the Shellcracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

https://units.fisheries.org/fl/

October 2019

President's Message:

Fishing for Karma

When in transit between sampling sites or riding to and from a favorite fishin hole, we often pick up some flotsam along the way. We announce that it is to build karma for the fishing time ahead. Everybody smiles and a bad thing turns into a good start of what may well become a memorable excursion.

Sometimes flotsam and jetsam is a very welcome diversion from an otherwise long dreary transit. Stopping and taking a quick break can recharge the crew. Picking up potential treasure may well be the catalyst to wake things up.

It's an outing. You are already generating trash and should have a container for it. If not, then you can just wear that trash like a badge of honor. Some of us just have to be doing something to feel productive even on a casual walk on the beach. Some pay extra for that shirt statement, you can proudly carry the real deal front and center.

Sometimes the trash itself becomes the memorable part of the trip. Everybody remembers the weather balloons, gliders (reported but left to continue work), message in a bottle, beach balls, kites, lots of mylar balloons, etc.

This is the second year that Nick Trippel has led an invasion flotilla and shore patrol on the Harris Chain of Lakes. On this day, trash is everything. Good times abound and everybody wins.

Awards can be the trash itself, a quaint ribbon, or just bragging rights at the fire for the Biggest, Best, Most, Most unique/interesting, Most valuable, etc. Or conversely, the Worst, Dirtiest, Most controversial, Most embarrassing, Most toxic, etc. The whole thing just wreaks of the current competitive climate where everybody wins and everybody gets an award, albeit a trashy memory.

Pick a day or take the opportunity when presented, it doesn't have to be on that special get together designated cleanup day. Think of yourself as a "vessel of opportunity" to be commandeered when the time and place presents the need. Basically, when you see trash, tackle it. Now, being that your peers here are scientists, they reserve the right to not believe that story of a mountain of junk, or the massive "fat burg" you towed in. So, just to confirm your claim to fame (not necessarily fortune), take a picture and submit it to Nick.Trippel@myfwc.com. We can then have a poster or slide show at the next chapter meeting April 1-3, 2020.

See you April Fools' day,
Bob Heagey
Florida Chapter President

Getting in Touch

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Upcoming Events

February 20–22, 2020: Southern Division American Fisheries Society meeting. Little Rock, Arkansas.
February 21, 2020: Early Registration and Abstract deadline.
March 1, 2020: Chapter Award nomination deadline.
April 1–3, 2020: Florida Chapter Annual Meeting Haines City, Florida.

Interested in contributing something to the Shellcracker? Email: Scott Bisping at *Scott.Bisping@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 December 15th, 2019, so start fishing...

Feature Article

Reef fish community structure on artificial reefs of the West Florida Shelf with insights on the influence of Goliath Grouper

By: Brittany Barbara, Kerry Flaherty, and Angela B. Collins

Reef fish assemblages are strongly influenced by habitat complexity (Chabanet et al, 1997; Walker et al. 2009) and predator-prey dynamics (Rilov et al 2007). Artificial reefs can be designed to capitalize on characteristics important to reef fish (Bohnsack 1991; Pickering & Whitmarsh 1997) and increased habitat complexity has been shown to benefit multiple reef fish species of economic importance (Gratwicke & Speight 2005; Dance et al. 2011). Consistent, long-term monitoring of offshore reef habitats is often limited by logistical and budgetary constraints, but it is well known that fish communities and trophic structure can vary significantly through time. Atlantic Goliath Grouper *Epinephelus itajara* are large, reef-associated predators that are commonly associated with artificial reefs. Their life history characteristics, including their large size and strong site fidelity to habitats relatively accessible to people make them especially vulnerable to fishing pressure (Bullock et al 1992; Collins 2014; Collins et al 2015).

Harvest of Goliath grouper has been prohibited in Florida since 1990. The population has responded well to protective measures and as their abundance increases, so do encounters with anglers and divers. Reports of stolen fish and increased Goliath Grouper catch rates, especially at artificial reefs, have prompted inquiries from various stakeholder groups as to whether Goliath Grouper abundance impacts the diversity or abundance of other targeted reef fish species at these sites.

Underwater visual census (UVC) using divers is a widely used method of monitoring reef fish diversity, allowing for data collection that is logistically simple, cost-effective, and repeatable (Mallet & Pelletier 2014). The inclusion of underwater video in UVC often provides supplementary data beyond the scope of individual project objectives and affords greater data quality control through the ability to pause, rewind, and share images to ensure positive identification.

Feature Article

As part of an ongoing Goliath Grouper survey program, underwater visual surveys were conducted seasonally from 2011–2014 on six artificial reefs along the West Florida Shelf (Figure 1). These fixed sites were selected to be representative of a spectrum of artificial reef sizes (differing by maximum relief and total volume), and submersion depth (deep >20 m or shallow <20 m). Relative frequency of reef fish species observed and total counts of Goliath Grouper were recorded at each site during each sampling event. Relative frequency (RF) categories were defined as absent (0), rare (1, one individual), few (2, 2-10 individuals), common (3, 11-100 individuals), or abundant (4, >100 individuals). A total of 70 species from 35 families were observed from 170 surveys. Overall, Tomtate *Haemulon aurolineatum* (mean RF = 3.88) was the most frequently observed species followed by Gray Snapper *Lutjanus griseus* (RF = 2.79).

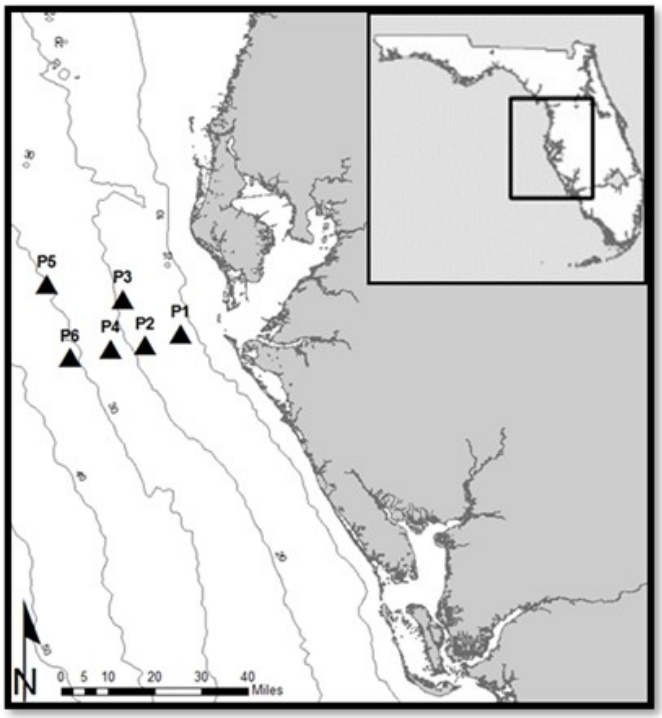

Figure 1: Map of artificial reef sites sampled during underwater visual surveys from 2011-2014 along the West Florida Shelf in the Eastern Gulf of Mexico.
(Map credit: Jamie Williams)

Nekton community structure differed among years, seasons, and site. Site (32.37% of variation explained) was the most important driver of fish assemblage structure, followed by variables that represent seasonal environmental changes (season: 4.95%, bottom temperature: 5.07%). Two- and three-way interactions between year, season, and site were also significant. Seasonal observations for many taxa were similar among seasons (e.g., Cubbyu and Tomtate), but differences in assemblage structure were driven primarily by higher relative abundances of Blue Runner *Caranx crysos* in the summer and fall and Atlantic Spadefish *Chaetodipterus faber* and Vermilion Snapper *Rhomboplites aurorubens* in the fall. Differences in reef fish community structure were strongly associated with the habitat characteristics of each artificial reef; for example, site P1 had a distinct community structure that could be attributed to a smaller area, lower volume, and shallower water depth than other artificial reefs in the study.

Community structure was also influenced by the water depth of the site (Figure 2). For example, Greater Amberjack *Seriola dumerili* and Vermilion Snapper were more prevalent on the deeper sites, while White Grunt *Haemulon plumierii* and Cocoa Damselfish *Stegastes variabilis* were commonly observed on the shallow sites. High relief and greater volume artificial reefs also had greater abundances of Goliath Grouper. Importantly, there was no evidence to suggest that Goliath Grouper presence affects the diversity or relative frequency of other reef species observed at surveyed artificial reefs.

Seasonal variation as well as the influence of specific site characteristics on fish community structure at artificial reefs can inform management by prioritizing habitat conservation for targeted reef species and directing artificial reef enhancement along the West Florida shelf.

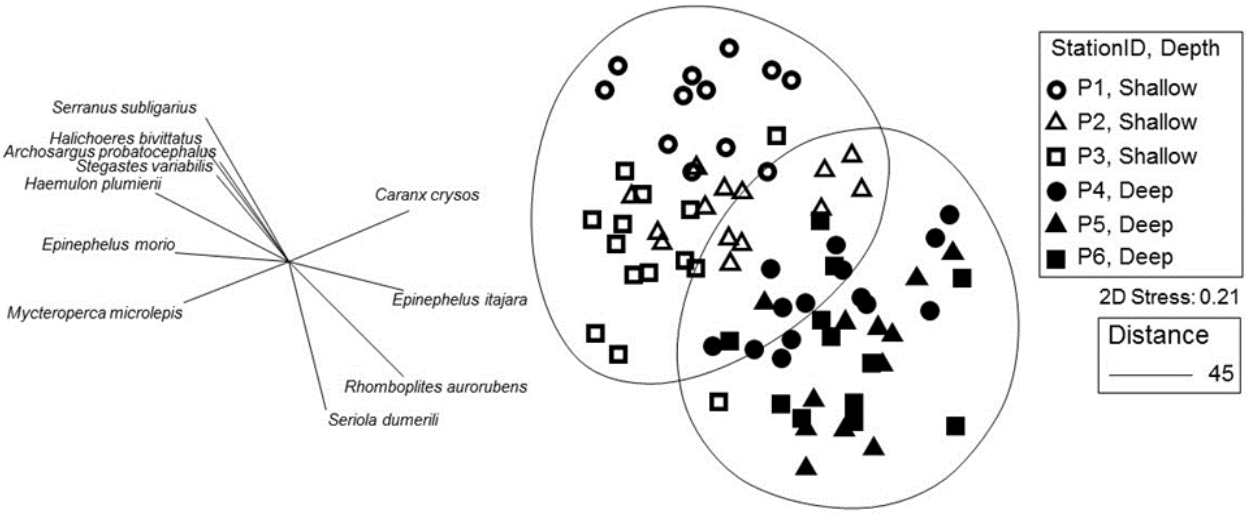

Figure 2: Non-metric multidimensional scaling (nMDS) ordination of year, season, and site centroids for fish observed during visual surveys at artificial reefs in the eastern Gulf of Mexico, 2011-2014.Symbols indicate each site, and colors designate their respective depth category (solid = deep; open = shallow). Ellipses represent groups that had community structures at a 45% (solid line) similarity level as determined from CLUSTER analysis. Vectors for taxa that contributed 0.55 or more to assemblage structure are also included.

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Feature Article

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We invite you to submit abstracts for the 2020 (40th!!) annual meeting of the Florida Chapter of the American Fisheries Society meeting. The meeting will take place April 1-3, 2020 at the Florida FFA Leadership Training Center, located in Haines City, on the shore of Lake Pierce. We hope you can join us!

The meeting will consist of both invited and contributed oral presentations and posters. The 2020 symposium is titled **'Schooling for Successful Science'**.

We all know that there are many fish species that exhibit schooling behavior for the betterment of their species. Whether it is to increase foraging success or escape those that are foraging on them, schooling is a behavior observed by both freshwater and marine species. As fisheries scientists, "schooling" amongst ourselves can help us meet our goals and objectives as well. Two of the most important aspects we can learn from schooling as scientists are learn from what was historically done and learn from those currently around us. In this year's symposium, I want to focus on how we got to where we are today. I want to focus on how we have learned from historical, potentially long-term data sets, and better fisheries science through communication and collaboration with those around us. This learning can take place either within our species (internal collaboration) or outside (external collaboration) but should focus on the implementation of an objective towards the advancement of fisheries science. Examples of topics relevant to the symposium would be: the various research projects done on rearing and stocking techniques for Largemouth Bass that can inform our freshwater hatcheries on developing more successful stocking techniques or marine fisheries independent monitoring that provides recruitment data on inshore species for regulation changes. Joint talks between collaborators are welcomed, but not necessary. I truly believe that understanding and sharing the stories to our present day will aid us in becoming better scientists and advancing Florida fisheries further ahead with our help.

We strongly encourage submissions for the symposium but will also accept submissions outside the scope of the symposium topic. Therefore, in your abstract submission please specify if you would like your presentation to be part of the symposium.

Deadline for abstract submission and early registration: **Friday, February 21, 2020.**

Meeting Details
The 2020 meeting will be held at the Florida FFA Leadership Training Center, 5000 Firetower Road, Haines City. Maps and directions will be available in the next issue of the Shellcracker or can be found on the Florida FFA Leadership Training Website at www.flaltc.org.

The meeting's schedule of events will be similar to past meetings. We will begin in the afternoon on Wednesday, April 1st with the presentation of contributed papers. The poster session will take place following dinner on Wednesday evening. The **'Schooling for Successful Science'** symposium will start on Thursday morning. The business meeting and raffle will follow dinner on Thursday night. We will hear more contributed papers on Friday morning, followed by lunch and the presentation of awards immediately following lunch.

The Continuing Education Committee is excited to announce that we will be holding a workshop entitled **"Introduction to Fisheries Analysis in R" on April 1, 2020 from 9:00am to 12:00pm**. We are planning on holding the workshop in the Technology Room at the Florida FFA Leadership Training Center and it is **FREE with any meeting registration** (one day or full). Space is limited, so please be sure to select "Attending" for the Continuing Education Workshop on the 2020 FL AFS Annual Meeting Registration page. We will announce the workshop agenda in the coming months.

Registration, Lodging, Meals, and Chapter Dues
Early registration deadline is **Friday, February 21, 2020.** The cost for early full registration is $60.00. The cost for full registration after Friday, February 21, 2019 is $80.00. **We strongly encourage folks to register early because the venue needs estimates for meals and rooms several weeks in advance. As an incentive, we will be raffling off a $100 Bass Pro Shops gift card to one lucky early registrant.** If you are staying at the FFA Leadership Training Center for this year's meeting, the cost for full meals and lodging is $272.00. Costs of meals and lodging are the same for year's meeting as they were last year. The full cost of meals and lodging is still cheap compared to most meetings. Linens will be provided including pillows, towels, and sheets. **We ask that everyone has a roommate. Everyone must pay for lodging each night regardless of whether they have a roommate. Rooms and roommates will be chosen at the meeting's registration desk.**

For your convenience, **all registrations will be made online at: https://flafs.regfox.com/florida-chapter-of-the-american-fisheries-society-2020-annual-meeting**

This link to the registration website will also be made available on our chapter's website at https://units.fisheries.org/fl/. **There will be no mail-in registration forms this year, however, you can still mail a check for your meeting costs.**

If you can't attend the meeting, we have a link on the chapter's website (https://units.fisheries.org/fl/chapter-dues/) where you can pay your $10 annual dues electronically, or you can still mail a check for $10 to the Secretary/Treasurer made payable to Florida Chapter AFS.

New Committees to FL AFS
Two new committees were formed at the 2018 annual meeting of FL AFS, a "Continuing Education Committee" and "Marketing and Membership Committee."

The Continuing Education Committee was formed to develop additional educational opportunities for chapter members. They will be hosting workshops during upcoming meetings on topics such as: non-traditional skills to be an effective natural resource professional, emerging tools for data analysis, and leadership. If you are interested in volunteering or want to learn more about this committee, please contact Allison Durland Donahou (adurland@ufl.edu).

New Committees to FL AFS (cont.)

The Marketing and Membership Committee was formed to attract new members, retain current members and reactivate members non-active members. This will be done through various tactics such as: investing time in social media to raise awareness for FL AFS, promotion of the chapter through various outlets, and coordinating summaries on what interest the various levels of membership have within FL AFS. If you are interested in volunteering or want to learn more about this committee, please contact Kerry Flaherty-Walia (Kerry.flaherty-walia@MyFWC.com).

Opportunities for student support

As in previous years, 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 on the chapter's website at https://units.fisheries.org/fl/awards-and-scholarships/.

2020 Student Raffle

We need your help to make this meeting's raffle a great one. If you are interested in helping or donating items, please email Amanda Croteau (amanda.croteau@gmail.com) or Chelsea Crandall (kicksea@ufl.edu). Remember all proceeds fund our student travel grants for the following year's meeting. Please contact us to get involved!

We look forward to seeing everyone in Haines City for our 2020 annual meeting!

Thanks,
Daniel Nelson

1st Call for Oral & Poster Presentations!

Abstract Submission

Please submit your abstract as a MS Word document to Daniel Nelson. Please follow these instructions for submission:

In the email subject line, please enter FLAFS 2020: followed by the author names in your abstract (e.g., FLAFS2020 SmithTaylorRosen)

Use the same name for the abstract file, e.g., FLAFS2020 SmithTaylorRosen.doc

Please include the associated information requested above with the abstract

***NEW**:* Please submit 1-3 "action shots"/pictures (jpg format <500 KB in size) associated with your research for the FL Chapter website with your abstract. Non-presenters may also submit photos to Chris Anderson or Daniel Nelson if they would like to contribute.

Abstract format

Abstract *word limit is 300 words* and should include the following information:

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

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

Abstract: 300 word maximum

Student Presentation: No or Yes (work presented 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?

Presentation details

Speakers will be given 20 minutes for talks (15 minutes for presentations and 5 minutes for questions and/ or discussion). We will have PowerPoint on a laptop capable of accepting your presentation on a flash drive or other device.

Important note: Please use ***widescreen PowerPoint slide format*** for all presentations.

All posters will be presented on *Wednesday evening, April 1*, 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, Daniel Nelson, Daniel.Nelson@myfwc.com.

Florida Chapter of the American Fisheries Society

2020 Annual Meeting Registration Information

Florida FFA Leadership Training Center
April 1–3, 2020

All registrations will be made online:
https://flafs.regfox.com/florida-chapter-of-the-american-fisheries-society-2020-annual-meeting

Payments for registration, meals, lodging, and chapter dues prior to the meeting will be made online via credit card or by mailing a check to the address listed on the registration website.

EARLY-REGISTRATION: registration paid online or check postmarked by Friday, February 21, 2020
$50.00 One-day Registration $60.00 Full Registration

LATE-REGISTRATION: registration paid online or check postmarked after Friday, February 21, 2020
$60.00 One-day Registration $80.00 Full Registration

Meals and Lodging (lodging price based on double occupancy rooms)

Wednesday, April 1, 2020	Thursday, April 2, 2020	Friday, April 3, 2020
**No Lunch This Year*	$6.00 Breakfast	$6.00 Breakfast
$19.00 Dinner	$11.00 Lunch	$11.00 Lunch
$100.00 Lodging	$19.00 Dinner	
	$100.00 Lodging	

Full Meals and Lodging $272.00
Linens (provided)

Florida Chapter dues (calendar year 2019) $10.00

Registrations will still be accepted at the meeting, but with a late registration fee.
We can accept VISA, MASTERCARD, AMEX, DISCOVER, cash, or check at the meeting.**

Make sure to register early! As an incentive to register early, FL AFS will be raffling off a
$100 Bass Pro Shops gift card to one lucky early registrant!!

Note: This is a buffet-style service and food must be ordered one week in advance.
Since meals are pre-paid, **please** submit your registration online as soon as possible.

**We ask that everyone has a roommate. Everyone must pay for lodging each night regardless of whether they have a roommate. Rooms and roommates will be chosen at the meeting's registration desk.

***FWC employee's may only use a state-issued P-Card to pay for the cost of registration and lodging. However, it is recommended to pay for all meeting costs with personal funds and seek reimbursement.

Award Nominations

The Florida Chapter American Fisheries Society is seeking nominations for the Outstanding Achievement and Rich Cailteux Awards. Our membership is full of dedicated professionals, and it's time to recognize their efforts. Please review the award criteria below and send nominations to Eric Nagid (eric.nagid@myfwc.com) by **March 1st, 2020**. Applications should be limited to one page, but descriptive enough to convey why the individual is deserving of the award.

Outstanding Achievement Award

The purpose of the Outstanding Achievement Award is to recognize individuals for singular accomplishments and contributions to fisheries, aquatic sciences, and the Florida Chapter. The award aims to honor individuals for distinct contributions to the fisheries profession and enhancing the visibility of the Chapter. The Outstanding Achievement Award is the highest honor Florida AFS may bestow upon an individual member or collaborating group.
Candidates will be evaluated according to the following criteria:

- Original techniques or research methodology
- Original ideas, viewpoints, or data which contributed to fisheries management or our understanding of aquatic resources
- Important ecological discoveries
- An original fishery research or management program of statewide importance
- Activities in public education and outreach that have statewide impacts

Rich Cailteux Award

The purpose of the Rich Cailteux Award is to recognize individuals who have maintained a long-term commitment to research, management, and/or conservation of Florida fisheries and aquatic resources. This award aims to honor individuals for their career contributions to the fisheries profession and enhancing the visibility of the Florida Chapter.
Candidates will be evaluated according to the following criteria:

- A minimum of 20 years spent in a fisheries related field in Florida
- Substantial career contributions to Florida aquatic resources and the fisheries profession
- An imaginative and successful program in fisheries and aquatic sciences education
- A history of mentoring young fisheries professionals, and involvement and leadership with the Florida Chapter of the American Fisheries Society

Student Research Highlight

Investigating Reef Food Web Structure and Energy Flow in the Northern Gulf of Mexico

Justin P. Lewis
PhD Student
University of Florida

Figure 1. Reef fish on a natural reef in the northern Gulf of Mexico

The reef community in the northern Gulf of Mexico (nGoM) is home to a diverse assemblage of fisheries and non-fisheries species (Figure 1). Although fisheries management has historically focused on single species stock assessments to set harvest quotas, the potential effects of the *Deepwater Horizon* oil spill (DWH) and invasion of the Indo-Pacific lionfish (*Pterois* sp.) have garnered interest in understanding food web structure and patterns of energy flow that may affect the productivity of fisheries species. The potential for DWH, the lionfish invasion, and fishing pressure to affect reef food web structure is clear but likely manifest through different mechanisms. The effects of DWH appear most pronounced among species reliant on benthic production and these species also exhibited the slowest recovery (Ainsworth et al. 2018, Lewis et al. in review). Lionfish have become important predators and competitors within the reef community but are considered a trophic dead end for they feed at an intermediate trophic level (Dahl and Patterson 2014; Dahl et al. 2017) but are not consumed by native predators. Fishing mortality, on the other hand, may reduce top-down pressure on forage fishes altering the relative abundance of lower trophic level species (e.g., Fogarty and Murawski 1998) and affect food web stability (Bascompte et al. 2005; Rooney et al. 2006). However, our lack of understanding of reef food web structure makes it difficult to assess the combined effect of these recent perturbations on ecosystem function.

My dissertation research at the University of Florida is focused on understanding the effects of the aforementioned stressors on reef food web structure in the nGoM. Using a community time series from remotely operated vehicle surveys of 16 natural reefs between 2009 and 2017, I documented declines across a range of trophic guilds following DWH but prior to the arrival of lionfish in 2011 (Figure 2). For several guilds, including groups comprised of higher trophic level fisheries species (e.g. generalist carnivores and piscivores) and non-fisheries species (e.g. small demersal invertivores), declines have persisted. These temporal trends suggest the acute effects of DWH (Murawski et al. 2014; Snyder et al. 2015) resulted in an initial decline in reef fish density, but the subsequent lionfish invasion, coupled with high fishing mortality, are the primary factors affecting reef fish recovery (Lewis et al. in review).

Student Research Highlight

Future research will focus on the trophic importance of cryptobenthic fishes (e.g., gobies, blennies, cardinal fishes etc.) and small demersal reef fishes (e.g., damselfish, small serranids, wrasses, etc.). Several of these species were heavily impacted by DWH and are especially vulnerable to lionfish predation (Dahl et al. 2017). A combination of compound specific stable isotope and stomach content analyses will be employed to assess the use of recycled carbon by small-bodied reef fishes and track its flow to higher trophic level consumers. This information is particularly useful because cryptobenthic and small demersal fishes are thought to be an important link connecting large-bodied consumers to detrital resources (Brandl et al. 2018).

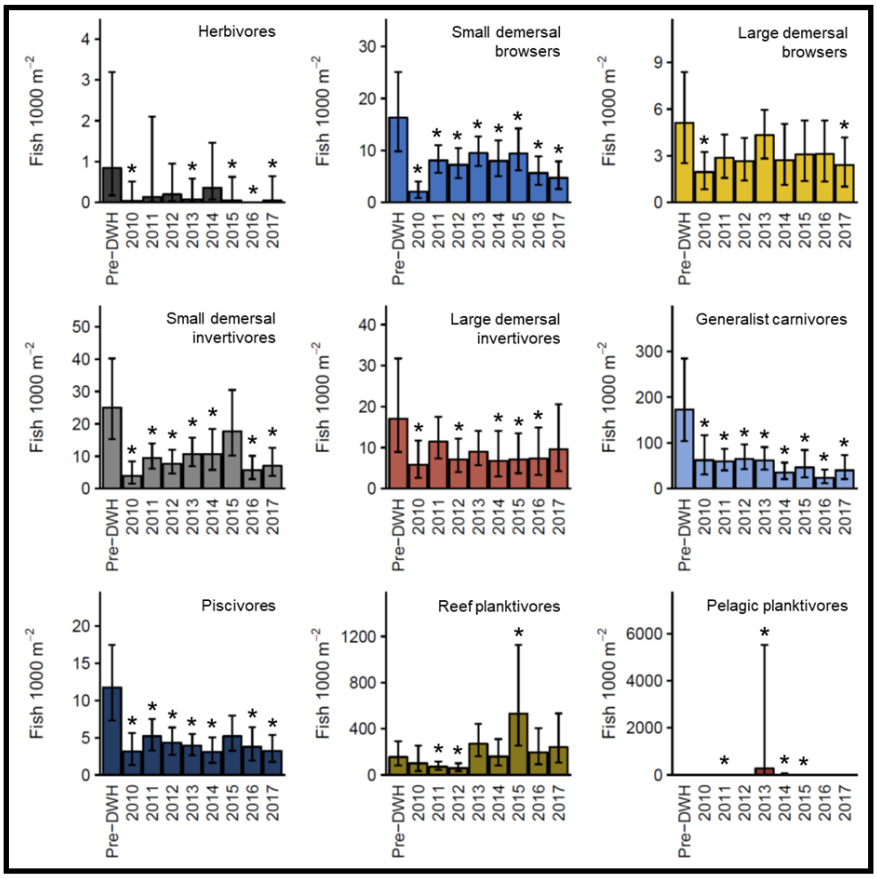

Figure 2. Standardized median (± 95% C.I.) density estimates for eight reef fish trophic guilds. Asterisks denote significant differences relative to Pre-DWH baseline.

Another area of interest is the role food web compartmentalization wherein taxa are arranged in subgroups reliant on separate basal resource pools (e.g., Krause et al. 2003). The coupling of compartments by higher trophic level generalists appears to be an important feature that improves food web stability (Rooney et al. 2006), but whether reef food webs exhibit this property is unclear. Three common stable isotopes ($\delta^{13}C$, $\delta^{15}N$, and $\delta^{34}S$) will be used to quantify species specific reliance on distinct resource pools and used in conjunction with Ecopath to identify food web compartments and describe food web topography. Simulation will be run in Ecosism to explore the impacts of lionfish and fishing pressure on food web structure and functional indices used to monitor ecosystem processes (Ulanowicz 1996; Link 2005). In doing so, I hope to better understand the role of cryptobenthic and small demersal fishes at the ecosystem level, whether higher trophic level generalist provide a stabilizing function, and consequences of past, present, and future perturbations.

References

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