

LGL Ecological Research Associates Inc. Application for an Exempted Fishing Permit for Quantification of Bycatch Composition and Survival in the Commercial Menhaden Purse Seine Fishery.

1. The date the application is submitted and extent of time (research end date) needed to accomplish work.

Submitted October 12th, 2023 for research to be conducted between April 15th 2024 and November 1st 2024.

2. The applicant's and/or project coordinator's name, mailing address, telephone number, e-mail, and fax number, if available.

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3. A point of contact who can respond to any questions regarding the project that NMFS staff may have during consideration of your application.

Dr. Peter Mudrak, pmudrak@lgl.com, 330-205-7188 (cell)

4. A statement of the purposes and goals of the activity for which an EFP is needed, including justification for issuance of the EFP.

LGL has been awarded a contract to quantify the bycatch in the commercial menhaden purse seine fishery in both the state and federal waters off Louisiana. LGL personnel will act as observers, primarily on run boats used within the fishery, in order to count, weigh and measure bycatch from net sets made by all of the vessels participating in the fishery. In addition to lengths and weights, sex will be recorded for a subset (~200 individuals per species), which may require teleosts to be lethally sampled. A subset of fish released under normal operations in the fishery will also be tagged to collect additional data on the fate of bycatch released in the fishery. In addition to quantifying bycatch, a release mortality study will simultaneously be conducted. On menhaden purse seine boats, large fish are released at two phases of normal fishing operations with two large fish excluding devices. Fish, primarily red drum, will be held in large flow through tanks on the vessel for 24 hours to determine the proportion of fish that experience short term mortality. We anticipate needing approximately 200 individuals/species to obtain an accurate estimate of survival after encountering each large fish excluding device (i.e., 400 individuals/species total). While appropriate collecting permits have been obtained from the state of Louisiana, the current federal ban on retention of red drum and other federally managed species would require fish being held within the tanks to be released prematurely if the vessel enters federal waters, and prevent fish captured in federal waters from being used in the survival study. An exempted fishing permit allowing red drum and other federally managed species to be held for 24 hours before release would provide valuable information about what proportion of the released bycatch survives in the commercial menhaden purse seine fishery.

5. A list of the specific regulations from which an exemption is being requested and why each exemption is required for the experiment to succeed.

An exemption from regulations against temporarily holding red drum and other federally managed species is required to determine the short term survival of these species. Without such an exemption, fish caught in state waters will have to be released prematurely each time the vessel crosses into federal waters, and without the ability to retain fish caught in federal waters, inadequate sample sizes may be obtained if sufficient numbers of fish are not caught in state waters.

6. The following catch information:

1. The species (target and incidental species must be clearly differentiated) expected to be harvested and/or discarded under the EFP.

The commercial menhaden purse seine fishery targets menhaden and other clupeids, all other species are incidental bycatch. Based on past observer studies, the federally managed species we expect to encounter are red drum, Spanish mackerel, and king mackerel, although other unexpected species may be encountered. All federally managed species not normally retained by the fishery will be released, but a subset (~200 to 400 per species) will be retained for 24 hours to assess short term survival of bycatch. Although one past study did observe a single Goliath grouper captured as bycatch, we do not anticipate encountering Goliath grouper or other protected species. Based on past studies, we do not anticipate federally managed reef fish to be captured during this study, any reef fish encountered will be counted, weighed, measured, and released. A list of bycatch species observed in past studies is provided below.

Source: Sagarese et al., 2016. SEDAR Assessment.

Table 4. Comparison of species composition and abundance (number) across studies quantifying bycatch in the Gulf menhaden fishery. - indicates no data.

Species	Scientific name	Simmons 1949	Ktapp 1950	Breuer 1950	Christ- mas 1960	Condrey 1994 Release	de Silva and Condrey 1997	Dunham 1972	Pulver and Scott- Denton 2012
Total fish	-	2502182	2501574	5333589	55,949	NA	NA	715324	-
Menhaden	<i>Brevoortia</i> sp.	2500000	2500000	5326000	53,770	NA	NA	715000	-
Other fish	-	2,182	1,574	7,589	2,179	2,847	15,579	324	1955
UNID fish	-	-	-	-	-	-	516	-	-
Herring-like fishes	-	1,500	-	-	-	-	-	6	-
Scrawled cowfish	<i>Acanthostracion quadricornis</i>	-	-	3	0	-	-	-	-
Spotted eagle ray	<i>Aetobatus narinari</i>	-	1	1	-	-	-	-	1
Skipjack herring	<i>Alosa chrysochloris</i>	-	-	-	-	-	-	-	-
Striped anchovy	<i>Anchoa hepseus</i>	-	-	-	1	-	-	-	-
Bay anchovy	<i>Anchoa mitchilli</i>	-	-	-	0	-	-	-	-
Ocellated flounder	<i>Ancyloperca quadricellata</i>	-	-	1	0	-	-	-	-
Sheepshead	<i>Archosargus probatocephalus</i>	-	-	-	0	-	-	-	5
Catfish	<i>Ariidae</i>	-	-	-	-	-	1,002	-	-
Gafftopsail catfish	<i>Bagre marina</i>	3	3	36	85	825	-	33	-
Silver perch	<i>Bairdiella chrysoura</i>	-	-	-	18	-	-	-	-
Flounder	<i>Bothidae</i>	-	-	-	-	-	-	-	2
Blue crab	<i>Callinectes sapidus</i>	-	-	-	-	14	-	2	-
Lesser blue crab	<i>Callinectes similis</i>	-	-	-	-	-	-	1	-
Crabs	<i>Callinectes</i> sp.	26	-	75	-	-	-	-	-
Blue runner	<i>Caranx crysos</i>	-	-	8	-	-	-	-	-
Crevalle jack	<i>Caranx hippos</i>	-	-	91	0	246	349	2	210
Spinner shark	<i>Carcharhinus brevipinna</i>	-	-	-	-	-	-	-	5
Finetooth shark	<i>Carcharhinus isodon</i>	-	-	-	-	-	-	-	32
Bull shark	<i>Carcharhinus leucas</i>	-	-	-	0	-	39	-	3
Blacktip shark	<i>Carcharhinus limbatus</i>	-	-	-	0	-	184	-	245

Species	Scientific name	Simmons 1949	Knapp 1950	Breuer 1950	Christ- mas 1960	Condrey 1994 Release	de Silva and Condrey 1997	Dunham 1972	Pulver and Scott- Denton 2012
Requiem shark	<i>Carcharhinus</i> sp.			-			57	-	-
Sand shark	<i>Carcharias littoralis</i>	-	-	163	-	-	-	-	-
Orange filefish	<i>Ceratocanthus schoepfi</i>	-	-	1	-	-	-	-	-
Atlantic spadefish	<i>Chaetodipterus faber</i>	-	-	14	9	-	-	-	-
Striped burrfish	<i>Chilomycterus schoepfi</i>	-	-	21	0	-	-	1	-
Atlantic bumper	<i>Chloroscombrus chrysurus</i>	-	-	3,681	1	19	2,497	-	-
Gulf Stream flounder	<i>Citharichthys arctifrons</i>	-	-	-	-	16	-	-	-
Spotted whiff	<i>Citharichthys macrops</i>	-	-	11	-	-	-	-	-
Bay whiff	<i>Citharichthys spilopterus</i>	-	-	-	3	-	-	-	-
Clupeoidei	Clupeoidei	-	1,250	-	-	-	-	-	-
Jellyfish	Cnidaria	-	-	-	-	-	61	-	-
Sand seatrout	<i>Cynoscion arenarius</i>	-	-	-	83	69	-	-	-
Spotted seatrout	<i>Cynoscion nebulosus</i>	2	2	3	7	19	-	5	-
Silver trout	<i>Cynoscion nothus</i>	-	-	242	70	29	-	-	-
Seatrout	<i>Cynoscion</i> sp.	77	77	-	-	-	3,507	11	-
Southern stingray	<i>Dasyatis americana</i>	-	-	-	-	-	-	-	3
Atlantic stingray	<i>Dasyatis sabina</i>	-	12	9	2	-	-	-	3
Stingrays	<i>Dasyatis</i> sp.	13	-	-	-	-	-	-	-
American gizzard shad	<i>Dorosoma cepedianum</i>	-	-	-	2	-	-	-	-
Threadfin shad	<i>Dorosoma petenense</i>	-	-	-	155	-	-	-	-
Live sharksucker	<i>Echeneis naucrates</i>	-	-	-	0	-	-	-	-
Sharks	<i>Elasmobranch</i>	63	63	-	-	201	-	7	368
Ladyfish	<i>Elops saurus</i>	-	-	-	-	5	-	-	-
Atlantic goliath grouper	<i>Epinephelus itajara</i>	-	-	-	0	-	-	-	-
Smallmouth flounder	<i>Etropus microstomus</i>	-	-	-	11	-	-	-	-
Jenny mojarra	<i>Eucinostomus gula</i>	-	-	-	-	-	-	1	-

Species	Scientific name	Simmons 1949	Knapp 1950	Breuer 1950	Christ- mas 1960	Condrey 1994 Release	de Silva and Condrey 1997	Dunham 1972	Pulver and Scott- Denton 2012
Hardhead catfish	<i>Galeichthys felis</i>	3	-	18	83	95	-	118	9
Smooth butterfly ray	<i>Gymnura micrura</i>	-	-	9	0	-	-	-	-
Scaled sardine	<i>Harengula pensacola</i>	-	-	-	7	-	-	-	-
Lined sea horse	<i>Hippocampus hudsonius</i>	-	-	-	1	-	-	-	-
Sea horse	<i>Hippocampus</i> sp.	-	-	5	-	-	-	-	-
Common halfbeak	<i>Hyporhamphus unifasciatus</i>	-	-	5	-	-	-	-	-
Pinfish	<i>Lagodon rhomboides</i>	-	-	-	23	-	-	-	-
Banded drum	<i>Larimus fasciatus</i>	-	-	-	-	-	-	-	-
Spot	<i>Leiostomus xanthurus</i>	50	50	-	203	-	-	31	-
Tripletail	<i>Lobotes surinamensis</i>	-	-	-	-	-	-	-	1
Squid	<i>Loligo</i> sp.	1	-	6	-	-	-	-	-
Atlantic tarpon	<i>Megalops atlanticus</i>	5	5	13	0	-	-	-	1
Rough silverside	<i>Membras martinica</i>	-	-	-	0	-	-	-	-
Southern kingcroaker	<i>Menticirrhus americanus</i>	-	-	-	18	-	-	6	-
Northern kingfish	<i>Menticirrhus focaliger</i>	-	-	-	1	-	-	-	-
Gulf kingcroaker	<i>Menticirrhus littoralis</i>	-	-	-	10	-	-	-	-
Kingcroaker	<i>Menticirrhus</i> sp.	7	7	8	-	-	-	-	-
Atlantic croaker	<i>Micropogonias undulatus</i>	39	-	103	342	793	5105	5	-
Flathead grey mullet	<i>Mugil cephalus</i>	-	-	-	902	59	895	6	-
Silver mullet	<i>Mugil curema</i>	-	-	-	10	-	-	-	-
Eagle ray	Myliobatidae	-	-	-	-	-	-	-	28
Polka-dot batfish	<i>Ogcocephalus radianus</i>	-	-	8	-	-	-	-	-
Leatherjacket	<i>Oligoplites saurus</i>	-	-	11	1	-	-	-	-
Crested cusk-eel	<i>Ophidion welsli</i>	-	-	-	-	-	-	1	-
Atlantic thread herring	<i>Opisthonema oglinum</i>	-	-	1,485	15	5	-	-	-
Gulf toadfish	<i>Opsanus beta</i>	-	-	-	1	-	-	-	-
Pigfish	<i>Orthopristis chrysoptera</i>	-	-	9	0	-	-	-	-
Southern flounder	<i>Paralichthys lethostigma</i>	-	3	-	0	-	-	-	-

Species	Scientific name	Simmons 1949	Knapp 1950	Breuer 1950	Christ- mas 1960	Condrey 1994 Release	de Silva and Condrey 1997	Dunham 1972	Pulver and Scott- Denton 2012
4-spotted flounder	<i>Paralichthys oblongus</i>	-	-	2	-	-	-	-	-
Flounder	<i>Paralichthys</i> sp.	7	-	5	-	-	-	7	-
Brown shrimp	<i>Penaeus aztecus</i>	-	-	-	-	-	65	-	-
White shrimp	<i>Penaeus setiferus</i>	-	-	-	-	-	-	3	-
Shrimp	<i>Penaeus</i> sp.	34	-	191	-	168	32	-	-
Gulf butterfish	<i>Peprilus burti</i>	-	-	-	-	16	40	-	-
American harvestfish	<i>Peprilus paru</i>	117	-	467	2	-	-	7	-
Porpoise	Phocoenidae	-	-	-	-	5	-	-	-
Portuguese man-of-war	<i>Physalia physalis</i>	-	-	1	-	-	-	-	-
Black drum	<i>Pogonias cromis</i>	3	3	-	-	19	-	3	49
Atlantic threadfin	<i>Polydactylus otronemus</i>	-	-	-	6	-	-	-	-
Bluefish	<i>Pomatomus saltatrix</i>	42	42	304	3	3	-	7	-
American butterfish	<i>Poronotus triacanthus</i>	-	-	-	73	-	-	-	-
Sea robin	<i>Prionotus</i> sp.	-	-	16	0	-	-	-	-
Bighead sea robin	<i>Prionotus tribulus</i>	-	-	-	1	-	-	-	-
Skate	Rajidae	-	-	-	-	-	-	4	7
Texas cleamose skate	<i>Raja texana</i>	-	-	-	1	-	-	-	-
Common remora	<i>Remora remora</i>	-	-	1	-	-	-	-	-
Cownose ray	<i>Rhinoptera bonasus</i>	-	-	24	0	25	70	37	176
Atlantic sharpnose shark	<i>Rhizoprionodon terraenovae</i>	-	-	-	0	-	-	-	187
Red drum	<i>Sciaenops ocellatus</i>	1	1	-	-	15	245	-	422
Mackerel	Scombridae	-	-	-	-	-	-	-	9
King mackerel	<i>Scomberomorus cavalla</i>	-	-	1	-	4	-	-	-
Spanish mackerel	<i>Scomberomorus maculatus</i>	107	47	205	5	101	241	10	184
Lookdown	<i>Selene vomer</i>	-	-	-	2	-	-	-	-

Species	Scientific name	Simmons 1949	Knapp 1950	Breuer 1950	Christ- mas 1960	Condrey 1994 Release	de Silva and Condrey 1997	Dunham 1972	Pulver and Scott- Denton 2012
Least puffer	<i>Sphoeroides parvus</i>	-	-	-	-	2	-	-	-
Blowfish	<i>Sphoeroides</i> sp.	2	-	-	-	-	-	-	-
Bandtail puffer	<i>Sphoeroides spengleri</i>	-	-	1	-	-	-	-	-
Scalloped hammerhead	<i>Sphyrna lewini</i>	-	-	-	0	-	-	-	-
Hammerhead shark	<i>Sphyrna</i> sp.	-	-	13	-	-	-	-	-
Bonnethead shark	<i>Sphyrna tiburo</i>	-	-	26	0	-	-	-	5
American starfish	<i>Stellifer lanceolatus</i>	-	-	-	1	-	-	-	-
Conch	Strombidae	-	-	7	-	-	-	-	-
Atlantic needlefish	<i>Strongylura marina</i>	-	-	3	-	2	-	-	-
Shoal flounder	<i>Syacium gunteri</i>	-	-	-	2	-	-	-	-
Longtail tonguefish	<i>Symphurus pelicanus</i>	-	-	-	-	4	-	-	-
Blackcheek tonguefish	<i>Symphurus plagiusa</i>	-	-	-	0	-	204	1	-
Inshore lizardfish	<i>Synodus foetens</i>	-	-	1	-	-	-	-	-
Oyster drill	<i>Thais haemastoma</i>	-	-	-	-	-	-	-	-
Florida pompano	<i>Trachinotus carolinus</i>	8	8	9	-	-	-	-	-
Largehead haibtail	<i>Trichiurus lepturus</i>	72	-	247	13	86	470	7	-
Hogchoker	<i>Trinectes maculatus</i>	-	-	12	4	2	-	2	-
Southern hake	<i>Urophycis floridana</i>	-	-	-	0	-	-	-	-
Moonfish	<i>Vomer setapinnis</i>	-	-	13	2	-	-	-	-

- The number or weight, by species, of such harvest and/or discard anticipated to occur during the exempted fishing, regardless of whether or not it is retained for sale.

Over the course of the study, approximately 200 to 400 red drum (caught both within state and federal waters) will be held for 24 hours in onboard tanks before being released. If approved, other federally managed species encountered may also be retained for up to 24 hours prior to release, not to exceed 400 per species.

3. The expected disposition of all regulated species harvested under the EFP (e.g., what will be done with the fish once it is caught).

Individuals that enter the hold, that would normally be harvested by the fishery will be counted, weighed, measured, sexed, and returned to the hold. Individuals that would normally be released will be counted, weighed, and measured and released. A subset of 200 individuals per species, preferably individuals that have suffered mortality, will be sexed. Additionally, red drum and other sport fish will be tagged prior to release. A subset of approximately 200 to 400 individuals per species will be tagged and held for 24 hours in flow through tanks on board the vessel to assess short term survival before being released.

4. Any anticipated impacts on fisheries, marine mammals, endangered species, or Essential Fish Habitat.

No impacts are expected on fisheries, marine mammals, endangered species, or Essential Fish Habitat.

7. The following anticipated effort information for each vessel:

1. For fixed gear:

1. Type and size of gear to be used.

The fishery uses 1,200 to 1,500 foot purse seines.

2. Amount of gear to be used (e.g., number of pots, number of gillnets, etc.).

Each vessel carries a single purse seine.

3. Number of gear hauls.

We will sample a minimum of 400 net sets spread within both state and federal waters.

4. Average soak time.

The gear is typically deployed between 20 and 45 minutes per set.

5. Sampling months/time of year.

Sampling will occur over the entire length of a single menhaden season, which extends from the third Monday in April to November 1st.

6. Sampling locations (including depth).

Sampling will occur in Louisiana state and adjacent federal waters, generally at depths less than 60 feet.

2. For mobile gear:

1. Type and size of gear to be used.
2. Number of tows to be made per day.
3. Duration and speed of each tow.
4. Number of days during which the experiment will be conducted.
5. Sampling locations (including depth).
8. Information for vessels to be used for the EFP as soon as the information is available and before operations begin under the EFP:

The vessels used in this study are operated in association with West Bank Fishing out of Empire Louisiana, and Ocean Harvesters in Abbeville Louisiana and Moss Point Mississippi. Although sampling will primarily occur on three run boats, the catch of every vessel in the fleet will be sampled. The vessels associated with Abbeville are listed in Table 1, Empire in Table 2, and Moss Point in Table 3.

Table 1. Vessel information for Abbeville Louisiana.

Owner		Alpha Vessel, Co		
Abbeville	Vessel/Hull #	Menhaden Lic #	Vessel Lic#	Captain
Atchafalaya Bay	539603	490823	518199	Justin Mitchell
Purse Boat 22-206 A	1323851			
Purse Boat 22-206 B	1323852			
Bull Dog	581304	490814	518200	Emerson Harding
Purse Boat 16-199 A	1266493		518201	
Purse Boat 16-199 B	1266494		518202	
Cote Blanche Bay	509347	490815	518203	Christopher Wilson
Purse Boat 14-196 A	1252916		518204	
Purse Boat 14-196 B	1252917		518205	
Galveston Bay	508776	490816	490763	Feldon Arrington
Purse Boat 05-185 A	1175365		518196	
Purse Boat 05-185 B	1175366		518197	
Grand Batture	571537	490817	490764	Lawson Schools
Purse Boat 04-183A	1152413		518189	
Purse Boat 04-183B	1152468		518190	
Oyster Bayou	531634	490820	518184	Michael Dameron
Purse Boat 16-201 A	1273594		518185	

Purse Boat 16-201 B	1273593		518186	
Q.O. Dunn	503167	490818	518187	Timothy Smith
Purse Boat 07-188 A	1205344		518182	
Purse Boat 07-188 B	1205345		518183	
Terrebonne Bay	508200	490822	518188	David Verrett
Purse Boat 07-189 A	1209643		490765	
Purse Boat 07-189 B	1209644		490766	
Timbalier Bay	539206	490821	518195	Steven Scott Mitchell
Purse Boat 19-204 A	1298321		508318	
Purse Boat 19-204 B	1298320		508317	
Vermilion	579571		518198	Jeb Morgan
Abbeville Spare Purse Boats				
82-172-A	1142145		518191	
82-172-B	1142146		518192	
12-100 A	1238293		518193	
12-100 B	1238294		518194	

Table 2. Vessels associated with Empire Louisiana.

Vessel Name	Current Owner	Official USCG #	State Vessel License #	Company Number	Vessel Captain
Sea Wasp	Westbank Fishing, LLC.	632370	632370	Unit 1	Bryan Rice
Lauren A	Westbank Fishing, LLC.	621980	621980	Unit2	James Braddock

Sea Charger	Westbank Fishing, LLC.	589550	589550	Unit 3	Barry Shepherd
Sea Wolf	Westbank Fishing, LLC.	617276	617276	Unit 4	Chris Johnson
Mary Virginia	Westbank Fishing, LLC.	556175	556175	Unit 6	Allen Ketnor
Mary Judith	Westbank Fishing, LLC.	558515	558515	Unit 7	Brian Buie
Maria C	Westbank Fishing, LLC.	582436	582436	Unit 8	Jack Stokes
Frances T Carinhas	Westbank Fishing, LLC.	603401	603401	Unit 9	William Comeaux
Vasco Da Gama	Westbank Fishing, LLC.	645397	645397	Unit 10	Johnathan Buras
Kittiwake (Runboat)	Westbank Fishing, LLC.	593370	593370	Unit 11	Robert Kell???
Sea Falcon	Westbank Fishing, LLC.	563349	563349	Unit 12	Billy Pickett
Kimberly K	Westbank Fishing, LLC.	1113563	1113563	Unit 14	Gilbert Verrett

Table 3. Vessels associated with Moss Point Mississippi.

Moss Point	IMO or Other Number	Owner	Captain	MS Menhaden Boat & Net License	MS Interstate Commerce License	LA - Vessel License Wildlife & Fisheries
Grand Calliou	7201677	Alpha VesselCo., LLC	Bruce Bosarge	1026836	1026841	490736
Grand Cheniere	7742449	Alpha VesselCo., LLC	David Smith	1018152	1026838	490746
Gussie J. Flynn	7534787	Alpha VesselCo., LLC	Butch Thornton	1008354	1026839	490740
Isle Derniere	7902087	Alpha VesselCo., LLC	Willis Baily	1048630	1048632	525971
Marsh Island	7207839	Alpha VesselCo., LLC	David Kell	1040961	1040962	491431
Mississippi Sound	7534816	Alpha VesselCo., LLC	Josh Fowler	1018158	1018159	490737
Tiger Point	7309467	Alpha VesselCo., LLC	Kevin Verrett	1031411	1031412	490743
Willard P. Lebouf	7316472	Alpha VesselCo., LLC	Carlton Harcum	1042552	1042554	495777
Frosty Morn	7048960	Alpha VesselCo., LLC	Tim Stevens	1041553	1042554	490767

1. Vessel name.
2. USCG documentation number, state license or registration of each vessel.
3. Vessel home port.
4. Vessel owner information – name, mailing address, phone number, email.
5. Vessel captain information and primary project participants – names.
9. Signature of applicant.

Peter Mastroz 10/12/2023