

Fisheries Sampling Branch Data Collection

Focusing on similarities/differences between NEFOP and ASM groundfish data

The National Marine Fisheries Service (NMFS) Northeast Fisheries Science Center (NEFSC) Fisheries Sampling Branch (FSB) collects, maintains, and distributes data for scientific and management purposes in the Northwest Atlantic. FSB manages three separate but related observer programs: Northeast Fisheries Observer Program (NEFOP), At Sea Monitoring (ASM), and Industry Funded Scallop (IFS). Although each program is tailored to meet specific monitoring objectives, all programs operate within and are governed by the same laws, and are subject to the same standards in regard to data quality and confidentiality, safety, and harassment.

NEFOP and IFS priorities focus on the following objectives:

- Collecting accurate catch data in fisheries that interact with groundfish and other species (tow-by-tow basis)
- Monitoring catch in experimental fisheries and special management programs such as Species Access Programs (SAPs) and fishing in the U.S./Canada Management Area
- Monitoring catch in scallop access areas
- Sampling fish and crustacean catch in fisheries throughout the Northeast and Mid-Atlantic regions
- Collecting detailed biological samples (age structures, lengths, etc.) for fish, invertebrates, and protected species

ASM priorities focus on the following objectives:

- Collecting select information on fishing gear to categorize effort
- Collecting accurate catch data in the NE multispecies fishery (tow-by-tow basis)
- Sampling fish catch in fisheries throughout the Northeast and Mid-Atlantic regions
- Collecting select information on interactions with protected species

The main difference between the two programs is ASM collects a scaled down set of data, thereby reducing training time, gear requirements, and internal support resources. NEFOP focuses on biological sampling of catch including protected species. Biological sampling involves collecting data on age, length, sex, animal condition, and gear interactions in order to provide end users with data to determine the health of a fish stock, project biomass, and to use in scientific studies of life history that examine the distribution of stock, matriarchal lines, and contaminate and food habit studies. ASMs collect data to verify area fished and catch (landings and discards), by species and gear type, for the purpose of monitoring sector ACE utilization (FY2015_Multispecies_Sector_ASM_Requirements_Summary).

The NE multispecies groundfish fishery is covered by both NEFOP and ASM sampling protocols. All groundfish trips follow the same process:

- Observer uploads preliminary data within 48 hours of landing
 - Both programs upload all ASM data fields electronically
- Species verification samples/photos are checked in within 48 hours of receipt (photo upload or physical sample arrival)
 - Both programs have the same species verification requirements
- Preliminary data is reviewed and loaded to SIMM within 5 days of landing

- Observer submits paper logs within 5 days of landing
 - Both programs currently use paper logs for verification of electronic submissions
- Paper log data is compared to electronic data and any additional changes are made and reloaded to SIMM within 30 days of landing
- Biological samples are checked in within a week and sent for processing within 90 days
 - NEFOP biological samples include whole fish/invertebrate samples, whole protected species or samples, otoliths, scales, monkfish vertebrate, and specialized research tags

After review, the NEFOP data fields are entered into a separate data entry system, audited, and loaded to the observer database for use by NEFSC end-users, a process that typically takes about 90 days from trip landing.

Table 1: Summary of the data collected and reported on groundfish trips. For a complete list of all data fields collected on NEFOP and ASM logs, refer to the [Northeast Fisheries Observer Program Manual](#).

Data Set	ASM Collection	Additional NEFOP Collection	SIMM Reporting
Vessel and Trip Information	Trip identifier, program code, sector/fleet, vessel information, ports and dates sailed and landed, trip costs, gear type used, target species	Home port, trip duration, crew size, fishing time lost, gear onboard and soaking, captain experience	All ASM fields
Trawl Gear Information	Gear code, gear number, net descriptors, codend and liner mesh sizes, excluder/separator and escape outlet presence	Doors, kites, construction material, fishing circle, length measurements, strengthener, chafing gear, ground gear, sweep gear, floats, gear mounted electronics details, excluder/ separator and escape outlet details	Gear code, gear number, mesh size category
Gillnet Gear Information	Gear code, gear number, number of nets, net length, net height, tie downs, marine mammal deterrents, mesh size	Hanging ratio, twine size, floats and floatline, anchors and leadline, spaces, droplines, net color, surface system, buoyline, groundline, weak links	Gear code, gear number, mesh size category
Longline Gear Information	Gear code, gear number, number of hooks, hook brand, hook model, hook size	Sections, mainline, leaders, anchors, gangions, surface system, buoyline, groundline, weak links, swivels, radar reflectors	Gear code, gear number
Haul Information	Haul number, gear code, gear number, haul observed, weather, wave height, gear condition, target species, soak duration; Dates, times, and locations: haul begin and end	On effort, marine mammal watch, catch exist, wind speed and direction, water temperature, depth, set method, set/tow speed, number of turns, wire out, bait; Dates, times, and locations: fixed gear set, mobile gear fishing begin and gear onboard	Haul number, gear code, haul observed, target species, statistical area, soak duration
Catch Information	Species name, market, weight, disposition (kept or discard) and reason, catch estimation method	Same as ASM	Species, market, stock area, weight, disposition (kept or discard), calculated live weight

Biological Sampling	Lengths: Species name, disposition and reason, sample weight, animal length, number at length	Lengths: sex, age sample type and number Age structures: scales, otoliths, vertebrae, and/or heads (species dependent)	None
Protected Species Interactions	Takes: Animal number, haul number, tag number (applied or existing), species name, entanglement situation, animal condition	Takes: Net number/position, time taken, pinger condition code, sex, sampling measurements, body temperature (mammals) Sightings: Event type, position, haul number, location, weather, wave height, species name, number of animals, how sighted, animal condition, animal behavior	Harbor porpoise takes: Porpoise number, tag number, entanglement situation, animal condition, location

Table 2: Target species recorded (appears in a minimum of 10 trips) by program and gear type from 2010-2014.

Description	NEFOP		% trips	ASM		% trips
	Target Species	Target Species		Target Species	Target Species	
Gillnet	Bass, Striped	Mackerel, Spanish	35%	Cod, Atlantic	51%	
	Bluefish	Mackerel, King		Dogfish, Spiny		
	Bonito, Atlantic	Kingfish, Southern		Flounder, Not Specified		
	Croaker, Atlantic	Kingfish, Not specified		Flounder, Yellowtail		
	Dogfish, Spiny	Weakfish		Haddock		
	Flounder, Southern	Spot		Monkfish		
	Flounder, Winter	Skate, Winter		Skate, Not Specified		
	Groundfish, Not specified	Skate, Not specified		Skate, Winter		
	Hake, White	Haddock		Pollock		
	Seatrout	Flounder, Yellowtail		Hake, White		
	Pollock	Flounder, Summer		Groundfish, Not specified		
	Mullet, Striped	Flounder, Not specified		Flounder, Winter		
	Monkfish	Dogfish, Smooth				
	Menhaden, Atlantic	Cod, Atlantic				
Longline	Cod, Atlantic		2%	Bluefish	5%	
	Haddock			Cod, Atlantic		
	Dogfish, Spiny			Dogfish, Spiny		
	Groundfish, Not specified			Haddock		
Otter trawl	Bass, Striped	Hake, White	50%	Cod, Atlantic	Hake, White	44%
	Cod, Atlantic	Hake, Silver		Fish, Not specified	Groundfish, Not specified	
	Crab, Horseshoe	Haddock		Flounder, Not Specified	Flounder, Witch	
	Dogfish, Spiny	Tautog		Flounder, Winter	Flounder, Summer	
	Flounder, American Plaice	Squid, Short-Fin		Flounder, Yellowtail	Flounder, American Plaice	
	Flounder, Summer	Squid, Atl Long-Fin		Haddock	Dogfish, Spiny	
	Flounder, Witch	Skate, Winter		Lobster, American		
	Groundfish, Not specified	Skate, Not specified		Skate, Winter		
	Scup	Skate, Little		Skate, Not Specified		
	Redfish, Not specified	Shrimp, Pandalid		Skate, Little		
	Pollock	Sea Bass, Black		Scallop, Sea		
	Monkfish	Flounder, Yellowtail		Redfish, Not specified		
	Lobster, American	Flounder, Winter		Pollock		
	Herring, Atlantic	Flounder, Not specified		Monkfish		
Beach Seine	Bass, Striped		<1%			
	Butterfish					
	Croaker, Atlantic					
	Mackerel, Spanish					
Midwater Trawl	Herring, Atlantic		7%			
	Mackerel, Atlantic					
Purse Seine	Herring, Atlantic		2%			
	Menhaden, Atlantic					
Pots & Traps	Lobster, American		1%			
	Sea Bass, Black					
	Whelk, Channeled					
Scallop Dredge			2%			
Scallop Trawl	Scallop, Sea		<1%			
Twin Trawl	Squid, Atl Long-Fin		<1%			

Table 3: Count and percent of trip type by program from 2010-2014.

	NEFOP			ASM		
	Single-Day Trips	Multi-Day Trips	Total	Single-Day Trips	Multi-Day Trips	Total
Trip	8520	3453	11,973	8572	2356	10,928
Types	71%	29%		78%	22%	

Table 4: Observer and monitor experience and certifications from 2010-July 2015.

NEFOP				ASM			
Number of NEFOP Observers	Experience, Max Years	Experience, Avg Years	% with an ASM Certification	Number of ASM Observers	Experience, Max Years	Experience, Avg Years	% with a NEFOP Certification
69	13	2	43%	79	5	3	38%

Table 5: List of observer and at-sea monitor providers currently approved for monitoring in the Northeast. Three companies are currently under contract in the NMFS-Funded ASM program, one of these is certified for NEFOP. All five companies are approved for an Industry-Funded ASM program.

Company Name	Approved Through		NEFOP	NMFS-Funded ASM
	Regulatory Process			
ACD	Yes	No	No	No
AIS	Yes	No	No	Yes
EWTS	Yes	No	No	Yes
Fathoms	Yes	No	No	No
MRAG, Inc	Yes	Yes	Yes	Yes

Table 6: Priority species measured and sampled by the NEFOP and ASM programs from 2010-2014. ASMs do not collect physical samples, only length measurements.

Species Name	NEFOP		ASM	
	Number of Lengths	Number of Physical Samples Collected	Number of Lengths	Number of Physical Samples Collected
Alewife	5,976	512	248	0
Bass, Striped	2,102	61	276	0
Bluefish	8,033	672	1,361	0
Butterfish	45,705	1,882	474	0
Cod, Atlantic	66,846	9,118	106,388	0
Croaker, Atlantic	9,202	110	0	0
Cusk	1,128	32	996	0
Dogfish, Spiny	33,903	25	47,866	0
Drum, Black	91	0	0	0
Drum, Red	26	1	0	0
Flounder, American Plaice	53,530	5,192	107,126	0
Flounder, Sand Dab	26,158	1,746	20,477	0
Flounder, Summer	64,395	11,508	15,417	0
Flounder, Winter	36,976	1,558	48,460	0
Flounder, Witch	33,533	2,528	58,667	0
Flounder, Yellowtail	47,512	5,455	85,261	0
Haddock	64,246	10,007	77,476	0
Hagfish, Atlantic	2,994	0	3	0
Hake, Red	6,914	44	2,405	0
Hake, Silver	31,006	321	8,154	0
Hake, White	17,718	1,931	25,794	0
Halibut, Atlantic	890	38	1,616	0
Herring, Atlantic	95,889	765	2,823	0
Herring, Blueback	2,598	262	107	0
Mackerel, Atlantic	10,445	295	660	0
Mackerel, Spanish	2,761	0	1	0
Menhaden, Atlantic	5,531	23	6	0
Monkfish	66,115	1,436	92,445	0
Ocean Pout	385	1	1,356	0
Pollock	39,038	4,562	63,727	0
Redfish, NK	18,026	1,147	38,439	0
Scup	44,989	6,254	3,237	0
Sea Bass, Black	20,152	4,045	814	0
Shad, American	5,646	107	3,329	0
Skate, Barndoor	2,939	2	7,599	0
Skate, Clearnose	1,119	3	49	0
Skate, Little	14,127	13	16,354	0
Skate, Rosette	350	3	10	0
Skate, Smooth	1,340	4	3,969	0
Skate, Thorny	1,559	3	4,616	0
Skate, Winter	12,571	4	23,839	0
Spot	3,401	7	0	0
Squid, Atl Long-Fin	74,891	6	453	0
Squid, Short-Fin	37,634	5	822	0
Tautog	477	0	8	0
Tilefish, Blueline	73	3	0	0
Tilefish, Golden	2,001	81	43	0
Weakfish	1,538	214	9	0
Wolfish, Atlantic	284	4	974	0

Table 7: Summary of catch encountered by the NEFOP and ASM programs from 2010-2014. The fish grouping includes squid, scallops, clams, whelks, and terrapins.

Grouping	Number of species encountered in NEFOP	Number of species encountered in ASM
Fish	323	222
Crustaceans	21	18
Mammals	17	15
Turtles	5	4
Birds	21	17

Table 8: Summary of days absent (days a vessel is absent from the dock), percent of days absent, and the number of vessels observed by program and state landed. NEFOP and ASM coverage is assigned based on two different managing strategies therefore NEFOP data is summarized by SBRM¹ year and ASM data are summarized by fishing year.

State Landed	NEFOP April 1st, 2014 - March 31st, 2015			ASM May 1st, 2014 - April 30th, 2015		
	# Days Absent	% Days Absent	# Vessels Observed	# Days Absent	% Days Absent	# Vessels Observed
ME	493	8%	47	539	13%	33
NH	192	3%	19	190	5%	14
MA	2259	37%	204	3019	72%	141
RI	1011	17%	92	293	7%	35
CT	187	3%	21	22	1%	6
NY	431	7%	68	56	1%	9
NJ	851	14%	104	13	0%	4
MD	68	1%	10			
VA	324	5%	54	36	1%	7
NC	307	5%	65	9	0%	1
TOTAL	6123	100%	616	4177	100%	222

¹ Standardized Bycatch Reduction Methodology

Alewife	Crab, Speckled, Not specified	Flounder, Fourspot	Kingfish, Not specified	Pompano, Florida	Sea Robin, Northern	Shearwater, Not specified	Stingray, Pelagic
Alligatorfish	Crab, Spider, Not specified	Flounder, Gulfstream	Kingfish, Southern	Porgy, Not specified	Sea Robin, Not specified	Shearwater, Sooty	Stingray, Roughtail
Amberjack, Not specified	Crab, Spider, Portly	Flounder, Lefteye, Not specified	Kittiwake, Blk-Leggd	Porpoise, Harbor	Sea Robin, Striped	Sheepshead	Stingray, Southern
Anchovy, Bay	Crab, True, Not specified	Flounder, Not specified	Ladyfish	Porpoise/Dolphin, Not specified	Sea Squirt, Not specified	Shell, Not specified	Stomach Contents Fish, Not specified
Anchovy, Not specified	Croaker, Atlantic	Flounder, Sand Dab	Lamprey, Not specified	Puffer, Northern	Sea Urchin, Not specified	Shell, Scallop	Storm Petrel, Not specified
Anchovy, Striped	Cunner	Flounder, Southern	Lampshell, Not specified	Puffer, Not specified	Seal, Gray	Shellfish, Not specified	Storm Petrel, Wilson
Anemone, Not specified	Cusk	Flounder, Summer	Lanternfish, Not specified	Quahog, Hard Shell Clam	Seal, Harbor	Shortspine Boarfish	Sturgeon, Atlantic
Argentine, Atlantic	Cusk-Eel, Not specified	Flounder, Winter	Lizardfish	Quahog, Ocean	Seal, Harp	Shrimp, Mantis	Sturgeon, Not specified
Baracuda, Not specified	Cutlassfish, Atl	Flounder, Witch	Lobster, American	Raven, Sea	Seal, Not specified	Shrimp, Not specified	Swordfish
Barrelfish	Dealfish	Flounder, Yellowtail	Lookdown	Ray, Bullnose	Seatrou	Shrimp, Pandaid	Tautog
Bass, Striped	Debris, Fishing Gear	Fulmar, Northern	Loon, Common	Ray, Butterfly, Not specified	Seatrou, Not specified	Shrimp, Penaeid	Tilefish, Blueine
Barfish, Atlantic	Debris, Glass	Gannet, Northern	Loon, Not specified	Ray, Butterfly, Smooth	Seaweed, Not specified	Shrimp, Royal Red	Tilefish, Golden
Barfish, Not specified	Debris, Metal	Gaper, Red Eye	Loon, Red-Throated	Ray, Butterfly, Spiny	Shad, American	Shrimp, Scarlet	Tilefish, Not specified
Beardfish	Debris, Not specified	Garfish	Lumpfish	Ray, Cownose	Shad, Gizard	Shrimp, Shore, Not specified	Toadfish, Not specified
Bird, Not specified	Debris, Plastic	Grenadier, Common	Mackerel, Atlantic	Ray, Devil	Shad, Hickory	Silverside, Atlantic	Toadfish, Oyster
Blenny, Not specified	Debris, Rock	Grenadier, Long-Nosed	Mackerel, Chub	Ray, Eagle, Not specified	Shanny, Not specified	Silverside, Not specified	Triggerfish, Not specified
Bluefish	Debris, Wood	Grenadier, Not specified	Mackerel, Frigate	Ray, Manta, Atlantic	Shark, Atl Angel	Skate, Barndoor	Tuna, Big Eye
Bluespotted Cornetfish	Dogfish, Chain	Grenadier, Roughhead	Mackerel, King	Ray, Manta, Not specified	Shark, Atl Sharpnose	Skate, Clearnose	Tuna, Blackfin
Boarfish, Deepbody	Dogfish, Not specified	Groundfish, Not specified	Mackerel, Not specified	Ray, Not specified	Shark, Basking	Skate, Little	Tuna, Bluefin
Boarfish, Not specified	Dogfish, Smooth	Grouper, Not specified	Mackerel, Snake, Not specified	Ray, Torpedo	Shark, Bignose	Skate, Little/Winter, Not specified	Tuna, Little
Bone, Not specified	Dogfish, Spiny	Grouper, Snowy	Mackerel, Spanish	Redfish, Not specified	Shark, Black Tip	Skate, Not specified	Tuna, Not specified
Bonito, Atlantic	Dolphin, Bottlenose	Gull, Great Blk-Back	Marine Mammal, Not specified	Remora, Not specified	Shark, Blacknose	Skate, Rosette	Tuna, Skipjack
Bullet Mackerel	Dolphin, Common	Gull, Herring	Marlin, Not specified	Ribbonfish, Not specified	Shark, Blue	Skate, Smooth	Tuna, Yellowfin
Butterfish	Dolphin, Not specified	Gull, Less Blk-Back	Marlin, White	Ribbonfish, Scalloped	Shark, Bluntnose Sixgill	Skate, Thorny	Turtle, Green
Capelin	Dolphin, Rissos	Gull, Not specified	Menhaden, Atlantic	Rockling, Fourbeard	Shark, Bonnethead	Skate, Winter	Turtle, Kemps Ridley
Carp	Dolphin, Whitesided	Haddock	Mola, Not specified	Rockweed, Not specified	Shark, Bull	Slender Snipefish	Turtle, Leatherback
Clam, Bloodarc	Dolphinfish	Hagfish, Atlantic	Mola, Ocean Sunfish	Rosefish, Black Belly	Shark, Carcharhinid, Not specified	Smelt, Rainbow	Turtle, Loggerhead
Clam, Not specified	Dory, Buckler	Hake, Longfin	Mola, Sharptail	Roughy, Big	Shark, Dusky	Snail, Moonshell, Not specified	Turtle, Not specified Hard-Shell
Clam, Razor	Dory, Not specified	Hake, Not specified	Molluca Eggs, Not specified	Roughy, Not specified	Shark, Finetooth	Snail, Not specified	Turtle, Terrapin
Clam, Surf	Dovekie	Hake, Red	Mollusk, Not specified	Runner, Blue	Shark, Greenland	Snakeblenny	Unknown Living Matter
Clapper, Clam	Drum, Banded	Hake, Red/White Mix	Monkfish	Salmon, Atlantic	Shark, Hammerhead, Great	Snapper, Not specified	Weakfish
Clapper, Not specified	Drum, Black	Hake, Silver	Moonfish, Atlantic	Sand Dollar	Shark, Hammerhead, Scalloped	Snapper, Red	Whale, Fin/Sei
Clapper, Scallop	Drum, Not specified	Hake, Southern	Mullet, Striped	Saury, Atlantic	Shark, Hammerhead, Smooth	Snapper, Vermillion	Whale, Finback
Cobia	Drum, Red	Hake, Spotted	Mummichog	Scad, Bigeye	Shark, Hammerhead, Not specified	Snipefish, Longspine	Whale, Humpback
Cod, Atlantic	Echinoderm, Not specified	Hake, White	Murre, Not specified	Scad, Mackerel	Shark, Mako, Shortfin	Snipefish, Not specified	Whale, Minke
Coral, Soft, Not specified	Eel, American	Hallibut, Atlantic	Murre, Thick-Billed	Scad, Rough	Shark, Night	Spadefish	Whale, Not specified
Coral, Stony, Not specified	Eel, Conger	Hallibut, Greenland	Murre, Thin-Billed	Scallop, Ray	Shark, Not specified	Sponge, Not specified	Whale, Pilot, Not specified
Cormorant, Dbl Crest	Eel, Not specified	Harvestfish	Mussel, Not specified	Scallop, Not specified	Shark, Pelagic	Spot	Whelk, Channeled
Cormorant, Not specified	Eel, Rock	Herring, Atlantic	Needlefish, Atlantic	Scallop, Sea	Shark, Porbeagle	Squid Eggs, Atl Long-Fin	Whelk, Knobbed
Crab, Blue	Eel, Sand Lance, Not specified	Herring, Blueback	Ocean Pout	Scorpionfish, Not specified	Shark, Sand Tiger	Squid, Atl Long-Fin	Whelk, Lightning
Crab, Cancer, Not specified	Eel, Slender Snipe	Herring, Not specified	Octopus, Not specified	Sculpin, Longhorn	Shark, Sandbar	Squid, Not specified	Whelk, Not specified, Conch
Crab, Deepsea, Red	Eelgrass	Herring, Round	Opah	Sculpin, Not specified	Shark, Sevengill Sharpnose	Squid, Short-Fin	Whelk, True Unc
Crab, Green	Eelpout, Not specified	Hogchocker	Perch, Sand	Scup	Shark, Silky	Squirrelfish, Not specified	Whiting, Black
Crab, Hermit, Not specified	Eggs, Elasmobranch, Not specified	Hogfish	Perch, White	Sea Bass, Black	Shark, Spinner	Starfish, Brittle, Not specified	Wolffish, Atlantic
Crab, Horseshoe	Eggs, Not specified	Houndfish	Periwinkle, Common	Sea Bass, Not specified	Shark, Thresher	Starfish, Seastar, Not specified	Wolffish, Northern
Crab, Jonah	Eider, Common	Invertebrate, Not specified	Pigfish	Sea Cucumber, Not specified	Shark, Thresher, Bigeye	Stargazer, Northern	Worm, Not specified
Crab, Lady	Filefish, Not specified	Jack, Crevalle	Pilotfish	Sea Pansy	Shark, Tiger	Stargazer, Not specified	Wreckfish
Crab, Northern Stone	Fish Eggs, Not specified	Jack, Not specified	Pinfish	Sea Pen, Not specified	Shark, White	Stingray, Atlantic	Wrymouth
Crab, Rock	Fish, Not specified	Jellyfish, Not specified	Pipefish/Seahorse, Not specified	Sea Potato	Shearwater, Greater	Stingray, Bluntnose	
Crab, Snow	Flounder, American Plaice	Kingfish, Northern	Pollock	Sea Robin, Armored	Shearwater, Manx	Stingray, Not specified	

Figure 1: Color-coded list of species encountered by program from 2010-2014. NEFOP only encounters are shaded in blue, ASM only encounters are shaded in green, and beige represents where both programs encountered the species.

VESSEL & TRIP			
Field Name	NEFOP	ELECTRONIC	SIMM
Trip Identifiers	X	X	X
Homeport/Trip Dur/Crew	X		
Gear Used/Onboard/# soak	X		
Time Lost	X		
hauls obs/unobs, primspland	X		
Trip Costs	X	X	X
Vessel info- name, permit	X	X	X
Gear and target species	X	X	X
Port/Date sail and land	X	X	X

Highlighted fields are collected by ASM

TRAWL GEAR			
Field Name	NEFOP	ELECTRONIC	SIMM
General gear- name/type	X	X	X
Codend/liner, mesh size	X	X	X
Construction material	X		
Doors and Kites	X		
Fishing circle, strengthner	X		
Ground gear	X		
Length measurements	X		
Sweep/floats	X		
Gear mounted electronics	X		
General excluder/escape	X	X	
Specific excluder/escape	X		

Highlighted fields are collected by ASM

GILLNET GEAR			
Field Name	NEFOP	ELECTRONIC	SIMM
General gear- # nets, mesh size	X	X	X
Net info basic- length/height	X	X	
Net specifics- hang ratio, twine	X		
Tie downs	X	X	
Droplines, anchors, floats	X		
MM deterrents basic- number	X	X	
Deterents specific- passive, brand	X		
Color, surface system, buoyline	X		
Groundline, weak links	X		

Highlighted fields are collected by ASM

LONGLINE GEAR			
Field Name	NEFOP	ELECTRONIC	SIMM
General gear- # hooks	X	X	X
Hook brand, model, size	X	X	
# of sections and length	X		
Mainline, leaders, anchors	X		
Gangions, buoyline, groundline	X		
Surface system, weak links	X		
Floats, light sticks, color	X		
Swivels, dropline, material	X		

Highlighted fields are collected by ASM

LENGTH FREQUENCY			
Field Name	NEFOP	ELECTRONIC	SIMM
Species name, fish disp	X	X	
Sex, age samples, # samples	X		
Sample weight	X	X	
Volume meats (scallop)	X		

Highlighted fields are collected by ASM

HAUL LOG			
Field Name	NEFOP	ELECTRONIC	SIMM
General info	X	X	X
Weather	X	X	
Wind, depth haul begin	X		
Wave height	X	X	
Begin/end time/coordinates	X	X	
Specific haul info ex. pumping (OT)	X		
MM watch (GG)	X		
Depth bottom/leadline (GG)	X		
# net hauled (GG)	X	X	
# nets set/lost (GG)	X		
# MM deterrents hauled (GG)	X	X	
# Deterents lost/passive (GG)	X		
Mainline length (LL)	X		
Set method and speed (LL)	X		
Hook depth range (LL)	X		
Bait (LL)	X		

Highlighted fields are collected by ASM

INCIDENTAL TAKE			
Field Name	NEFOP	ELECTRONIC	SIMM
PSID, haul #	X	X	X*
Time, active deterrent device	X		
Species, tag #, entanglement	X	X	X*
Animal condition, photo	X	X	X*
Animal onboard	X		
Sample taken, length	X		

Highlighted fields are collected by ASM

* Harbor porpoise only

INDIVIDUAL ANIMAL LOG			
Field Name	NEFOP	ELECTRONIC	SIMM
Species, wgt, market, est meth	X	X	
Sequence #	X	X	
Gear #	X		
Initial status code	X		
End status code, fish disp	X	X	
Processing code	X		
Tag number, length	X	X	
Sex, biosamp, photos	X		

Highlighted fields are collected by ASM

Figure 2: Collection of tables illustrating a summary of data fields collected by the NEFOP and ASM programs as well as which of those fields are available in SIMM. SIMM is managed through the Greater Atlantic Regional Fisheries Office (GARFO) whereas NEFOP and ASM are managed through NEFSC therefore there are footnotes for certain fields noting specific variations.

The following figures are a subset of NEFOP and ASM logs displayed side by side to illustrate the data collection differences between programs. Blue-shaded fields are collected at ASM data upload but not recorded on paper logs. Yellow-shaded fields are not collected by At-Sea Monitors.

BOTTOM TRAWL GEAR CHARACTERISTICS LOG
NMFS FISHERIES OBSERVER PROGRAM
OBOTG 05/01/13

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

GEAR CODE <input type="text"/>		GEAR NUMBER	NET NAME	NET TYPE	NET BUILDER	CODEND/LINER HUNG CODEND LINER	GEAR MOUNTED ELECTRONICS	EXCLUDER/SEPARATOR DEVICE USED? NO 0 ____ YES 1 ____	
LINER USED? NO 0 ____ YES 1 ____		CONSTRUCTION MATERIAL TYPE NET BODY CODEND LINER		LENGTH MEASUREMENTS		Unknown 0 ____ ____ Diamond 1 ____ ____ Square 2 ____ ____ Square, wrapped 3 ____ ____ Combination 8 ____ ____	USED ? NO 0 ____ YES 1 ____	Type Code ____	
DOORS USED? NO 0 ____ YES 1 ____		Poly 02 ____ ____ Kevlar® 03 ____ ____ Spectra® 04 ____ ____ Tenex® 05 ____ ____ Nomex® 06 ____ ____		Headrope ____ ft Footrope/Sweep ____ ft Ground Cable ____ fm Bridle ____ fm		TWINE TYPE CODEND LINER	NUMBER OF TRANSDUCERS	T.E.D. EXTENSION	
WEIGHT OF ONE DOOR ____ kg		Combination 98 ____ ____ Other 99 ____ ____		STRENGTHENER USED? NO 0 ____ YES 1 ____		Single 1 ____ ____ Double 2 ____ ____ Single on Top/ Double on Bottom 3 ____ ____ Other 9 ____ ____	TYPE Unknown 0 ____ Wired 1 ____ Wireless 2 ____ Both 3 ____	Mesh Size ____ . ____ in (circle one) A / E	
KITE PANEL KITE USED? Number ____ NO 0 ____ Width ____ in YES 1 ____ Length ____ in		FISHING CIRCLE # MESHES ____ MESH SIZE ____ . ____ in		CHAFING GEAR USED? NO 0 ____ YES 1 ____		CODEND MESH SIZE ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm	BRAND Unknown 0 ____ Furuno® 1 ____ Simrad® 2 ____ Northstar Tech 3 ____ Notus 4 ____ Marport 5 ____ Scanmar 6 ____ Combination 8 ____ Other 9 ____	ESCAPE OUTLET USED? NO 0 ____ YES 1 ____	
COMMENTS		GROUND GEAR TYPE GROUND CABLE BRIDLE/ LEG SWEEP				CODEND MESH SIZE ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm		TYPE Unknown 0 ____ Panel 1 ____ Opening 2 ____ Single Flap 3 ____ Double Flap 4 ____ Other 9 ____	MESH SIZE ____ in
		SWEEP GEAR Number ____ Diameter ____ in		FLOATS Number ____ Diameter ____ in		LINER MESH SIZE ____ mm ____ mm ____ mm ____ mm ____ mm ____ mm		LOCATION (check all that apply) Unknown 0 <input type="checkbox"/> Headrope 1 <input type="checkbox"/> Wings 2 <input type="checkbox"/> Footrope 3 <input type="checkbox"/> Door 5 <input type="checkbox"/> Codend 6 <input type="checkbox"/> Other 9 <input type="checkbox"/>	LENGTH # MESHES ____ OR ____ in WIDTH # MESHES ____ OR ____ in SHAPE Type Code ____ LOCATION Type Code ____

BOTTOM TRAWL GEAR LOG (FRONT)
NMFS FISHERIES AT-SEA MONITORING PROGRAM
ASMOTG 05/01/13

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GEAR CODE □□□	GEAR # □□	NET NAME	NET TYPE
CODEND LINER ? Y <input type="checkbox"/> N <input type="checkbox"/>		EXCLUDER/ SEPARATOR? Y <input type="checkbox"/> N <input type="checkbox"/>	ESCAPE OUTLET? Y <input type="checkbox"/> N <input type="checkbox"/>
CODEND		LINER	
CODEND HUNG UNKNOWN <input type="checkbox"/> DIAMOND <input type="checkbox"/> SQUARE <input type="checkbox"/> SQUARE WRAPPED <input type="checkbox"/> COMBINATION <input type="checkbox"/>		CODEND MESH MEASUREMENTS _____mm _____mm _____mm _____mm _____mm	
CODEND TWINE UNKNOWN <input type="checkbox"/> SINGLE <input type="checkbox"/> DOUBLE <input type="checkbox"/> TOP SINGLE/ BOTTOM DOUBLE <input type="checkbox"/> OTHER <input type="checkbox"/>		LINER TWINE UNKNOWN <input type="checkbox"/> SINGLE <input type="checkbox"/> DOUBLE <input type="checkbox"/> TOP SINGLE/ BOTTOM DOUBLE <input type="checkbox"/> OTHER <input type="checkbox"/>	

COMMENTS

GEAR CODE □□□	GEAR # □□	NET NAME	NET TYPE
CODEND LINER ? Y <input type="checkbox"/> N <input type="checkbox"/>		EXCLUDER/ SEPARATOR? Y <input type="checkbox"/> N <input type="checkbox"/>	ESCAPE OUTLET? Y <input type="checkbox"/> N <input type="checkbox"/>
CODEND		LINER	
CODEND HUNG UNKNOWN <input type="checkbox"/> DIAMOND <input type="checkbox"/> SQUARE <input type="checkbox"/> SQUARE WRAPPED <input type="checkbox"/> COMBINATION <input type="checkbox"/>		CODEND MESH MEASUREMENTS _____mm _____mm _____mm _____mm _____mm	
CODEND TWINE UNKNOWN <input type="checkbox"/> SINGLE <input type="checkbox"/> DOUBLE <input type="checkbox"/> TOP SINGLE/ BOTTOM DOUBLE <input type="checkbox"/> OTHER <input type="checkbox"/>		LINER TWINE UNKNOWN <input type="checkbox"/> SINGLE <input type="checkbox"/> DOUBLE <input type="checkbox"/> TOP SINGLE/ BOTTOM DOUBLE <input type="checkbox"/> OTHER <input type="checkbox"/>	

COMMENTS

BOTTOM TRAWL HAUL LOG
NMFS FISHERIES OBSERVER PROGRAM
OBOH OBHAU OBSPP 05/01/13

OBS/ TRIP ID	
DATE LAND (mm/yy)	/ /
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

GEAR CODE <input type="text"/>	GEAR # <input type="text"/>	HAUL # <input type="text"/>	HAUL OBS? NO 0 <input type="checkbox"/> YES 1 <input type="checkbox"/>	ON-EFFORT? NO 0 <input type="checkbox"/> YES 1 <input type="checkbox"/>	CATCH? NO 0 <input type="checkbox"/> YES 1 <input type="checkbox"/>	INC TAKE? NO 0 <input type="checkbox"/> YES 1 <input type="checkbox"/>	WEATHER CODE	WIND SPEED <input type="text"/> kn DIRECTION <input type="text"/> °	WAVE HEIGHT <input type="text"/> ft	DEPTH, HAUL BEGIN <input type="text"/> fm	GEAR COND CODE							
HAUL INFO	DATE mm/dd/yy	TIME 24 hours	LATITUDE / LONGITUDE (DD MM.M) - LORAN (XXXXX)					NUMBER OF TURNS	TOW SPEED <input type="text"/> kn	WIRE OUT <input type="text"/> fm								
BEGIN HAUL	/ /	:	Station 1 9960 -	Latitude / Bearing	Station 2 9960 -	Longitude / Bearing												
BEGIN FISHING	/ /	:						WATER TEMP <input type="text"/> ° <input type="text"/> F	TARGET SPECIES CODE									
END HAUL	/ /	:	9960 -		9960 -													
GEAR ONBOARD	/ /	:	COMMENTS							VERTICAL OPENING ** <input type="text"/> ft								
FISH PUMPING																HORIZONTAL OPENING ** <input type="text"/> ft		
BEGIN	/ /	:																
END	/ /	:																

** Only fill in if gear mounted electronics are used

SPECIES						SPECIES					
NAME	CODE	SUB-SAMPLE WEIGHT	POUNDS	DISP CODE	ESTIMATION METHOD CODE	NAME	CODE	SUB-SAMPLE WEIGHT	POUNDS	DISP CODE	ESTIMATION METHOD CODE
1						11					
2						12					
3						13					
4						14					
5						15					
6						16					
7						17					
8						18					
9						19					
10						20					

TRAWL HAUL LOG
NMFS FISHERIES AT-SEA MONITORING PROGRAM
ASMOTH ASMHAU ASMSPP 05/01/13

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DATE LANDED mm/yy	/
PAGE #	of

GEAR CODE □□□	GEAR NUMBER □□	HAUL NUMBER □□□	HAUL OBSERVED? YES <input type="checkbox"/> NO <input type="checkbox"/>	INC TAKE? YES <input type="checkbox"/> NO <input type="checkbox"/>
WEATHER CODE	WAVE HEIGHT ft	GEAR COND CODE	TARGET SPECIES 1	TARGET SPECIES 2
HAUL INFO	DATE mm/dd/yy	TIME 24 hours	LATITUDE/LONGITUDE (DD MM.M)	
BEGIN HAUL	/ /	:	LATITUDE	LONGITUDE or (STAT AREA)*
END HAUL	/ /	:		

COMMENTS * Enter only if latitude/longitude coordinates are not available

SAMPLE WEIGHT MULTIPLIER
 _____.____

SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.	SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.
1	_____					11	_____				
2	_____					12	_____				
3	_____					13	_____				
4	_____					14	_____				
5	_____					15	_____				
6	_____					16	_____				
7	_____					17	_____				
8	_____					18	_____				
9	_____					19	_____				
10	_____					20	_____				

GILLNET GEAR CHARACTERISTICS LOG
NMFS FISHERIES OBSERVER PROGRAM
OBBGG OBMSZ 05/01/13

OBS/ TRIP ID	
DATE LAND (mm/yy)	/ /
PAGE #	OF

GEAR CODE <div style="border: 1px solid black; width: 30px; height: 20px; display: inline-block;"></div> <div style="border: 1px solid black; width: 30px; height: 20px; display: inline-block;"></div> <div style="border: 1px solid black; width: 30px; height: 20px; display: inline-block;"></div>		GEAR NUMBER(S)		NUMBER OF NETS		MESH SIZE(S)		NET COLOR	
AVERAGE NET: LENGTH _____ ft HEIGHT (endline) _____ . _____ ft MESH COUNT VERTICAL _____ HANGING RATIO _____ / _____ TWINE SIZE _____ (circle one) A / E FLOATLINE MATERIAL Unknown 0 _____ Floating (foam core) 1 _____ Twisted Polypropylene 2 _____ Other 9 _____		USED? FLOATS 0 _____ 1 _____ TIE DOWNS 0 _____ 1 _____ (all nets) 2 _____ (not all nets) SPACE(S) BETWEEN NETS 0 _____ 1 _____ DROPLINES 0 _____ 1 _____ ADDITIONAL WGTS 0 _____ 1 _____ ANCHOR(S) 0 _____ 1 _____ SECURING METHOD(S) None 1 _____ Ocean Bottom 2 _____ Vessel/Ocean Bottom 3 _____ Vessel Only 4 _____		MEASUREMENTS Dist Between _____ ft Length _____ . _____ ft Number _____ Width _____ ft Length _____ ft Weight _____ lbs Type Unknown 0 _____ Danforth-style 1 _____ Dead Weight 2 _____ Combination 8 _____ Other 9 _____		# OF NETS _____ MESH SIZE (inches) _____ (circle one) _____ . _____ A / E _____ . _____ A / E _____ . _____ A / E _____ . _____ A / E OR MESH SIZE RANGE _____		Unknown 00 _____ Clear 01 _____ White 02 _____ Pink 03 _____ Black 04 _____ Green 05 _____ Blue 06 _____ Multi-color 07 _____ Red 08 _____ Orange 09 _____ Purple 10 _____ Combination 98 _____ Other 99 _____	
LEADLINE WEIGHT _____ . _____ lbs/ net MM DETERRENT DEVICES ACTIVE USED? 0 _____ 1 _____ Number _____ Frequency _____ kHz PASSIVE USED? 0 _____ 1 _____ Number _____		Brand(s) Unknown 00 _____ Dukane 01 _____ Airmar 02 _____ Fumunda 03 _____ Future Oceans LED 04 _____ Combination 98 _____ Other 99 _____		SURFACE SYSTEM # of High Flyer(s) _____ # of Buoy(s) _____ Surface Line Length (avg) _____ ft Type Code _____ Diameter _____ / _____ in Mark? NO 0 _____ YES 1 _____		BUOYLINE # of Buoyline(s) _____ Length (avg) _____ ft Type Code _____ Percent of Type (sinking / floating) _____ % / _____ % Diameter _____ / _____ in Mark? NO 0 _____ YES 1 _____			
COMMENTS 		WEAK LINKS NO YES USED ON SURFACE? 0 _____ 1 _____ Number (total) _____ Type Code _____		GROUNDLINE NO YES USED? 0 _____ 1 _____ Length (total) _____ ft Type Code _____ Diameter _____ / _____ in		USED ON STRING? 0 _____ 1 _____ Number (total) _____ Type Code _____			

GILLNET GEAR LOG (FRONT)
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GEAR CODE □□□□	GEAR # □□	# OF NETS	NET LENGTH ft	NET HEIGHT ____ . ____ ft	TIEDOWNS USED? YES <input type="checkbox"/> NO <input type="checkbox"/>	TIEDOWN LENGTH ____ . ____ ft
-------------------	--------------	-----------	------------------	------------------------------	---	----------------------------------

MESH SIZES (Fill out mesh MEASUREMENTS OR RANGE)

MEASUREMENTS (in.)				OR	RANGE (in.)		PINGERS USED? YES <input type="checkbox"/> NO <input type="checkbox"/>
# NETS	@	MESH SIZE	ACTUAL EST		MINIMUM	MAXIMUM	
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		

COMMENTS

GEAR CODE □□□□	GEAR # □□	# OF NETS	NET LENGTH ft	NET HEIGHT ____ . ____ ft	TIEDOWNS USED? YES <input type="checkbox"/> NO <input type="checkbox"/>	TIEDOWN LENGTH ____ . ____ ft
-------------------	--------------	-----------	------------------	------------------------------	---	----------------------------------

MESH SIZES (Fill out mesh MEASUREMENTS OR RANGE)

MEASUREMENTS (in.)				OR	RANGE (in.)		PINGERS USED? YES <input type="checkbox"/> NO <input type="checkbox"/>
# NETS	@	MESH SIZE	ACTUAL EST		MINIMUM	MAXIMUM	
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		
____		____ . ____	<input type="checkbox"/> <input type="checkbox"/>		____ . ____		

COMMENTS

GILLNET HAUL LOG
NMFS FISHERIES OBSERVER PROGRAM
OBGGH OBHAU OBSPP 05/01/13

OBS/ TRIP ID	
DATE LAND (mm/yy)	/ /
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

GEAR CODE	GEAR #	HAUL #	HAUL OBS? NO 0 _____ YES 1 _____	ON-EFFORT? NO 0 _____ YES 1 _____	MM WATCH? NO 0 _____ YES 1 _____	CATCH? NO 0 _____ YES 1 _____	INC TAKE? NO 0 _____ YES 1 _____	WEATHER CODE	WIND SPEED _____ kn DIRECTION _____ °	WAVE HEIGHT _____ ft	DEPTH, HAUL BEGIN BOTTOM _____ fm LEADLINE _____ fm
-----------	--------	--------	--	---	--	-------------------------------------	--	--------------	---	----------------------	---

SET INFO	DATE AND TIME mm/dd/yy 24 hours	LATITUDE / LONGITUDE (DD MM.M) - LORAN (XXXXX)				ESTIMATED SOAK DURATION	TARGET SPECIES	CODE(S)	GEAR COND CODE
S E T	BEGIN	/ /	:	9960 -		9960 -			
	END	/ /	:	9960 -		9960 -			
HAUL INFO						WATER TEMP _____ °F	NUMBER OF NETS _____	IF MM DETERRENTS USED: ACTIVE _____ PASSIVE _____	
H A U L	BEGIN	/ /	:	9960 -		9960 -		HAULED _____	
	END	/ /	:	9960 -		9960 -		LOST _____	

COMMENTS	SET METHOD
	Unknown 00 _____ Visual 05 _____
	Temperature 01 _____ Mixed 98 _____
	Bottom Contours 02 _____ Other 99 _____
	Compass/Loran 03 _____
	Tide/Current 04 _____
SAMPLE WEIGHT MULTIPLIER _____	

SPECIES					WEIGHT			SPECIES					WEIGHT		
NAME	CODE	SUB-SAMPLE WEIGHT	POUNDS	DISP CODE	D/R	EST METHOD CODE	NAME	CODE	SUB-SAMPLE WEIGHT	POUNDS	DISP CODE	D/R	EST METHOD CODE		
1							11								
2							12								
3							13								
4							14								
5							15								
6							16								
7							17								
8							18								
9							19								
10							20								

GILLNET HAUL LOG
NMFS FISHERIES AT-SEA MONITORING PROGRAM
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OBS/TRIP ID	
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GEAR CODE □ □ □	GEAR NUMBER □ □	HAUL NUMBER □ □ □	HAUL OBSERVED? YES <input type="checkbox"/> NO <input type="checkbox"/>	INC TAKE? YES <input type="checkbox"/> NO <input type="checkbox"/>
WEATHER CODE	WAVE HEIGHT ft	GEAR COND CODE	TARGET SPECIES 1	TARGET SPECIES 2
HAUL INFO	DATE mm/dd/yy	TIME 24 hours	LATITUDE/LONGITUDE (DD MM.M)	
			LATITUDE	LONGITUDE or (STAT AREA)*
BEGIN HAUL	/ /	:		
END HAUL	/ /	:		

COMMENTS	* Enter only if latitude/longitude coordinates are not available	
	SOAK DURATION _____ . _____ hrs	# PINGERS HAULED
	# NETS HAULED	# PINGERS LOST
	SAMPLE WEIGHT MULTIPLIER _____ . _____	

SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.	SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.
1	_____ . _____					11	_____ . _____				
2	_____ . _____					12	_____ . _____				
3	_____ . _____					13	_____ . _____				
4	_____ . _____					14	_____ . _____				
5	_____ . _____					15	_____ . _____				
6	_____ . _____					16	_____ . _____				
7	_____ . _____					17	_____ . _____				
8	_____ . _____					18	_____ . _____				
9	_____ . _____					19	_____ . _____				
10	_____ . _____					20	_____ . _____				

LOGLINE GEAR CHARACTERISTICS LOG
NMFS FISHERIES OBSERVER PROGRAM
OBLLG 05/01/13

OBS/TRIP ID	
DATE LANDED mm/yy	/ /
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

GEAR CODE <input type="text"/>		GEAR NUMBER(S)		NUMBER OF HOOKS		SECTION LENGTH _____ nm		NUMBER OF SECTIONS	
MAINLINE		LEADERS		BUOYLINE		SURFACE SYSTEM		FLOATS **	
# OF STRANDS _____		USED? NO 0 YES 1 _____		# of Buoylines _____		# of High Flyers _____		TYPE NO YES NUMBER AVG HOOKS BETWEEN	
DIAMETER _____ mm		LENGTH _____ ft		Length (avg) _____ ft		# of Buoys _____		Unknown 0 1 _____	
TEST _____ lbs		TEST _____ lbs		Type Code _____		Surface Line Length (avg) _____ ft		Polyball 0 1 _____	
MATERIAL _____		MATERIAL _____		Percent of Type _____ % / _____ % (sinking/floating)		Type Code _____		Bullet/Daub 0 1 _____	
COLOR _____				Diameter _____ / _____ in		Diameter _____ / _____ in		Other 0 1 _____	
HOOKS		ANCHOR USED?		Mark? NO 0 YES 1 _____		Mark? NO 0 YES 1 _____		LIGHT STICKS USED? **	
BRAND	MODEL/PATTERN	SIZE	NO 0 YES _____	Weight _____ lbs		Weight _____ lbs		NO 0 YES 1 _____	
			Actual 1 _____	Estimated 2 _____		Estimated 2 _____		COLOR _____	
								NUMBER _____	
GANGIONS		LENGTH		COUNT		GROUNDLINE		WEAK LINKS	
DISTANCE BETWEEN _____ ft		_____ ft		COUNT _____		USED? NO YES 0 1 _____		NO YES 0 1 _____	
DIAMETER _____ mm		_____ mm		Type Code _____		Length (total) _____ ft		USED ON SURFACE? 0 1 _____	
TEST _____ lbs		MATERIAL _____		Diameter _____ / _____ in		Type Code _____		Number (total) _____	
COLOR _____		_____				Diameter _____ / _____ in		Type Code _____	
COMMENTS								USED ON STRING? 0 1 _____	
								Number (total) _____	
								Type Code _____	
								Type Code _____	
								COLOR	
								Unknown 00 Multi-Color 07	
								Clear 01 Red 08	
								White 02 Orange 09	
								Pink 03 Purple 10	
								Black 04 Combination 98	
								Green 05 Other 99	
								Blue 06	
								MATERIAL	
								Unknown 0	
								Mono-filament Nylon 1	
								Cotton 2	
								Steel Wire 3	
								Multi-strand Nylon 4	
								Other 9	

** only record for Pelagic Longline

LONGLINE GEAR CHARACTERISTICS LOG (FRONT)
NMFS FISHERIES AT-SEA MONITORING PROGRAM
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GEAR CODE	GEAR #	# OF HOOKS	COMMENTS
<input type="text"/>	<input type="text"/>		
HOOKS	BRAND	MODEL/PATTERN	SIZE
HOOK #1			
HOOK #2			

GEAR CODE	GEAR #	# OF HOOKS	COMMENTS
<input type="text"/>	<input type="text"/>		
HOOKS	BRAND	MODEL/PATTERN	SIZE
HOOK #1			
HOOK #2			

GEAR CODE	GEAR #	# OF HOOKS	COMMENTS
<input type="text"/>	<input type="text"/>		
HOOKS	BRAND	MODEL/PATTERN	SIZE
HOOK #1			
HOOK #2			

GEAR CODE	GEAR #	# OF HOOKS	COMMENTS
<input type="text"/>	<input type="text"/>		
HOOKS	BRAND	MODEL/PATTERN	SIZE
HOOK #1			
HOOK #2			

ADDITIONAL COMMENTS

LONGLINE HAUL LOG
NMFS FISHERIES AT-SEA MONITORING PROGRAM
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DATE LANDED mm/yy	/
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GEAR CODE [][]	GEAR NUMBER [][]	HAUL NUMBER [][]	HAUL OBSERVED? YES <input type="checkbox"/> NO <input type="checkbox"/>	INC TAKE? YES <input type="checkbox"/> NO <input type="checkbox"/>
WEATHER CODE	WAVE HEIGHT ft	GEAR COND CODE	TARGET SPECIES 1	TARGET SPECIES 2
HAUL INFO	DATE mm/dd/yy	TIME 24 hours	LATITUDE/LONGITUDE (DD MM.M)	
			LATITUDE	LONGITUDE or (STAT AREA)*
BEGIN HAUL	/ /	:		
END HAUL	/ /	:		

COMMENTS	* Enter only if latitude/longitude coordinates are not available
	SOAK DURATION _____ . _____ hrs
	MAINLINE LENGTH _____ . _____ nm
	SAMPLE WEIGHT MULTIPLIER _____ . _____

SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.	SPECIES NAME	SAMP. WEIGHT	POUNDS	DISP CODE	D/R	EST. METH.
1	_____					11	_____				
2	_____					12	_____				
3	_____					13	_____				
4	_____					14	_____				
5	_____					15	_____				
6	_____					16	_____				
7	_____					17	_____				
8	_____					18	_____				
9	_____					19	_____				
10	_____					20	_____				

LENGTH FREQUENCY LOG
NMFS FISHERIES OBSERVER PROGRAM
OBLNH OBLND 05/01/13

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>
HAUL #	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

SPECIES NAME															
SPECIES CODE															
FISH DISPOSITION CODE															
SEX CODE															
SAMPLE WEIGHT (R/A)														SAMPLE WEIGHT (D/A)	
AGE SAMPLE TYPE CODE														VOLUMETRIC MEASURE OF MEATS	
# SAMPLES														nearest 50 ml	
MEASUREMENTS:	0	0	0	0	0	0	0	0	0	0	0	0	0	10 - 14	110 - 114
Finfish, Squid - cm	1	1	1	1	1	1	1	1	1	1	1	1	1	15 - 19	115 - 119
Shellfish - mm	2	2	2	2	2	2	2	2	2	2	2	2	2	20 - 24	120 - 124
	3	3	3	3	3	3	3	3	3	3	3	3	3	25 - 29	125 - 129
SEX CODES:	4	4	4	4	4	4	4	4	4	4	4	4	4	30 - 34	130 - 134
0=Unknown	5	5	5	5	5	5	5	5	5	5	5	5	5	35 - 39	135 - 139
1=Male	6	6	6	6	6	6	6	6	6	6	6	6	6	40 - 44	140 - 144
2=Female	7	7	7	7	7	7	7	7	7	7	7	7	7	45 - 49	145 - 149
	8	8	8	8	8	8	8	8	8	8	8	8	8	50 - 54	150 - 154
AGE SAMPLE TYPE CODES:	9	9	9	9	9	9	9	9	9	9	9	9	9	55 - 59	155 - 159
0=None	0	0	0	0	0	0	0	0	0	0	0	0	0	60 - 64	160 - 164
1=Scales	1	1	1	1	1	1	1	1	1	1	1	1	1	65 - 69	165 - 169
2=Otoliths	2	2	2	2	2	2	2	2	2	2	2	2	2	70 - 74	170 - 174
3=Shells	3	3	3	3	3	3	3	3	3	3	3	3	3	75 - 79	175 - 179
4=Whole	4	4	4	4	4	4	4	4	4	4	4	4	4	80 - 84	180 - 184
5=Vertebra	5	5	5	5	5	5	5	5	5	5	5	5	5	85 - 89	185 - 189
6=Dorsal Spines	6	6	6	6	6	6	6	6	6	6	6	6	6	90 - 94	190 - 194
7=Scales & Otoliths	7	7	7	7	7	7	7	7	7	7	7	7	7	95 - 99	195 - 199
8=Head	8	8	8	8	8	8	8	8	8	8	8	8	8	100 - 104	200 - 204
9=Other	9	9	9	9	9	9	9	9	9	9	9	9	9	105 - 109	205 - 209

COMMENTS

LENGTH FREQUENCY LOG (FRONT)
NMFS FISHERIES AT-SEA MONITORING PROGRAM
ASMLNH ASMLND 05/01/13

OBS/TRIPID	
DATE LANDED mm/yy	/
PAGE #	___ of ___
HAUL #	

SPECIES NAME		SPECIES NAME		SPECIES NAME		SPECIES NAME		SPECIES NAME	
FISH DISP. CODE		FISH DISP. CODE		FISH DISP. CODE		FISH DISP. CODE		FISH DISP. CODE	
SAMPLE WEIGHT (R/A)		SAMPLE WEIGHT (R/A)		SAMPLE WEIGHT (R/A)		SAMPLE WEIGHT (R/A)		SAMPLE WEIGHT (R/A)	
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

COMMENTS

**INDIVIDUAL ANIMAL LOG
NMFS FISHERIES OBSERVER PROGRAM
OBIAL 05/01/13**

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>
HAUL #	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

GEAR #	SEQ #	SPECIES		INTL STAT- US CODE	END STAT- US CODE	FISH DISP CODE	PROC CODE	WEIGHT			TAG			LENGTHS cm			SEX 0=U 1=M 2=F	BIO- SAMP 0=N 1=Y	PHOTO TAKEN? 0=N 1=Y
		NAME	CODE					POUNDS	MKT D/R	EST. METH- OD	NUMBER(S)	CODE	DATA STORAGE TAG? 0=N, 1=Y	#1	#2	Est (#1)			
	1																		
	2																		
	3																		
	4																		
	5																		
	6																		
	7																		
	8																		
	9																		
	0																		

COMMENTS: List identifying characteristics such as fin placement relative to other body parts, coloration, head and tail shape, presence/absence of lateral and/or anal scutes (sturgeon), presence of spines, etc.
Also include tag recapture information such as tagging program, phone number, etc.

STANDARD LENGTHS:		
	#1	#2
Swordfish (c)	LJFL	CK
Billfish (c)	LJFL	PFL
Tuna	FL	PFL
Shark	FL	TL
Sturgeon	FL	None
Ray	TL	DW
Terrapin	TL	NL
Other	FL	None

STATUS CODES:	PROCESSING CODES:	WEIGHT MARKET CODES:	TAG CODES:	ESTIMATION METHOD CODES:
0 = Unknown	00 = Unknown	D = Dressed	0 = Unknown	01 = Actual, spring scale
1 = Alive	01 = No Processing	R = Round	1 = Tag Applied by Observer	04 = Estimated by captain
2 = Dead	02 = Chunked		2 = No Tag(s)	05 = Tally
3 = Dead, Damaged	03 = Filleted		3 = Tag Already Present, Left On	06 = Visually Estimated by observer
4 = Dead, Head only	04 = Dressed (Gutted only)		4 = Tag Already Present, Removed	11 = Actual, electronic scale
	05 = Dressed (Finned only)		5 = Carcass Tagged (fish only)	99 = Other, describe in COMMENTS
	06 = Dressed (Headed and Gutted)			
	07 = Dressed (Headed, Gutted, Finned)			
	08 = Dressed (Headed, Gutted, Tailed)			
	09 = Dressed (Headed, Gutted, Finned, Tailed)			
	99 = Other			

INDIVIDUAL ANIMAL LOG (FRONT)
NMFS FISHERIES AT-SEA MONITORING PROGRAM
ASMIAL 05/01/13

OBS/TRIPID	
DATE LANDED mm/yy	/ /
PAGE #	___ of ___
HAUL #	

SEQ #	SPECIES NAME	SEQ #	SPECIES NAME	SEQ #	SPECIES NAME
<input type="text"/>		<input type="text"/>		<input type="text"/>	
END STATUS ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> DEAD, DAMAGED <input type="checkbox"/> DEAD, HEAD ONLY <input type="checkbox"/> UNKNOWN (COMMENT) <input type="checkbox"/>		END STATUS ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> DEAD, DAMAGED <input type="checkbox"/> DEAD, HEAD ONLY <input type="checkbox"/> UNKNOWN (COMMENT) <input type="checkbox"/>		END STATUS ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> DEAD, DAMAGED <input type="checkbox"/> DEAD, HEAD ONLY <input type="checkbox"/> UNKNOWN (COMMENT) <input type="checkbox"/>	
DISP. CODE	WEIGHT (POUNDS)	DISP. CODE	WEIGHT (POUNDS)	DISP. CODE	WEIGHT (POUNDS)
DRESSED?	EST. METHOD	DRESSED?	EST. METHOD	DRESSED?	EST. METHOD
Y <input type="checkbox"/> N <input type="checkbox"/>		Y <input type="checkbox"/> N <input type="checkbox"/>		Y <input type="checkbox"/> N <input type="checkbox"/>	
LENGTH (cm)		LENGTH (cm)		LENGTH (cm)	
TAGS		TAGS		TAGS	
TAG #1		TAG #1		TAG #1	
TAG #1 CODE		TAG #1 CODE		TAG #1 CODE	
APPLIED BY OBSERVER <input type="checkbox"/>		APPLIED BY OBSERVER <input type="checkbox"/>		APPLIED BY OBSERVER <input type="checkbox"/>	
NO TAG(S) <input type="checkbox"/>		NO TAG(S) <input type="checkbox"/>		NO TAG(S) <input type="checkbox"/>	
TAG PRESENT, LEFT ON <input type="checkbox"/>		TAG PRESENT, LEFT ON <input type="checkbox"/>		TAG PRESENT, LEFT ON <input type="checkbox"/>	
TAG PRESENT, REMOVED <input type="checkbox"/>		TAG PRESENT, REMOVED <input type="checkbox"/>		TAG PRESENT, REMOVED <input type="checkbox"/>	
UNKNOWN (COMMENT) <input type="checkbox"/>		UNKNOWN (COMMENT) <input type="checkbox"/>		UNKNOWN (COMMENT) <input type="checkbox"/>	
TAG #2		TAG #2		TAG #2	
TAG #2 CODE		TAG #2 CODE		TAG #2 CODE	
APPLIED BY OBSERVER <input type="checkbox"/>		APPLIED BY OBSERVER <input type="checkbox"/>		APPLIED BY OBSERVER <input type="checkbox"/>	
NO TAG(S) <input type="checkbox"/>		NO TAG(S) <input type="checkbox"/>		NO TAG(S) <input type="checkbox"/>	
TAG PRESENT, LEFT ON <input type="checkbox"/>		TAG PRESENT, LEFT ON <input type="checkbox"/>		TAG PRESENT, LEFT ON <input type="checkbox"/>	
TAG PRESENT, REMOVED <input type="checkbox"/>		TAG PRESENT, REMOVED <input type="checkbox"/>		TAG PRESENT, REMOVED <input type="checkbox"/>	
UNKNOWN (COMMENT) <input type="checkbox"/>		UNKNOWN (COMMENT) <input type="checkbox"/>		UNKNOWN (COMMENT) <input type="checkbox"/>	
COMMENTS					

MARINE MAMMAL, SEA TURTLE, AND SEA BIRD INCIDENTAL TAKE LOG
NMFS FISHERIES OBSERVER PROGRAM
OBINC 05/01/13

OBS/TRIP ID	
DATE LANDED mm/yy	/
PAGE #	<input type="checkbox"/> OF <input type="checkbox"/>

PSID #	HAUL NUM	GEAR NUM	NET NUM/ DREDGE/NET POSITION (p/s/u/a)	TIME (24 hours)	ADD COND CODE	SPECIES		TAG		ENTANG SITU CODE	ANIMAL COND CODE	ANIMAL ONBRD? 0=No 1=Yes	PHOTO TAKEN? 0=No 1=Yes	SAMPLED? 0=No 1=Yes 2 = Yes, feathers only	EST LEN (cm) (if no actual) (no birds)
						NAME	CODE	NUMBER(S) <small>(record most recent first)</small>	CODE(S)						
___ 1				:											
___ 2				:											
___ 3				:											
___ 4				:											
___ 5				:											
___ 6				:											
___ 7				:											
___ 8				:											
___ 9				:											
___ 0				:											

COMMENTS: List identifying characteristics, describe in detail the entanglement situation, include a description of the overall body condition of the animal, behavior on deck and upon release and any other related information. Use back of log if more room is needed.

