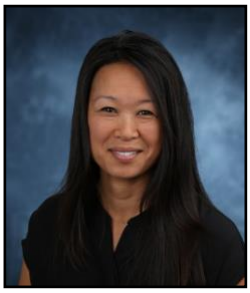
BRIEFS – The Official AIFRB Newsletter Volume 49, Number 2

President's Message



Dear Members,

As biologists, you understand that humans are evolutionarily hardwired to develop and foster social and emotional bonds, which are dependent upon our well-being. When barriers such as travel restrictions and social distancing ordinances disrupt those neurological pathways, our natural proclivity to mobilize freely, go to work and interact with the world becomes increasingly difficult and oftentimes psychologically stressful. As we continue to adjust to this new lifestyle in an effort to stay safe, healthy and take thoughtful measures to ensure the safety of others, now is perhaps the greatest time for us to reflect upon the importance of uniting around shared challenges. Who hasn't scrolled through the perpetual online applications like Twitter, Instagram and Facebook and seen the massive movement to reach out to extended family, seek entertainment and learn something new? More than ever people are taking advantage of technology to interact and finding creative ways to stay physically active at home, intellectually stimulated and emotionally connected. AIFRB members are no different.

On behalf of the AIFRB Board, I'd like to invite you to stay connected with us during this challenging and unprecedented time. As part of our effort to facilitate communication within our fishery science community, we will continue to pursue our mission of advancing fishery science and we hope to do so in a light-hearted, fun way. Please send us photographs of you working from home, teaching online, crunching data or writing manuscripts. How do AIFRB members take breaks from fisheries? Discovering your backyard? Cleaning your backyard? Taking inventory of toilet paper? Creatively cooking with random items left over in your refrigerator and pantry? Let's see it—pets, family and friends are welcome! If you have personal stories, words of wisdom or fishery biology news you'd like to share, we'd love to hear about them. We hope that sharing pictures and stories amongst our membership will help us to stay connected, united and motivated.

AIFRB has not shut down nor have we paused in our efforts to recognize your achievements in fishery science. The Board will continue with its tasks at hand and plan for our annual meeting, aligned with the currently scheduled 150th American Fisheries Society meeting from August 30 – September 3, 2020 in Columbus, Ohio. We will discuss potential alternatives to in-person meetings at the district and national levels over the coming months. Should you have questions, concerns or issues to discuss, do not hesitate to contact me directly at any time.

Don't forget to visit each other via Facebook, Twitter and Instagram (@aifrb_fishery_biologists) and share your "shelter-in-place" experiences, photographs and announcements as you continue to stay vigilant, healthy and positive.

Sincerely,

Kim Anthony
President
kim.anthony@aifrb.org

AIFRB in Quarantine

Steve Cadrin continues to work from home with his pal, Ringo's help. He is preparing online lectures for a course at the School for Marine Science & Technology at the University of Massachusetts, Dartmouth.

If you haven't already done so…

Renew Your Membership!
$25 - Student Associates
$45 - Professional Associates, Members, and Fellows
$600 - Lifetime Member

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New Member Spotlight

Zoë Kitchel – Keystone District

Zoë Kitchel recently joined AFIRB as an associate member. She is currently a PhD candidate at Rutgers University in the Ecology and Evolution Program. Growing up on the coast of Maine, Zoë has long been fascinated by the diversity of marine fishes, and how they are uniquely adapted to thrive in ocean ecosystems.

After earning her Bachelor of Science in Ecology and Evolutionary Biology, Zoë interned for the Gulf of Maine Research Institute, assisting with field sampling and laboratory processing of juvenile fish. She was amazed by how rapidly climate change is impacting the Gulf of Maine and the natural resources that coastal economies depend on. Interested in learning more about the relationship between coastal communities and fisheries, she moved to Sitka, Alaska to work for the University of Alaska Southeast. As a project coordinator with the Fisheries Technology Program, she developed curriculum for students working at remote hatcheries, received her scientific diving certification, and observed first-hand the delicate relationship among management, climate, and the availability of fisheries resources.

Zoë's experiences in Maine and Alaska led her to Rutgers University, where she studies the impacts of climate change on bottom fish living on the continental shelves of North America. She uses NOAA's bottom trawl surveys to examine patterns in temperature, oxygen, species traits, fish distributions, and fish abundances. As a part of the Coastal Climate Risk and Resiliency Program, she works closely with public planners, engineers, oceanographers, and municipal leaders to develop innovative ways in which coastal communities in New Jersey can increase their resiliency in light of rising seas, changing fish communities, and frequent flooding events.

She is excited to be a part of the AFIRB community and is looking forward to meeting other members at future events. Don't hesitate to get in touch!

Current Member Spotlight

John Denton – Florida District

John Denton is currently a postdoctoral researcher in the Florida Program for Shark Research at the Florida Museum of Natural History, in Gainesville, FL. He was previously an Axelrod Postodoctoral Fellow in the Department of Vertebrate Paleontology at the American Museum of Natural History in New York City. John received an A.B. from Harvard College, cum laude in Biology; a M.Sc. in Biological Sciences from Stanford University; and a Ph.D. in Comparative Biology from the Richard Gilder Graduate School at the American Museum of Natural History. He has conducted fieldwork collecting midwater fishes in collaboration with NOAA agencies throughout the Pacific, and is currently analyzing causes for population decline in the thorny skate. Photo provided by the Florida Museum of Natural History of the University of Florida.

Many questions scientists get asked relate in some way to why we do work for the sake of it; most often, data itself does not have an immediate return on investment. However, data is needed before returns under a respectable model can ever be projected. This distinction is made plain by research projects that begin with simple premises. For example, we are interested in how a diminutive, ungainly shark feeds. This shark is the cookiecutter shark (*Isistius brasiliensis*), made somewhat infamous as the cause of several punch-hole marks on the rubber coverings of US submarine radar devices during the Cold War.

The subject of how this shark feeds may seem akin to the “shrimp on a treadmill” study maligned earlier this decade by certain groups as an example of waste in scientific effort and funding. After all, we see certain sharks eating, often in slow-motion and at high-definition, on television programs rather frequently at certain times of the year, and so many might consider the matter quite settled. However, the simple premise belies a far more complicated reality.

There are over four-hundred species of sharks alive today (the fossil record includes many more), and not all of them feed with this commonly-recognized bite- and/or bite-and-shake method. Some sharks swim with open mouths to filter plankton, and do not bite at all; others ingest prey whole, making biting irrelevant.

The cookiecutter shark, however, exhibits an especially gruesome kind of bite, leaving eerily symmetrical crater wounds on the surfaces of larger fishes, open-water swimmers, other sharks, and sometimes drowning victims. These wounds bleed profusely and heal slowly. It, therefore, stands to reason that, given this macabre feeding strategy, it must be one of the most studied examples of shark feeding behavior. Strangely enough, this is not the case.

Some evidence linking this shark to its signature wound came from a 1971 study in which a researcher used a dead cookiecutter shark like a melon-baller on the surface of a nectarine to successfully reproduce the shape of the crater wound and coaxed a bedraggled, net-caught specimen to affix itself to the surface of a dead fish. Legal counsel would call such evidence circumstantial, but this work, done without an anticipated return on investment, highlighted a new conundrum related to *Isistius* feeding—that the shark could potentially generate astonishingly high pressures within its oral cavity. But how?

Evolution builds things with what it has to work with, and sometimes the solutions appear to use what engineers might consider unorthodox materials and configurations. The cookiecutter shark has what amounts to a razorblade-lined bucket for a lower jaw; a floppy Velcro pad for an upper jaw; a fleshy O-ring for lips; a plunger for a tongue; and an unusual branching configuration of cranial muscles linked to its pectoral fins.

Figure 1 (left). Cookiecutter shark jaws, quite specialized for an unusual feeding method. Specimen caught during trawl operations during OES1104 (Integrated Ecosystem Assessment survey; Chief Scientist Evan Howell, summer 2011) aboard the NOAA vessel *Oscar Elton Sette*. Photo by Don Kobayashi, NOAA/PIFSC.

Somehow, these components successfully produce the characteristic bite wound. This toolkit works, as engineers have, it turns out, independently replicated the general mechanics in a suction-based tool used for human rectal biopsy. But such biopsy plugs are often small, excised from soft tissue, and done on sedated patients. Extracting larger plugs, of denser tissue, from prey animals that would prefer not to be bitten is another matter, especially given the cookiecutter shark's lackadaisical swimming pace. Intuition suggests the bite must be quick, so why not keep one in a tank to confirm this suspicion?

Tank-based studies are a traditional staple of feeding research, which is often under the purview of a field of biology known as biomechanics. Much of what we know about the engineering, fluid flow, and energetics of fish and shark feeding comes from the labs dedicated to this field of research. The study animals are acclimated to tanks and sometimes fitted with pressure sensors through the gill slits. Some fishes figure out that food will arrive no matter what they do, and change their behavior accordingly. Wiliness aside, acclimation is stressful and can take several weeks. The cookiecutter shark is a midwater species, meaning it lives predominantly in the upper level of what we know as the "deep-sea" environment, and previous efforts to keep them in tanks have failed. Deep-sea vertebrates do not survive long in aquaria; the record is around two weeks, which precludes the possibility of tank-based observation of acclimated cookiecutter shark feeding behavior and oral pressure measurement.

Or does it? Scientific research often needs to be clever in order to formulate questions in ways that can be addressed with the equipment on hand. There are several ways to measure pressure indirectly if direct measurement through the gills is impossible. One of these ways is at the surface to which the

cookiecutter shark attaches itself before biting, as this surface would experience the effects of negative pressure generated inside the shark's oral cavity. With this in mind, we might design an experiment where a caught shark would bite a surface covered with a pressure plate of some sort. Such a plate would need to be inconspicuous, be able to measure negative pressure, be operable in saltwater, and work at depth. But do such sensors exist?

We posed the problem to two different sensor companies, both of whom were excited by the project when we described it to them. It turns out, however, that no existing technologies satisfy all the requirements. Cookiecutter shark feeding poses a unique measurement problem. And we still have not observed a complete feeding event, regardless of pressure measurement.

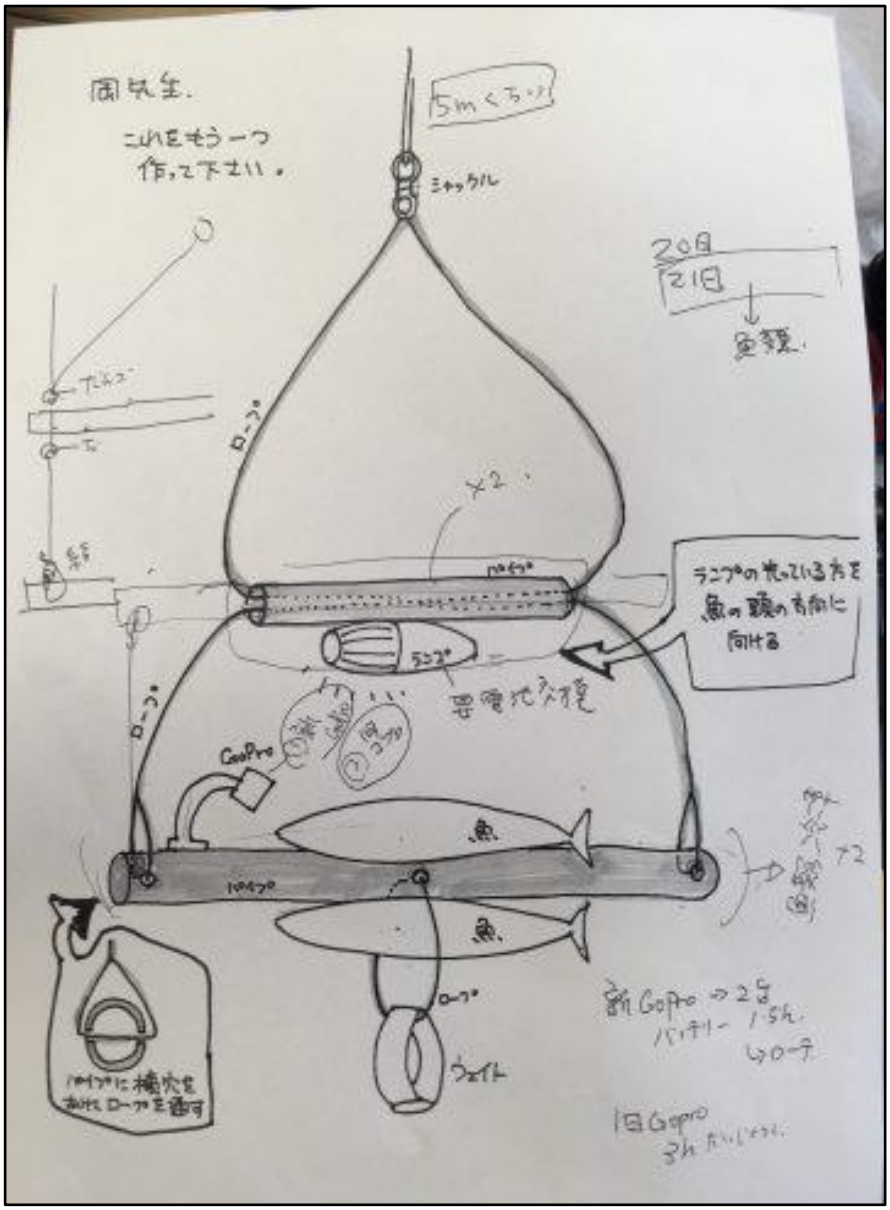
Scientific research is a global endeavor, and interesting problems, such as the cookiecutter shark puzzle, do not conform to national boundaries. Last fall, we were funded by the Okinawa Churashima Fund (OCF) to travel to Japan, and with OCF staff attempt to document cookiecutter shark feeding. We considered pressure to be the major feature of the feeding event. Strong enough pressure would cause a bulge of tissue into the shark's oral cavity, and under these circumstances, a bite straight across this tissue would appear as a crater wound after the fact. Our sponsor favored a hypothesis from the literature that proposed a bite-and-twist approach. Our friendly disagreement had led to the project getting funded. We flew in over the remnants of Typhoon Hagibis.

I had personal experience catching cookiecutter sharks. In four trips aboard a National Oceanic and Atmospheric Association (NOAA) research vessel, these sharks were not infrequently encountered as pests in trawls and were considered a liability as they were known to bite the trawl receptacle and compromise net integrity by causing blowouts through the semicircular holes they left behind.

These encounters had been variable in frequency. Once, we had potentially six cookiecutter sharks in a single trawl. Other times, we had encountered one the entire trip. However, wounds we observed on fish auction tuna and mahi-mahi caught in the vicinity of our Okinawa expedition sites suggested the sharks were active in the area (Fig. 2).

Figure 2 (above). Fresh cookiecutter shark bite mark (lower left) on the right flank of a tuna, caught in the vicinity of the payaos. Specimen observed at a fish auction. Photo by the author.

I had personally never considered how a cookiecutter shark might be caught without a trawl net, but our sponsor had an elegant solution. Rather than attempt to capture the sharks, we would video the feeding events using a GoPro and an illuminated bait fish anchored to a PVC armature (Fig. 3). This way, given its natural setting, the video would help us determine not only the bite method of the shark but also its natural method of approach to prey.



However, taking this tack meant we had to incorporate everything known about the zoology of the cookiecutter shark. Midwater organisms follow what is known as a diel cycle, meaning that they migrate closer to the surface at night, with activity also influenced by the lunar cycle. Cookiecutter sharks have in the past been caught at night in the upper 20 meters of water, but the open ocean is generally empty, and as far as we know, cookiecutter sharks do not school or swarm, so encountering an aggregation of them was unlikely. Our hosts' solution was to drop the camera setups near an anchored Fish Aggregating Device (FAD), known locally as a payaos, a piece of equipment designed to attract fishes of commercial interest, such as tuna and billfish which, based on previous prey preference studies, appeared to be preferentially targeted by cookiecutter sharks. If these preferred prey were in the area, it was reasonable that we might see cookiecutter sharks, as well.

Figure 3 (above). Schematic of the observational rig design for videotaping cookiecutter shark feeding using a GoPro. Illustration by Taketeru Tomita, OCF. Photo of the illustration by the author.

Getting to the payaos, however, required a three-hour trip one-way. We were fortunate the Okinawa Churaumi Aquarium owned a vessel, the *Kuroshio*, on whose operations we were allowed to piggyback. We left in the morning, heading west from the harbor, and moved from patch to patch, occasionally

following aggregations of seabirds, helping with vessel operations catching tuna for the aquarium's live tank. As the sun set, we had a meal on the back deck and then prepared the rigs for night operations. We were limited in the amount of time we could deploy, due to the battery limitations of the GoPros, but managed to get two two-hour deployments in per night. In the morning, we would return to the harbor. We went out four times but did not see a cookiecutter shark.

What began with a gory bite and a question ended with sleeping over a hold full of tuna, on a windy ship deck off the coast of Okinawa. It did not go as we had thought it might, but today's nothing is tomorrow's something, and this is why we work.

Figure 4 (right). Staff and crew of the *Kuroshio* (OCF) sharing a meal with us before deploying the cookiecutter rigs.

We would like to thank Taketeru Tomita; Keiichi Sato; Keiichi Ueda; Shin-Ichiro Oka; Kei Miyamoto; Nozomi Kobayashi; Rui Matsumoto; Masaru Nakamura; Kiyomi Murakumo; and the staff and crew of the OCF vessel *Kuroshio*, the Okinawa Churaumi Aquarium, and the URM Fish Collection for making this trip and collaboration possible. More information about the Okinawa Churashima Foundation may be found at https://churashima.okinawa/en/ocrc/. The author would additionally like to thank NOAA PIFSC for collaboration through the years. The featured image at the top of the post is by Don Kobayashi, NOAA/PIFSC.

This content was provided by the University of Florida and the Florida Museum of Natural History and the Florida Program for Shark Research.

Young Professionals Spotlight

Evelyn Bond – Southern California District

What is your current position, with what company/organization, and what is the focus of your research/work?

I am a master's candidate at California State University, Fullerton (CSUF) and am conducting research in Dr. Kristy Forsgren's Fish Reproductive Biology Lab. My research is aimed at characterizing the roles of surfperch (Embiotocidae) genital papilla (located ventrally) and the paired flask organs (located on both sides of the anal fin) during the reproduction and their involvement in sperm transfer. My research will clear up some of the inconsistencies and misunderstandings of male surfperch reproduction, specifically the external reproductive structure used during copulation.

Where did you receive your education, and what helped pave your way to your current position?

I completed my undergraduate work and received my B.S in Biological Science with an emphasis in Marine Biology at CSUF. As an undergraduate student, I was research scholar in CSUF's Southern California Ecosystems Research Program (SCERP). The program provided me with guidance, and the encouragement I needed as a new scientist. I was also introduced to great faculty members and is how I met my current research advisor, Dr. Forsgren. I credit Dr. Forsgren for guiding me along the way and always preparing me for success.

How does your work apply to, or influence, fishery management (e.g., stock assessments, sportfishing, commercial regulations, habitat protection, etc.)?

The management of marine resources is based on the best available scientific information, and many fisheries are data-poor (i.e., surfperches). The lack of essential fishery information and basic biological information such as reproductively-based data which includes when and how fish reproduce is important when determining a population's ability to replenish itself and at what level it might be harvested sustainably. Thus, reproductive information is crucial to fully assess fish stocks and to set appropriate restrictions (e.g., timing of harvest, fishery closure) on fisheries.

What is your professional outlook for fisheries management? In other words, what will the future of fisheries management look like 10-20 years from now. What are we doing correctly, what needs to be improved (e.g., in research, policy, education)?

I believe that fisheries management helps to protect natural resources and will continue to provide suitable fish stocks for future generations. While fisheries management could be a challenge given

unpredictable circumstances (e.g., impacts of climate change, presence of microplastics), it is important to continue educating professionals and the general public of such beneficial practices for our future.

What is the importance of young fishery professionals today and for the future of fishery management?

As the environment and ecosystems continue to change, we must be the example to young professionals in our field. It is our job as professionals, scientists, and ambassadors of the ocean and fisheries conservation to motivate and encourage young professionals to continue the work we are currently focusing on.

What drew you to AIFRB, and what does AIFRB do for you and what can it do for other young professionals in this field?

I was encouraged by my research advisor to join AIFRB 2015. I have been an active member since then, and I am now holding my second term as the Secretary/Treasurer for AIFRB's southern California District. It is truly a pleasure to be a part of the AIFRB community because it gives me an opportunity to give back to young scientists who are excited to share their research. AIFRB gave me the opportunity to network and build professional relationships with others in the scientific community. Being a part of the AIFRB community gave me a competitive edge because of the exposure and mentorship from top professionals in my field of study and is why young professionals should consider joining this great community.

Please contact Evelyn (evelync.bond@gmail.com**) to continue the conversation!**

Young Professionals Spotlight

Erica Mason – Southern California District

What is your current position, with what company/organization, and what is the focus of your research/work?

I am a third-year graduate student in the Marine Biology PhD program at Scripps Institution of Oceanography, and I study under Dr. Brice X. Semmens. My work focuses on improving our understanding of the long-term population dynamics of sea basses in southern California relative to natural oceanographic and anthropogenic influences. I am also a lead for the California Collaborative Fisheries Research Program (CCFRP) in San Diego. For info on CCFRP, please visit https://www.mlml.calstate.edu/ccfrp/about/.

Where did you receive your education, and what helped pave your way to your current position?
I received my B.S. in Marine Biology and my M.S. in Biology from California State University (CSU), Long Beach. Early on, the most influential drivers in my career path were 1) a CSU marine biology semester at the USC Wrigley Institute of Environmental Studies on Catalina Island, CA, and 2) mentors who fostered a stronger sense of self-efficacy. Later, I was an Environmental Scientist with California Department of Fish and Wildlife's Marine Region for 7 years, and I had the opportunity to lead fishery research on important sport-caught fishes as well as participate in a contentious regulatory process for the basses. These experiences, as well as life changes (e.g., marriage, family) provided new perspectives, and inspired me to further my training in pursuit of making a difference in fishery science and conservation.

How does your work apply to, or influence, fishery management (e.g., stock assessments, sportfishing, commercial regulations, habitat protection, etc.)?
Reconstructing the population dynamics of the saltwater basses in California will improve estimates of current and future fishery status under changing natural and anthropogenic influences and will enable investigation of reliable species-specific environmental indicators. These additional tools should improve monitoring and assessment and form the basis for a framework that incorporates changing ocean conditions into management action -- both of which are critical components of the State's fishery management strategy.

What is your professional outlook for fisheries management? In other words, what will the future of fisheries management look like 10-20 years from now. What are we doing correctly, what needs to be improved (e.g., in research, policy, education)?
The outlook for fisheries management is bright. From a California perspective, we have taken huge strides in how we assess and manage our stocks, evaluate management effectiveness, engage stakeholders in the regulatory process, and in directing significant resources to public education and outreach. California was the first state in the nation to implement a state-wide network of Marine Protected Areas (MPAs). Though these MPAs were not intended as a fisheries management tool, they work to compliment current and future fishery management strategies. MPAs in California have served to increase our understanding of ecosystem dynamics and fishing impacts through comparisons of fished and unfished areas. Finally, technological advances, such as electronic monitoring of commercial vessels, are being tested and implemented in California and several other states. The future of fisheries management is likely to rely

more on automated, near real-time landings data, machine learning tools to assist in monitoring of bycatch and length composition of catches at sea, and collaborations with fishery constituents to fill data gaps.

Even with these strengths and advances, we as a state, nation, and globe can do better. Climate change is the most important issue facing fisheries management, and although the ideals for incorporating climate change in fisheries management exist, they are difficult to implement because we don't always have the necessary data to provide historical perspective, and because we lack a complete understanding of how oceanographic variability influences many of our fish populations. Long-term monitoring and the resources to fund it will be at the crux of our ability to accurately interpret and predict fish population responses to environmental change. Even more pressing will be the formulation of a framework to guide managers and fishermen in preparing and adapting to shifts in species distributions. Anticipating the potential loss of some fisheries and the emergence of new ones will require flexibility in fishery management plans and added caution when dealing with data-poor fisheries.

We can also do more to bridge the gap between research and policy. Having strong research components in government fishery agencies typically hinges on capacity. And although there are numerous scientific studies from academic institutions geared toward informing fisheries management, the utility of these studies to managers is limited primarily due to a lack of early consultation with resource managers (e.g., limited knowledge of what managers actually need, and a disconnect between proposed management measures and what can be feasibly instituted).

What is the importance of young fishery professionals today and for the future of fishery management?

Young fishery professionals today hold the key to incorporating climate change in fisheries management and influencing national and global perspectives on prioritizing fisheries sustainability. They bring a whole new suite of analytical and quantitative skills that can increase efficiency and capacity in data analysis and decision making. Through advances in interactive media, young fishery professionals are also well equipped to reach broader audiences, thereby enhancing outreach and education efforts.

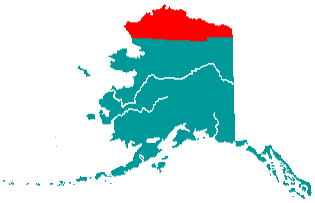
What drew you to AIFRB, and what does AIFRB do for you and what can it do for other young professionals in this field?

Shortly after receiving my bachelor's degree, my supervisor at the Southern California Coastal Water Research Project, Dr. M. James Allen, invited me to attend my first meeting of the AIFRB Southern California and Baja California, Mexico District. He had been a former Director and I was inspired by his dedication and passion, and I wanted to be a part of AIFRB too. AIFRB also provided me the opportunity to meet colleagues from a variety of professions and institutions – academia, state and federal government agencies, sanitation districts, and consulting agencies – with various travel awards and networking opportunities. For all these reasons, I highly encourage young professionals in fishery science to seek out (or start up) a local District and become a member!

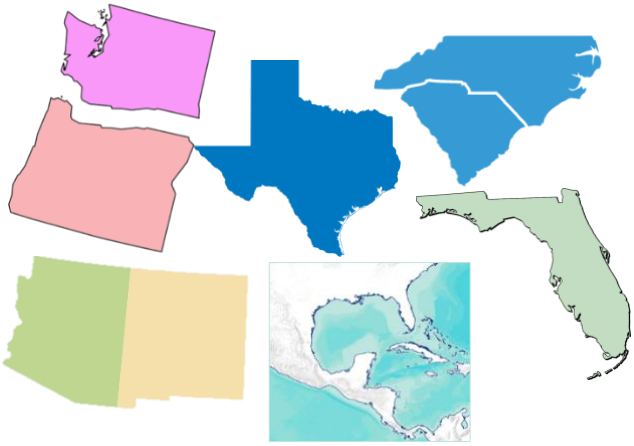
Please contact Erica (etmason@ucsd.edu**) to continue the conversation!**

AIFRB Position Opening

District Director Vacancies – Now Seeking Nominations!



The Institute has vacancies for District Directors in the following Districts: Northern Alaska, Southeast Alaska, Pacific Northwest Super District (Washington, NW Oregon – SW Washington), Oregon, the Great Lakes, the Carolinas, Arizona/New Mexico, the Gulf of Mexico, Texas, and Florida. These present excellent opportunities for members to get more involved with the Institute in a leadership role in order to help advance our mission, including the professional development of members and the advancement of the field of fisheries science. District Directors are elected by the membership of each District to serve two-year terms and they are responsible for promoting the Institute activities at the regional level, including the recruitment and advancement of members, as well as organization of regional meetings and activities. District Directors also serve on the AIFRB Board of Control to be involved with leadership of the Institute on a national level. Therefore, serving as a District Director presents individuals with many opportunities for professional and personal development while serving in these rewarding roles and making meaningful contributions to our field.



If you are interested in nominating someone (including self-nominations) for one of these vacancies, then please contact Kim Anthony by March 1st, 2020.

AIFRB Position Filled

AFS/AIFRB Liaison – Doug Zemeckis

Dr. Douglas Zemeckis (County Agent III – Assistant Professor, Rutgers University) has been appointed as the new liaison between AIFRB and the American Fisheries Society (AFS). Doug has been a member of both AIFRB and AFS since 2013, and he has served as the Director of AIFRB's Keystone District since 2017. In this liaison capacity he will be responsible for advancing AIFRB's policy of maintaining strong relations and productive collaborations with AFS, including promoting matters of mutual interest. This will be accomplished by working collaboratively with the AIFRB President, Board of Control, and members, as well as the leadership and membership of AFS. If you have any questions or suggestions, then please contact Dr. Zemeckis (zemeckis@njaes.rutgers.edu, 732-349-1152).

AIFRB Position Filled

Great Lakes District Director – Lynn Waterhouse

Lynn Waterhouse is a research biologist at the Daniel P. Haerther Center for Conservation and Research at the John G. Shedd Aquarium. Her research focuses on mesopredators in the Bahamas and Caribbean, specifically population assessments of groupers and snappers. Waterhouse teaches a college course in the Bahamas aboard Shedd's research vessel, the R/V *Coral Reef II*. Before coming to Shedd, Waterhouse completed her Ph.D. in biological oceanography at Scripps Institution of Oceanography at the University of California San Diego in December 2018. As part of her Ph.D., Waterhouse worked on Nassau groupers in the Cayman Islands with REEF (Reef Environmental Education Foundation) and the Cayman Island Department of the Environment. Waterhouse also completed the first stock assessment of white seabass for the State of California with Dr. Juan Valero of CAPAM (Center for Advancement of Population Assessment and Methodology). Waterhouse also holds a Master of Science degree in statistics from Pennsylvania State University and a Master of Science degree in fisheries sciences from Virginia Institute of Marine Sciences at the College of William and Mary. She has a Bachelor of Science degree in biology with a minor in economics from the University of Dayton. Waterhouse has been a member of AFS since 2007 and joined AIFRB in 2013 at the encouragement of then labmate Lyall Bellquist. Waterhouse began volunteering as a reviewer for the W. F. Thompson Award in 2014 and also received the Clark Hubbs Award in 2014. AIFRB has also been a supporter of the "Monsters of …" events at 3 past AFS meetings – which Waterhouse has helped organize. These events are fundraisers for future student travel award for the Marine Fisheries Section and Estuaries Section of AFS (and in 2017, the Fish Habitat Section).

AIFRB Position Filled

New England District Director – Alex Hansell

Alex Hansell is currently a postdoctoral researcher at the Gulf of Maine Research Institute in Portland, ME. Alex grew up in Massachusetts, and received his Bachelor's degree in Biology from Northeastern University. Whilst there, Alex worked at the New England Aquarium and volunteered at the Bimini Biological Field Station. Alex attended graduate school at the University of Massachusetts Dartmouth School for Marine Science and Technology. Alex graduated with his Ph.D. in 2020, and his dissertation was focused on standardizing catch rates to support data-limited stock assessment. Some of Alex's research interests are improving abundance estimates, understanding the influence of climate change on fish distribution, and working collaboratively with the fishing industry. Alex joined AIFRB as a student member in 2018. In his spare time, Alex enjoys hiking, playing guitar and watching/participating in sports. For any questions, please contact Alex at ahansell@Gmri.org.

Follow the AIFRB Members

AIFRB is back on social media! Follow us on Facebook, Instagram, Twitter, and LinkedIn for updates on events, news, member highlights, and more. If you have content from past or advertisements for upcoming AIFRB events, research highlights (e.g. recently published paper, invited talk, presentation at a conference), or other exciting fisheries news, we would like to share it on our social media platforms to spread the word. Please contact our Social Media Director, Emily Slesinger, at slesinger@marine.rutgers.edu with a photo, description, and the names of the AIFRB local district and/or AIFRB members present.

Award Recipient

Kashara Early Career Award – Abigail Lynch

The American Institute of Research Fishery Biologists established the Kasahara Early Career Award in 2006 to honor the memory of Dr. Hiroshi Kasahara and the lasting contributions made by Dr. Hiroshi and Mrs. Toshiko Kasahara to fisheries science and the work of the Institute. The Kasahara Award is intended to recognize the Institute's most promising young associates and members early in their research careers. A committee comprised of five individuals was appointed by the President to determine guidelines and procedures for the award.

Abigail Lynch (US Geological Survey, Reston VA) received the 2019 Kasahara Early Career Award. Abby met all of the criteria and preferred qualifications for the award. Her publication record demonstrates productive collaborations and contributions to fisheries science, and her research on stakeholder-driven decision support and climate effects on inland fisheries are innovative, and they bridge basic-applied topics in the science-policy interface. She has also been an active leader in our profession and science community in AIFRB (symposium on social media, Capital District event organization), AFS (several committees and recognized her as an emerging leader) and USGS and her academic communities.

Award Recipient

Outstanding Achievement Award Winner

The AIFRB selected the Gills Club as the 2019 recipient of the AIFRB Group Outstanding Achievement Award. Since 1982, AIFRB's Outstanding Achievement Awards have recognized sustained contributions of significant publications, exceptional service to the fishery profession, outstanding teaching or training programs, important discoveries or inventions and significant contributions to the advancement of fishery science. Nominated by Dr. Cate O'Keefe, the Gills Club was unanimously selected by the AIFRB Board to receive the 2019 award. The Gills Club is the Atlantic White Shark Conservancy's STEM-based education initiative dedicated to connecting girls with female scientists from around the world, sharing knowledge, and inspiring ocean research and conservation, with a focus on sharks. The Club was established in 2014 by a team of dedicated female shark researchers who recognized the need to enhance STEM education and experience for elementary and middle school girls. The Club's founders recognized the gender disparity and lack of diversity in higher education and the professional fisheries workplace. The focused efforts on introducing hands-on, experiential learning to the youngest generation to boost their chances of entering a career in science.

Founded in Massachusetts, the Club has expanded their research mentoring team to include nearly 70 leading female shark scientists from around the world. They offer hands-on K-12 educational events, provide scholarships for undergraduate students to attend intensive field-based courses, and serve as mentors for aspiring female scientists. Initially, the free, hands-on learning program was offered on Cape Cod, and as the Gills Club emerged as a leader in fostering STEM education for girls, the program grew. With assistance from research laboratories and aquariums around the country, the Club's events have been attended by over 2,000 kids.

The Outstanding Achievement Award will be presented to the Gills Club at an educational event in the summer of 2020. We interviewed Gills Club co-founder Marianne Long to learn more about the organization and their continued success.

How did the Gills Club start and what was the inspiration?

"The Gills Club came to be after several conversations between Dr. Cynthia Wigren (AWSC Board Director), Dr. Heather Marshall (Professor at State College of Florida), Julie Patterson (Graphic Designer), and me (Marianne Long, AWSC Education Director). At various outreach events we were all having conversations with young girls who wanted to be shark scientists, but all had similar stories about being made fun of at school because of their love of sharks or were told that sharks are for boys. We wanted those young girls to know that they aren't alone, many girls (and women!) love sharks, and

that there are a lot of women who are shark scientists that are great role models. So, the idea was born to connect young girls so they realized they weren't alone, as well as connect them to women working in shark science so they could learn how to get into that career one day."

How did you grow your network of scientists to include so many leading female shark scientists globally?

Marianne Long performs a dissection with MA high school students. Photo courtesy of Cape Cod Times.

"In the beginning and even now it is word-of-mouth. Scientists recommend other scientists and we've had some women reach out because they want to get involved. We do have criteria, that all science team members minimally have a Master's degree, and it has been awesome to see that many students have approached Gills Club members at conferences sharing how they hope to get involved when they finish school."

How has the Club expanded its reach to students?

"When the Club was founded, we were approached by the Cape Cod Museum of Natural History to do an event to help launch the program. We saw the impact the hands-on learning program had on the attendees, so we made them monthly. Soon after, Mote Marine Lab and several other aquariums and educational facilities wanted to start running the events as well. Our mission with the events is to offer a free learning opportunity and to ensure it is experiential."

How has the Gills Club evolved with your continued success?

"We have really grown our social media presence since that is a great way to connect with people and allow interaction between scientists and individuals. We have also done some larger events, including the Gills Club Symposium. We offered a scholarship to the Shoals Marine Lab Shark Biology Course the past several summers, which has been great to provide a unique learning opportunity to a young woman. As we look to the future we are working on an app, and hopefully another symposium!"

Dr. Cynthia Wigren with an 8-year-old shark enthusiast. Photo courtesy of AWSC.

For more information about the Gills Club, please visit:

Website: www.gillsclub.org

Symposium Video: https://www.youtube.com/watch?v=M0mrakms4y8&t=31s

Cape media news story on events:

https://www.facebook.com/CapeMediaNews/videos/2599544773664092/UzpfSTE2MDk1MzQ1MTI4NTUzNDo1MDE4OTgzMDcxOTEwNDU/

Previous Events

POPULATION ASSESSMENTS

Fish Stock Assessment Report

Quarterly summary of the activities of the national stock assessment enterprise.

The Office of Science and Technology provides quarterly updates on the completion of stock assessments and surveys. Previously this report was distributed as a pdf, and now has been converted to a dynamic report on a standing web page:

https://www.fisheries.noaa.gov/national/population-assessments/fish-stock-assessment-report

The page includes summary tables and graphics, but also complete tables of what was completed (and planned), pulled from the national tracking databases to which many of you contribute (SIS and FINSS). You may find this interesting and useful as a source for managers, stakeholders, and others who are curious about NMFS stock assessments and surveys.

AIFRB in Quarantine

As you may know, last month Cate O' Keefe, Treasurer and President Elect, began her new career as a scientific consultant, and founded Fishery Applications Consulting Team. She's currently working on projects for the New England Fishery management Council and the Northeast Seafood Coalition.

As AIFRB Treasurer, she's been a big help in budgeting sponsorships, registrations, expenses and contingency planning for the International Flatfish Symposium (click here for more info). We'll have a notice in the next BRIEFS about extending the abstract deadline and the current intention of holding the conference this fall as planned.

Upcoming Events

AMERICAN FISHERIES SOCIETY
150th Annual Meeting
COLUMBUS, OHIO, AUG 30 - SEPT 3, 2020

The 150th Annual American Fisheries Society Meeting is currently scheduled to continue as originally planned. The deadline for abstract submission has been extended to April 20, 2020.

Learning from the Past, Meeting Challenges of the Present, Advancing to a Sustainable Future
The Ohio Chapter invites you to attend the 150th Annual Meeting of the American Fisheries Society in Columbus, Ohio from August 30th to September 3rd, 2020. Come celebrate 150 years of fisheries ecology, conservation, and management with fisheries students and professionals from across the world.

Upcoming Events

Title: Marking, Tagging, and Tracking* **ID number:** 9391 *AIFRB sponsored

AMERICAN FISHERIES SOCIETY
150th Annual Meeting
COLUMBUS, OHIO, AUG 30 - SEPT 3, 2020

Abstract: Tracking data inform how individual organisms and populations distribute locally, utilize habitat, migrate over larger scales, and evolve over time. Analyzed carefully, these data may indicate changes in climate and land use, biodiversity, invasive species, predict spread of diseases or parasites, and correspond to effectiveness of stocking efforts.

Successful approaches not only involve proper tagging and placement of monitors to detect movements, but also require robust analyses and effective communication of large datasets. This symposium will share technologies, methodologies, findings, analytical approaches, and troubleshooting tips to highlight more recent developments and encourage collaboration. Talks will focus on the following topics:

- Description of novel tagging methods or monitoring approaches
- Description of novel combinations of technologies for improved data quality or quantity, including metadata collection
- Connection of tracking data to environmental data, such as climate, habitat, or water quality
- Explanation and demonstration of useful software for tracking data management and analysis
- Explanation and demonstration of robust analytical approaches used with tracking data
- Application of tracking data to inform decision-making processes in fisheries policy

Symposium Organizers: Jeff Heindel (heindel@mcmjac.com), Michelle L. “Mick” Walsh, Quinton Phelps, Kim Anthony, Paul Venturelli and Richard D. Methot Jr.

Upcoming Events

Title: Spill Your Guts: Understanding Diet Data and Its Utility for Ecosystem and Fishery Modeling and Management **ID number:** 9358

Abstract: Diet data (e.g., gut contents) have a broad range of possible uses, from the presence/absence of prey taxa to informing end-to-end ecosystem models. The ecological relevance and subsequent utility of diet data can be unclear, however, because diet data are often sparse and/or only collected for certain species, seasons, or years. As management agencies transition to ecosystem based fisheries management (EBFM), an improved understanding of the utility of diet data for modeling and management would be beneficial. This symposium will coalesce researchers experienced and interested in all aspects of diet data, from collection to end users. The symposium should broaden our understanding of the physiological factors that affect diet observations (e.g., digestion and evacuation rates), spatial and temporal variation in diet data, robust use of diet data in assessment and ecosystem models, and how managers can use diet data to advance EBFM. Diet data are collected from a range of fresh and marine systems globally; thus, this symposium should garner widespread interest among scientists and managers. The methods and application of diet data have also evolved through time and will continue to do so, making the general topic fitting for the Meeting theme, “Past, Present, and Future”.

Symposium Organizers: Jonathan J. Deroba (jonathan.deroba@noaa.gov), Justin J. Suca (jsuca@whoi.edu), Sean M. Lucey (sean.lucey@noaa.gov), Elizabeth Ng (elng@uw.edu)

Upcoming Events

Title: Fish Welfare **ID number:** 9479

Abstract: Fish welfare is an aspect of fish husbandry that is often overlooked. Fish can sense and react to noxious stimuli, often displaying similar aversive responses to the ones we observe in mammals, including stress. Chronic and acute stress can cause anorexia, weaken the immune system, and induce other physiological abnormalities. Stressed fish may display abnormal behaviors or show abnormal swimming patterns. In the aquaculture of food fishes, pre-slaughter stress can cause changes in the texture and quality of fish fillets. In the ornamental fish industry and for fishes cultured and/or transported for stocking, shipping stress may be an important cause of mortality. Thus, fish welfare is not only a matter of ethical debates but a relevant issue for anyone that works with fish from fishermen and fish growers to researchers using fish as animal models. This symposium will aim to explore a variety of aspects of fish welfare, including: how welfare can be assessed, the use of naturally derived compounds to reduce shipping and handling stress, and the effects of fish welfare in the overall health of fish.

Symposium Organizers: Jose Reyes-Tomassini (jreyes-tomassini@francis.edu), Jeff Heindel, Michelle L. “Mick” Walsh and Benjamin R. LaFrentz

Upcoming Events

Title: How Citizen Science and Non-Traditional Data Sources can be better incorporated into fisheries stock assessments and management **ID number:** 9377

AMERICAN FISHERIES SOCIETY
150th Annual Meeting
COLUMBUS, OHIO, AUG 30 - SEPT 3, 2020

Abstract: Sustainable fishery management relies on stock assessments and effective management measures. Fisheries scientists strive to use the best available information to provide managers with past, present, and future information on a fish stock. Management and scientific institutions have developed systems for data collection and analysis to support fisheries stock assessments and management decisions. Data are typically collected by government agencies and academic partners via fishery-dependent catch monitoring and statistically-designed, fishery-independent surveys. However, data gaps remain largely because programs are expensive and time and labor intensive. This symposium will explore how non-traditional sources, including non-governmental organizations, academia, and increasingly, citizen science could benefit stock assessments and management. We will explore questions, such as "How can citizen science projects be designed to provide data that will improve stock assessments and management?" and, "What is needed to improve coordination between governmental and non-governmental groups so that non-traditional data sources can be made available for use in the management process?" Presentations will cover challenges and successes associated with incorporating citizen science and other non-traditional data sources into the fisheries stock assessment and management process. We hope to identify common themes and best practices to guide future use of these data sources.

Example topics include:

- Survey and sampling design for citizen science projects so data can be incorporated into assessments
- Collaborative survey projects among multiple partners and agencies
- Facilitating greater incorporation of "external" data into assessments and management
- Effective communication between governmental and non-governmental groups on data gaps and project design

The organizers anticipate sharing case studies from federal, state, international, and academic perspectives. A discussion will be held at the close of the symposium to discuss challenges and successful methods. **If you are interested in providing an oral or poster presentation in the session, abstracts must be submitted via the meeting website by April 20**. For further info, please visit the Meeting website at https://afs.confex.com/afs/2020/cfp.cgi.

If you have any questions about the symposium, please feel free to contact the organizers listed below.

Symposium Organizers: Abigail Furnish (abigail.furnish@noaa.gov), Laura Oremland (laura.oremland@noaa.gov), Richard Cody (richard.cody@noaa.gov), and Julia Byrd (Julia.Byrd@safmc.net)

Upcoming Events

Title: Getting it Right: A Guide to Successful Supplementation for Recreation, Restoration, and Recovery **ID number:** 9380

Abstract: Captive rearing and supplementation has been a common tool in fisheries management in North America for over 150 years. Applications include support for recreational and harvest-based fishing, restoration and recovery of declining populations, and genetic banking of valuable genotypes. Techniques are changing, and success stories are increasing. This symposium aims to build bridges within the fisheries community and demonstrate that new approaches are yielding improved success. Talks will focus on the following topics: 1) Strategies or tactics to reduce domestication of captive animals and increase survival and/or fitness post-release, including efforts to target fitness or adaptive variation in captive breeding programs; 2) Efforts to incorporate a holistic approach to conservation goals through coordination with habitat restoration and evaluation to ensure strong phenotype-habitat matches to improve outcomes; 3) Adaptive approaches to evaluating impact or success of release programs through connections between rearing, supplementing, and monitoring; 4) Descriptions of advancements in rearing techniques fostering improved outcomes including genetics, nutrition, pathogen management, and operations; 5) Descriptions of means to improve supplementation success through adapting release strategies or improving monitoring; 6) Means to manage, diagnose, treat, or prevent disease outbreaks and pathogen exchange with novel approaches to operational techniques, feed regimes, or low-impact surveillance.

Symposium Organizers: Nathan Wilke (nathan_wilke@fws.gov), Michelle L. “Mick” Walsh and Jeff Heindel

Upcoming Events

Title: AFS/Sea Grant Best Student Podium & Poster Presentation **ID number:** 9230

Abstract: The Education Section of the American Fisheries Society (AFS) sponsors this Best Student Podium & Poster Symposium each year to recognize outstanding presentations by finishing students. This symposium highlights the “best of the best” student research at the annual meeting. To apply to this competitive process, students first submit a standard abstract (200-word limit) to the symposium through the online registration system. This standard abstract must be followed by a letter of support from the student’s advisor which indicates the relevance and rigor of the student’s research and that the research is at a stage appropriate for award consideration. For podium presentations, an additional extended abstract must be submitted. The extended abstract (limited to three pages) includes Background, Methods, Results (including up to five tables or figures), Discussion, and References. Authors of accepted presentations will be notified; submissions not accepted to this Symposium will be assigned to appropriate contributed paper sessions. All letters of support and extended abstracts should be sent to afs_bsp@googlegroups.com. Send questions to Dr. Melissa Wuellner at wuellnermr@unk.edu. Complete details and additional resources can be found here.

Symposium Organizers: Melissa Wuellner (wuellnermr@unk.edu), Dan Shoup and Kyle Hartman

Upcoming Events

Title: Incorporating Socioeconomic Data and Methods in Stock Assessments **ID number:** 9473

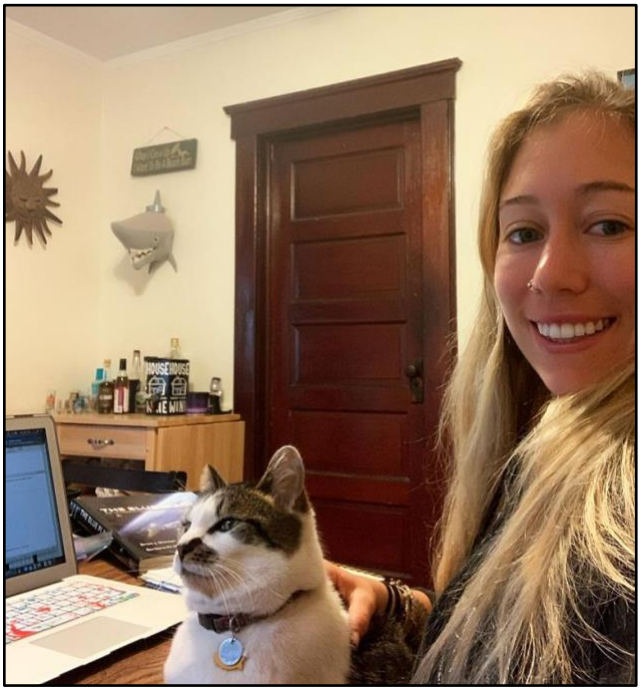
AMERICAN FISHERIES SOCIETY
150th Annual Meeting
COLUMBUS, OHIO, AUG 30 - SEPT 3, 2020

Abstract: Socioeconomic analyses are one of many tools which inform the fisheries management process to optimize fishery performance. However, there is a growing body of evidence suggesting that expanding the considerations of feedback mechanisms between humans and fish stocks in stock assessment models could increase their accuracy. Developing stock assessment models that consider socioeconomic data and interactions will help fishery managers to better match fishing capacity with available resources and develop harvest policies that consider the economic resilience of their fishing industries. This could be especially useful as we consider possible distribution shifts based on changes in environmental conditions and the impacts to commercial and recreational fishing.

In February 2020, NOAA Fisheries held an interdisciplinary workshop to develop recommendations for when and how to incorporate and/or consider socioeconomic information in fisheries stock assessments. This symposium will share initial findings and provide an opportunity to broaden the discussion on this cutting edge science. Presentations can focus on research related to the use of socioeconomic information (e.g. prices, illegal fishing behavior, fishing fleet competition, changing fishing practices) and analyses in the stock assessment process, which includes stock assessment data collection, data processing, population modeling, forecasting, and methods for communicating scientific advice to managers.

Symposium Organizers: Andrea Chan (andrea.chan@noaa.gov), Jeffrey Vieser and Abigail Furnish

AIFRB in Quarantine



Meet PhD candidate Emily Slesinger who studies fish physiology and energetics as a way to understand climate change impacts on fisheries. Most of her research currently is in the lab, so she has had to recalibrate a bit and focus on other important dissertation tasks that can be done remotely. She has also been focusing on teaching a class online and continuing to mentor undergrads remotely. She enjoys the company from her furry coworker who sleeps most of the day when not assisting with research.

Want to share your story and experience during these stressful times? Email Slesinger@marine.rutgers.edu to be featured! All stories are unique and welcomed.

Upcoming Events

Upcoming Events

Spatial Stock Assessment Methods

Workshop October 2020

WORLD FISHERIES CONGRESS
ADELAIDE • AUSTRALIA

Workshop – Early Notification and Call For Interest

A three-day spatial stock assessment methods workshop will take place following the 2020 Adelaide World Fisheries Congress. The workshop will evaluate methods for incorporating spatial complexity into stock assessments and will focus on, but not be limited to, the application of different assessment modeling platforms to simulated spatial data for two important international stocks (Antarctic toothfish and Indian Ocean yellowfin tuna).

We are currently looking for analysts to implement spatial population dynamic models using the modeling framework of their choice (generalized software packages or specific applications), examine the assumptions in their approach, and provide feedback on performance and potential improvements at the workshop. Simulated data and biological parameters will be provided well before the October 2020 workshop, along with a general study design.

Contact Aaron Berger (aaron.berger@noaa.gov) or Dan Goethel (daniel.goethel@noaa.gov) for more information.

A full workshop announcement and a general call for presentations will be forthcoming.

Steering Committee

Aaron Berger (NOAA)
Dan Goethel (NOAA)
Simon Hoyle (NIWA)
Jeremy McKenzie (NIWA)
Pamela Mace (FNZ)
Mark Maunder (IATTC)
Rick Methot (NOAA)
Patrick Lynch (NOAA)
Rich Little (CSIRO)
Paul DeBruyn (IOTC)
Rosemary Hurst (NIWA)
Andrea Chan (NOAA)

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2nd CALL FOR ABSTRACTS

***General Theme*: Interdisciplinary Solutions to Flatfish Challenges**

Abstract deadline May 1, 2020

We look forward to this opportunity for in-person interaction to share our research.

University of New Hampshire
College of Life Sciences and Agriculture

11TH INTERNATIONAL Flatfish Symposium

University of Massachusetts Dartmouth SMAST

NIOZ Royal Netherlands Institute for Sea Research

American Institute of Fishery Research Biologists Professional AIFRB Biologist

New England Fishery Management Council

NAFO
NORTHWEST ATLANTIC FISHERIES ORGANIZATION

NOAA 50 YEARS

Sea Grant New Hampshire

Cape Cod Commercial Fishermen's Alliance

New England Aquarium

STAR ODDI
Logging Life Science

hallprint the world's best fish t

SONOTRONICS

FLOY TAG

November 15-20, 2020; New Castle, New Hampshire USA

Historic Wentworth-by-the-Sea Hotel

More information and abstract submission at:

https://www.flatfishsymposium.com/international-flatfish-symposium-2020

American Fisheries Society
425 Barlow Place, Suite 110, Bethesda, MD 20814-2199
Phone: 301-897-8616 www.fisheries.org

Communication to AFS Chapter, Division, and Section Leaders

Background: COVID-19 has caused enormous disruptions to everyday life. Among the many personal and professional challenges we face, one has been the cancellation of several AFS chapter and division meetings. Fisheries scientists, managers, and students have constructed important talks to discuss their work with limited or no venue to disseminate the information. Many professionals and students have shifted their workspaces to home. Thus, an online forum for information exchange between presenters and online attendees would provide AFS members whose meetings have been canceled a virtual platform and audience to present talks. This is a distinct and separate event from the AFS Annual Meeting currently planned for August 30-September 3, 2020 in Columbus, Ohio. A tentative date for the first session is Tuesday, April 7 from 1-4pm Eastern Time and continuing twice a week – Tuesday and Thursday- from that date until we complete the presentations.

Objectives: 1) Create an opportunity for AFS members who prepared presentations but had their event canceled to share that information with a broad audience, 2) provide a solid science delivery event for AFS members (and others) to continue with the mission of AFS of sharing good science, 3) create an AFS community event for members to remain connected, share thoughts and concerns, and learn from and lean on each other in this challenging time, and 4) build a specific website page for all presentations.

Approach: AFS will provide an innovative online AFS event for presenters of canceled in-person talks to disseminate their research. Webinar sessions of online talks will occur in at least two timeslots per week for several weeks *beginning ASAP, but no later than mid-April*. The number of sessions and how they will be separated will be determined by submissions. For example, we will either break this out by topic or state chapter. Timeslots will be two- to three-hour time blocks mid-day to allow for East and West Coast attendees. GoToWebinar will be used as the platform for presenters to give talks to the online audience.

Eligibility: Only presenters whose talks were canceled or those with travel restrictions that did not allow them the opportunity to submit abstracts are eligible to present. This applies to oral and poster presenters; however, poster presentations will need to be turned into a narrated oral presentation. We may invite others in special topic areas or as plenary speakers.

Presenter Expectations: This will be a bit different than typical online webinars. Given the potential for connectivity issues with presenters during the meeting, we will ask all presenters to pre-record their talks and limit them to a maximum of 15 minutes in duration. Presenters will be expected to log-on during their scheduled talk time and conduct a live chat Q&A session during and following their talk. They will be encouraged to continue the conversation through Social Media outlets.

How to Pre-Record: Presenters will need access to a microphone for voice recording. Follow the easy instructions at the link provided. Easy "how-to" video from Microsoft – Record powerpoint presentations Stay tuned for file type & full set of instructions.

What's Next: Please send this to your Chapter, Division or Section membership to gage interest in presenting and viewership. If your symposium has presenters willing and able to present, please let us know ASAP including the number of presentations. We will also be sending out a "Call for Papers" for individuals. Stay tuned! Please email correspondence to: VirtualSpring2020@fisheries.org

Upcoming Events

71st Tuna Conference

The 71st annual Tuna Conference has been postponed until 2021. The current developments with COVID-19 prompted this difficult decision. The conference committee wants to do their part to help everyone stay safe and healthy during these difficult times. Those who registered this year do not have to take any action. Unless requested otherwise, registration and lodging payments will be forwarded to cover the 2021 conference. If, however, you would like to request a reimbursement, please notify Stephanie (Stephanie.Flores@noaa.gov). IATTC's registrations have already been approved to go towards next year. Next year's dates are for May 17 – 20, 2021. Owyn and Stephanie will remain the chair and coordinator, respectively, and the theme will remain the same. Student scholarship winners will also remain the same even if the student graduates in the meantime. The committee thanks you all for your participation and attendance over the years and they look forward to seeing you in 2021!

Job Postings

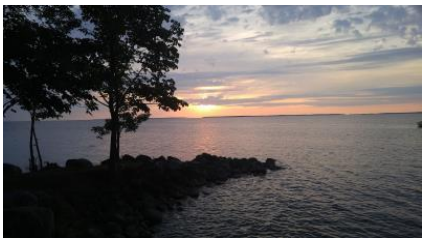
Director of Biological Resources – ECORP Consulting, Inc.

ECORP Consulting, Inc., a multidisciplinary environmental consulting firm, is looking for a seasoned professional to lead our biological resources group companywide. This professional will be responsible for the operations, growth and development of department and staff. Must have excellent and proven leadership and organizational skills. In addition to staff management responsibilities, the successful candidate will manage large complex projects, lead pursuits, strengthen teams and client relationships, and determine and develop other service areas to better serve our client needs. Must be well respected and recognized for technical expertise in one or more technical areas in biology or a closely related field. Must have advanced expertise in environmental compliance with respect to biological resources and regulatory permitting, as well as experience in marketing and business development.

Must have a B.A. or B.S. in either biology or a closely related field (M.A./M.S. preferred). Must have at least 15 years of related experience and/or training with eight years managing projects and staff and five years managing large multidisciplinary projects. This position will require periodic travel to other company offices and project locations throughout California, Arizona, and New Mexico.

ECORP offers a very comprehensive list of benefits to its employees. To apply, please submit a resume and cover letter to jobs@ecorpconsulting.com.

ECORP Consulting, Inc. is an Equal Opportunity Employer.




Pre-Notice - Quantitative Fisheries Scientist/Ecologist

The U.S. Geological Survey, Minnesota Cooperative Fish and Wildlife Research Unit will soon invite applications for a Quantitative Fisheries Scientist/Ecologist. The successful candidate will: (1) Develop novel quantitative methods for fisheries stock assessment modeling and near-term ecological forecasting; (2) Develop fish population and ecosystem models that incorporate environmental change and other human-caused impacts to freshwater systems; (3) Assist state, federal, and tribal natural resource agencies in implementing quantitative methods designed to improve freshwater fisheries management; (4) Strengthen the academic program in fisheries and aquatic sciences at the University of Minnesota in its mission to educate future professionals and, in doing so, expand the national capacity of quantitative fisheries science. The successful candidate will contribute to the teaching mission of the Department of Fisheries, Wildlife, and Conservation Biology by advising graduate and/or postdoctoral researchers from diverse backgrounds and cultures and by teaching up to 1 graduate-level course or seminar per year in their area of expertise at the request of the department.

Essential Qualifications

- Must be a U.S. citizen with Ph.D. by the time of application
- Exceptional quantitative skills
- Demonstrated ability to communicate effectively, both orally and in writing
- Ability to secure and administer funds to build and support a vibrant research program
- Ability to work collaboratively and productively with stakeholders and outside partners

Preferred Academic Preparation and Experience

- Post-doctoral, faculty, or agency experience
- Demonstrated research emphasis in quantitative fisheries science or aquatic ecology
- Experience applying quantitative ecological tools to population or community dynamics
- Leadership in a research program that involves development and application of innovative quantitative tools to address applied ecological questions
- Strong publication record in refereed journals
- Track record of interacting creatively, collaboratively, and productively on interdisciplinary teams
- Successful grant writing experience

To Apply

This is a U.S. Geological Survey research scientist position, hired at a GS-12 level with potential for advancement. Submit an application using the USAJobs website (https://www.usajobs.gov/; expected posting date April 2020). Questions can be directed to either David Andersen, Unit Leader

(dea@umn.edu) or John Fieberg, chair of the Quantitative Fisheries Scientist/Ecologist Search Committee (jfieberg@umn.edu).

Program Unit/Description

The Minnesota Cooperative Fish and Wildlife Research Unit (MNCFWRU) was established in 1987 and its mission is to conduct research related to fish and wildlife conservation, addressing issues of regional, national, and international significance. The MNCFWRU is one of 40 Coop Units in the U.S. Geological Survey (USGS) Cooperative Research Units Program, and its cooperators include the USGS, U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources, University of Minnesota, and the Wildlife Management Institute. The Department of Fisheries, Wildlife and Conservation Biology on the St. Paul Campus of the University of Minnesota comprises a diverse and integrative group of scientists working on applied and fundamental problems related to the ecology of free-ranging wild animals, management of harvested and invasive species, and conservation of biodiversity. Affiliated research units and outreach facilities include the U.S. Department of Interior, Minnesota Aquatic Invasive Species Research Center, Saint Anthony Falls Laboratory, a statewide network of ten university research and outreach centers, the Lake Itasca Biological Station, the Cedar Creek Ecosystem Science Reserve, the Bell Museum of Natural History (including curated collections), the Minnesota Supercomputing Institute, and the Biomedical Genomics Center. The University of Minnesota campus is located in the heart of the Minneapolis-Saint Paul metropolitan area, which is rich in cultural and natural attractions. Minnesota is renowned for its diverse fisheries and aquatic resources including Lake Superior, 9 other large (> 10,000 ha) lakes, approximately 5,400 fishable inland lakes, and over 18,000 miles of fishable rivers and streams. Recreational, commercial, tribal, and aquaculture fisheries contribute more than $2.4B to Minnesota's economy.

Post-Doctoral Research Opportunity: Spatio-Temporal Analyses of New England Fish Species with VAST

PIs: Liz Brooks, Chris Legault, Charles Adams, Deborah Hart, Charles Perretti (Population Dynamics Branch at the Northeast Fisheries Science Center)

Salary: $60,000/year

Duration: 2 year research opportunity, second year funds contingent on federal budget and satisfactory progress

Contact: For additional information, send email to: Liz.Brooks@noaa.gov

Summary: An opportunity to research the utility of VAST for combining multiple fishery-independent surveys and spatial covariates for use in stock assessment models through simulation and case studies. Particular emphasis on surveys and stocks in the Northeast U.S. region.

Research Problem: Fishery-independent indices play an important role in stock assessment, and inform the model of relative trends in the fish population. There are a variety of fishery independent surveys conducted in the Northeast region of the US: spring and fall bottom trawl surveys conducted by the Northeast Fisheries Science Center (NEFSC) with a spatial footprint from the mouth of the Bay of Fundy, New Brunswick (CAN) to Cape Hatteras, NC; a spring bottom trawl survey conducted by DFO on Georges Bank; invertebrate surveys that sample areas in the Mid-Atlantic Bight, Georges Bank, and the Gulf of Maine; and the NEAMAP and other state surveys which sample primarily inshore waters. For any given stock assessment, multiple fishery-independent indices may be incorporated, despite differences in spatial coverage and survey timing. Depending on the season and the stock, the small state surveys may provide information on recruitment and/or juvenile trends, while the larger scale NEFSC surveys inform on trends of mature biomass. The index trends have traditionally been design-based estimators from the stratified random sampling survey design (depth defines the strata), often scaled up to swept area and including experimentally derived catchability coefficients for some species. An alternative approach to deriving indices is model-based, which effectively ignores the survey stratification and attempts to standardize the annual trend by accounting for factors that explain significant amounts of variance, given assumptions about the statistical distribution of the data. Recent work has led to development of spatial modeling tools to estimate abundance (or biomass), with the ability to account for spatial and/or temporal autocorrelation, and to distinguish between habitat and catchability covariates (program VAST). This modeling tool has seen increased application in recent years at several science centers, and we aim to explore applications to survey data for fish stocks managed by the NEFSC, including simulation studies to develop best practice guidelines for this region. Topics for consideration include: use the simulation capability of VAST to explore the impact of combining indices with different catchability, selectivity, timing, and degree of spatial (or temporal) overlap; provide guidance on how to standardize for those differences; and explore whether the inclusion of additional covariates collected on the surveys (e.g, bottom temperature, habitat information where available, abundance of other species, salinity) improves index standardization and interpretation of big-picture trends that may not be observable when focusing on one species at a time in a stock assessment meeting.

Contact Information

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