South Carolina Aquarium

November 9, 2016

Roy E. Crabtree, Ph.D.
Regional Administrator
Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, FL 33702

Dear Dr. Crabtree:

The South Carolina Aquarium (SCA) requests a five (5) year Exempted Fishing Permit (EFP) for the purpose of collecting specimens for public display (Appendix A), valid from July 1, 2017 through June 30, 2022.

The applicant's contact information is as follows:

Rachel Kalisperis, Director of Husbandry
South Carolina Aquarium
100 Aquarium Wharf
Charleston, SC 29401
Desk: (843) 579-8610
E-mail: rkalisperis@scaquarium.org

Statement of Purposes and Goals

The South Carolina Aquarium (SCA) is a 501 (c) (3) not-for-profit public institution dedicated to the understanding and conservation of South Carolina's natural habitats and resources. It is accredited by the American Zoo and Aquarium Association (AZA), and is located on the Cooper River in Charleston, SC.

The SCA displays and interprets South Carolina's diverse range of aquatic habitats from mountain streams to oceanic depths in approximately 45 aquatic displays, ranging in size up to a 330,000-gallon Great Ocean Tank, where most of our large fishes are displayed. Only species endemic to the South Carolina region are on permanent display. It is a major educational institution, with free admission to school children in prearranged program groups, extensive field studies and outreach programs. Our goal in requesting this permit is to showcase the charismatic fishes found in our oceans in a way that inspires strong appreciation of the natural world and motivates people to take conservation action.

South Carolina Aquarium Mission Statement

The mission of the South Carolina Aquarium is to inspire conservation of the natural world by exhibiting and caring for animals, by excelling in education and research, and by providing an exceptional visitor experience.

The Aquarium achieves this through its commitment to excellence in exhibit and animal care, education, and customer service. The professional Education Division staff at the Aquarium has a tremendous amount of experience in interpreting the natural world to our adult visitors, school children and teachers. All of the Education staff, including the division director, school program manager, education program coordinator, and outreach educator, is required to complete and maintain a professional certification. Animal care personnel are well qualified to carry out the proposed objectives of this permit and maximize animal survivorship.

Husbandry staff, including a full time veterinarian, life support operators, and several experienced aquarists provides on-call coverage for animal care 24/7/365.

Location and Frequency of Collections

The SCA ideally would like to collect in federal waters off the coast of South Carolina once a week during the months of May through September and twice a month for all other months. In reality, weather conditions and personnel schedules make actual collection trips less frequent. In addition, we stipulate below that collection methods using traps except those deployed without lines or buoys during specific SCUBA dives would not be deployed between November 1 and April 30 of each year. The aquarium would also like to collect in federal waters off the coast of North Carolina; however, collecting trips to this location would be far less frequent (we anticipate no more than five trips per year).

Collecting will usually take place during mid-day hours with prior notification before each trip made to our National Marine Fisheries Service Special Agent Mark Kinsey at P.O. Box 61420, North Charleston, SC 29419, (843) 572-5801. Notification will include intended time of collecting, location of collecting, gear type that will be deployed and associated sizes and amounts of said gear. Estimated time of collecting per collecting trip should not exceed five hours in duration.

Collecting Vessels and Participants are stipulated in Appendix B.

Collection Gear and Methods

The SCA uses a variety of collection methods, detailed below, to focus on specific needs. All animal capture and handling techniques are designed to maximize survivorship.

1) Scuba diving with small hand nets and "dip netting" (Table 1) on the surface from a boat in areas around sargassum mats.
   - Note: generally no bycatch is involved with these collection methods because desired animals are first seen and then targeted with individual nets. Any non-target animals that may enter the net are released alive immediately. Incidental collection of sargassum weed from dip netting is anticipated to be none or very low because the methods target the animals and avoid collection of the sargassum weed.

Table 1. Hand and dip nets used by the SCA.

Name	Hoop Dimensions	Handle Length	Net Depth	Mesh
Hand Net	11"x11" square	12"	17"	Clear vinyl with ¼" Delta weave nylon mesh bottom
Hand Net	15" dia. round	8"	22"	1" square knotted monofilament
Hand Net	13"x13" square	8"	22"	1" square knotted monofilament
Dip Net	21"x26" teardrop	48"	21"	½" King weave nylon
Dip Net	21"x26" teardrop	48"	21"	¼" Delta weave nylon

2) Vertical hook and line and trolling with rod and reel. Lines may be of the following types (a, b, c, and d) described below. No more than 7 lines total regardless of type will be deployed at the same time.

   a) Vertical hook and line fishing rod and reel using natural baits and circle hooks, no more than 3 hooks per line.
   b) Vertical hook and line fishing rod and reel using sabiki-style artificial rigs with J hooks, no more than 7 hooks per line.
   c) Vertical hook and line fishing rod and reel using artificial jigs with J hooks, no more than 2 hooks per jig and 1 jig per line.
   d) Trolling rod and reel, J hooks, no more than one hook per line; hooks may have artificial lures or natural bait.

   - Note: Incidental bycatch is expected to be very low based on previous fishing reports. Every effort is made to release all non-targeted bycatch alive. Animals that are caught at depth may be de-gassed at the surface using a hypodermic needle prior to release or taken back down and released at depth using a depth release tool (e.g. the "BlackTip Catch and Release Recompression Tool"). No more than 7 lines are deployed at one time so staff members on board are able to constantly monitor the lines and respond immediately. Generally most fishing is done in less than 300 feet.

3) Sea bass pots, spiny lobster traps and golden crab traps that meet the construction requirements of 50 CFR 622.40. These traps will be deployed and retrieved during individual collection trips (i.e. the traps will be deployed for no more than 5 hours at a time) in waters less than 300 feet deep. No more than 5 traps at a time will be set and they may be set on individual nylon lines with buoys or hand placed by SCUBA divers. They will not be tied together on a longline. No traps will be set between November 1 and April 30 of each year. The traps may be baited with natural bait items.
   - Note: Incidental bycatch is expected to be very low based on previous fishing reports; every effort is made to release all non-targeted bycatch alive. Traps are retrieved using a controlled ascent to allow for gas absorption. Animals may be de-gassed at the surface using a hypodermic needle prior to release or taken back down and released at depth using a depth release tool (e.g. the "BlackTip Catch and Release Recompression Tool"). Interaction with protected species is expected to be low or none based on previous reports and the use of single lines, short soak times, and limited months for deployment.

4) Bait Traps and Minnow Traps (Figures 1-3): These traps (maximum 5 traps) will only be deployed by hand during SCUBA dives in waters less than 300 feet deep. Any non-target species retained in the traps will be released at depth unharmed after a maximum period of 5 hours. Each trap will be retrieved when divers exit the water. These traps may be baited with natural bait items. The traps will not have lines or buoys on them.
   - Note: Incidental bycatch is expected to be very low based on previous fishing reports; any non-target species retained in the traps will be released at depth unharmed after a maximum period of 5 hours. Interaction with protected species is expected to be low or none based on previous reports, the short soak time, and the lack of lines or buoys associated with the traps.

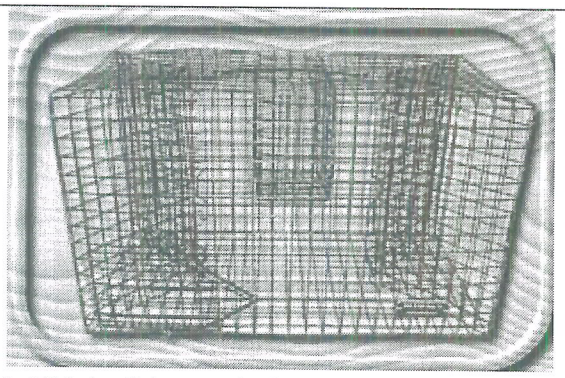

Figure 1. Mid size fisherman's classic bait fish trap Dimensions 14" High x 13" Wide x 24" Long, 1" square mesh, rubber coated galvanized wire, 2 high entries at 14"

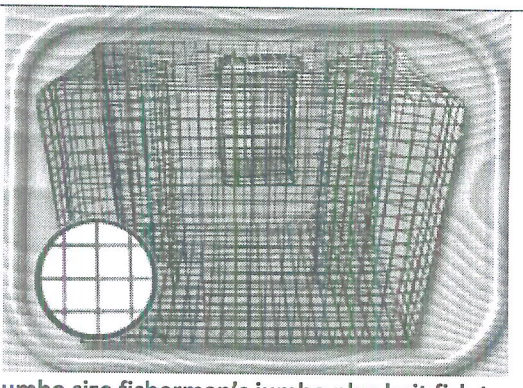

Figure 2. Jumbo size fisherman's jumbo plus bait fish trap Dimensions 24" High x 24" Wide x 24" Long, 1" square mesh, rubber coated galvanized wire. 2 high entries at top.

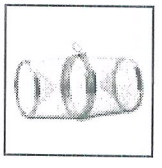

Figure 3. Minnow Trap ¼" galvanized uncoated wire mesh.

5) Habitat Traps (Figure 4). These traps are designed to target benthic fishes. They are made of four inch high sections of 20" diameter PVC pipe. A piece of ¼" pvc sheet is permanently attached to the bottom of each trap and another piece is attached to the top using plastic cable ties so that it can be removed if necessary. A three inch diameter hole is drilled through the side of the trap to act as an entrance/exit and is left open to allow animals to enter and exit at will. 3-4 lbs of cement are secured to the bottom of the trap on the inside. There are no internal compartments to this habitat trap and the 3" diameter opening is not blocked in any way so that animals can come and go at will. A 3' (1 m) length of ¼" nylon line is used to attach a longline snap to the front of the trap near the opening. Up to 10 traps will be deployed unbaited on a nylon line of not more than 500 feet total length with a weight at each end; or they may be hand placed by divers in the same areas. Set times are expected to be about 7 days but may vary slightly with weather conditions (set time will not exceed 30 days). All traps will be deployed in waters less than 300 feet deep. Traps will not be set from November 1 – April 30 of each year.

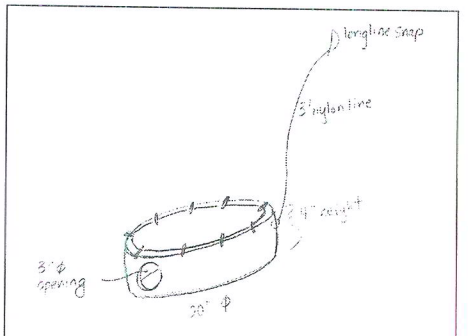

Figure 4. Habitat trap

- Note: Any non-target species retained in the traps will be released unharmed at depth when retrieved by SCUBA divers. When retrieved from the surface, bycatch may be de-gassed at the surface using a hypodermic needle prior to release or taken back down and released at depth using a depth release tool (e.g. the "BlackTip Catch and Release Recompression Tool"). Every effort is made to deploy these traps over sandy bottom habitats. Deployment sites are investigated by SCUBA divers prior to deployment.

6) Octopus Traps (Figure 5). These traps as described by Whittaker et al. (1991) are made of 18" (46 cm) lengths of 4" (10.2 cm) diameter black HDPE corrugated drainage pipe. One end is filled with cement to a depth of 2-3" (5-7.5 cm) to block egress and provide weight. The other end will remain open so that the animals may come and go at will. A 3' (1 m) length of ¼" nylon line is used to attach a longline snap to the open end. Up to 10 traps will be deployed unbaited on a nylon line of not more than 500 feet total length with a cinder block weight at each end; or they may be hand placed by divers in the same areas. Set times are expected to be about 7 days but may vary slightly with weather conditions (set time will not exceed 30 days). Animals can easily crawl or swim out of the 4" opening of this habitat trap and octopi are the only animals that will be targeted with it. All traps will be deployed in waters less than 300 feet. Traps will not be set from November 1 – April 30 of each year.

- Note: Incidental bycatch is expected to be none or very little because animals can easily crawl or swim out of the 4" opening of this trap. Any non-target species retained in the traps will be released unharmed at depth when retrieved by SCUBA divers. When retrieved from the surface, bycatch may be de-gassed at the surface using a hypodermic needle prior to release or taken back down and released at depth using a depth release tool (e.g. the "BlackTip Catch and Release Recompression Tool"). Every effort is made to deploy these traps over sandy bottom habitats. Deployment sites are investigated by SCUBA divers prior to deployment.

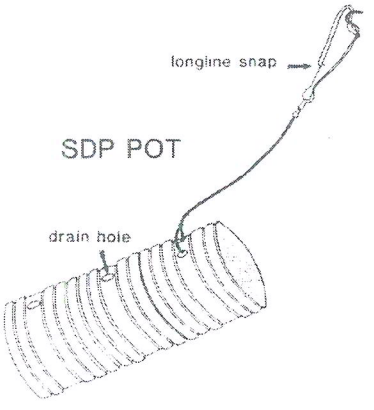

Figure 5. Octopus habitat trap (Whitaker et al. 1991)

Record Keeping

Detailed records are kept for every collection trip (please see the enclosed Accession Form and Trip Log). This information is used in part to submit the required annual report for this permit. We record all animals that are retained and we will report any marine mammal interactions if they occur (none to date). Individual specimens are not measured in order to minimize stress and reduce handling time as much as possible. This is extremely important in maximizing survivorship.

Please feel free to contact me if you have any further questions regarding this EFP request. I would be happy to explain or provide further information to you in order to make this request easier to process.

Thank you in advance for your consideration,

Rachel Kalisperis
Director of Husbandry
South Carolina Aquarium

Enclosure (2)

Reference : Whitaker, J. David, L.B. DeLancey and J.E. Jenkins. 1991. Aspects of the biology and fishery potential for *Octopus vulgaris* off the coast of South Carolina. *Bull. Mar. Sci* 49(1-2):482-493.

Appendix A Requested Species and Quantities

The following table lists the names and quantities of federally managed species that the SCA is asking permission to collect per calendar year. Desired specimens will be collected and transported live to the SCA for public display purposes.

Common Name	*Scientific Name*	Request per calendar year
black snapper	*Apsilus dentatus*	10
cero	*Scomberomorus regalis*	12
cobia	*Rachycentron canadum*	6
common octopus	*Octopus vulgaris*	15
coney	*Cephalopholis fulva*	10
dolphinfish	*Coryphaena hippurus*	50
florida pompano	*Trachinotus carolinus*	25
golden crab	*Chaeceon fenneri*	5
graysby	*Cephalopholis cruentata*	10
groupers	*Epinephelus spp.*	40
groupers	*Myctoperca spp.*	50
grunts	*Haemulon spp.*	250
hogfish	*Lachnolaimus maximus*	8
jacks	*Caranx spp.*	100
jacks	*Seriola spp.*	100
king mackerel	*Scomberomorus cavalla*	15
little tunny	*Euthynnus alletteratus*	25
longspine porgy	*Stenotomus caprimus*	50
ocean triggerfish	*Canthidermis sufflamen*	5
porgies	*Calamus spp.*	65
porkfish	*Anisotremus virginicus*	15
puddingwife	*Halichoeres radiatus*	2
queen snapper	*Etelis oculatus*	2
red drum	*Sciaenops ocellatus*	12
red porgy	*Pagrus sedecim*	25
red snapper	*Lutjanus campechanus*	25
scup	*Stenotomus chrysops*	50
sea basses	*Centropristis spp.*	100
sheepshead	*Archosargus probatocephalus*	15
shovelnose lobster	*Scyllarus chacei*	12
white shrimp	*Litopenaeus setiferus*	200
pink or brown shrimp	*Farfantepenaeus sp.*	200
Sand tilefish	*Malacanthus plumier*	10
snappers	*Lutjanus spp.*	75
spadefish	*Chaetodipterus faber*	50
Spanish mackerel	*Scomberomorus maculatus*	15
spiny lobster	*Panulirus argus*	25
triggerfish	*Balistes spp.*	20
vermilion snapper	*Rhomboplites aurorubens*	75
wahoo	*Acanthocybium solandri*	5
yellowtail snapper	*Ocyrurs chrysurus*	15
	Total	1799

Appendix B Collecting Vessels and Participants

The SCA would like to use a total of four (3) vessels for collecting purposes. Our two primary vessels belong to the SCA and therefore the contact information for these two vessels is the same. These vessels are

1) 32' 3" Scout (*REEL SCIENCE*)
   Registration number SC-9152-DE
   Hull identification number SLPXM305C314

2) 17' Scout (CUB SCOUT)
   Registration number SC-9288-BF
   Hull identification number SLPL8051E999

Rachel Kalisperis, Curator
South Carolina Aquarium
100 Aquarium Wharf
Charleston, SC 29401
Desk: (843) 579-8610
E-mail: rkalisperis@scaquarium.org

Because these vessels are owned by SCA, the captain will be one of several SCA staff members, many of whom have been staff at SCA for more than 5 years. Their contact information is the same as that listed above for the SCA owned vessels and their resumes are enclosed.

Jason Cassell	Shannon (Teders) Howard
Jennifer (Skoy) Krizan	Chris Matthews
Nigel Bowers	Ryan Yuen
Rachel Kalisperis	Sarah Dingley
Richard Arnold Postell	Stephen Beaman
Sam David Wilkins	Joshua Zalabak
Samantha Dale	Monty Wallace
Sarah (Miller) Behrend	Shane Boylan

The third vessel, named MISTRESS, is privately owned and operated locally by a SCA staff member, Nigel Bowers:

3) 26' Glacier Bay (MISTRESS)
   registration number SC-5326-BS
   hull identification number GLKD1867G405

   Nigel Bowers
   7 Atlantic St.
   Charleston, SC 29401
   (843) 722-8503

SOUTH CAROLINA AQUARIUM

ACCESSION FORM - GENERAL

COLLECTING INFORMATION * = required for HMS and EFP

Name_____ Acquisition Date_____ ISIS Number:_____

Participants_____

*Location (Lat/Long, descript.): _____ Tide:_____

*Gear Type: _____

*Capture Mortality_____ *Length_____ *Weight_____ *Sex_____ *Gravid? Y / N

*Tag #: _____ *Water Depth: _____ *Water Temp: _____

PURCHASE INFORMATION

Vendor:_____Shipping Info:_____

OTHER INFORMATION (circle one)

Donation (attach donation receipt) Loan Birth at SCA

COMMENTS: _____

_____

_____

_____

COMMON NAME	SCIENTIFIC NAME	CONDITION	QUANTITY	PLACEMENT

Trip Log

Date	
Crew	
Destination	
Bearing	GPS: Mag:

Forecast

	Wave	
Inshore		
Offshore		
Weather		
Tide		

Notes:

	Dock	Time	Temp	hours	Miles	Gas
Departure						
Return						

	Weather	rpm	Speed	Trim	Miles	Gas
Performance						

Time	Site #	Depth	Temp	Fish	Bait	Comment