sub-unit has mentioned something about using the student funds they receive from their membership dues to buy another big ticket raffle item this year – maybe a nice fishing pole or Yeti cooler. Secondly, Jonathan Freedman, a new professor at Stetson University in Deland, will be joining our Chapter and has kindly volunteered to help with obtaining Raffle-donations in that area. Finally, our own Andy Strickland of Quincy said he should be able to attend the 2014 meeting for the first time in 2 years and will help request donations from his area and to send request letters to Cabela's and other big national companies. Thanks, Ross, Jonathan, and Andy. We have volunteers for several areas of the state, but we still need help in the Keys, Orlando, Fort Myers, Miami, Ocala, Tampa/St. Pete., Jacksonville, Tallahassee, and Pensacola. If we can get a few more volunteers in those areas, then we could probably increase the number of total donations to at least 100 (from 55 this year) and greatly increase the number of students attending our 2015 annual meeting, as well as all future meetings.

So please contact Alan Collins (lac96@bellsouth.net, or (850-303-4434) or one of the other volunteers listed to find out how easy it usually is to get donations. Helping our students helps all of us.

Student Article

Exotic foods: examining the effectiveness of predator diet sampling as a non-native detection and monitoring tool in the sub-tropical estuary.

Ross Boucek. Department of Biology, Florida International University, 11200 SW 8th street Miami, FL, 33199

(Full article under the second round of revisions with the Journal *Transactions of the American Fisheries Society*)

Introduction

Non-native fishes are causing serious problems in many aquatic systems. Carp for instance, can become so abundant in rivers and lakes, that they eat much of aquatic vegetation, taking away important juvenile habitat for freshwater fishes. Likewise, in Florida, populations sailfin catfishes (*Pterygoplichthys* spp.) can dig thousands burrows in the sides of rivers, which could cause river banks to degrade and collapse.

Due to the potentially serious impacts that non- native species can impose on natural systems, detecting and efficiently tracking non-native population dynamics is critically important. However, due to the various sampling biases of conventional monitoring strategies, some non-native species populations can go unnoticed or under-detected. Therefore, developing techniques that improve detecting and tracking non-native species is vital to our ability accurately predict future environmental damage caused by non-natives, and to evaluate the effectiveness of control strategies.

Current non-native monitoring techniques span from technologically-advanced and species-specific environmental DNA sampling, to indiscriminate active and passive monitoring (e.g., routine electrofishing and trapping). Environmental DNA sampling detects trace amounts of DNA shed by non-natives in large bodies of water, thus can determine if focal species are present without capturing them. However, this method is not as good at detecting changes in abundance patterns or the introduction of unanticipated species. In contrast, iindiscriminate monitoring efforts may be less efficient at detecting the presence of any single invader, but can better track changes in abundance and distributional patterns of key non-native fishes.

A possible complement to indiscriminate sampling methods that may increase detection probabilities for non-native fishes, is to sample the diets of predators. Using predators as "auto samplers" has been implemented successfully to characterize fish communities in hard to sample areas, and also to track changes in species abundance. Despite the potential benefit of incorporating predator diet sampling into detection and monitoring efforts of non-native fishes, no previous work has compared the effectiveness of this method, relative to other conventional monitoring techniques.

In Florida, a recent extreme climatic event provided a unique opportunity to test the effectiveness of sampling predator diets as a detection tool for non-native fishes. In January of 2010, an extreme 80-year cold front swept through Florida. This weather event virtually extirpated many tropical non-native fish populations. The freshwater reaches of the Everglades estuary was especially impacted by the 2010 cold front, where water temperatures decreased to 6.2 °C, at or below the lower lethal limits for many non-native taxa. These mass mortalities and the resetting of non-native invasion trajectories caused by this extreme cold front provided us with a unique natural experiment to test the effectiveness of using predator diet sampling as a detection and monitoring method for non-native fishes as these re-colonize the estuary. Thus, the aim of this study was to investigate whether we would first detect tropical non-native fishes that were impacted by the 2010 cold front in predator diets or by standardized and commonly used boat electrofishing.

Research Approach

To explore this research question, we sampled fishes by electrofishing at 5 sites in the freshwater reaches of the Everglades National Park, monthly from January 2010 to April 2013 (Fig. 1). In this region of the Everglades, seven non-native fishes were observed prior to the cold front, four of which were relatively abundant. These four abundant species included blue tilapia (*Oreochromis aureus*), Mayan cichlid (*Cichlasoma urophthalmus*), peacock eels (*Macrognathus siamensis*), and African jewelfish (*Hemichromis bimaculatus*). The three less common species were pike killifish (*Belonesox belizanus*), spotted tilapia (*Tilapia mariae*), and a sailfin catfish (*Pterygoplichthys* spp). Two other catfishes, brown hoplo (*Hoplosternum littorale*) and walking catfish (*Clarias batrachus*), have been found in marshes upstream of the estuary, but were not known to occur at study sites prior to this study.

The three focal predators we chose to sample diets were two freshwater species, largemouth bass (*Micropterus salmoides*) and bowfin (*Amia calva*), and one estuarine predator, common snook (*Centropomus undecimalis*). During our electrofishing samples, if a predator was caught, we removed their stomach contents via the non-lethal pulsed gastric lavage. This procedure forces water in the fish's stomach, causing them to regurgitate recently consumed food items. Throughout the course of this study, we sampled the diets of 627 largemouth bass, 302 bowfin, and 254 snook. All three of these species are physiologically capable of consuming all of the common Everglades non-native fishes.

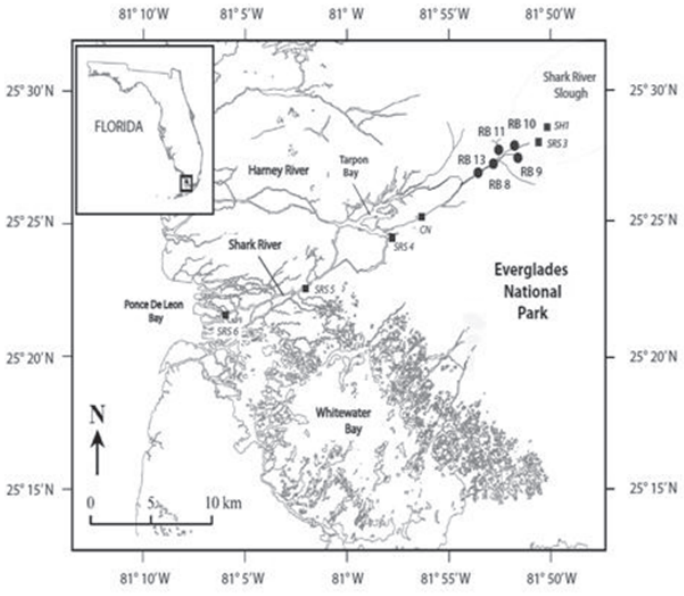


Fig. 1. Map of the Shark River and the Southern Everglades. Circles represent the five sampling sites. Squares represent hydrologic monitoring stations.

Results

Over the course of the study, we captured 6 non-native species. All six fish species were found in the diets of predators, while only three were captured via electrofishing (Figure 2). The three non-natives detected only with diet sampling were the brown hoplo, walking catfish, and pike killifish. Walking catfish were only found in snook stomachs, pike killifish were only observed in largemouth bass diets, while brown hoplo were identified in both largemouth bass and snook diet samples. For two of the six species, walking catfish and brown hoplo, detection in consumer diets represented the first records in the estuary (Figs. 2 and 3).

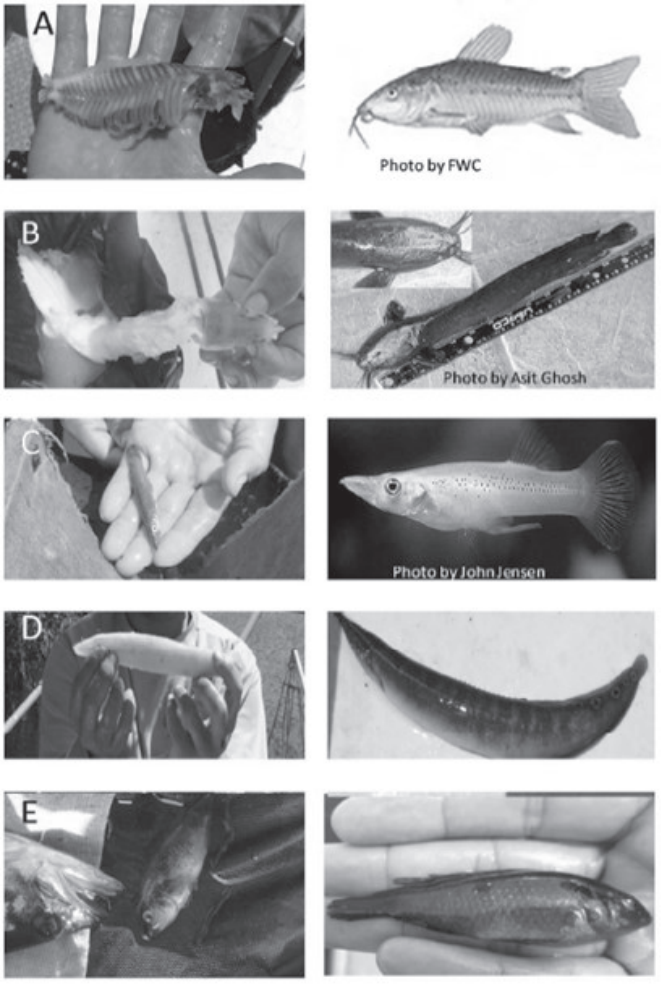


Fig. 2. Photographs of recently consumed brown hoplo (A), walking catfish (B), pike killifish (C) peacock eel (D), and (E) African Jewelfish found in the diets of the focal consumers. Adjacent photographs show a live captured specimen from each species.

Unlike sampling predator diets, only three species were detected electrofishing, African Jewelfish, tilapias and peacock eels (Fig. 3). However, these species also were found in consumer diets. African jewelfish and tilapias were detected in both sampling techniques at approximately the same time, while peacock eels were detected much sooner with electrofishing. Unfortunately, the tilapia specimen found in the diet samples was too digested to determine species identity (blue or spotted tilapia per previous records). Lastly, two non-natives found in the estuary prior to the 2010, sailfin catfishes and Mayan cichlids have yet to be detected with either gear type.

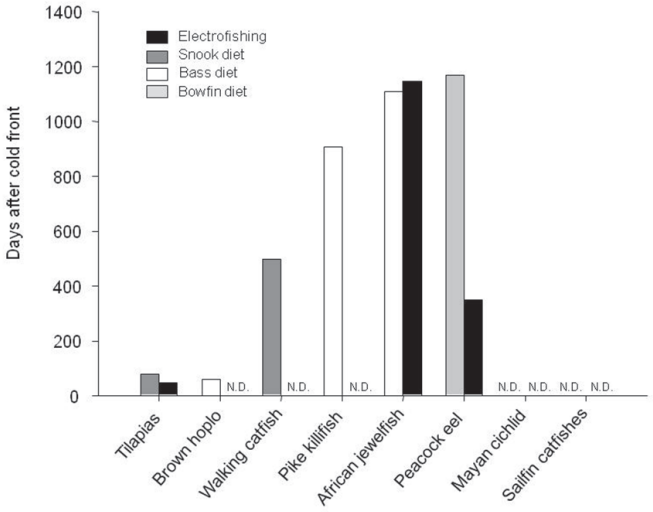
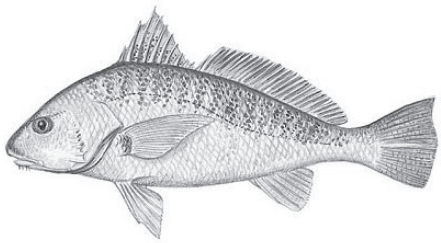


Figure 3: The number of days after the 2010 cold front that tropical non-natives were detected by electrofishing (black bars) or diet sampling: diets of snook (dark grey bar), bass (white bar) or bowfin (light grey bar). Six species are known to occur in system prior to the cold snap, while brown hoplo and walking catfish are new records from this study. N.D. indicates species that were not detected by a sampling technique.

Got a nice old canoe or fishing gear you are no longer using? Have you considered donating it to our Chapter Meeting Raffle in February? Proceeds go to helping our students attend our annual meeting Contact Alan Collins for more information

Prizes!

Chum!

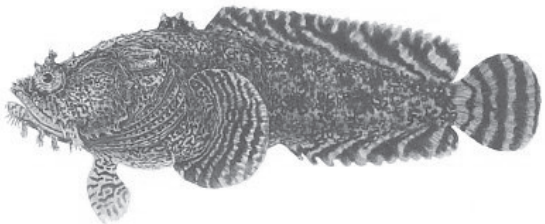


Conclusions

These results show that incorporating predator diet sampling into detection and monitoring networks may serve as a useful supplement to improve non-native detection. We argue that predator diet sampling may easily be added to detection or routine monitoring efforts for fishes (i.e. electrofishing; seine netting etc.) with minimal cost, offering the potential benefit of increased detection probabilities of non-native species. Second, removing and processing stomach content samples does not require substantial specialized training nor expensive equipment, providing a very cost effective complement to other sampling strategies. Further, genetic samples can be recovered from diet samples, which can provide valuable insights on invasion histories. In addition to potentially increasing non-native detection and monitoring capabilities, information gained from consumer diets can answer very important ecological questions. These include understanding energetic pathways and cross-ecosystem connectivity in natural systems measure fragmentation and anthropogenic degradation and identify prey bases for fisheries, including the role of novel non-native prey bases. Thus, much more can be learned from systems, on top of monitoring and detecting non-natives by including these diet components which will undoubtedly aid in informing management strategies.

Name these Florida Fishes (answers page 2)

A



B

Annual Meeting and Symposium Announcement – 1st Call for Papers 34th Annual Meeting of the Florida Chapter of the American Fisheries Society
February 18-20, 2014
Ocala 4H-Camp, Altoona, Florida

The 2014 meeting is still several months away, but it is never too early to plan to attend. The meeting format will consist of both invited and contributed oral presentations and posters. The symposium on Wednesday will be 'Research and Management: Tag Team Titans'. The link between management and research has strengthened through recent years and we are focusing on that for this symposium. More specifically we wish to highlight the way management can shape research and research has shaped management. For example, managers see a need in the assessments (the fate of fish with various types of barrotrauma) and work with researchers to fill the critical gaps in assessments. Research can also illuminate how a species needs to be managed, discovering skip spawning in snook for example.

This symposium will focus these relationships and team ups. Preference will be given to researchers and managers who are willing to give a joint presentation on how they have informed each other's work. All abstracts are due Friday, January 10, 2014, for full consideration in the symposium or contributed sessions. Please send your abstract (<300 words) and associated information (following the format given below) to chris.bradshaw@myfwc.com; in the subject line of your email, please list the author(s) as they will appear in the program (e.g., BullockTaylorCollins.doc). Platform presentations will be 20 minutes (15 minutes for presentation and 5 minutes for questions or discussion). We will have PowerPoint 2007 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 18, 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, Chris Bradshaw, at Chris.Bradshaw@myfwc.com.

The 2014 meeting will again be held at the Ocala 4-H Camp, on Sellers Lake in the Ocala National Forest. This venue is located east of Ocala, south of SR 40, just off SR19. Maps and directions will be available in the next issue of the Shellcracker or can be found at 4-H Camp Ocala's website 4-H Camp Ocala. The meeting's schedule will be similar to recent past meetings. We will begin at noon on February 18th. Lunch will be served and then followed by the presentation of contributed papers. The poster session will take place following dinner on Tuesday evening. The 'Research and Management: Tag Team Titans.' symposium will start on Wednesday morning. The business meeting and raffle will follow dinner on Wednesday night. We will hear more contributed papers on Thursday morning, followed by lunch and the presentation of awards immediately following lunch.

Registration for the Floriida Chapter Meeting

For your convenience, we are again planning to have registration available online: 2014 FLAFS Meeting Online Registration. Once you fill out the online form, you can either pay online through PayPal or print the completed form and mail it in with your check, cash, or money order.

If you would rather not use the online form, a hard copy of the registration form as used in previous years can found in this issue of the Shellcracker or on the Chapter's website: Florida Chapter AFS

Please note the savings available if you register on or before January 10, 2014. This helps in many ways: reduces everyone's registration time, gives us a head's up on the count for meals, saves money, gets the correct amount of t-shirts or hats, and you don't miss any talks. Therefore, please **pre-register by completing the registration form** (online or hard copy) **and sending in your deposit** online through PayPal or by mail to the Chapter's Secretary-Treasurer, Cheree Steward (see registration form for Cheree's contact information), **by January 10, 2014**. 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: Student travel awards will be available for the annual meeting. 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 the application materials are available at FLAFS Awards and Scholarships.

We're looking forward to returning to the beautiful 4-H camp for our 2014 annual meeting, and hope to see you there!

Abstract Format:
Limit abstracts to ≤ 300 words and follow this format (2007 MS WORD is preferred):

Presenter: Williams, Brian; Email: BrianWilliams@FloridaFish.net;
Author(s): Williams, B.[1], K. Rowley[1], and P. George[2].
[1]Affiliation. Address.
[2]Affiliation. Address.

Title: Recommendations for New Limits on Some of Florida's Most Targeted Fish Species

Abstract: <300 words (MS Word will count it for you)

Student Presentation: No or Yes (work reported was completed while a student)

Presentation type: Oral or Poster

Would you like to be considered for the symposium? Yes or No

Are you willing to be a moderator? Yes or No

Are you willing to be a judge? Yes or No If so, oral presentation or poster?

Florida Chapter of the American Fisheries Society
4H Camp Ocala, Florida
Annual Meeting Registration: February 18-20, 2014

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 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 boxes below.

PRE-REGISTRATION: registration form postmarked by Friday, January 10, 2014
☐$ 30.00 One-day Registration ☐$ 40.00 Full Registration

LATE-REGISTRATION: registration form postmarked after Friday, January 10, 2014
☐$ 35.00 One-day Registration ☐$ 47.00 Full Registration

Meals and Lodging

Tuesday, February 18, 2014
- ☐ $8 Lunch
- ☐ $14.50 Dinner
- ☐ $27.00 Lodging

Wednesday, February 19, 2014
- ☐ $6.50 Breakfast
- ☐ $8 Lunch
- ☐ $14.50 Dinner
- ☐ $27.00 Lodging

Thursday, February 20, 2014
- ☐ $6.50 Breakfast
- ☐ $8 Lunch

Full Meals and Lodging ☐ **$120.00**
Linens (please bring own, limited supply) ☐ $ 6.00

Florida Chapter dues (calendar year 2014) ☐ **$10.00** ☐ FL Chapter dues paid via AFS annual membership.

Total Amount: _____

Total Enclosed: _____ ○Cash ○Check
(Minimum $10)

Balance Due: _____ ○Cash ○Check ○Credit

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

Cheree Steward
FWC
601 W. Woodward Ave.
Eustis, FL 32726

Phone: (352) 800-5003
Fax: (352) 357-2941
Email: cheree.steward@myfwc.com

*Checks not payable to 'Florida Chapter AFS' will be returned to sender.

Registration Forms may be sent via fax (attention: Cheree) or via email: (subject: 2014 AFS FL).
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 as soon as possible.
Registrations will still be accepted at the meeting, but with a late registration fee.
We can accept VISA, MASTERCARD, cash or check at the meeting**.**
If you would like to pay your meeting fees with a credit card, then please send a $10 check for your deposit.