



Ethical Fishing Seminars on the Miami Science Barge

Proposal for Fish Florida

NOV 1 2016

Florida is the "Fishing Capital of the World" according to the Fish and Wildlife Commission. Recreational fishing alone is a multibillion-dollar industry in the state of Florida. Over 1.5 million saltwater fishing licenses were sold in FY13/14 alone to anglers from all over the world who came to try their luck and patience with some of the best fighting and best tasting fish that the Atlantic Ocean has to offer. With target species ranging from near-shore sport fish such as tarpon and snook, to offshore fish such as mahi mahi, cobia, tuna, and the formidable trio of billfish, there is certainly not a lack of exhilarating angling to be found in our waters.

The Miami Science Barge is the only platform of its kind in Miami-Dade County. Moored in downtown's Museum Park, the Miami Science Barge is a custom-designed 4,000 square foot platform containing research-scale systems for sustainable aquaculture and agriculture, renewable energy, environmental restoration, and water conservation, as well as a large marine science classroom and laboratory area.

Winner of the inaugural Knight Foundation Cities Challenge in 2015, the Miami Science Barge delivers K-12 STEM education and sustainability focused programming that showcases Miami's unique ecology and supports the development and retention of scientifically-literate young people in our community. Since opening in April 2016, the Miami Science Barge has educated over 3,800 visitors through field trips, complemented by evening and weekend programming for adults and families.

The Miami Science Barge would like to host a three part ethical fishing series intended to engage the public with many of the legal, ecological, and ethical implications that surround recreational angling in south Florida. The three-workshop series will be open to

the public with one workshop session offered per month over three consecutive months. These sessions will focus on fishing as a family activity that can help to get kids outside and participating in various facets of angling and conservation.

Session 1 will focus on filleting techniques and honing knife skills. The goal of the session will be maximizing fish and producing less waste. Local charter captains will be invited out to teach safe knife handling and proper filleting technique on locally caught fishes (<https://www.youtube.com/watch?v=F2hEHNGnJmA>). One Mahi will be provided to each participant so that they will receive hands on experience with an indigenous charismatic species that is plentiful in south Florida waters. The captains, in addition to Barge staff, will provide demonstrations and oversight to ensure a safe learning environment and a low instructor to student ratio. The Captains and Barge staff will utilize their expertise to facilitate additional discussion of various angling techniques and provide a lay-person perspective on local marine ecology and fisheries. This will be juxtaposed in later sessions with the perspective of local scientists, conservationists, and law enforcement agency officers. At the end of Session 1 each participant will receive two mahi-mahi fillets to take home along with recipe cards that details how to properly prepare their fish. Each recipe will utilize other local ingredients and will have notes discussing the benefits of eating local and reducing food miles, as well as the best ways to check the sustainably of seafood in stores and restaurants.

Session 2 will focus on lionfish and raising awareness of the invasion epidemic in and around our waters. Participants will be educated on necessary gear, proper removal, and safe handling, as well as promote usage of lionfish as a delicious imported-seafood substitute. A local expert on lionfish (<http://www.reef.org/lionfish>) and their impacts will be the primary presenter for the session, during which she will discuss and take questions on lionfish morphology, invasion history [8], organized removal derbies, current research, and the legal implications of lionfish removal. Following this portion

of the session participants will be guided through the gear necessary for safe lionfish removal and handling, as well as the common techniques for removal. To close the session each participant will receive a locally caught lionfish and the equipment required to safely clean and fillet the fish. Following an instructional demonstration, participants will clean their own lionfish onboard (<http://lionfish.co/cleaning-and-preparing-lionfish-to-eat/>). Each participant will leave the session with a trident pole spear, two lionfish fillets, and a recipe card explaining how to cook their lionfish. These recipes will incorporate other easily foraged invasive ingredients and will include notes on invasive species and the threats they pose to native species and ecosystems [4].

Session 3 will focus on the legal boundaries that surround fishing in Florida waters as well as the ethical implications of handling fish in general. A Florida Fish and Wildlife Conservation Commission officer will present on topics including proper identification of commonly mistaken south Florida species, legal measurement techniques and proper harvest for species such as spiny lobster and stone crab, licensing and permitting, and proper disposal of gear and tackle [7]. Additionally, scientists from the University of Miami's Shark Research and Conservation Program (<http://sharkresearch.rsmas.miami.edu>) will be onboard to discuss safe handling and release of sharks, shark stress response to fishing pressure, and legal fishing practices for local species of shark such as the Great Hammerhead and Small tooth Sawfish [6]. Finally, Field School (<http://www.getintothefield.com>)

scientists will be onboard to lead conservation-based discussion and hands-on training in how to properly measure fish for pre-caudal, fork, and total length. At the end of the session, each participant will leave with a dual-purpose measurement tool for Spiny Lobster and Stone Crab.

Visitors attending each session will participate in a survey that will be designed to measure the effectiveness of the series. Furthermore, follow-up information and instructional videos will be sent via email to participants to allow them to review what they learned and learn more about additional topic that may interest them.

The Miami Science Barge is requesting a grant in the amount of \$7,500 to fund the workshop series and necessary materials for the hands-on-learning components associated with hosting the series aboard the Miami Science Barge.

Series Schedule

The Miami Science Barge Ethical Fishing Seminar Series will tentatively be scheduled as a three part series, executed in three installments. The first installment of the series will be run in February, March, and April with seminars on the second Saturday of each month. The second installment will run June, July, and August, and the third installment will be run September, October, and November of 2017.

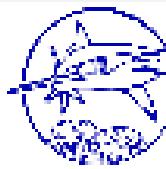
Appendix 1: Fish Florida Grant Proposal.

The Shark Research and Conservation Program (SRC) at the University of Miami Rosenstiel School of Marine and Atmospheric Science is proud to partner with Miami Science Barge in their upcoming Science Barge Seminar ethical fishing lecture series. As an organization, SRC works to overlap four focal areas through our exploration science, public outreach, and research projects. These include: science, education, conservation, and technology. A core component of SRC's work is to foster scientific literacy in the community in effort to catalyze conservation mindsets globally. Through proven field research techniques, SRC safely samples hundreds of sharks per year in the South Florida area that can be applied to various research projects being conducted in the lab. Our sampling methods are quick, efficient, and safe for the shark and all SRC team members and citizen scientists involved. However, a growing issue in the world of marine conservation is the implications of recreational fishing on shark populations. As a research program, SRC works to inform the public about these implications and the stress they can cause on sharks involved in recreational catch-and-release fishing. Aligning with Miami Science Barge's lecture on ethical and legal implication of recreational fishing in the Science Barge Seminar, SRC is proud to share our expertise on safe shark handling techniques, species specific stress responses, and our own research techniques and projects. We hope this partnership will inform listeners on the consequences of shark fishing and inspire them to conserve these important marine top predators.

Shark Research and Conservation Program
University of Miami Rosenstiel School of Marine and Atmospheric Science



Appendix 2: Shark Research and Conservation Letter of Commitment.



Field School

Research • Education • Exploration

October 15, 2016

To Whom It May Concern:

Field School is pleased to offer a letter of commitment to the Miami Science Barge for this grant opportunity offered by Fish Florida. Our staff, who are professional research scientists with over 25 years of experience working with fish and other marine organisms have agreed to provide lectures as part of an educational series devoted to ethical fishing practices, a topic we believe to be of great importance and relevance to the wider South Florida community. Our participation in these series will focus on best fishing practices and teaching participants about conservation issues, including in-depth discussion of stress physiology in fish and how recreational fishermen can limit their impacts during catch-and-release fishing. We will discuss proper fish handling and revival protocols, and the importance of healthy ecosystems to productive fisheries, including the necessity of protecting and restoring critical fish habitat. As with all of Field School's educational activities, the lecture will include hands-on components explaining different types of fishing gear and approaches to animal handling in our discussion of best practices.

Field School is an experiential marine education company, providing in-depth college and graduate-level training to the next generation of field scientists. Our primary educational platform is our custom live-aboard ship, Research Vessel Garvin, but our staff regularly participate in public educational and outreach initiatives, including through COSEE (Center for Ocean Science Education Excellence) and the University of Miami. For more information on Field School and our mission, please visit www.getintothefield.com.

Should you have any questions about our participation in this series, please don't hesitate to contact me at (786) 571-6791.

Sincerely,

Julia Wester, MSc, PhD
Director of Program Development
Field School

3109 Grand Ave, Miami, FL 33133
(786) 571-6791

Expenses						
Item	Source	Price-Low	Price-Average	Price-High	Quantity	Total
Lionfish	Wholesale/Whole Foods	\$3.00	\$5.00	\$8.99	60	\$300.00
Mahi	Pop's Fish and Ships	\$3.00	\$6.69	\$21.33	60	\$401.40
Lionfish Trident	Diver's Supply	\$15.00	\$25.00	\$35.00	60	\$625.00
Fillet Knife	Amazon	\$7.50	\$14.00	\$35.00	20	\$150.00
Lobster/Stone Crab Gauge	Amazon/Diver's Direct	\$1.00	\$2.00	\$4.00	120	\$240.00
Disposable plastic tablecloths			\$5.00		8	\$40.00
Rubber gloves			\$5.00		2	\$10.00
Paper towels			\$10.00		1	\$10.00
Butcher Paper			\$15.00		1	\$15.00
Fish ID Card			\$4.00		120	\$480.00
Speaker Gift			\$20.00		12	\$240.00
Insurance			\$63.00		9	\$567.00
Marketing			\$1.50		240	\$360.00
Salaried Staff			\$80.00		9	\$720.00
						Total Cost \$4,158.40
Income						
Item	Source	Price-Low	Price-Average	Price-High	Quantity	Total
Admission	Ticket Sales Lionfish	\$15.00	\$20.00	\$25.00	90	\$1,800.00
Admission	Ticket Sales Mahi	\$15.00	\$20.00	\$25.00	90	\$1,800.00
Donations	Day of Donations	\$0.50	\$1.00	\$2.00	240	\$240.00
						Total Income \$3,840.00

Appendix4: Fish Florida Grant Approved Budget.