Gear Condition Codes:

ALL HAUL LOGS

000 = Unknown.
990 = Other. Specify in COMMENTS.

TRAWL HAUL LOG (Otter Trawl, Scallop Trawl, Twin Trawl, Pair Trawl and Mid-Water Otter Trawl)

010 = No gear damage, or very few small, scattered holes.
020 = Wings twisted or torn, not exceeding 50% of meshes.
030 = Wings twisted or torn, exceeding 50% of meshes.
040 = Square and/or bosom torn, not exceeding 50% of meshes.
050 = Square and/or bosom torn, exceeding 50% of meshes.
060 = Belly torn, not exceeding 50% of meshes.
070 = Belly torn, exceeding 50% of meshes.
080 = Codend and/or extension piece torn, not exceeding 10% of meshes.
090 = Codend and/or extension piece torn, exceeding 10% of meshes.
100 = Hang-up, causing gear to be hauled back before scheduled time; minor damage.
110 = Parted legs, sweep, or head rope.
120 = Tear up exceeding gear condition code 020, but not total net destruction.
130 = Obstruction in the gear, such as a large amount of fixed gear, boulders, etc.
140 = Crossed Doors.
150 = Open codend.
160 = Major hang-up or tear-up, or loss of gear.
170 = Grate clogged with fish or debris.

SCALLOP DREDGE HAUL LOG

710 = No gear damage, or insignificant gear damage.
711 = Hang-up, causing gear to be hauled back before scheduled time; minor damage.
712 = Chains (rock, tickler, sweep) detached.
713 = Twine top torn but was able to be repaired.
714 = Twine top torn completely and had to be replaced.
715 = One dredge fished on top of the other dredge (Rider on dredge).
716 = Hydraulic issue (i.e., hose leak or blown, winch broken).
717 = Obstruction in the gear, such as large amount of fixed gear, boulders, etc.
720 = Chain bag broken, partially detached or lost.
730 = Several rings destroyed.
740 = Club stick caught in twine top, chains or chain bag. Club stick detached from chain bag.
750 = One dredge turned over.
760 = Two dredges turned over.
770 = Dredges crossed.
780 = One dredge lost or totally damaged.
790 = Two dredges lost or totally damaged.

CLAM/QUAHOG DREDGE HAUL LOG

810 = No gear damage or insignificant gear damage.
820 = Knife frame bent.
830 = Dredge flipped.
840 = Hose of towline in propeller.
850 = Dredge lost or totally damaged.

GILLNET and BEACH SEINE HAUL LOG

210 = No gear damage, or very few small, scattered holes.
220 = Small number of torn meshes, not exceeding 25% of any one net, each net may be torn slightly.
230 = Less than 50% of the nets have less than 50% of the meshes torn.
240 = 50% or more of the nets have less than 50% of the meshes torn.
250 = Less than 50% of the nets are obstructed by a large object.
260 = 50% or more of the nets are obstructed by a large object.
270 = Less than 50% of the nets have 50% or more of the meshes torn.
280 = 50% or more of the nets have 50% or more of the meshes torn.
290 = Nets in the string totally balled up.

LOBSTER, CRAB and FISH POT HAUL LOG

410 = No gear damage.
420 = Less than 25% of the pots have enough damage to allow the target species to be released. This damage includes loss of the escape panel.
430 = Between 25% and 50% of the pots have enough damage to allow the target species to be released.
440 = Greater than 50% of the pots have enough damage to allow the target species to be released.
450 = Less than 25% of the pots are un-fishable.
460 = Between 25% and 50% of the pots are un-fishable.
470 = Greater than 50% of the pots are un-fishable

LONGLINE HAUL LOG

610 = No gear damage, or only a few hooks missing.
620 = Less than 50% of gear fouled, i.e., weather/oceanic conditions caused the gear to become tangled, or otherwise lowered the fishability of the gear.
630 = Greater than 50% of gear fouled, i.e., weather/oceanic conditions caused the gear to become tangled, or otherwise lowered the fishability of the gear.
640 = Less than 50% of hooks missing.
650 = Greater than 50% of hooks missing.
660 = Parted off, no damage.
670 = Parted off, less than 50% of gear damaged.
680 = Gear completely damaged, or completely lost.

PURSE SEINE HAUL LOG

510 = No or insignificant gear damage.
520 = Minor wrap of wire around gear.
530 = Major wrap of wire around gear.
540 = Minor tear-ups of net, not exceeding total of 5% of the net.
550 = Tear-up exceeding code 540, but not total net destruction.
580 = Total net destruction.

Gear Codes:

010 Longline, Bottom
020 Handline (Rod & Reel)
050 Trawl, Otter, Bottom, Fish
052 Trawl, Scallop
053 Trawl, Twin
054 Rhule trawl
060 Troll Line, Other/Nk Species
070 Beach Seine/Beach Anchored Gillnet
100 Gillnet, Fixed Or Anchored-Sink
105 Gillnet, Anchored-Floating
116 Gillnet, Drift-Floating
117 Gillnet, Drift-Sink
121 Purse Seine, Herring
123 Purse Seine, Menhaden
124 132 Dredge, Scallop, Sea
170 Trawl, Otter, Midwater Paired
200 Pot + Trap, Lobster Offshore, Nk
300 Pot + Trap, Crab Other
301 Pot + Trap, Blue Crab
352 Beam Trawl, Scallop
353 Beam Trawl, Fish
370 Trawl, Otter, Midwater
381 Dredge, Other/Nk Species
386 Dredge, Clam, Hydraulic

BAIT CODES:

KIND

00 = Unknown.
01 = Mackerel.
02 = Herring.
03 = Squid.
04 = Artificial. (Leave BAIT TYPE and BAIT CONDITION blank).
05 = Redfish.
06 = Sardine.
07 = Scad.
08 = Skate.
09 = Clams.
10 = Fish with binders/casings.
11 = Eel
99 = Other. Record the bait kind in COMMENTS.

TYPE

0 = Unknown.
1 = Whole.
2 = Cut.
3 = Live.
4 = Processed.
9 = Other. Record the bait type in COMMENTS.

CONDITION

0 = Unknown.
1 = Previously frozen.
2 = Fresh.
3 = Salted.
6 = Frozen.
7 = Semi-frozen.
8 = Combination. Record all bait conditions in COMMENTS.
9 = Other. Record the bait condition in COMMENTS.

Time Lost Reason Codes:

00 = Unknown.
01 = Gear conflict with another vessel.
02 = Gear damage repair.
03 = Engine repair.
04 = Awaiting arrival of another vessel, i.e., pair trawling or offloading.
05 = Coast Guard boarding.
06 = Medical emergency, i.e., medical evacuation.
07 = Weather Conditions.
08 = Marine mammal interaction.
09 = Gear loss. Include only time spent trying to retrieve the gear.
10 = Vessel leaves a dock at the start of the trip, steams to another dock(s) or port(s) to engage in an activity (i.e., refueling, buying ice, picking up crew, etc.) and then steams to the fishing grounds. Record the total amount of time spent steaming to, and docked at, the other dock(s).
11 = Vessel returns to a dock after reaching the location where it will begin fishing, but before deploying the gear, OR returns to the dock before reaching the location where it will begin fishing. Record the total amount of time spent steaming out, steaming back to the dock and at the dock.
12 = Vessel returns to a dock **after completing fishing activities**, but no fish are offloaded. Vessel engages in an activity (i.e., refueling, dropping off crew, etc.) and then steams to the dock where the captain intends to sell most of the catch. Record the total amount of time spent at the first dock, plus the time spent steaming to the offloading dock.
13 = Vessel returns to a dock **after beginning fishing activities**, but no fish are offloaded. Vessel then returns to fishing grounds. Record the total amount of time spent steaming back to the dock, time spent at the dock and time spent steaming back to the grounds.
99 = Other. Please record the time lost reason in COMMENTS.

Compass Bearings (Wind speed):

N	0	SE	135	W	270
NNE	23	SSE	158	WNW	293
NE	45	S	180	NW	315
ENE	68	SSW	203	NNW	338
E	90	SW	225		
ESE	113	WSW	248		

Station Codes

Loran Station:	First digit will be:
W	1xxxx
X	2xxxx
Y	4xxxx
Z	6xxxx

Weather Codes:

00 = Unknown.
01 = Clear.
02 = Partly Cloudy.
03 = Continuous layers of clouds.
04 = Drizzle.
05 = Rain.
06 = Showers.
07 = Thunderstorms.
08 = Rain and fog.
09 = Fog or thick haze.
10 = Snow, or rain and snow mixed.
11 = Blowing snow.
99 = Other. Describe in COMMENTS.

CATCH DISPOSITION CODES:

MARKET:

001 = No market, reason not specified.
002 = No market, too small.
003 = No market, too large.
004 = No market, quota filled.
005 = No market, won't keep until trip end.
006 = No market, but retained by vessel for alternate program.
007 = No market, but retained by observer for science purposes.

REGULATIONS:

011 = Regulations prohibit retention, reason not specified.
012 = Regulations prohibit retention, too small.
013 = Regulations prohibit retention, too large.
014 = Regulations prohibit retention, quota filled.
015 = Regulations prohibit retention, no quota in area.
022 = Regulations prohibit retention, v-notched.
023 = Regulations prohibit retention, soft-shelled.
024 = Regulations prohibit retention, with eggs.
025 = Regulations prohibit retention (including no permit).

QUALITY:

031 = Poor quality, reason not specified.
032 = Poor quality, due to sand flea damage.
033 = Poor quality, due to seal damage.
034 = Poor quality, due to shark damage.
035 = Poor quality, due to cetacean damage.
036 = Poor quality, due to hagfish damage.
037 = Poor quality, due to shell disease.
038 = Poor quality, due to gear damage.
039 = Poor quality, previously discarded fish.

NOTE: If species are given a disposition code of 039 then the species name should be recorded as fish nk, the weight type – D/R should be given an unknown code of "U", and the species type of the previously discarded fish should be written in the comments section of the corresponding haul log.

NOT BROUGHT ON BOARD:

041 = Not brought onboard, reason not specified.
042 = Not brought onboard, gear damage prevented capture.
043 = Not brought onboard, fell out/off of gear.
044 = Not brought onboard, considered to have no marked value.
048 = Not brought onboard, vessel capacity filled.
049 = Not brought onboard, not enough fish to pump aboard.

DEBRIS/SHELLS:

053 = Debris.
054 = Empty shells.

UPGRADING/MARKET DRIVEN SELECTIVITY:

062 = Upgraded.
063 = Vessel retaining only certain size for best price due to trip quota in effect.

KEPT:

100 = Kept.
110 = Kept, transferred to another vessel.
170 = Kept, used for bait.
171 = Kept, consumed by captain/crew.
172 = Kept, regulations prohibit discard at sea

GENERAL:

099 = Discarded other, record the discard reason in COMMENTS.
000 = Discarded, reason unknow.
900 = Unknown.

Nautical Units

1 fathom	=	6 feet
1 fathom	=	1.83 meters
1 nautical mile	=	6076 feet
1 nautical mile	=	1.15 statue miles
1 knot	=	1 nautical mile

Mass

1 pound	=	453.59 grams
1 pound	=	0.45 kilograms
1 kilogram	=	2.20 pounds
1 standard ton	=	2000 pounds
1 metric ton	=	2204.6 pounds
1 metric ton	=	1000 kilograms

Seconds to Tenths of Minutes

(or Minutes to Tenths Hours)

0-2 seconds	=	0.0 minutes
3-8 seconds	=	0.1 minutes
9-14 seconds	=	0.2 minutes
15-20 seconds	=	0.3 minutes
21-26 seconds	=	0.4 minutes
27-32 seconds	=	0.5 minutes
33-38 seconds	=	0.6 minutes
39-44 seconds	=	0.7 minutes
45-50 seconds	=	0.8 minutes
51-56 seconds	=	0.9 minutes
57-60 seconds	=	1.0 minutes

24 Hour Clock

12:00 Midnight	=	00:00
01:00 a.m.	=	01:00
02:00 a.m.	=	02:00
03:00 a.m.	=	03:00
04:00 a.m.	=	04:00
05:00 a.m.	=	05:00
06:00 a.m.	=	06:00
07:00 a.m.	=	07:00
08:00 a.m.	=	08:00
09:00 a.m.	=	09:00
10:00 a.m.	=	10:00
11:00 a.m.	=	11:00
12:00 noon	=	12:00
01:00 p.m.	=	13:00
02:00 p.m.	=	14:00
03:00 p.m.	=	15:00
04:00 p.m.	=	16:00
05:00 p.m.	=	17:00
06:00 p.m.	=	18:00
07:00 p.m.	=	19:00
08:00 p.m.	=	20:00
09:00 p.m.	=	21:00
10:00 p.m.	=	22:00
11:00 p.m.	=	23:00

Length

1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 foot	=	0.30 meters
1 yard	=	3 feet
1 meter	=	3.28 feet
1 meter	=	39.37 inches
1 statue mile	=	5280 feet
1 statue mile	=	1.61 kilometers
1 kilometer	=	0.62 statue mile

Metric Units

1 meter	=	100 centimeters
1 kilogram	=	1000 grams
1 liter	=	1000 milliliters
Mega	=	1,000,000
Kilo	=	1,000
Deca	=	10
Deci	=	0.1 (tenth)
Centi	=	0.01 (hundreth)
Milli	=	0.001 (thousandth)

SHAPE CODES

00	=	Unknown
01	=	Rectangular
02	=	Round/Oval
03	=	½ Round
04	=	Cone
05	=	Trapezoid
06	=	Square
07	=	Diamond
08	=	Triangular
11	=	Horizontal Cut
99	=	Other. Record shape in COMMENTS

Volume

1 liter	=	1.05 quarts
1 liter	=	0.26 gallons
1 gallon	=	3.78 liters

Circular Measure

60 seconds	=	1 minute
60 minutes	=	1 degree
90 degrees	=	1 quadrant

TWINE SIZE CONVERSIONS

Gillnet Monofilament

Size	Diameter (mm)	Old Size
3	0.28	69
4	0.33	104
6	0.40	139
7	0.45	-
8	0.47	177(208)
10	0.52	208(208L)
12	0.57	277
14	0.62	-
16	0.66	-
18	0.70	-
20	0.74	-
24	0.81	-
30	0.90	-
40	1.05	-

General: 000 = unknown
998 = combination

Estimation Codes

1 = Weighed (Actual)
2 = Volume-to-Volume
3 = Basket or Tote Count
4 = Captain
5 = Tally
6 = Visually Estimated
7 = Cumulative Sum
10 = Catch Composition Log
98 = Combination (comment)
99 = Other (comment)

MATERIAL / OTHER CODES

MAINLINE, GANGION and LEADER MATERIAL (Longline Only):

1 = Monofilament Nylon.
2 = Cotton (Mainline and Gangion only).
3 = Steel Wire (Mainline and Leader only).
4 = Multi-strand Nylon (Mainline and Gangion only).

POT SIDE CONSTRUCTION MATERIAL:

1 = Wood Lathe.
2 = Plastic Coated Wire.
3 = Twine Mesh.
4 = Plastic Mesh.
8 = Combination. Specify all types.

WEAK LINK TYPE:

1 = Rope of appropriate breaking strength.
2 = Off the shelf.
3 = Overhand knot.
4 = Hog rings.
8 = Combination. Specify all types.

GROUNDLINE TYPE:

1 = Sinking / Neutrally Buoyant.
2 = Floating.
8 = Combination. Specify all types.

BIODEGRADABLE PANEL ATTACHMENT MATERIAL:

1 = Iron Hog Rings.
2 = Degradable Plastic.
3 = Softwood Lathe.
4 = Uncoated Wire.

NET / BUNT CONSTRUCTION MATERIAL:

1 = Nylon.
2 = Poly.
3 = Kevlar®.
4 = Spectra®.
5 = Tenex®.
6 = Nomex®.
98 = Combination. Specify all types.

Note: "Multi-mono" is composed of multiple strands (usually four) of twisted or braided monofilament nylon.

BUOYLINE TYPE:

1 = Sinking / Neutrally Buoyant
2 = Floating.
8 = Combination. Specify all types.

ANCHOR TYPE:

1 = Danforth-style
2 = Dead Weight (i.e. railroad tracks, mushroom weights, pile of leadline tied together).
8 = Combination. Specify all types.

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Portuguese Translations

Good morning	Bom dia
Good afternoon	Boa tarde
Good night	Boa noite
Thank you	Obrigado
No, thank you	Não obrigado
Please	Põr favor
Excuse me / I am sorry	Desculpe
I don't understand	Eu não compreendo
Water	Água
Net/ Gear	Rede
Haul Begin	Início do arrasto
Haul End	Fim do arrasto
Vessel	Barco
Direction	Direcção
Weather Conditions	Condições climatérias
Tow	Lanço

One	Um
Two	Dois
Three	Três
Four	Quatro
Five	Cinco
Six	Seis
Seven	Sete
Eight	Oito
Nine	Nove
Ten	Dez

I need to see and weigh the discards.
Eu precisava de vêr o peso do peixe rejeitado.

I will clear the discards out the scuppers when I am done.
Eu limparei o peixe rejeitado para fora das portalós assim que acabar.

Please save the small fish for me.
Pôr favor pode-me guardar o peixe mais pequeno.

May I weigh the full baskets?
Posso medir o peso das basquetes?

What's your name?
Como se chama?

What time is it?
Que horas são?

This is more information about the observer program.
Aqui está mais informação sobre o programa dos observadores.

I don't think so.
Eu acho que não.

AIS CONTACT NUMBERS

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ORDER OF LOGS

PER TRIP

VESSEL & TRIP
GEAR LOG

****

PER HAUL

HAUL LOG
INDIVIDUAL ANIMAL LOG
LENGTH-FREQUENCY LOG
CRUSTACEAN LOG

****

PER TRIP

INCIDENTAL TAKE LOG
MARINE MAMMAL BIOLOGICAL SAMPLE LOG
TURTLE BIOLOGICAL SAMPLE LOG
SIGHTING LOG
FISHERMAN'S COMMENT LOG
SAFETY CHECKLIST

NET TYPE	COMMENTS	NET TYPE	COMMENTS
Flynet	A high profile trawl used to primarily harvest weakfish and croaker. Spot and bluefish are also occasionally targeted. Net is typically fished just off the bottom. Headrope length is typically 80-120 ft across with a wing mesh size of 16-64 inches that will slowly taper to smaller mesh sizes in the body extension and codend. Headrope will also be slightly larger than the footrope. Codend mesh size is about 3.5-3.75 inches. Tow speeds are often between 3-4 knots with tow duration from 10 minutes to several hours. High volume catches in a short amount of time are not uncommon. Uses a large number of floats to keep the net slightly off the bottom. Typically use bottom otter trawl gear (negear = 050).	Shuman Trawl	A trawl net used mainly by squid fishermen from RI. Typically fished as a semi-pelagic net (slightly off-bottom) for targeting squids and butterfish. Contains very large meshes in the mouth and his a high-opening net that may have canvas kites on headline to keep the mouth open.*
Haddock Separator Trawl	A groundfish trawl with 2 extensions arranged one over the other. Codend is attached only to the upper extension, and the bottom extension is left open with no codend attached. In addition, a horizontal separating panel constructed with a minimum of 6.0 inch diamond mesh must be installed laterally between the selvedges joining the upper and lower panels, extending forward from the front of the trouser junctin to the aft edge of the first belly behind the fishing circle. On the log, Separator Device Used = Yes, Separator Device Type = Separator Penel, Escape Outlet Used = Yes, Escape Outlet Length = count the number of meshes in the semi-circle from one side to the other. Escape Outlet Width = count the number of meshes that run along the straight axis of the semi-circle or measure the width across. Escape Outlet Shape = Semi-Circle. Escape Outlet Location = Bottom. As a note, if the codend is sewn shut, Escape Outlet = No.	4-Seam Millionaire Trawl	Typically a squid trawl (e.g. used by many Cape May squid fishermen). Always a 4-seam. Some made by Denmark and Dantrawl. Very large openings in mouth and large mesh in the wings. Both Shortfin and Longfin can be targeted using this net. Also called 40-footers.
Separator Trawl	A 2-Seam trawl net that has either a horizontal or vertical separator panel that runs from trouser junction to the aft edge of the first belly behind the fishing circle.	Shrimp Trawl	Small mesh, used to target shrimp.
2-Seam Flatfish Trawl	A low-rise constructed bottom trawl. The trawl, depending on the location and time of year, **may** (in compliance with 50 C.F.R. 684.80(a)(4)) contain a section of mesh at least 10 feet long and stretching from selvedge to selvedge (which joins the upper and lower panels of the trawl), composed of at least 12-inch mesh that is inserted no farther than 4.5 meshes behind the headrope. If this is the case, the logs should read: Separator Device Used = No, Escape Outlet Used = Yes, Escape Outlet Length = measurement from the front to the back of the net; i.e., counting the number of meshes of the top panel from the front to the back of the net (should be 12 inch mesh or at least 10 meshes long = 120 inches). Escape Outlet Width = measurement of escape outlet from side to side of the net; i.e. by counting the number of meshes of the top panel from side to side of the net (should be 12-inch mesh from selvedge to selvedge). Escape Outlet Shape = typically rectangular, but may be square or triangular.	Raised Footrope Trawl	Small mesh trawl required in some whiting management areas (e.g. Gulf of Maine). If this trawl is "sweepless" it is a separate net type (see description below). Typically fished 1-2 feet off the bottom. This net exploits differences in habitat preferences and swimming behaviors between target and non target species. It can also reduce flatfish catch without reducing whiting catch.
2-Seam Trawl	Made of two panels and mesh, a top and a bottom, which are laced along the two sides which is known as the gore line or selvage. Most common. Will maintain geometric shape. Less material to make therefore less expensive.	Pelagic Pair Trawl	Pair trawl that typically does not use doors and targets herring and mackerel.
4-Seam Trawl	Made of four panels of twine (top, bottom and two sides) that are laced together to form four gore lines. Less common. Maintains an advantageous geometric shape, however the panels can be somewhat confusing to fishermen on deck. Generally has a high vertical lift.	2-Seam Balloon Trawl	Used for Rockfish in California in the 1950's. Has a high mouth, and lighter net material and has floats attached to the corkline so that the leadline floats just above the rocky bottom.
4-Seam Box Trawl	Used to target squid and silver hake and is always a 4-seam trawl. Typically a high rise net in the essentially in the shape of a box.	Groundfish Trawl	A trawl that can really use any of the above designs. For example, can use a flatfish trawl to target Groundfish.
Sweepless Trawl	Identical to the raised footrope trawl except there is no chain sweep and the dropper chains are heavier. Proven to have lower susceptibility of entanglement. Required to target whiting in some management areas and may also be used to fish for Haddock when using "B" days at sea.	Scallop Trawl	Trawl where the headrope and footrope may be very similar in length. This allows the gear to be flipped. Target will be scallop.
Monkfish Trawl	Typically uses a flatfish trawl, however, since Monkfish are not a herding species, large wing extensions are used which increases the area swept by the gear.		**Do not confuse headrope transducer bags as kites*

Appendix Q. Net Name / Net Type / Net Builder

CODE	NET NAME
00	UNKNOWN
02	TRAWL, BEAM
04	TRAWL, BOTTOM
05	TRAWL, SEMI-PELAGIC
01	TRAWL, TROUSER
03	TRAWL, TWIN
06	TRAWL, PELAGIC
99	OTHER

CODE	NET TYPE
00	UNKNOWN
88	BALLOON TRAWL
89	BALLOON TRAWL (2-SEAM)
90	BALLOON TRAWL (4-SEAM)
24	BOX TRAWL (4-SEAM)
10	FLATFISH TRAWL
11	FLATFISH TRAWL (2-SEAM)
12	FLATFISH TRAWL (4-SEAM)
08	FLYNET
01	FLYNET (2-SEAM)
02	FLYNET (4-SEAM)
85	GROUNDFISH TRAWL
86	GROUNDFISH TRAWL (2-SEAM)
87	GROUNDFISH TRAWL (4-SEAM)
09	HADDOCK SEPARATOR TRAWL
03	HADDOCK SEPARATOR TRAWL (2-SEAM)
04	HADDOCK SEPARATOR TRAWL (4-SEAM)
18	MILLIONAIRE TRAWL (4-SEAM)
65	MONKFISH TRAWL
66	MONKFISH TRAWL (2-SEAM)
67	MONKFISH TRAWL (4-SEAM)
75	PELAGIC PAIR TRAWL
76	PELAGIC PAIR TRAWL (2-SEAM)
77	PELAGIC PAIR TRAWL (4-SEAM)
20	RAISED FOOTROPE TRAWL
21	RAISED FOOTROPE TRAWL (2-SEAM)
22	RAISED FOOTROPE TRAWL (4-SEAM)
60	SCALLOP TRAWL
61	SCALLOP TRAWL (2-SEAM)
62	SCALLOP TRAWL (4-SEAM)
05	SEPARATOR TRAWL
06	SEPARATOR TRAWL (2-SEAM)
07	SEPARATOR TRAWL (4-SEAM)
25	SHRIMP TRAWL
26	SHRIMP TRAWL (2-SEAM)
27	SHRIMP TRAWL (4-SEAM)
80	SHUMAN TRAWL
81	SHUMAN TRAWL (2-SEAM)
82	SHUMAN TRAWL (4-SEAM)
70	SWEEPLESS TRAWL
71	SWEEPLESS TRAWL (2-SEAM)
72	SWEEPLESS TRAWL (4-SEAM)
91	TRAWL (2-SEAM)
92	TRAWL (4-SEAM)
99	OTHER

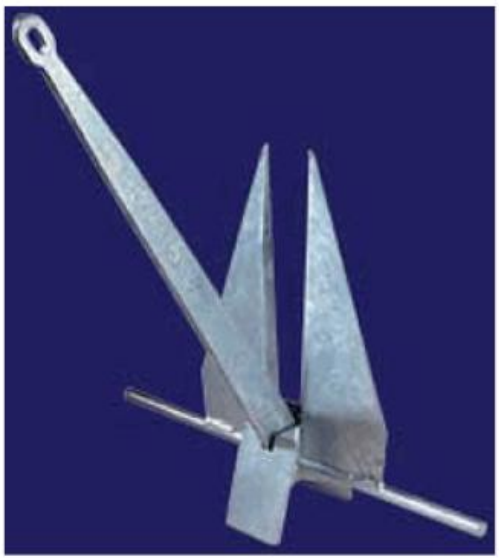
CODE	NET BULDER
00	UNKNOWN
13	CHRISTIANSEN'S NETS
01	CUSTOM BUILT
11	DANTRAWL
19	GEARWORK
17	IMP GROUP
21	JAMESTOWN TRAWL
14	JEFF FLAGG
02	LE DREZEN
03	LEVINE MARINE SUPPLY
04	NOREASTERN TRAWL SYSTEMS LTD
12	REIDAR'S MANAFACTURING INC
15	SHUMANN
05	SMART NET SYSTEMS LTD
09	SUPERIOR TRAWL
06	SWAN NET GUNDRY
10	TRAWLWORKS INC
18	VEIDARFAER
20	VT FISHING GEAR SUPPLIES
07	WANCHESE TRAWL SUPPLY
08	WILCOX TRAWLS
16	YANKEE
99	OTHER

Northeast Fisheries Observer Program List of Available Freezers

Feb 2009

State	Freezer Location	Hours	Size	Issues	Contacts	Status
MA	NMFS Port Office 29C Stage Harbor Rd. Chatham, MA	9-3 M-F	Stand-up fridge size	No whole animals; she's the only person in office	Lorraine Spenle Port Agent (508) 945-5961	OK to freeze – call first
MA	UMass Boston McCormack Building Third floor same hallway as Room 308 100 Morrissey Blvd Boston, MA	9-5 M-F possibly on weekends	Walk-in	Can store whole animals	Mike Shiaris (617) 287-6675	OK to freeze
MA	NMFS Port Office 11-15 Parker St. Room 211 Gloucester, MA (near state fish pier)	9-5 M-F	Stand-up fridge size	No whole animals	Caleb Gilbert Port Agent (508) 281-9363	OK to freeze – call first
MA	DMF Annisquam River 30 Emerson Ave. Gloucester, MA	9-5 M-F	Walk-in	In locked facility – No whole animals, body parts ok	Matt Ayer 978-282-0308 ext. 107 Cell: 603-591-7468	OK to freeze – call first
MA	Bergies Seafood Inc 8 Hassey St. New Bedford, MA	Flexible hours	Loads of space	Any samples OK	Mark Bergeron (508) 999-4447	OK to freeze – call first
MA	Whaling City Display Auction 62 Hassey St. New Bedford, MA	Flexible hours	Loads of space	Any samples OK	Kevin Ferreira 24 hour line: (508) 990-0799 (508) 328-7673	OK to freeze – call first
ME	University of New England Marine Animal Rehab Facility 11 Hills Beach Raod Biddeford, ME	24 hours a day	Large freezer	Can store small to medium whole animals	Keith Matassa Kristin Patchett 24 hour line (800) 532-9551	Ok to freeze – call first
NH	Yankee Fish CO-OP Rt. 1A Ocean Blvd. Seabrook, NH	Summer 7-7 Winter less flexible	Chest freezer About 4 ft long x 3 ft deep	Can store small whole animals	Bob Cambell (603) 474-9850	OK to freeze – call first
RI	Univ. of Rhode Island East Farm/Building 83 Rt. 108 Kingston, RI	Flexible hours	Walk-in	Can store whole animals	Barbara Somers (401) 874-2012	OK to freeze – call first
RI	NMFS Port Office 83 State St. Point Judith, RI (Next to RI Engine Co.)	8-4:30 M-F	Medium chest about 4.5 ft wide x 2.5 ft deep	New building, must be **dry and clean** NO whole animals	Walter Anoushian Port Agent (401) 783-7797	OK to freeze small samples – call first
NC	UNC Wilmington 601 South College Road Willmington, NC	Flexible hours	Small chest	NO whole animals	Bill McLellan (910) 962-7266	OK to freeze – call first
NC	NMFS Beaufort Lab 101 Pivers Island Beaufort, NC	9-5 call office; after hours use pager –anytime	Large walk-in	Whole animals OK	Rachel Lo Piccolo (252) 728-8672 Pager: (252) 444-8064	OK to freeze – call first
NC	Chealsea Doepp (AIS) 3284 Broadwater Rd. Exmore, VA	Flexible hours	Chest freezer About 5.5 ft long(	Small whole animals	Chelsea Doepp 774-276-0617	OK to freeze – call first
NJ	NMFS Port Office 1382 Lafayette St. Cape May, NJ (next to Century 21 building)	8:30-4:30 M-F	Small freezer 5 x 2.5 ft	Small samples	Chris Petruccelli (609) 884-2113	OK to freeze – call first
NJ	Jenkinson's Aquarium 300 Ocean Ave Point Pleasant NJ	Winter 9:30-5 M-F 10-5 Sat-Sun Summer 10-10 all week After hours use available	Small Chest freezer	Whole animals and samples ok Small seals and turtles only	Office hours: Cindy Claus or Linelle Smith (732) 899-1659 After hours pagers: Cindy (732)-288-4075, Linelle (732) 929-7657	Ok to Freeze – call first ALWAYS.
NY	Riverhead Foundation 428 E. Main St. Riverhead, NY	Flexible after hours	12 ft x12 ft	Large whole animals OK	Rob DiGiovanni / Kim Durham (631) 369-9840 ext. 23	OK to freeze – call first
VA	NMFS Port Office 1026F Settlers Landing Road Hampton, VA (Across from Hampton Univ.)	8-5 M-F	Medium chest about 3-4 ft wide x 2.5 ft deep	Small samples NO whole animals	David Ulmer Port agent (757) 723-3369	OK to freeze – call first
VA	VIMS Eastern Shore Lab 10 Atlantic Avenue Wachapreague, VA	8-4:30 M-F	Small chest 2x3x4 ft	No whole animals	Mark Luckenbach (757) 787-5816	OK to freeze – call first
VA	Virginia Marine Science Museum 717 General Booth Blvd. Virginia Beach,VA	24 hour pager	Large freezers	whole animals OK	Sue Barco (757) 437-6364 (757)-437-6159	OK to freeze – call first
VA	AIS Area Coordinator Chelsea DoEpp 3284 Broadwater Rd. Exmore, VA 23350	24 hour pager	Small chest 2x3x4 ft	Small samples	Chelsea DoEpp 774-276-0617	OK to freeze – call first
VA	Virginia Institute of Marine Science (VIMS) Rt. 1208 Greate Road Gloucester Point, VA	Business hours	Small space available	EMERGENCY basis only – small samples	Jack Musick (804) 684-7000 (general phone)	Emergency only

DANFORTH - STYLE



Danforth

DEAD WEIGHT

Railroad Track

Mushroom

OTHER

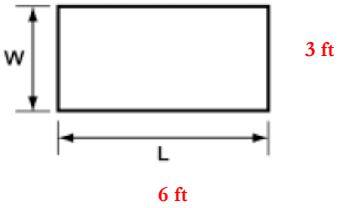
Kedge

Grapnel

AREA CALCULATION EXAMPLES

Area of a Rectangle or Square

Area = L x W



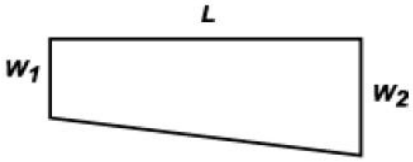
Example: L = 6 ft W = 3 ft

Area = 6 ft x 3 ft
= 18 ft^2

Area of a Trapezoid

Area = $[(W_1 + W_2) \div 2] \times L$

Note: For a trapezoid the short and long widths are equal to the parallel sides



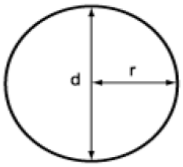
Example: W_1 (short width) = 3 ft
W_2 (long width) = 4 ft
L = 7.5 ft

Area = [(3 ft + 4 ft) ÷ 2] x 7.5 ft
= [7 ft ÷ 2] x 7.5 ft
= 26.25 ft^2

Area of a Circle

Area = πr^2 or 3.14 x r x r
(Remember: r = d ÷ 2)

d = 5 ft



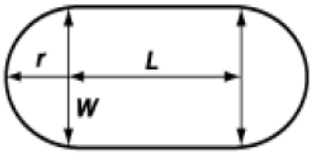
r = 2.5

Example: d (diameter) = 5 ft.
r = 5 ft ÷ 2 ft = 2.5 ft

Area = 3.14 x 2.5 ft x 2.5 ft
= 19.63 ft^2

Area of an Oblong- Shaped Oval

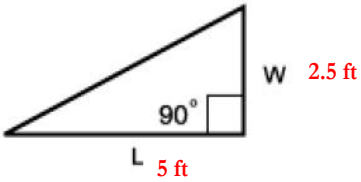
Area = (L x W) + (πr^2)
or
(L x W) + (3.14 x r x r)



Example: L = 5 ft W = 4 ft r = 2 ft
Area = (5 ft x 4 ft) + (3.14 x 2 ft x 2 ft)
= 20 ft + 12.56 ft
= 32.56 ft^2

Area of a Triangle

Area = [L x W] ÷ 2

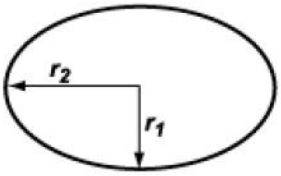


Example: L = 5 ft W = 2.5 ft

Area = (5 ft x 2.5 ft) ÷ 2
= 12.5 ft^2 ÷ 2
= 6.25 ft^2

Area of an Ellipse (Oval)

Area = $r_1 \times r_2 \times \pi$
or
= $r_1 \times r_2 \times 3.14$



Example: r_1 (short radus) = 4ft
r_2 (long radius) = 6 ft

Area = 4ft x 6ft x 3.14
= 75.36 ft^2

Converting inches to decimal form & feet to inches

For example: 6" ÷ 12 = .5 ft or

$$\frac{60 inches}{1} x \frac{1 foot}{12 inches} = \frac{60}{12} ft = 5 ft$$

Standard volumes of containers flush to the top with a subsample:

orange bushel basket = 1.47 ft^3

fish tote = 2.65 ft^3

VOLUME CALCULATION EXAMPLES

Volume of a Standard Orange Bushel Basket

$V = \pi [R^2 + Rr + r^2] H/3$

R = Top radius

r = Bottom radius

(Remember to convert inches into feet)

Volume = $3.14 [0.71^2 + (0.71)(0.56) + 0.56^2] 1.17/3$
= 3.14 [0.5 + 0.39 + 0.31] 1.17/3
= 3.14 [1.2] 1.17/3
= [3.77] 1.17/3
1.4695 ft^3 = 1.47 ft^3 = NEFOP Standard

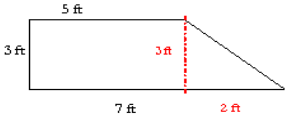
Volume of a Standard Trapezoidal Fish Tote

$V = [(W_1 + W_2) \div 2] \times L \times D$

Volume = (15.75 in + 16.75 in) ÷ 2 x 26 in x 11 in
= (1.31 ft + 1.39 ft) ÷ 2 x 2.16 ft x 0.91 ft
= 2.70 ft ÷ 2 ft x 2.16 ft x 0.91 ft
= 1.35 ft x 2.16 ft x 0.91 ft
= 2.65 ft^3 = NEFOP Standard

Volume of Irregular Shapes

Example 1
Irregular shaped fish bin (2 ft deep)



Rectangle
L = 5 ft W = 3 ft D = 2 ft
V = L x W x D (5 x 3 x 2) = 30 ft^3

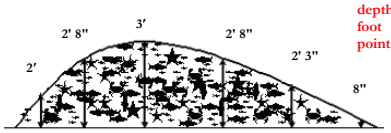
Triangle
A = [L x W] ÷ 2
3 ft x 2 ft ÷ 2 = 3 ft^2

V = A x D
3 ft^2 x 2 ft = 6 ft^3

Total volume of irregular shape
30 ft^3 + 6 ft^3 = 36 ft^3

Volume of Irregular Shapes

(*i.e.,* Fish not dumped into a bin)



Find the highest point of the catch (sometimes the center). Take a depth lengthwise every foot from the highest point in either direction

First, obtain an average catch depth

$$\frac{depth_1 + depth_2 + depth_3 \ldots + depth_n}{n + 1}$$

n = number of depth measurements taken

Calculate the average depth by using n + 1 (*i.e.,* if six depths are taken add one, then divide the total for all depths by seven)

Add feet and inches

$$\frac{2' + 2' 8'' + 3' + 2' 8'' + 2' 3'' + 8''}{6 + 1}$$

11′ 27″ = 13′ 3″

$$\frac{13' 3''}{7}$$

NOTE!
Convert feet into a decimal by dividing the inches by 12

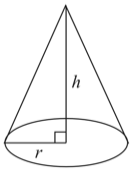
$$\frac{13.25 ft}{7} = 1.89 ft = \text{average catch depth}$$

Applicable when catch not dumped in fish bin or uneven depths occur

Second, determine the catch shape (angular, circular, ellipsoidal…) and calculate the area.
Next, multiply the area by the average catch depth to calculate the total catch volume
Area (ft^2) x Depth (ft) = Volume (ft^3)

Volume of a Circular Cone

$$V = \frac{1}{3} \pi r^2 h$$

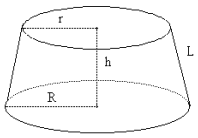


Applicable in the pot & trap fisheries but not limited to

Volume of a Frustum of a Right Circular Cone

A frustum is the part of a conical solid left after cutting off a top portion with a plane parallel to the base. The volume of a frustum of a right circular cone is given by:

r = radius of upper base
R = radius of lower base
h = height



$$V = \frac{1}{3} \pi h (r^2 + rR + R^2)$$

Applicable in the pot & trap fisheries but not limited to

Gear Modification Techniques for Complying with the Atlantic Large Whale Take Reduction Plan (ALWTRP)

(**Effective April 5, 2008**)

WEAK LINKS FOR BUOY, FLOTATION OR WEIGHTED DEVICES

The intent of the weak link requirement is to allow the release of the buoy, flotation or weighted device from the line in a way that when they release, the remaining line (that was connected to these devices) will not have a knot on its end. An eye left on the line made by splicing, tucking or hog rings is acceptable. Splices are not considered to be knots. Note: Weak links must be placed as close as operationally feasible to each individual buoy, flotation or weighted device.

Hog Rings

Hog rings can be used to form an eye in the end of a line that will function as a weak link. Up to 7 may be used to create a 600 pound weak link and up to 5 for a 500 pound weak link. No significant variation was noted between wet and dry tests. Also, the length over which the hog rings were distributed (from 6" to 12") did not significantly affect the strength.

A variation of this technique, shown at the right, is to fashion a weak link from a short length of line. The line is formed into a loop with its ends overlapped and hog ringed to each other. Five hog rings form a suitable 600 pound link while 4 are sufficient for a 500 pound weak link. **For this weak link to function properly, the loop must move freely where it attaches to both the buoy, flotation, or weighted device and the line**.

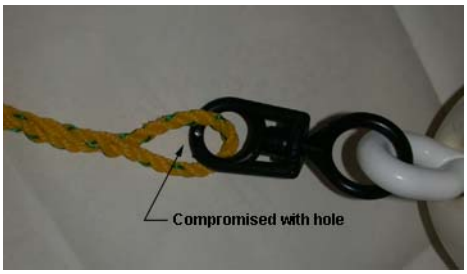
A line may also be passed through a plastic swivel two times, **not forming a knot**, and hog ringed back on itself with up to 3 hog rings.

Off the Shelf Weak Links

Off the shelf weak links are available in a variety of styles and configurations to meet different strength requirements. The strong end of the weak link goes toward the buoy, flotation, or weighted device.

Modified Swivels

Some swivels can be modified to conform to the weak link requirement by compromising their strength where the line attaches. However, they must be tested by the NMFS Gear Research Team to ensure that they will release in the proper fashion and within the required limits. Lukian swivels with a 9/32" diameter hole and SeaSide swivels with a 3/16" diameter hole satisfy the 600 pound requirement.



Rope of Appropriate Breaking Strength

Another weak link technique utilizes Rope Of Appropriate Breaking Strength (ROABS). A jumper is selected based on breaking strength data from the manufacturer. A length of rope or jumper of appropriate breaking strength may be tied into the buoy, flotation, or weighted device, thus creating a weak link, as long as the failure results in a knotless bitter end on the line. Testing by the NMFS Gear Research Team can make this determination.

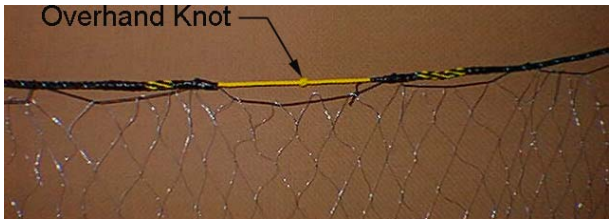
Stapling to a Buoy Stick

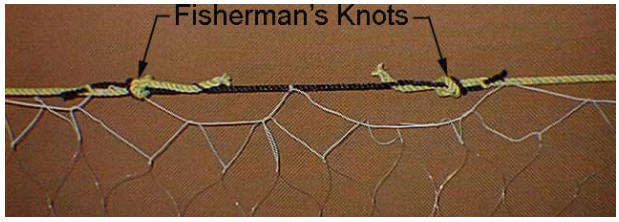
Another type of weak link can be created by stapling a rope to a wooden buoy stick to form an eye for the buoy line attachment. However, these must be tested by the NMFS Gear Research Team to ensure that they will release in the proper fashion and within the required limits. When using this method, the buoy line can only be attached by passing the end of it through the eye on the buoy stick once and bringing it back and splicing, tucking or hog ringing to form an eye.

Please note that this is not a substitute for the regulations. For more information, including a supplemental document with specific examples of the weak link techniques and the ALWTRP regulations, contact the NMFS Gear Research Team: John Higgins 207-677-2316, John Kenney 401-294-0443, or Glenn Salvador 757-414-0128 or go to http://www.nero.noaa.gov/whaletrp/.

Weak Links for Gillnet Floatline

Shown at the right are several methods of incorporating weak links into a gillnet floatline. The first two methods create a weak link by utilizing Rope of Appropriate Breaking Strength (ROABS). The top picture shows a weak link jumper spliced into the floatline. The overhand knot in the jumper reduces its strength to about 60% of its original strength. For example, putting an overhand knot in a piece of 5/16" polypropylene that has an original tensile strength of 1710 pounds will make the rope fail with a load of about 1025 pounds. The second picture shows a weak link (ROABS) tied into the float rope with the fisherman's knots. These knots also reduce the strength of the rope to about 60% of its original strength. Another alternative, illustrated in the bottom picture, shows an off the shelf weak link rigged into the floatline.





Techniques for Marking Lines

The 4" colored mark required by the ALWTRP can be accomplished in a variety of ways. Shown are three simple methods that were tested and found to work satisfactorily under normal conditions. At the top, colored twine is seized around the line and woven between the strands. In the center, the line was spray-painted; this method requires that the rope be dry. At the bottom, colored electrical tape was wrapped in one direction and then back over itself to form two layers. See the ALWTRP for information on appropriate color codes and placement of marks.

Gillnet Anchoring Techniques

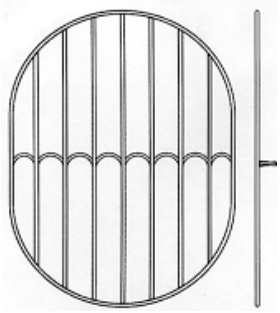
At the right is an example of a burying anchor (designed to hold to the ocean bottom through the use of a fluke, spade, plow or pick) that meets the requirement of the holding power of a 22-pound Danforth–style anchor. Note, **dead weights do not meet the requirements for burying anchors.**

Requirements for Marking Surface Buoys

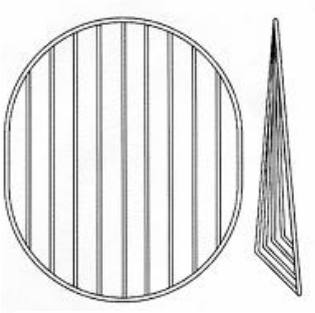
When marking is not already required by state or federal regulations as described in the ALWTRP, surface buoys should be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number, or U.S. vessel documentation number, the federal commercial fishing permit number, or whatever positive identification marking is required by the vessel's home-port state. The letters and numbers used to mark the gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, and in a color that contrasts with the color of the buoy.

Please note that this is not a substitute for the regulations. For more information, including a supplemental document with specific examples of the weak link techniques and the ALWTRP regulations, contact the NMFS Gear Research Team: John Higgins 207-677-2316, John Kenney 401-294-0443, or Glenn Salvador 757-414-0128 or go to http://www.nero.noaa.gov/whaletrp/.

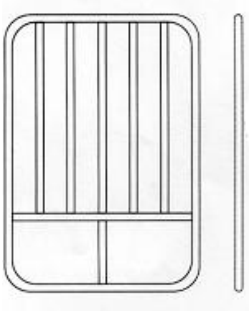
TURTLE EXCLUDER GRID TYPES



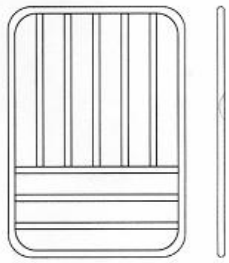
STANDARD TED



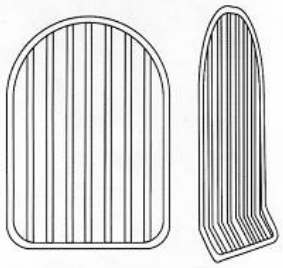
BENT ROD TED



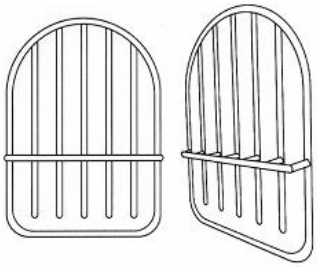
CONCH TED



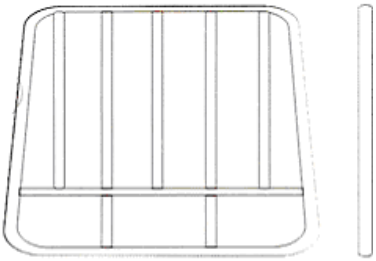
FLOUNDER TED



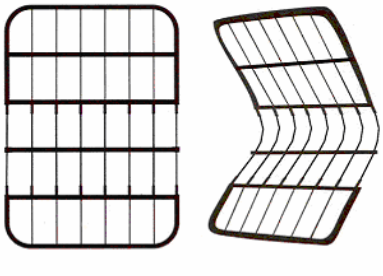
FLAT BOTTOM TED



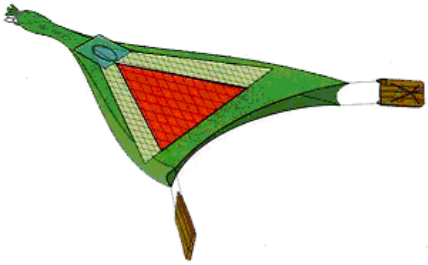
WEEDLESS TED



WHELK TED



FLEXIBLE TED

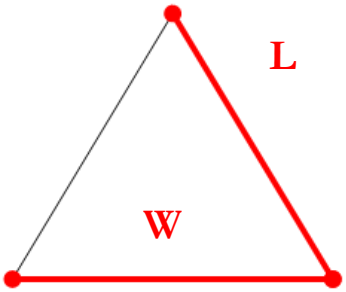


PARKER SOFT TED

FIXED ANGLE TED

HOOPED TED

Bycatch Reduction Devices & Fish Outlet Shape Measurements



Triangular Fish Outlet Measurements

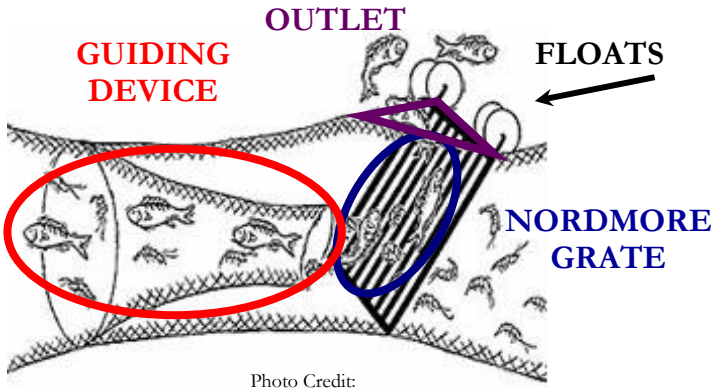
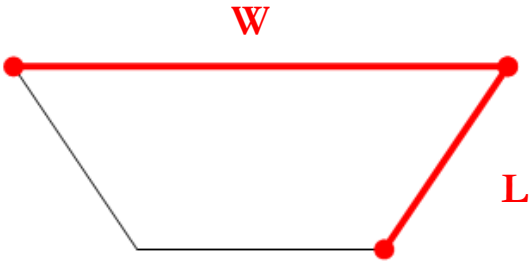
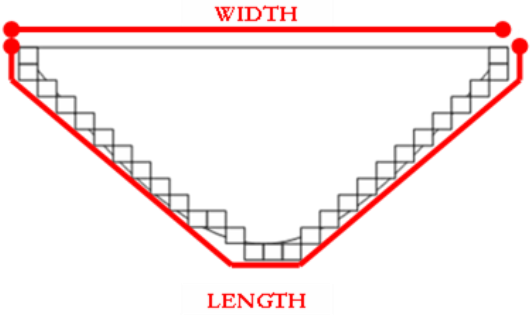


Photo Credit:
http://www.ecocontribution.com/images/Nordmore_Image_S.jpg

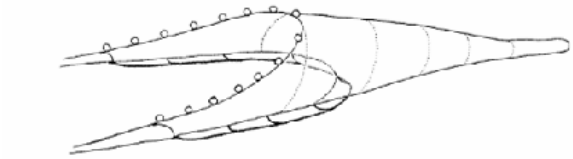


Trapazoidal Fish Outlet Measurements

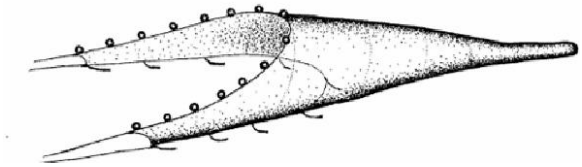


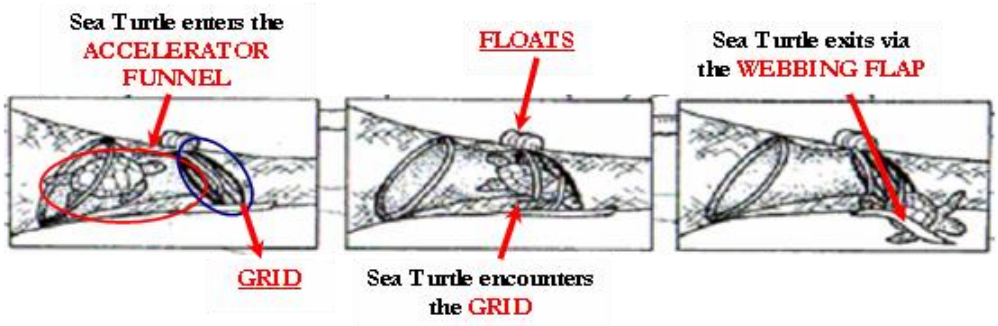
Semicircular Fish Outlet Measurements

Standard Raised Footrope Trawl



Sweepless Raised Footrope Trawl





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

NOV 15 2006

Small Entity Compliance Guide

Dear Atlantic Sea Scallop Permit Holder:

This is to inform you that NOAA's National Marine Fisheries Service has issued a final regulation (71 FR 66466) that removes one of the options for configuring chain mats in the mid-Atlantic sea scallop dredge fishery. This final regulation is effective November 18, 2006. In August 2006, NMFS published a final rule to require the use of a chain-mat modified dredge in the mid-Atlantic sea scallop fishery ("chain mat regulation"). The August 2006 regulation provided the vessel with two options for configuring the chain mats. Under the first option, the vessel was required to modify the dredges using a specified number of evenly spaced horizontal (tickler) chains and vertical (up-and-down) chains. The number of chains required was specified based on dredge width. Under the second option, the vessel was required to configure an unspecified number of chains, however many would be needed, such that the length of each side of the squares or rectangles formed by the chains is less than or equal to 14 inches. NMFS believed that the two options produced the same results, namely rectangles or squares with sides measuring 14 inches or less. Shortly after the chain mat regulation went into effect, NMFS became aware that, depending on the dredge width and configuration, using the specified number of chains may result in openings greater than 14 inches. With this new final regulation, NMFS has corrected this discrepancy by requiring only the second option for the configuration of the chain mats. That is, scallop dredge vessels are required to configure the chains such that the length of each side of the squares or rectangles formed by the intersecting chains is less than or equal to 14 inches. NMFS is aware that as the links in the chain wear with time, the chains will become longer ("stretch"). This wear depends on several factors including the type of chain and the bottom habitat fished. Fishermen should be aware of this "stretch" and take it into account when configuring the gear so that, as the chains wear, the length of the sides maintain a spacing of less than or equal to 14 inches. The area affected by the regulation remains waters south of 41° 9.0' N latitude. The regulation is in effect May 1 through November 30 each year.

How to comply with the regulation

During the time period of May 1 through November 30, any vessel with a sea scallop dredge and required to have a Federal Atlantic sea scallop fishery permit, regardless of dredge size or vessel permit category, present in waters south of 41° 9.0' N. latitude, from the shoreline to the outer boundary of the Exclusive Economic Zone must have on each dredge a chain mat described as follows. The chain mat must be composed of horizontal ("tickler") chains and vertical chains that are configured such that the length of each side of the square or rectangle formed by the intersecting chains is less than or equal to 14 inches (35.5 cm). The chains must be connected to each other with a shackle or link at each intersection point. The measurement must be taken along the chain, with the chain held taut, and include one shackle or link at the intersection point and all links in the chain up to, but excluding, the shackle or link at the other intersection point. In addition, any vessel that harvests sea scallops in or from the waters described above and that is required to have a Federal Atlantic sea scallop fishery permit must have the chain mat configuration installed on all dredges for the duration of the trip

You may receive permit holder letters by email by clicking on "Permit Holder Letters" on our website at http://www.nero.noaa.gov. This Small Entity Compliance Guide complies with section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996. Thank you for your continued support in the protection of endangered and threatened sea turtles in the mid-Atlantic.

For more information on these regulations, call 978-281-9300 x6505 or visit http://www.nero.noaa.gov/prot_res/ProResDiv/LinkforSeaTurtles.htm.

Sincerely,

for Patricia A. Kurkul
Regional Administrator

Sea Scallop Dredge Chain Mat Requirement

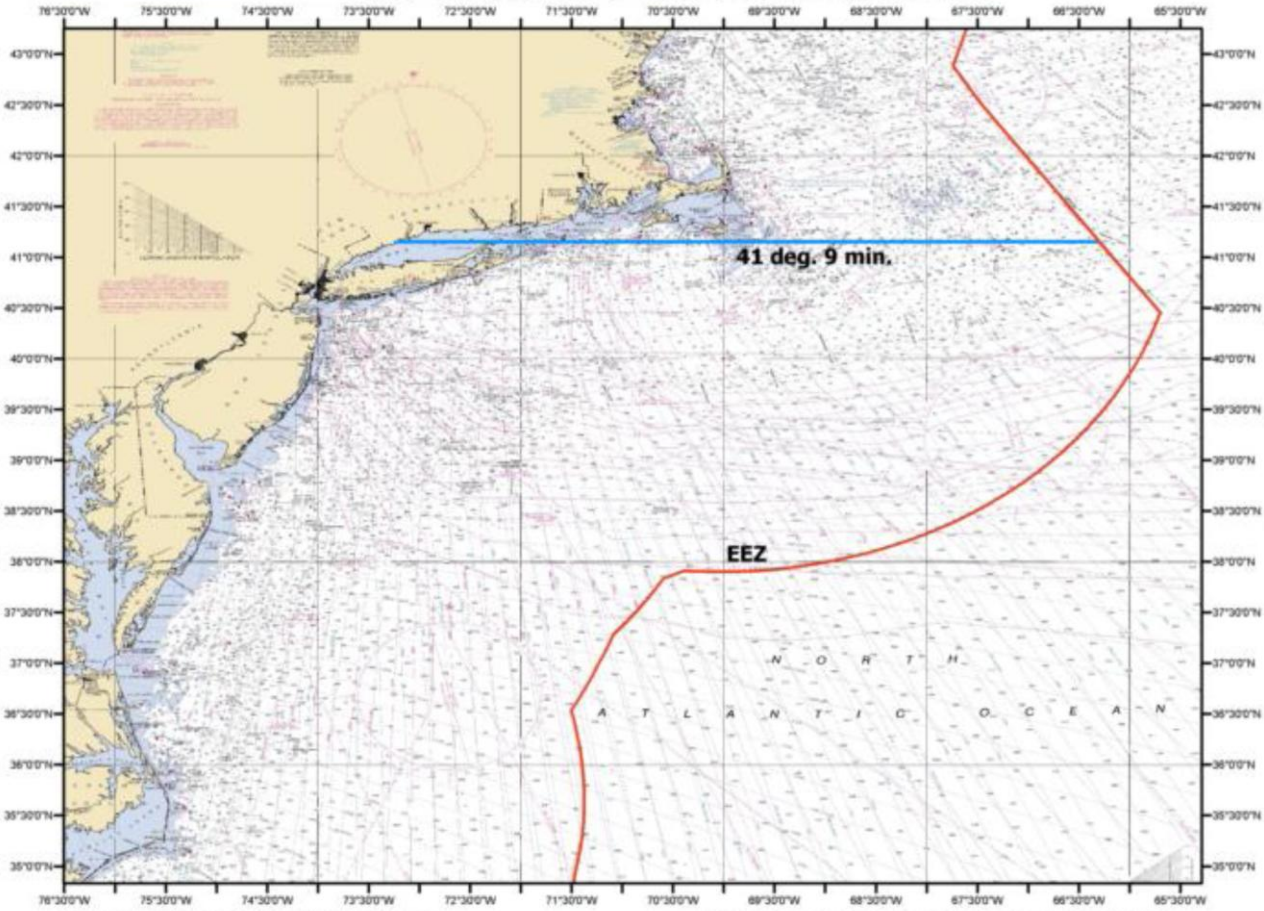


Chart Name: Cape Sable to Cape Hatteras
Chart #: 13003_1
- Not for navigational purposes
- Depth units = fathoms

Chain-mat modified sea scallop dredges are required south of 41 deg 9 min. North latitude (blue line) from the shoreline to the Exclusive Economic Zone (red line) from May 1 through November 30 each year.

New Bedford-style scallop dredge rigged with turtle chain.

Permit Number: 1148
Expiration Date: December 31, 2008

PERMIT TO TAKE ENDANGERED SPECIES

Research Conditions

The following individuals may participate in the conduct of the research authorized herein: David Potter (PI); Peter Dutton (CI); Michael Tork (CI); Erin Kupcha (CI) and NMFS Scientific Observers (observers are employed by the NEFSC through contract and trained by staff of the NEFSC's Fisheries Sampling Branch).

Authorization:

Northeast Fisheries Science Center, National Marine Fisheries Service, 166 Water Street, Room 211, Woods Hole, Massachusetts 02543-1097 [Principal Investigator (PI): David Potter] is hereby authorized to take the endangered and threatened species in the manner specified below for scientific research purposes, as cited in the Permit Holder's application, subject to the provisions of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.), the regulations governing endangered and threatened species (50 CFR Parts 222-226), and the conditions hereinafter set forth.

Abstract:

The purpose of the research , as stated in the application, is to determine the size and composition of populations of sea turtles found in the commercial fishing areas of the Northwest Atlantic Ocean and to establish individual identities of turtles which will permit subsequent determination of growth rates, possible stock origins and movement patterns. The research will contribute to the understanding of the pelagic ecology of these species, permit more complete models of their population dynamics, and allow more reliable assessments of commercial fishery impacts.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEC 31 2008

Nancy Thompson, Ph.D.
Director
Northeast Fisheries Science Center
National Marine Fisheries Service
166 Water Street, Room 211
Woods Hole, Massachusetts 02543-1097

Dear Dr. Thompson:

Enclosed is Modification No. 2 to Scientific Research Permit No. 1448, which extends the expiration date of the permit from December 31, 2008 to December 31, 2009 for takes of leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*), loggerhead (*Caretta caretta*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*) sea turtles. The modified section appears in **bold typeface**.

Your take authority has been extended to December 31, 2009, or until you have exhausted the total number of unused takes authorized, whichever occurs first. Once all takes authorized have been used the research must cease. All other Terms and Conditions of the permit remain in force and effect. Please attach this modification (**No. 1448-02**) to Permit No. 1448-01 as an addendum.

Pursuant to Condition C.2. of your permit, a final report must be submitted within one hundred and eighty (180) days of the expiration date of the permit. Please contact Patrick Opay (301-713-2289) if you have questions regarding this modification.

Sincerely,

P. Michael Payne
Chief, Permits, Conservation and
Education Division
Office of Protected Resources

Enclosure

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Permit No.: 1448-02
Expires: December 31, 2009

PERMIT TO TAKE ENDANGERED/THREATENED SPECIES
MODIFICATION NO. 2

Authorization

Northeast Fisheries Science Center, National Marine Fisheries Service (NMFS), 166 Water Street, Room 211, Woods Hole, Massachusetts 02543-1097 [Principal Investigator (PI): David Potter] is hereby authorized to take the endangered and threatened species in the manner specified below for scientific research purposes, as cited in the Permit Holder's application, and subject to the provisions of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 *et seq.*), the regulations governing endangered and threatened species (50 CFR Parts 222-226), and the conditions hereinafter set out.

This permit is modified in the following manner:

B. Research Conditions 2.i. is changed to read:

i. Expiration Date: Researchers may conduct activities authorized by this permit through **December 31, 2009.**

This modification became effective upon signature by the Director.

James H. Lecky for
Director
Office of Protected Resources

Date **DEC 31 2008**

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEC - 7 2009

Nancy Thompson, Ph.D.
Director
Northeast Fisheries Science Center
National Marine Fisheries Service
166 Water Street, Room 211
Woods Hole, Massachusetts 02543-1097

Dear Dr. Thompson:

We have received your application for a new permit to replace Permit No. 1448, which expires on December 31, 2009. We are currently processing your application (File No. 15112), but the review will not be complete prior to the expiration of your current permit. To prevent a gap in your research and in accordance with our permit regulations at 50 CFR section 222.304, you may continue such activities authorized in Permit No. 1448 until:

- December 31, 2010
- all takes remaining from the fifth year of your permit have been used, **or**
- we have completed the ongoing review and have made a decision on the new application, **whichever occurs first**

If you have any questions, please contact Kate Swails at the Permits, Conservation and Education Division, at 301-713-2289.

Sincerely,

P. Michael Payne
Chief, Permits, Conservation and
Education Division
Office of Protected Resources

cc: A. Johnson (F/NER)

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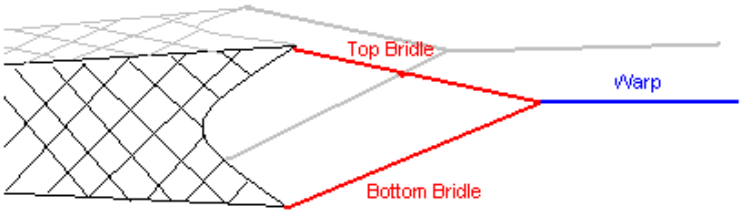
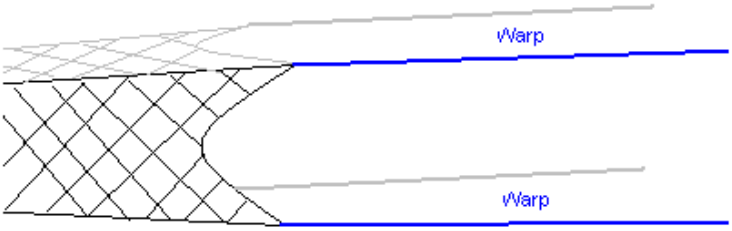
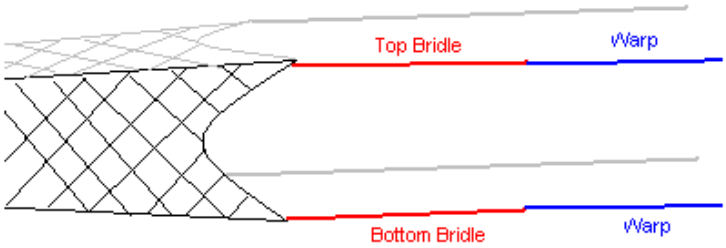
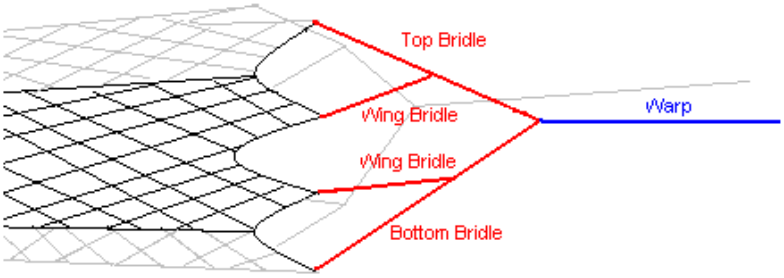
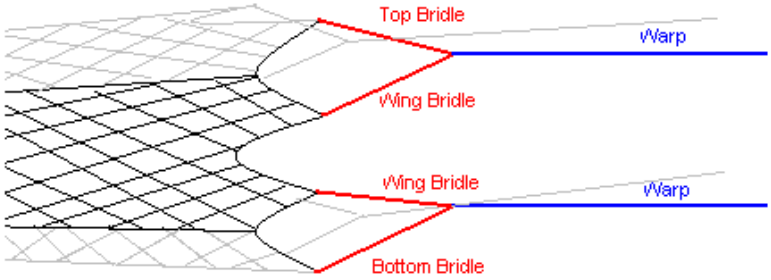
APPROVED ACTIVITIES UNDER ESA PERMIT 1448

Task#	#	Life Stage	Species / DPS / Population / ESU	Take Activity	Details
a.1.	1,425	Juvenile / Sub-Adult / Adult	Loggerhead	Handle, photograph, measure, PIT tag scan, collect tissue biopsy, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	Biopsy turtles > 25cm Tag turtles ≥ 27cm
a.2.	75	Juvenile / Sub-Adult / Adult	Loggerhead	Dip-Net, Handle, photograph, measure, PIT tag scan, collect tissue biopsy, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	POUND NET FISHERY Biopsy turtles > 25cm Tag turtles ≥ 27cm
b.	250	Juvenile / Sub-Adult / Adult	Leatherback	Handle, photograph, measure, PIT tag scan, collect tissue biopsy, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	PERFORM TAKE ACTIVITIES *IF* TURTLE IS BROUGHT ON BOARD. Biopsy turtles > 25cm Tag turtles ≥ 27cm
c.1.	30	Juvenile / Sub-Adult / Adult	Kemp's Ridley	Handle, photograph, measure, PIT tag scan, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	No tissue sampling will be done on this species.
c.2.	20	Juvenile / Sub-Adult / Adult	Kemp's Ridley	Dip-Net, Handle, photograph, measure, PIT tag scan, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	POUND NET FISHERY No tissue sampling will be done on this species.
d.	50	Juvenile / Sub-Adult / Adult	Green	Handle, photograph, measure, PIT tag scan, collect tissue biopsy, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	Biopsy turtles > 25cm Tag turtles ≥ 27cm
e.	50	Juvenile / Sub-Adult / Adult	Hawksbill	Handle, photograph, measure, PIT tag scan, collect tissue biopsy, Inconel tag, resuscitate, release, bring in whole dead (sample) or live stressed/injured turtles (for rehab).	Biopsy turtles > 25cm Tag turtles ≥ 27cm

Net Configuration

	Bridles/Warp	Bridles/Side	Warp/Boat
	2	2	1
	0	0	2
	1	2	2
	2	4	1
	2	4	2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

July 17, 2009

To Whom It May Concern:

The bearer of this letter is authorized, while performing official duties for the National Marine Fisheries Service (NMFS), Northeast Fisheries Science Center, Fisheries Sampling Branch, to collect, possess, store, and transport marine mammals or marine mammal parts.

This authority is granted under CFR 50 section 229.7 (c) (5) and reads:

"Marine mammals incidentally killed during fishing operations and which are readily accessible to crew members, must be brought onboard the vessel as biological specimens and retained for the purpose of scientific research if feasible and requested by NMFS personnel, designated contractors, or the aboard observer. Marine mammals so collected and retained as biological specimens must, upon request by NMFS personnel, designated contractors, or the observer aboard, be retained in cold storage on board the vessel, if feasible, until removed at the request of NMFS personnel, designated contractors, or the observer aboard, retrieved by authorized personnel of NMFS, or released by the observer for return to the ocean. Such specimens may be transported on board the vessel during the fishing trip and back to port under this authorization."

If you have any questions about the project or authority please contact the Fisheries Sampling Branch Chief, Amy Van Atten, at (508) 495-2266. Thank you for your cooperation with this project.

Sincerely,

for

Nancy B. Thompson, Ph.D.
Science and Research Director

cc: W. Gabriel
A. Van Atten
T. Lewandowski

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

3-201
(1/97)

FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES
16 USC 703-712

REGULATIONS
50 CFR Part 13
50 CFR 21.27

1. PERMITTEE

NORTHEAST FISHERIES SCIENCE CENTER
U.S. DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE
166 WATER STREET
WOODS HOLE, MA 02543
U.S.A.

3. NUMBER
MB043513-0

4. RENEWABLE
YES
NO

5. MAY COPY
YES
NO

6. EFFECTIVE
04/01/2009

7. EXPIRES
03/31/2012

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*
DAVID POTTER
CHIEF, FISHERIES SAMPLING BRANCH

9. TYPE OF PERMIT
SPECIAL PURPOSE SALVAGE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
Includes the waters of the U.S. Northeastern Continental Shelf or the Northwest Atlantic Ocean, including the Gulf of Maine and Georges Bank, in addition to the waters off the States of Rhode Island south to North Carolina, from three miles from the coastline extending to the edge on the Continental Shelf, and including the waters of the northern Middle Atlantic Bight and the southern Middle Atlantic Bight.
TEL: 508-495-2221

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. You are authorized to salvage migratory birds (except species listed as threatened or endangered under the Endangered Species Act found in 50 CFR 17) found dead that you had no part in the killing or death thereof. Any dead bald eagles or golden eagles salvaged must be reported within 48 hours to the National Eagle Repository at (303) 287-2110. The Repository will provide directions for shipment of these specimens. For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: www.fws.gov/endangered.

E. You are authorized to salvage abandoned (unoccupied) migratory bird nests and nonviable eggs after the nesting season, except for nests and eggs of bald eagles or golden eagles and threatened or endangered species.
F. All salvaged migratory bird specimens must be deposited with National Marine Fisheries Service, for educational or scientific use only.
G. You may not salvage and must immediately report to U.S. Fish and Wildlife Service Law Enforcement any migratory birds that appear to have been poisoned, shot, electrocuted, have collided with industrial power generation equipment, or were otherwise injured as the result of potential criminal activity.
H. Any person who is: (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.
I. You and any subpermittees must comply with the attached Standard Conditions for Special Purpose Salvage Permits.

For suspected illegal activity, immediately contact USFWS Law Enforcement at: Chelsea, MA 617-889-6616

☐ ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
Annual report due: 01/31

ISSUED BY	TITLE	DATE
Valerie Fonseca	ARD, MIGRATORY BIRDS & STATE PROGRAMS	05/19/2009

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

National Marine Fisheries Service
Highly Migratory Species Management Division
Exempted Fishing Permit

Permit Number: SHK-EFP-09-02 **Effective Dates**: Date of Issuance through March 31, 2010

Authorized Activity/ Purpose of Exempted Activity: NMFS-approved observers with the Northeast Fisheries Science Center (NEFSC) Observer Program are authorized to bring aboard and possess Atlantic sharks, and parts of Atlantic sharks (*e.g.*, vertebral centra, gonads, and stomachs), for scientific research purposes (*e.g.*, morphometric and reproductive measurements) while working on commercial fishing vessels, provided the sharks are dead prior to being brought aboard. NMFS-approved observers must carry a copy of the EFP for valid collection of scientific specimens.

Authorized Sampler(s): Any NMFS-approved observer with the NEFSC Observer Program

Authorized Vessel(s): Any vessel with a NMFS-approved observer onboard

Authorized Area(s)/Timing of Exempted Activity: In **Federal waters** of the Atlantic Ocean, from Maine to North Carolina.

Authorized Gear(s)/Amount of Gear: NMFS-approved observers with the NEFSC Observer Program are placed on a variety of commercial fishing vessels tending different gear types, which participate in a variety of fisheries that target non-HMS; however, sharks are incidentally caught in these fisheries. Sharks will be incidentally caught on bottom longline, gillnet, otter trawl, scallop dredge, scallop trawl, clam dredge, pair trawl, purse seine, and midwater trawl gear. Specific gear deployment and rigging will depend on the target species.

Authorized Species/Numbers of Fish: 200 Atlantic sharks are authorized to be retained and/or sampled under the auspices of this EFP.

Regulatory Exemptions (CFR Citation, Summary Text): 50 CFR Part 635.4 (HMS commercial and recreational permits); 635.5, (vessel reporting); 635.20 (e), (recreational size limits for sharks); 635.21 (e)(3)(i) (authorized fishing gear for sharks); 635.22 (c), (recreational retention limits for sharks and prohibited species); 50 CFR § 635.24(a)(1), (which limits retention of sandbar shark without shark research permit); 50 CFR § 635.24(a)(2), (which limits the commercial retention non-sandbar LCS for shark LAP holders); 50 CFR § 635.24(a)(3), (which limits retention of non-sandbar LCS for shark ILAP holders); 50 CFR § 635.24(a)(4), (which limits retention of SCS and pelagic sharks for shark ILAP holders); 50 CFR § 635.24(a)(5), (which limits the possession of prohibited sharks); 50 CFR § 635.27 (b)(1)(iii), (which sets the commercial quota for sandbar sharks); 50 CFR § 635.27(b)(1)(iv), (which sets the commercial quotas for non-sandbar LCS); 50 CFR § 635.27(b)(1)(v), (which sets the commercial quota for SCS); 50 CFR § 635.27(b)(1)(vi), (which sets the commercial quota for pelagic sharks); 635.28(b)(3) (establishes fishing season for sharks); and any prohibitions in 635.71 relating to the above exemptions. Observers are allowed to biologically sample any shark, or part thereof, brought dead to the fishing vessel. However, observers cannot sample an entire shark fin or remove an entire shark fin unless the shark has already been offloaded. There are NO exemptions for BLL vessels from the mid-Atlantic shark closed area off North Carolina. Vessels with longline gear onboard are not exempt from possessing the appropriate protected resources handling and release equipment specified at 635.21.

Quota Requirements/Notes: A total of 200 sharks may be retained and/or sampled. This represents approximately 9% of the annual 60 metric ton whole weight (mt ww) public display and research quota,

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which if combined with the percentages from other EFPs, scientific research permits, and display permits issued for calendar year 2009, cumulatively equals approximately 18% of the annual 60 mt ww quota to date.

Terms and Conditions:

Please note that this permit does not authorize the collection or harvest of species in waters in waters under state jurisdiction. The appropriate state fish and wildlife agency must be contacted regarding any collection in state waters, as separate state permits may be required for collection/harvest in state waters.

- ***Limitations on Collection/Harvest***
  Collections/Harvests are authorized only where authorized samplers (listed above) are present on the authorized vessels (listed above). No third-party collectors are authorized under this permit. A copy of this permit must be available for inspection aboard the authorized vessel while conducting the authorized activity.

  No fish, or any parts thereof, collected under the auspices of this EFP may be purchased, bartered, sold, or used for any purpose other than scientific research.

- ***Reporting Requirements***
  For all specimens caught, an Interim Report form must be filled out with the information specified and mailed within 5 days of the conclusion of a fishing trip to the Highly Migratory Species Management Division. This permit expiration date is extended to March 31, 2010, to avoid the need to extend the expiration date at the end of the year. An annual year-end report for fishing in 2009 under the auspices of this EFP is required within 30 days of December 31, 2009. All fishing under the auspices of this EFP in 2010 (*i.e.*, January 1 through March 31, 2010) can be included in an annual year-end report within 30 days of December 31, 2010. For months when no animals are collected, either in or outside the Exclusive Economic Zone (EEZ), an Interim Report form indicating "no catch" must be submitted within 5 days of the end of that month to the Highly Migratory Species Management Division. Copies of both the Interim and Annual Report Forms are enclosed for your use in meeting these reporting requirements (electronic forms may be requested). *Please do not submit your own form to meet these reporting requirements.* Reports must be submitted to the Highly Migratory Species Management Division, National Marine Fisheries Service, F/SF1, 1315 East-West Highway, Silver Spring, Maryland 20910. This information will be incorporated into future stock assessments.

Informational Contact(s):

Applicant's Name: Joe Mello Phone: 508-495-2110
NMFS Staff/Phone: Peter Cooper Phone: 301-713-2347

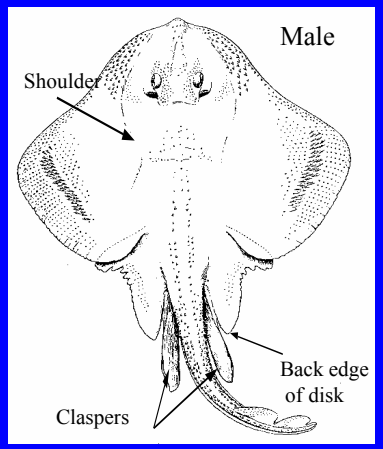
MAR 1 6 2009

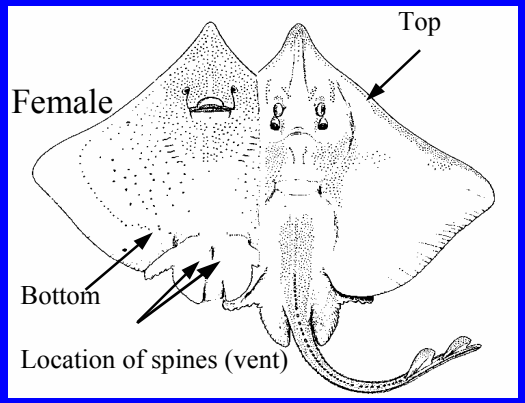
Alan Risenhoover, Director
Office of Sustainable Fisheries

Date

Skate Species Identification Guide

General Diagram of Skate Anatomy





Rosette Skate

VTR Code – SKROSE (whole), SKROSEW (wings)
Dealer Code – 3640 (whole),3641(wings)

Photo courtesy of K. Sosebee

Alternative name: Leopard Skate
Freckled Skate
Range: S. New England to Florida, USA
Depth: 30-300 fathoms (fth) (55-550m)
Max. size: 16 in (41cm)
Features:
- Dark rosettes (six or more dark spots surrounding a central point) on back
- Rows of spines along back and tail
- Tail rather long

Little Skate

VTR Code – SKL (whole), SKLW (wings)
Dealer Code – 3660 (whole),3661(wings)

Photo courtesy of D. Flescher

Alternative name: Summer Skate
Common Skate
Range: Gulf of St. Lawrence, Canada to NC, USA
Depth: 0-50 fth (90 m)
Max. size: 21in (54 cm)
Features:
- Rounded disk
- Two rows of spines on either side of the middle of tail
- In males (35-50 cm) claspers extend well beyond back edge of disk.
- In female (35-50 cm) patches of spines located on both sides of anus

Winter Skate

VTR Code – SKWIN (whole), SKWINW (wings)
Dealer Code – 3670 (whole),3671(wings)

Photo courtesy of J. Sulikowski

Alternative name: Big Skate
Spotted Skate
Eyed Skate
Range: Newfoundland, Canada to North Carolina, USA
Depth: 0-50 fth (90 m)
Max. size: 43 in (109 cm)
Features
- Rounded disk
- Two rows of spines on either side of the midline on tail.
- In males (35-50 cm) claspers barely (if at all) reach edge of posterior disk.
- In females (35-50 cm) no rough patch on sides of vent

Smooth Skate

VTR Code – SKSM (whole), SKSMW (wings)
Dealer Code – 3690 (whole),3691(wings)

Photo courtesy of D. Flescher

Alternative name: Prickly Skate
Smooth Tailed Skate
Range: Newfoundland, Canada to South Carolina, USA
Depth: 25-500 fth (45-900m)
Max. size: 24 in (61 cm)
Features:

- Nose pointed
- Row of many small spines on top from tail to behind eyes
- 2 additional rows of small spines along each side of tail

Clearnose Skate

VTR Code – SKCL (whole), SKCLW (wings)
Dealer Code – 3720 (whole),3721(wings)

Photo courtesy of D. Flescher

Alternative name: Brier Skate
Range: MA to FL, USA
Depth: 0-180 fth (330 m)
Max. size: 37 in (94 cm)
Features:

- Bars and spots on top surface
- One line of thorns that run down the mid-line of back
- Large clear space on each side of snout
- Defined space between two dorsal fins on tail

Thorny Skate

VTR Code – SKTHOR (whole), SKTHORW (wings)
Dealer Code – 3700 (whole),3701(wings)

Photo courtesy of D. Flescher

Alternative name: Starry Skate
Mud Skate
Range: Greenland to South Carolina, USA
Depth: 10-545 fth (20-1000 m)
Max. size: 40 in (102 cm)
Features:

- Regular row of 13-17 large thorns along middle back
- Rough top surface with thorns scattered over disk and tail
- Tail shorter than body
- Large thorns on shoulders

Barndoor Skate

VTR Code – SKBARN (whole), SKBARNW (wings)
Dealer Code – 3680 (whole),3681(wings)

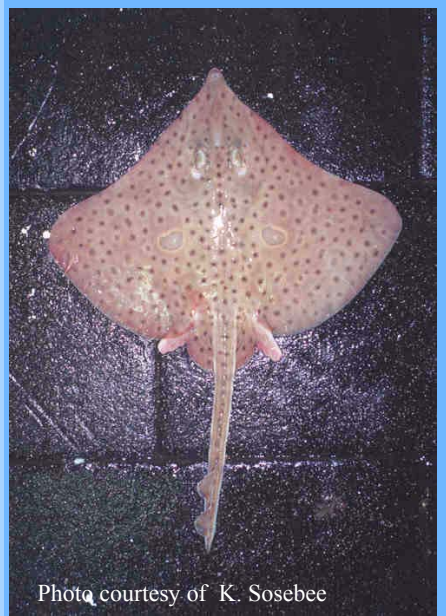


Photo courtesy of K. Sosebee

Range: Newfoundland, Canada to North Carolina, USA
Depth: 0-235 fth (430 m)
Max. size: 5 ft (152 cm)
Features:

- Very pointed nose, front edges of disk concave
- Distinct gray coloration on bottom
- Three rows of spines on tail

Herring Family Identification Guide

Alewife

Sharp belly scutes
Eye large
Peritoneum pale/ pink

Blueback Herring

Sharp belly scutes
Eye small
Peritoneum dark/ black

Atlantic Herring

Smooth belly scutes
Eye large
Body elongate

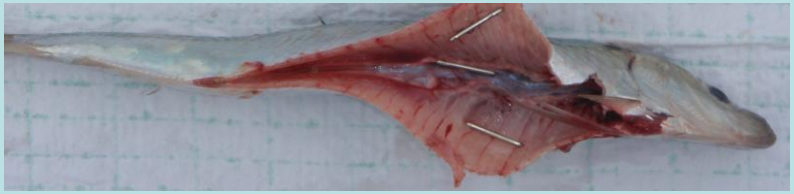
Alewife

Alternative names: Gaspereau, Sawbelly, Kiack, River Herring, Glut Herring, Branch Herring; Freshwater Herring; Grayback

Range: Common in Gulf of Maine/Georges Bank and throughout Mid-Atlantic

Features:

- One small black shoulder spot
- Gut cavity lining is pale pinkish
- Eye large; diameter greater than snout length
- Belly strongly saw-toothed (glove or finger **will catch** when run forward from anal fin)



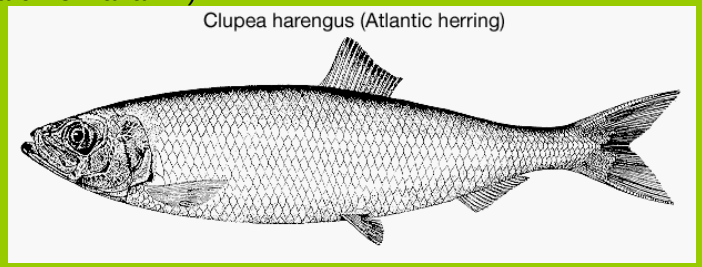
Atlantic Herring

Alternative names: Sea Herring, Labrador Herring, Sardine, Sperling, Brit

Range: Common in Gulf of Maine/Georges Bank and throughout Mid- Atlantic

Features:

- No visible spot, dorsal fin insertion point further back than other species
- Body elongate, eye large
- Smooth belly scutes (glove or finger **should not catch** when run forward from anal fin)



Blueback Herring

Alternative names: Glut Herring, Summer Herring, Blackbelly, Kyack

Range: Common in Gulf of Maine/Georges Bank and throughout Mid-Atlantic

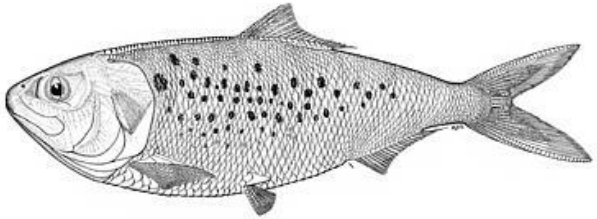
Features:

- One small black shoulder spot
- Gut cavity lining is black
- Eye small; diameter about equal to snout length
- Belly strongly saw-toothed (glove or finger **will catch** when run forward from anal fin)

*These three species all average 20-25 cm total length with an average weight of 0.5 lb. Maximum lengths are around 40 cm total length.

Atlantic Menhaden

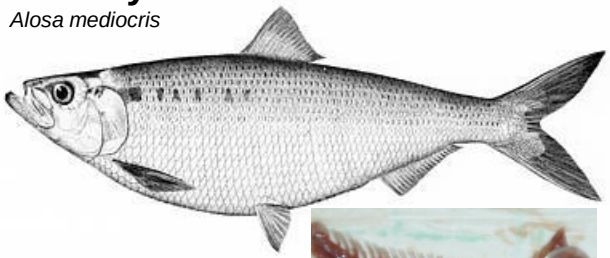
Brevoortia tyrannus



Alternative names: Pogy, Bunker, Mossbunker, Fat Back, Bugfish
Range: Common in Gulf of Maine/Georges Bank and throughout Mid-Atlantic
Ave. size: 30 cm, 0.5 lb; max size 44 cm
Features:
- Black shoulder spot and numerous variable spots on body
- Head large, equal to one-third standard length
- Body depth great (approximately 1/3 length)

Hickory Shad

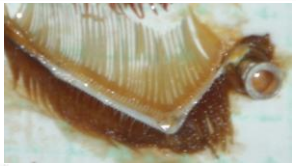
Alosa mediocris

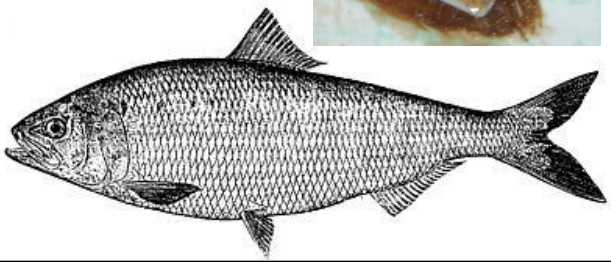


Alternative names: Fall Herring; Shad Herring
Range: Common in Mid-Atlantic, occassionally encountered in Gulf of Maine/Georges Bank
Ave. size: 40-45 cm, 0.5 lb; max size 60 cm
Features: 20 Gill rakers (lower arch)
- Dark shoulder spot followed by a series of poorly defined oval-shaped spots
- Lower jaw projects strongly, mouth opens upward
- Belly strongly saw toothed

American Shad

Alosa sapidissima





Alternative Names: White Shad
Range: Common in Gulf of Maine/Georges Bank and Mid-Atlantic
Ave. size: 50 cm, 5-10 lbs; max size 75 cm
Features: 60 Gill rakers (lower arch)
- Dark spot behind gill cover followed by few smaller dusky round spots
- Lower jaw does not protrude beyond upper jaw when mouth is closed
- Jaw large, reaches to below the rear edge of the eye

General Identification Notes:
- Any herring over 35 cm in length will most likely be a shad.
- Color is not a reliable character with herrings as it is variable and changes quickly once the fish is out of the water. All herrings are silvery with a darker dorsal surface.
- Blueback herring and alewives are the most often confused species. They are best differentiated by cracking open the belly cavity to view peritoneum color.
- The lateral spots of the hickory shad are generally longer vertically than those of the American shad.

Other Species found off the Atlantic Coast (both commonly occur in Mid-Atlantic):

Round Herring - body slender, without belly scutes, head triangular
Atlantic thread herring - elongated ray off trailing edge of dorsal fin; 5 or 6 horizontal stripes on upper half of body

Northern Stone Crab

Commonly King Crab
(*Lithodes maia*)

Range: Greenland to Gulf of Maine, 70-280m depth

Deep-sea Red Crab

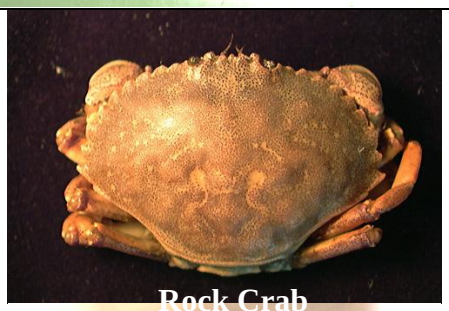
Commonly Red Crab
(*Geryon quinquedens*)

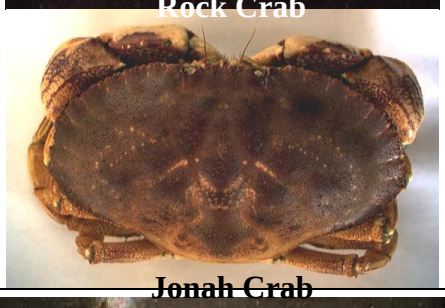
Range: Gulf of Maine as far south as Southern Georges Bank, 40-2000m depth

Snow Crab

Commonly Tanner Crab and Queen Crab
(*Chionoecetes opilio*)

Range: Greenland south to Casco Bay, ME, shallow to 450m depth





Rock Crab

(*Cancer irroratus*)

Jonah Crab

(*Cancer borealis*)
Commonly Sand Crab

Rock crab is distinguished by smooth marginal teeth, where Jonah crab has jagged marginal teeth.

Range: Nova Scotia to Florida, shallow to 800m

Common Spider Crab

Commonly Portly Spider Crab
(*Libinia emarginata*)

Range: Nova Scotia to Gulf of Mexico. More common in southern waters. Up to 125m depth

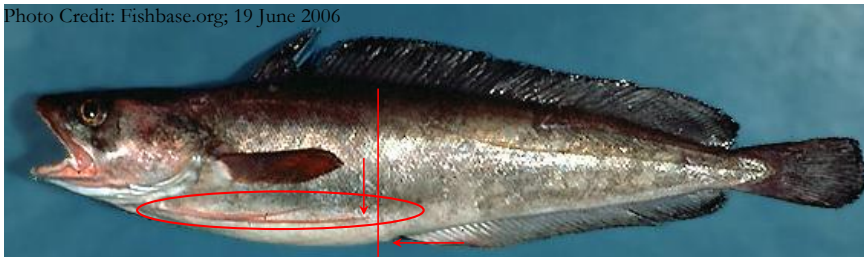


Photo Credit: Fishbase.org; 19 June 2006

White Hake

("Hake")

(*Urophycis tenuis*)

1. **Two gill rakers on upper limb of first arch**
2. Filamentous pelvic fin usually does not reach vent
3. Silvery white color, fresh specimens with scales may have a purple hue on dorsal surface
4. Smaller scales than red hake
5. If not broken, filamentous dorsal ray is shorter than red hake
6. Larger than red hake; maximum size is 138 cm

Commonly confused with red hake

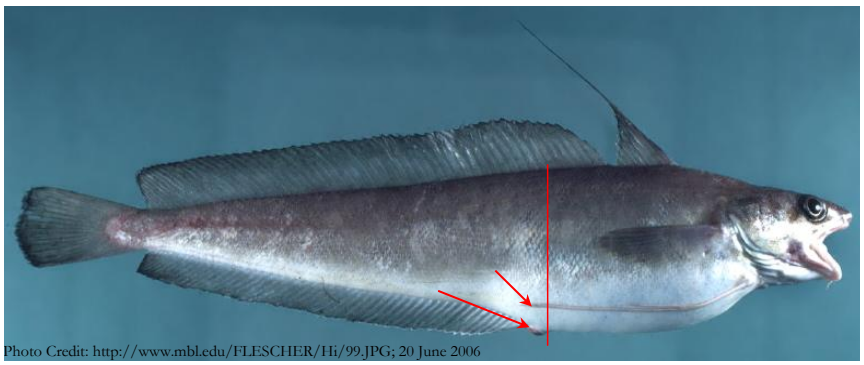


Photo Credit: http://www.mbl.edu/FLESCHER/Hi/99.JPG; 20 June 2006

Red Hake

("Ling")

(*Urophycis chuss*)

1. **Three gill rakers on upper limb of first arch**
2. Filamentous pelvic fin usually reaches to or past the vent
3. Reddish brown color if scales not removed
4. If not broken, filamentous dorsal ray long and black
5. Larger scales than white hake
6. Maximum size is 85 cm but any fish over 50 cm should be carefully examined to ensure it is not a white hake

Commonly confused with white hake

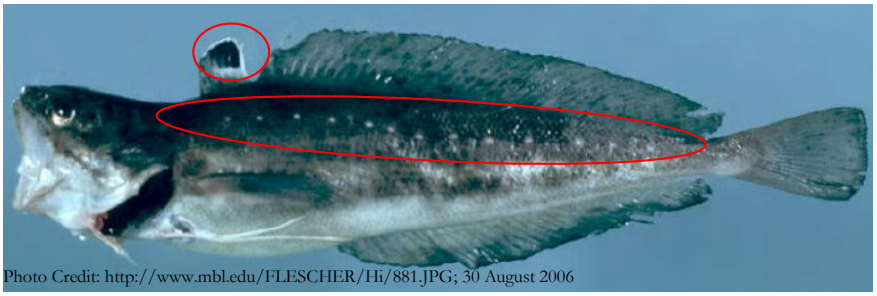


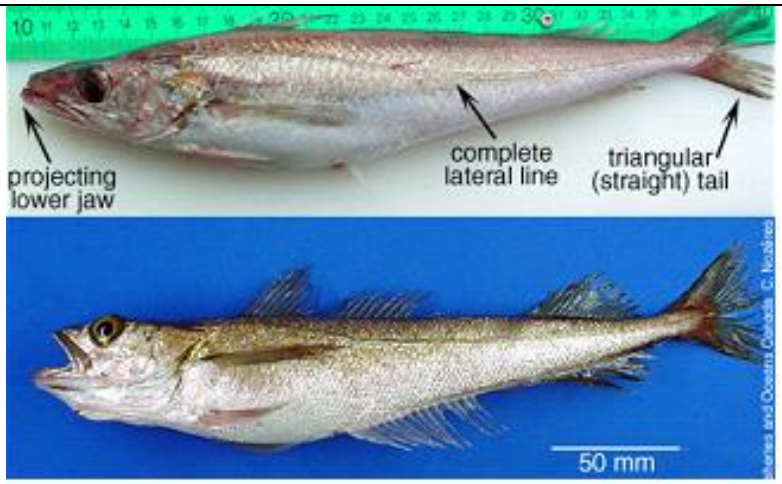
Photo Credit: http://www.mbl.edu/FLESCHER/Hi/881.JPG; 30 August 2006

Spotted Hake

("Codlet")

(*Urophycis regia*)

1. Black and white dashed lateral line
2. First dorsal fin with a conspicuous black and white pattern when extended
3. No elongate ray in dorsal fin
4. Pelvic-fin ray extends nearly to vent
5. Maximum size 40 cm



Silver Hake

("Whiting")

(*Merluccius bilinearis*)

1. Silvery
2. Lower jaw projects
3. Large mouth
4. No barbel
5. Gill raker count on first gill arch: 16 – 20
6. Maximum size 76 cm

May confuse with offshore hake which has a depth range typically greater than 43 fathoms and a gill raker count on first gill arch of 8 – 11. Some have confused with small Pollock

American Plaice Flounder (Dab)

Right Eyed

Note:

-Large mouth/ jaw with prominent teeth

-Lateral line has very subtle slope (NOT highly arched!!)

- Thick, robust fish

Summer Flounder (Fluke)

Left Eyed

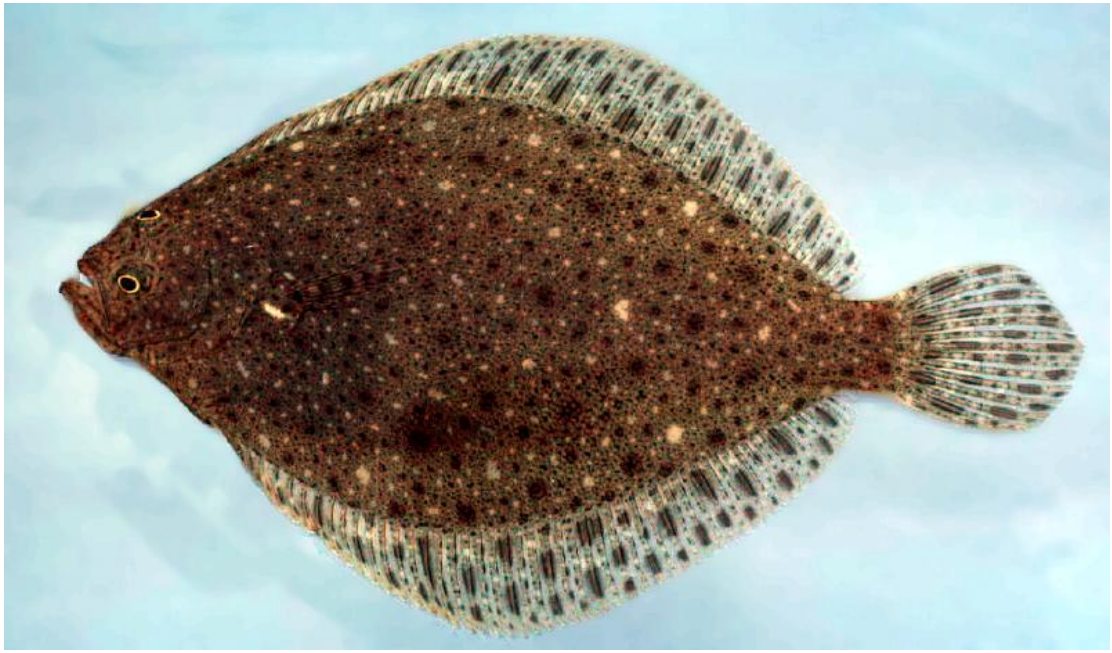
Note:

-Large mouth/ jaw with prominent teeth

-High arch in the lateral line

-Wide caudal peduncle

-Thick, robust fish



Sand Dab Flounder

(Windowpane) <u>Left Eyed</u>

Note:

-Large mouth/ jaw

-Round body shape

-Very thin body; can see through body (window-like)

-Speckled, sand like coloration on dorsal surface

Fourspot Flounder

<u>Left Eyed</u>

Note:

-Large mouth/ jaw, prominent teeth

-Thin, flimsy body

-Elongate body shape

- Four prominent ‘eye spots’

-High arching lateral line

Witch Flounder

(Gray Sole) <u>Right Eyed</u>

- Gray ventral surface (underside)
-Small mouth with fleshy lips
-Thin body
-Lateral line almost flat
-Mucous pores on underside of head

Yellowtail Flounder

<u>Right Eyed</u>

Note:

-Fleshy lips

-Upturned mouth and snout

-Highly arched lateral line

-Moderately thick fish

-Rust colored spots on dorsal surface

-Yellow coloration around underside of caudal region

Winter Flounder (Blackback)

Right Eyed

Note:

-Small mouth with fleshy lips. No prominent jaw

-Thick, robust body

-Lateral line almost flat

Atlantic Halibut

Right Eyed

Note:

-Large mouth/ jaw

-Concave caudal fin

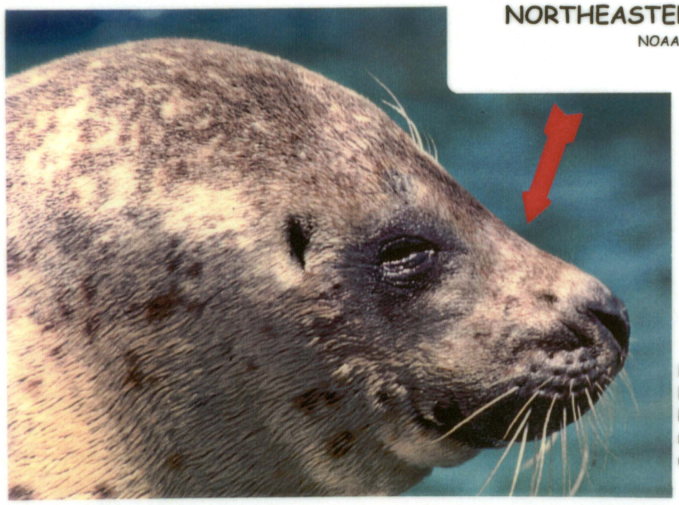
-Diamond shaped body (with dorsal and anal fin)

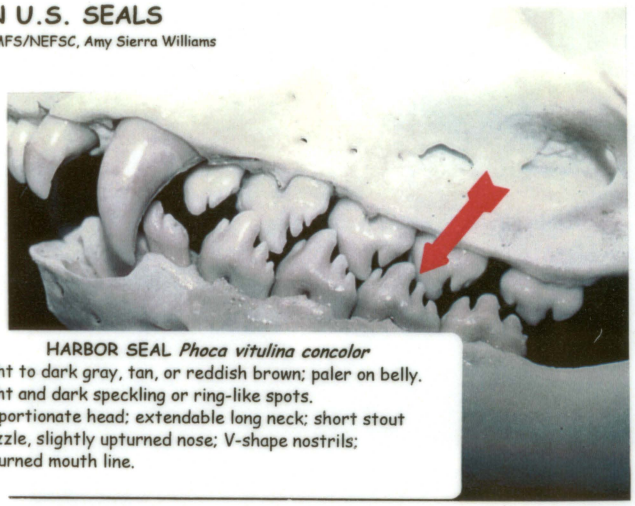
-Highly arched lateral line

-Thick robust fish

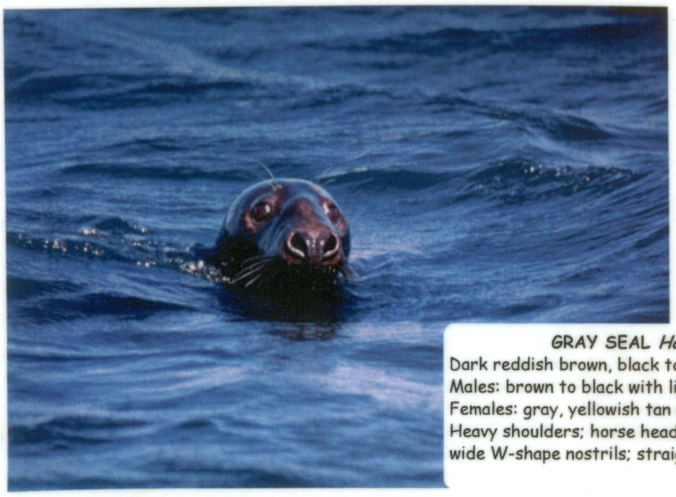
NORTHEASTERN U.S. SEALS

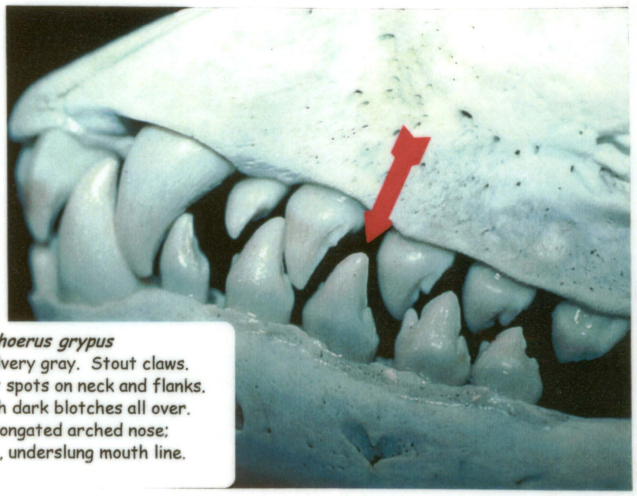
NOAA/NMFS/NEFSC, Amy Sierra Williams



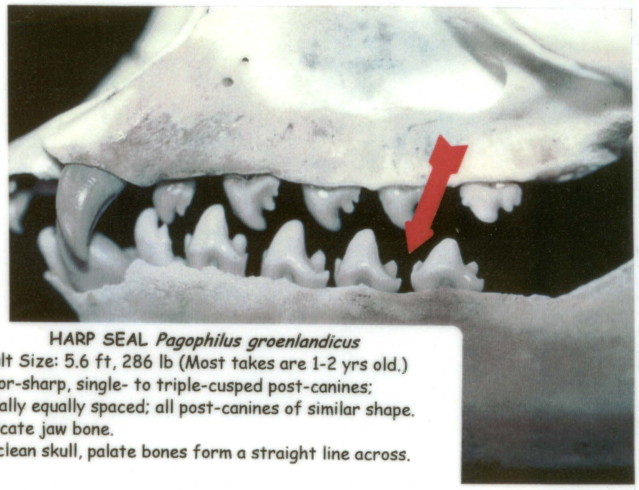


HARBOR SEAL ***Phoca vitulina concolor***
Light to dark gray, tan, or reddish brown; paler on belly.
Light and dark speckling or ring-like spots.
Proportionate head; extendable long neck; short stout muzzle, slightly upturned nose; V-shape nostrils; upturned mouth line.

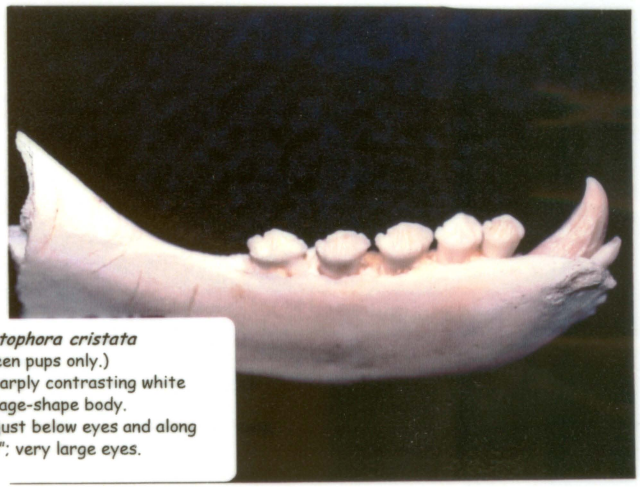




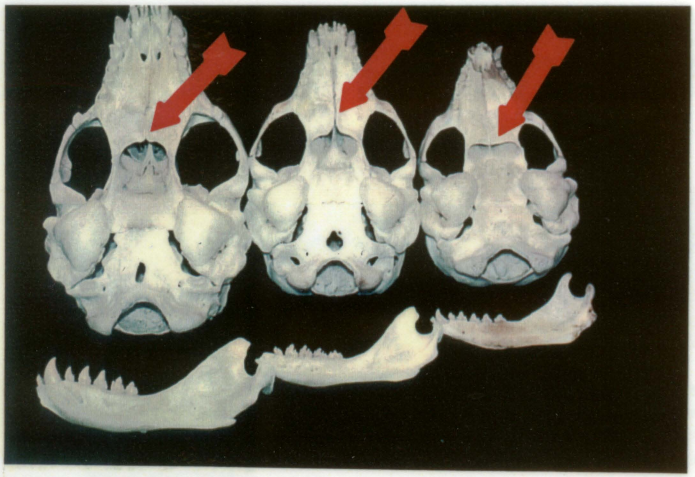
GRAY SEAL ***Halichoerus grypus***
Dark reddish brown, black to silvery gray. Stout claws.
Males: brown to black with light spots on neck and flanks.
Females: gray, yellowish tan with dark blotches all over.
Heavy shoulders; horse head; elongated arched nose; wide W-shape nostrils; straight, underslung mouth line.

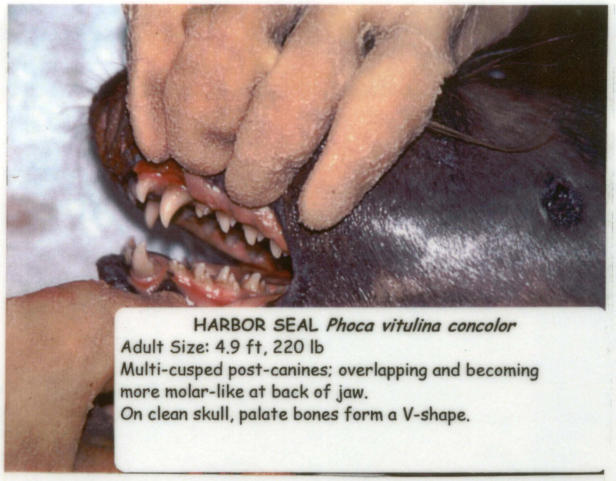


HARP SEAL ***Pagophilus groenlandicus***
Adult Size: 5.6 ft, 286 lb (Most takes are 1-2 yrs old.)
Razor-sharp, single- to triple-cusped post-canines; serially equally spaced; all post-canines of similar shape.
Delicate jaw bone.
On clean skull, palate bones form a straight line across.



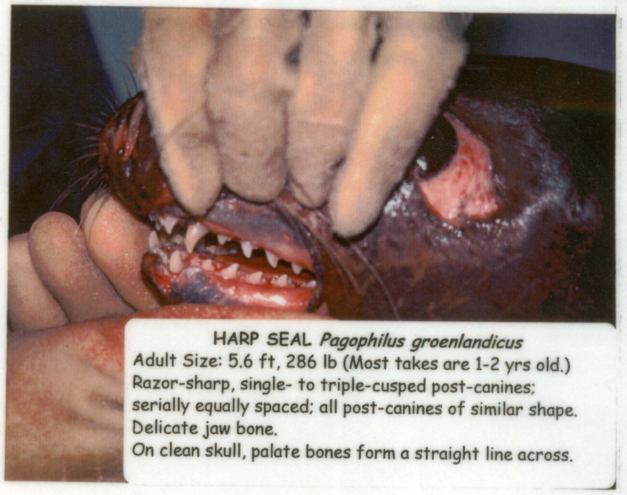
HOODED SEAL ***Cystophora cristata***
(Takes in Gulf of Maine have been pups only.)
Pup pelage: bluish gray back, sharply contrasting white belly with darker flippers; sausage-shape body.
Black face mask along cheeks, just below eyes and along brows, leaving white "mustache"; very large eyes.





HARBOR SEAL *Phoca vitulina concolor*
Adult Size: 4.9 ft, 220 lb
Multi-cusped post-canines; overlapping and becoming more molar-like at back of jaw.
On clean skull, palate bones form a V-shape.

GRAY SEAL *Halichoerus grypus*
Adult Size: 6.6 ft (f) - 7.5 ft (m), 330 lb (f) - 770 lb (m)
Large, thick, single-cusped post-canines.
Dense mandible.
On clean skull, palate bones form a U-shape.



HARP SEAL *Pagophilus groenlandicus*
Adult Size: 5.6 ft, 286 lb (Most takes are 1-2 yrs old.)
Razor-sharp, single- to triple-cusped post-canines; serially equally spaced; all post-canines of similar shape.
Delicate jaw bone.
On clean skull, palate bones form a straight line across.

NOTES:

Guide to Reporting Whale Sightings

Please help NOAA's National Marine Fisheries Service (NMFS) collect vital information on right whales and dead, entangled, or injured whales of any species by immediately calling one of the numbers below when these critical sightings are made. Please make taking video or photographs a priority. Images of critical sightings are extremely valuable.

If any whale is sighted near gear or appears to be in distress, check for signs of entanglement or injury. However, if no entanglement or injury has been noted, then there is no need to keep the whale in sight.

If a right whale is sighted, *please bear in mind that federal law prohibits all approaches to right whales within 500 yards except under special circumstances.* For more information, please visit http://rwhalesightings.nefsc.noaa.gov/.

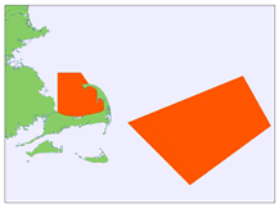
If an entangled, injured, or dead whale is sighted, please try to keep the whale in sight until you can report the sighting to NMFS responders. Do not attempt to disentangle a whale unless authorized.

Reporting Strategy

For any critical sighting, be prepared with the following information:

- ✓ **Date, time, and location of the sighting**
- ✓ **Distinctive features and estimated length of animal**
- ✓ **Signs of injury or entanglement**
- ✓ **Description of behavior, injuries, and entangling gear**
- ✓ **If the whale is dead, the condition of the carcass**
- ✓ **How you can be contacted (*i.e.* contact information for original report; how an observer can be contacted)**

NMFS Atlantic Administrative Divisions


New England Right Whale Critical Habitat Areas

Southeast U.S. Right Whale Critical Habitat Area

In the Northeast Region call the appropriate pager:
Entangled whales: 800-900-3622
Dead, ship-struck, or injured whales: 978-281-9351
General right whale sightings: 978-585-8473

In the Southeast Region (includes the Gulf of Mexico):
Entangled, dead, ship-struck, or injured whales: 877-433-8299
All other right whale sightings: 877-433-8299.

In both regions, reports can also be relayed through U.S. Coast Guard stations.

Northeast Region: ME - VA and offshore north of 36°35'N
Southeast Region: NC - TX and offshore south of 36°35'N

- **Right Whale Critical Habitat Areas: ****
  - **Cape Cod Bay:** 42°04.8'N, 70°10'W; 42°12'N, 70°15'W; 42°12'N, 70°30'W; 41°46.8'N, 70°30'W
  - **Great South Channel:** 41°00'N, 69°05'W; 41°40'N, 69°45'W; 42°10'N, 68°31'W; 41°38'N, 68°13'W
  - **Southeast:** 31°15'N to 30°15'N & offshore 15 nm; 30°15'N to 28°00'N & offshore 5 nm

**** Right whales follow a migratory path close to shore along the entire U.S. eastern seaboard. This migration is primarily in the early spring and late fall.**

Identifying Right Whales

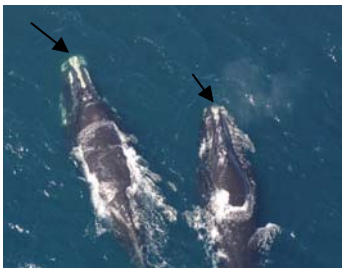
Several features should be observed to confirm species identification. These may include:

- ✓ **Rough white patches ('callosities') on the head.**
- ✓ **Dorsal fin absent when the whale arches on a dive. (But be cautious--other species may not show their dorsal fin until they arch up for a deep dive.)**
- ✓ **Flukes (tails) have smooth trailing edges and taper gradually to narrow pointy tips. (Only right whales, humpbacks, and sperm whales routinely lift their tails when diving.)**
- ✓ **Distinct 'V'-shaped blow when viewed from directly behind or head on (but not from the side).**

From the air, right whales are best identified by the presence of the callosities on the head. Their body shape is more robust than other whale species, and the flukes are proportionally larger. The flippers are typically harder to see.

(above) Right whale aerial view, note V-shaped spout
NEFSC/PSB

(above) Right whale fluke (to the right) Humpback whale fluke
NEFSC/PSB


(right) Right whale aerial view, note white patches (callosities) on the head (see arrows in photo)
NEFSC/PSB

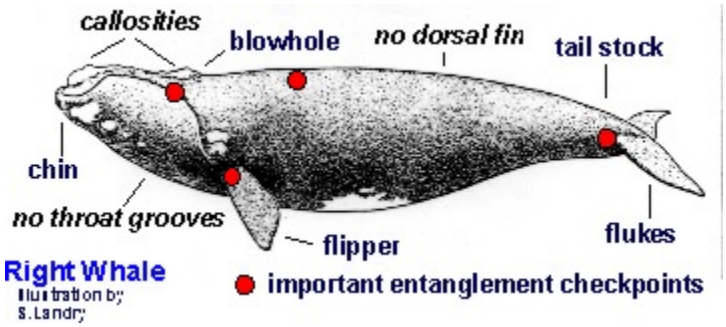
Spotting Entangled Whales

Spotting entangled whales requires careful observation. Whenever a whale is sighted, look for buoys or lines moving or unusually clumped near the whale or trailing some distance behind. Gear may also be seen wrapped over the whale's back, flippers, tail stock, or through the mouth.

Photographs or video of an entanglement are extremely valuable, especially when they document areas where the gear is entangled on the whale.

Be sure to stay well clear of an entangled whale to avoid spooking it or running over any trailing gear.

The right whale illustration below shows both important entanglement checkpoints and the primary body features. Key right whale features are *italicized*



Identifying Dead Whale Species at Sea

Whale carcasses are typically seen floating belly up. Due to predation and weathering, carcasses may differ significantly from the pictures below. Rely on described body structures for identification. If possible, closely examine the carcass for signs of injuries, such as gashes, bruises, or line marks.

Video or photographs are extremely valuable, especially close-ups of the areas around the tail stock, flukes, flippers, and any injuries.

Dead right whales

- ✓ **Throat grooves absent (belly may have white patches or be completely black.)**
- ✓ **Flippers squarish in shape and, when the whale is belly-up, both may be up out of the water**
- ✓ **If floating on its side, note strongly arched mouth that contains long (6+ foot) baleen**

Dead right whale (belly up; tail closest)
NEFSC/Sea Sampling

Dead right whale (floating on side; head to the right), note arched mouth and baleen (arrows).
DFO

(space below provided for sighting notes)

Date/Time: ***Location (lat/long):***

Notes:

Dead humpback whales

- ✓ **Throat grooves present**
- ✓ **Flippers white and about 1/3 the length of the body with knobby bumps on front edge**
- ✓ **Trailing edge of tail flukes ragged-looking with large barnacles on tips**
- ✓ **Several grapefruit-sized knobby black bumps on chin and snout**

Dead humpback whale (head to the left) NEFSC/PSB

Dead finback whales

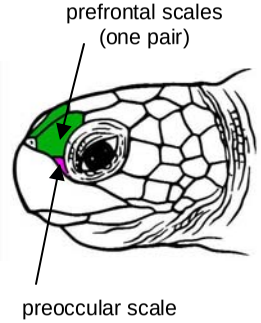
- ✓ **Throat grooves present (narrower and more numerous than on humpbacks)**
- ✓ **Flippers smooth, slender, and fairly short**
- ✓ **Tail flukes have smooth trailing edges and taper to narrow pointy tips**
- ✓ **Chin smooth and relatively slender**

Dead finback whale (head to the right) NEFSC/PSB

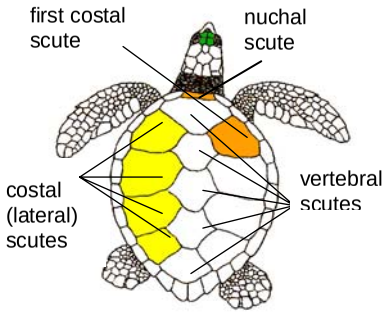
Dead minke whales are physically similar to finbacks but are smaller (less than 30 feet long), and their throat grooves do not extend as far aft.

A good reference for identifying other species is: *Guide to Marine Mammals & Turtles of the U.S. Atlantic & Gulf of Mexico* (c) 1999. Rhode Island Sea Grant. To order, call 401-874-6842

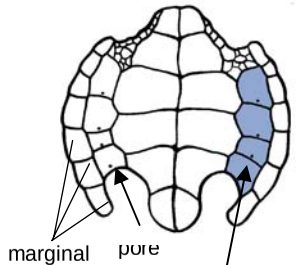
Sea Turtle Identification Key



Dorsal View (Carapace)

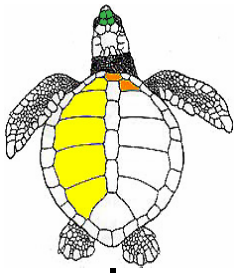
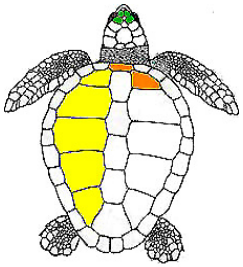
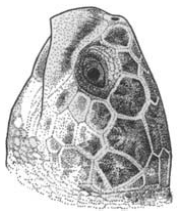
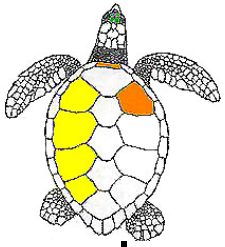
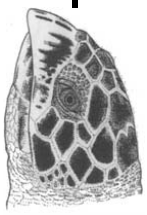
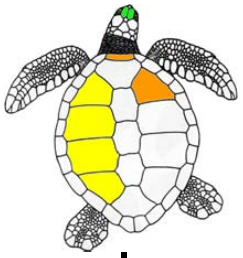
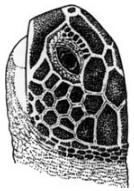
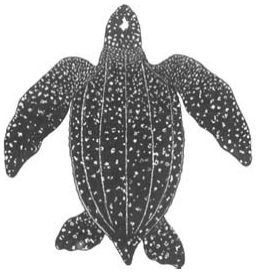
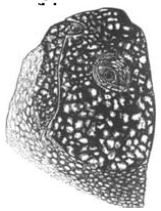


Ventral View (Plastron)



Inframarginal scutes touch both the plastron and marginal scutes of the carapace.

Typical adult colors are described here; colors may differ, particularly in hatchlings and juveniles

- Hard carapace (shell) with large scutes (shell plates)
  - Two pairs prefrontal scales
    - Usually 5 or more costal (lateral) scutes; first costal scute touches nuchal
      - Usually 4 inframarginal scutes with pores
        - 
        - **Kemp's Ridley** *Lepidochelys kempii*
        - Carapace: gray to light olive green; round; Plastron: white/yellow
        -
      - Usually inframarginal without pores
        - 
        - **Loggerhead** *Caretta caretta*
        - Carapace: red brown/dark brown; first costal scute is very small; Plastron: yellow/orange
        - 
    - Usually 4 costal (lateral) scutes; first costal scute does not touch nuchal; usually 4 inframarginal scutes without pores
      - 
      - **Hawksbill** *Eretmochelys imbricata*
      - Carapace: tan, brown and black with random streaks; overlapping scutes; Plastron: cream with dark blotches
      - 
  - One pair prefrontal scales; serrated lower jaw; usually 4 costal (lateral) scutes; first costal scute does not touch nuchal; usually 4 inframarginal scutes without pores
    - 
    - **Green** *Chelonia mydas*
    - Carapace: brown with radiating streaks; Plastron: white to yellow
    - 
  - Leathery, no scutes; Longitudinal dorsal ridges
    - 
    - **Leatherback** *Dermochelys coriacea*
    - Carapace: dark gray/black with white spots; Plastron: white with dark blotches
    - 

Leatherback, ***Dermochelys coriacea*** (**Spanish:** Baula, Tortuga Laud**,** Tora; **French:** Tortue Luth; **Portuguese:** Tartaruga Gigante, Tartaruga-de-couro)
Adult Size Range: Length: 165-190+ cm**/** 65-75+ in; **Weight:** 400-500 kg females, males to 900 kg/ 885-1985 lb
Range: All oceans, sub-arctic to tropical; mainly pelagic oceanic (surface dwelling in the open ocean) but found in bays and over continental shelves

Green, ***Chelonia mydas*** (**Spanish:** Tortuga Verde, **French**: Tortue Verte; **Portuguese:** Tartaruga Verde)
Adult Size Range: Length: 90-120 cm/ 35-45 in; **Weight:** 120-230 kg/ 265-510 lb
Range: All subtropical and tropical seas; bays and coastal waters; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Hawksbill, ***Eretmochelys imbricata*** (**Spanish:** Tortuga Carey; **French:** Tortue Imbriquée, Tortue Caret; **Portuguese:** Tartaruga-de-pente, Tartaruga de Escamas, Tartaruga Bico de Falcão, Tartaruga Verdadeira)
Adult Size Range: Length: 90-110+ cm/ 35-45+ in; **Weight:** 60-80 kg/ 130-175 lb
Range: All oceans; tropical waters, rarely subtropical; reef areas; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Loggerhead, ***Caretta caretta*** (**Spanish:** Caguama, Amarilla, Cabezona, Tortuga Boba; **French:** Caouanne; **Portuguese:** Tartaruga Boba, Tartaruga Comum, Tartaruga Careta, Tartaruga Cabeçuda, Tartaruga amarela, Careba Dura, Careba Amarela)
Adult Size Range: Length: 90-130 cm/ 35-50 in; **Weight:** 100-180 kg/ 220-400 lb
Range: All oceans; primarily subtropical and temperate waters; often associated with structures (i.e., reefs, wrecks, platforms); pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Kemp's Ridley, ***Lepidochelys kempii*** (**Spanish:** Tortuga Lora, Cotorra; **French:** Tortue de Kemp; **Portuguese:** Tartaruga de Kemp)
Adult Size Range: Length: to 70 cm/ 28 in; **Weight:** 35-50 kg/ 80-110 lb
Range: Gulf of Mexico, eastern USA, rarely in eastern North Atlantic; coastal, primarily subtropical and temperate waters; pelagic oceanic (surface dwelling in the open ocean) small juveniles; benthic neritic (bottom dwelling in coastal waters) large juveniles and adults

Sources:

Seaturtle.org

Pritchard, P. C. H. and Mortimer, J. A. (1999) Taxonomy, External Morphology, and Species Identification. pp. 21-38. In: Eckert, K.L., K.A. Bjorndal, F.A. Abreu-Grobois, and M. Donnelly (Editors). 1999. Research and Management Techniques for the Conservation of Sea Turtles. IUCN/SSC Marine Turtle Specialist Group Publication No. 4. (for further details see http://www.iucn-mtsg.org/publications.htm)

Wyneken, J. The Anatomy of Sea Turtles. 2001. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470, 172 pp.

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Illustrations by Tom McFarland and Dawn Witherington

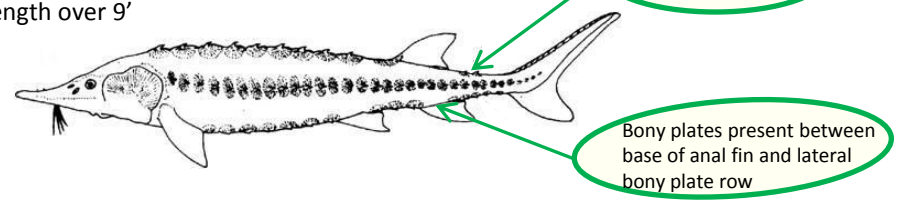
Modified for NEFOP purposes 9-07 from SEFSC Sea Turtle Identification Key

SPECIES IDENTIFICATION AND BIOLOGICAL SAMPLING OF STURGEON

03/2010

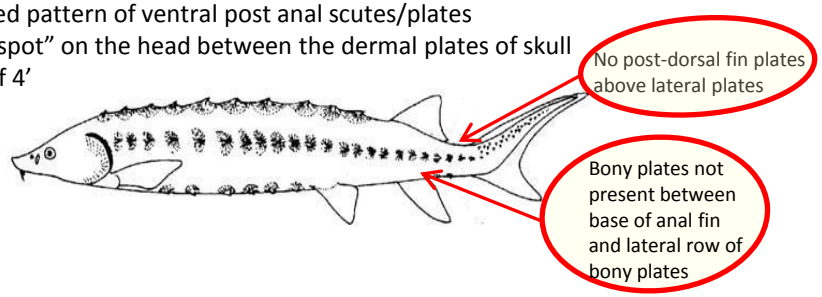
Atlantic Sturgeon ID Characteristics:

- Width inside lips <60% interorbital width
- 2-6 bony plates between base of anal fin and lateral row of scutes
- Row of bony plates post dorsal fin above lateral plates on each side
- More complex pattern of ventral post anal scutes/plates
- "Soft-spot" on the head between the dermal plates of skull
- Max length over 9'



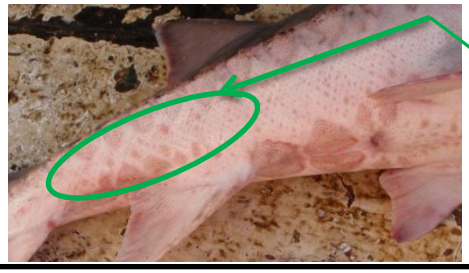
Shortnose Sturgeon ID Characteristics:

- Width inside lips >60% interorbital width
- Bony plats absent between base of anal fin and lateral row of scutes
- Lacking row of bony plates post dorsal fin above lateral plates on either side
- More simplified pattern of ventral post anal scutes/plates
- Lacking "soft-spot" on the head between the dermal plates of skull
- Max length of 4'

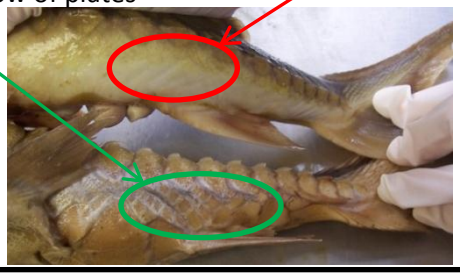


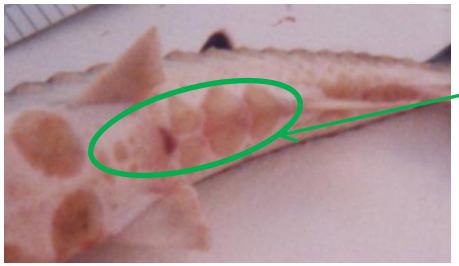
Atlantic- rows of bony plates post dorsal fin above the lateral plates on each side

Atlantic- row of bony plates between base of anal fin and lateral row of plates



Shortnose- no bony plates between base of anal fin and lateral row of plates.





Atlantic- more complex/paired post anal scutes

Anal Scutes

Shortnose- simple patterned post anal scutes

Atlantic- "soft-spot" on the head between the dermal plates (raised) of the skull

Dermal plates- head

Shortnose dermal plates- more contiguous with no "soft-spot"

What to do if you encounter a sturgeon:

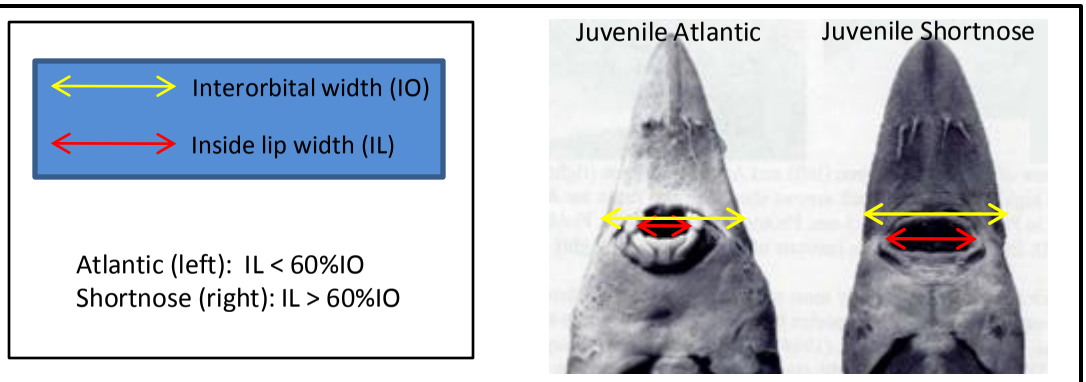
1. **<u>Photos</u> – Be sure to take the required photos of each individual sturgeon. Required photos: whole fish in profile, the underside of the head (mouth), top of head, post-dorsal fin lateral view, post-dorsal fin (dorsal view) and post-anal scutes (ventral view). Include photo slate in the photos for scale.**

2. **<u>Biosample (Atlantic sturgeon ONLY!!)</u> – Cut approximately a dime size piece off the top of the dorsal fin from each Atlantic sturgeon and place in a vial of DMSO. Each vial should contain a sample from ONE fish only. After the sample has been placed in the vial, make sure the cap is secure and covered with parafilm to prevent leaking. Label each vial with your TRIPID, IAL SEQUENCE NO., and HAUL NO. Be sure to WIPE YOUR KNIFE CLEAN BETWEEN SAMPLES with a clean cloth or paper towel to minimize cross contamination between the vials. Store samples at room temperature and send in with your trip.**

3. **<u>PIT Tags</u> – Both Atlantic and Shortnose sturgeon should be scanned for PIT tags using the same scanner used for turtles. The entire sturgeon should be scanned. Record any PIT tag numbers in the tag number field on the IAL. Please record whether or not a sturgeon was scanned regardless of the presence or absence of a PIT tag in the comments section. Remember, ALL STURGEON SHOULD BE SCANNED.**

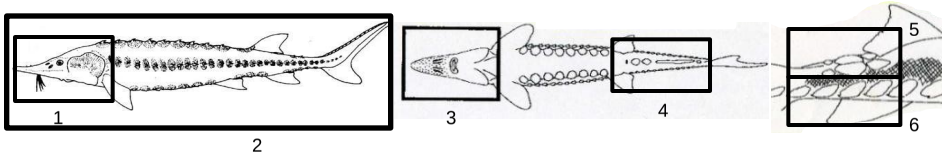
4. **<u>IAL</u> – For all sturgeon obtain a measured fork length and actual weight, if possible. BE SURE TO PROVIDE ID CHARACTERSITICS IN THE COMMENTS SECTION. Additionally, if a DNA sample was taken, <u>BIOSAMP (y/n)</u> on the Individual Animal Log should be 1 (yes).**

<u>Interorbital width vs. Inside lip width measurement</u>



Atlantic (left), photo courtesy of Eric Hilton, Virginia Institute of Marine Science
Shortnose (right), photo courtesy of John Weinsten, Field Museum of Natural History

Photograph these areas for ID characteristics:



- Profile head (1)
- Full length profile (2)
- Mouth (3)
- Anus to tail (4)
- Dorsal fin to tail- dorsal view (5)
- Posterior lateral/ventral view (6)
- Top of head (bony scutes)

<u>Shape of Snout and Head</u>:
These characteristics can be very misleading and ***should not be*** used as the definitive characteristic. Atlantic sturgeon snouts become relatively more rounded and the head profile relatively more convex as the size of the animal increases

EXAMPLE: Atlantic sturgeon head/snout variation

NMFS FISHERIES OBSERVER PROGRAM

REGULAR B-DAY PROGRAM and U.S. / CANADA MANAGEMENT AREA SPECIAL ACCESS REPORTING

CHEAT SHEET

June, 2008

AT THE BEGINNING OF THE TRIP:

1. Ask the Captain if they are declared into the "Regular B-Day Program". If yes, Program code = 150. Then ask if they are declared into the US/Canada Management Area (USCA). If yes, and not in Regular B-Day Program, Program code = 130 (go to step 2). If yes, and in Regular B-Day Program, Program code = 150 (go to step 5).

2. Ask the Captain for the declared VMS Fishing Area Code (2, 4, 4 +open, 5, or 6) and record the "VMS Code" on the VMS tab of the iPAQ.

REPORTING SAP HAUL DATA:

3. EASTERN USCA Trips - Stat Areas 561 and 562 - VMS Fishing Area Codes 2, 5, or 6 (see map on reverse side). VMS Fishing Area 2 is defined as the "Eastern US/Canada Area". VMS Fishing Area 5 is defined as the "Eastern US/Canada Haddock Special Access Program". VMS Fishing Area 6 is a combination of codes 2 & 5. If declared into Eastern USCA, report species weights for ALL OBSERVED HAULS regardless of where they fished.

4. WESTERN USCA Trips - Stat Areas 522 and 525 - VMS Fishing Area Codes 4, or 4+open (see map on reverse side). If declared into Western USCA, report species weights ONLY FOR OBSERVED HAULS INSIDE THE USCA. If just part of a haul occurs inside the USCA, that haul is reported. If the entire haul is outside the USCA (in Open Area), enter the Lat and Lon, go to Species Data Screen under the SAP tab of the iPAQ and tap "N" (no) under "C?" (catch?) for all species. If the entire trip occurs in Open Area (vessel never enters USCA), just place a comment in OBSCON and on the Vessel & Trip log that reads "no hauls inside USCA" and no SAP data is required.

5. For each haul, record the SAP Area as WA (Western Area), EA (Eastern Area), ES (Eastern Haddock Special Access Program Area), or OA (Open Area) on the SAP tab of the iPAQ.

6. Use Latitude and Longitude, not LORAN, whenever possible. Use the CalPosData program in your iPAQ to determine Lat and Lon and Stat Area.

AT THE END OF THE TRIP:

7. Ask Captain if trip FLIPPED from B-Days to A-Days and fill in the "Flipped Y/N" box on the VMS tab of the iPAQ.

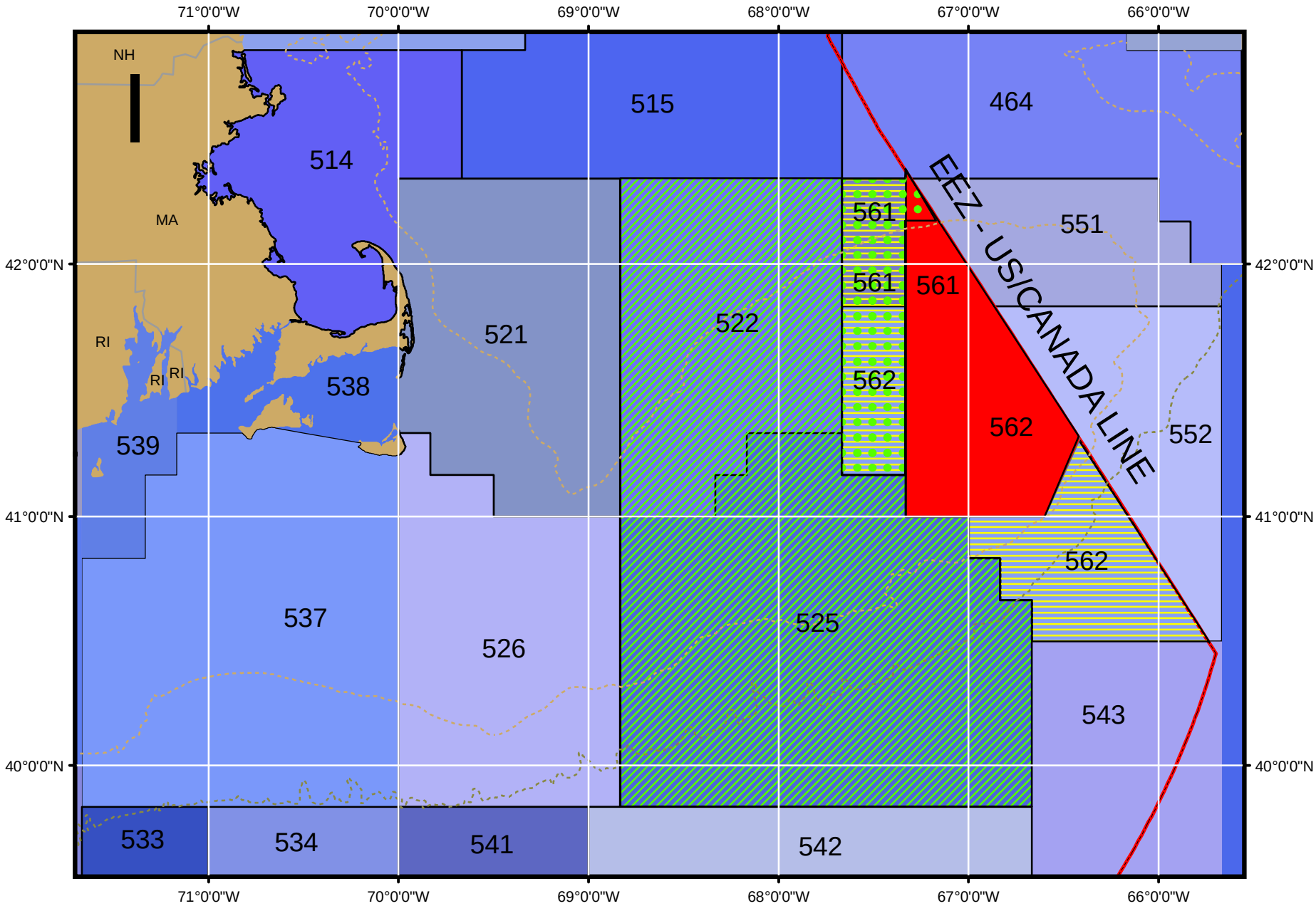
8. Ask Captain if the trip FLEXED. It may flex out or flex west or not flex at all from the Eastern USCA. Fill in the "Flexed" box on the VMS tab of the iPAQ, where N = Did Not Flex, O = Flexed Out to open area, and W = Flexed West into the Western USCA.

***** When a trip declares into the Regular B-Day Program AND fishes inside the USCA, the Regular B-Day Program (Program Code 150) reporting procedures always take precedence.**

Northeast Fisheries
Observer Program

US/CANADA MANAGEMENT AREAS

Do not use for navigation or regulatory purposes



Western US/Canada Area (VMS Area 4, 4+, STAT 522, 525)

Multispecies Closed Areas

Eastern US/Canada Area (VMS Area 2, STAT 561, 562)

Eastern US/Canada Haddock SAP (VMS Area 5, STAT 561, 562)

Chart 1. Overview of the Northeast Statistical Areas

Do not use for navigation

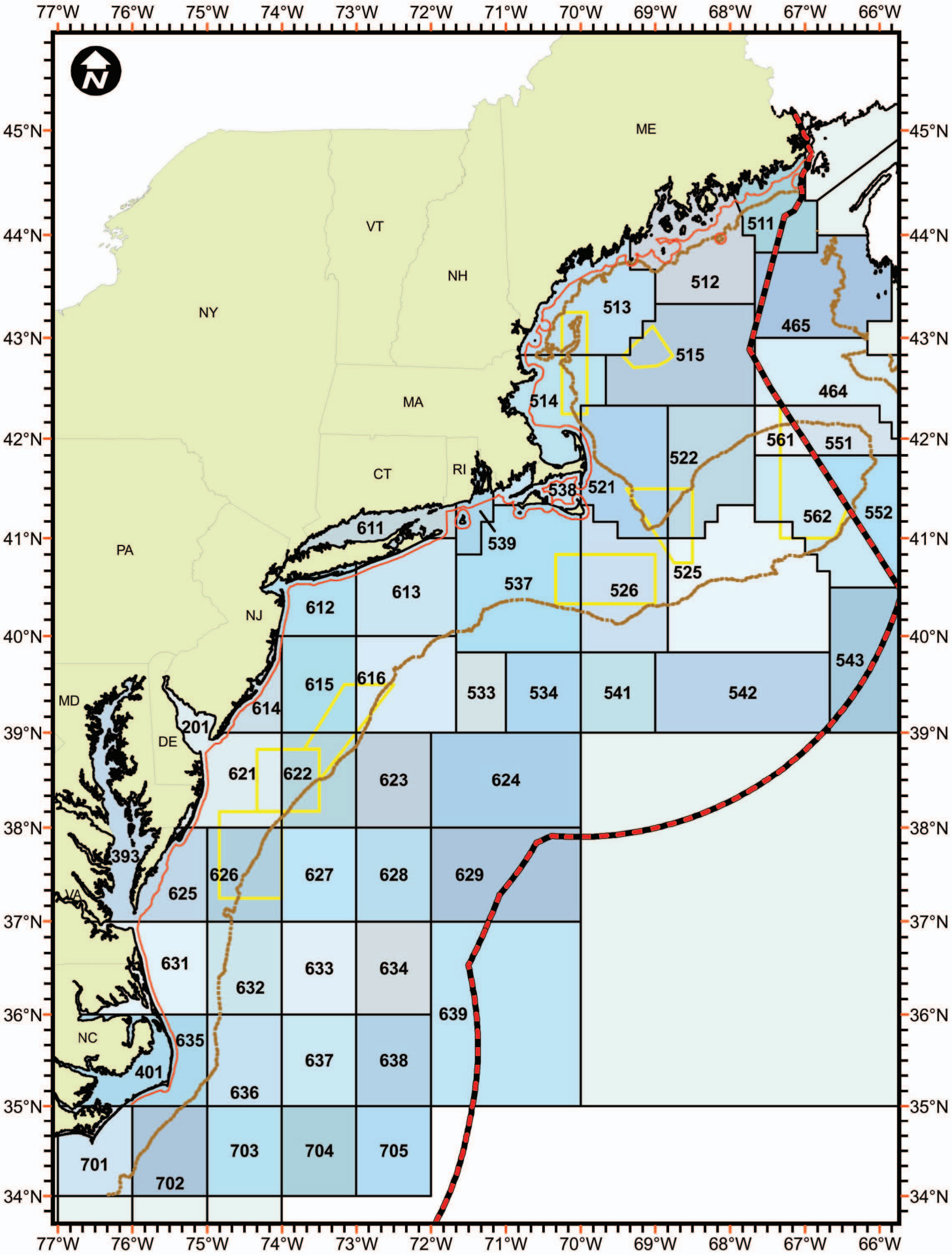
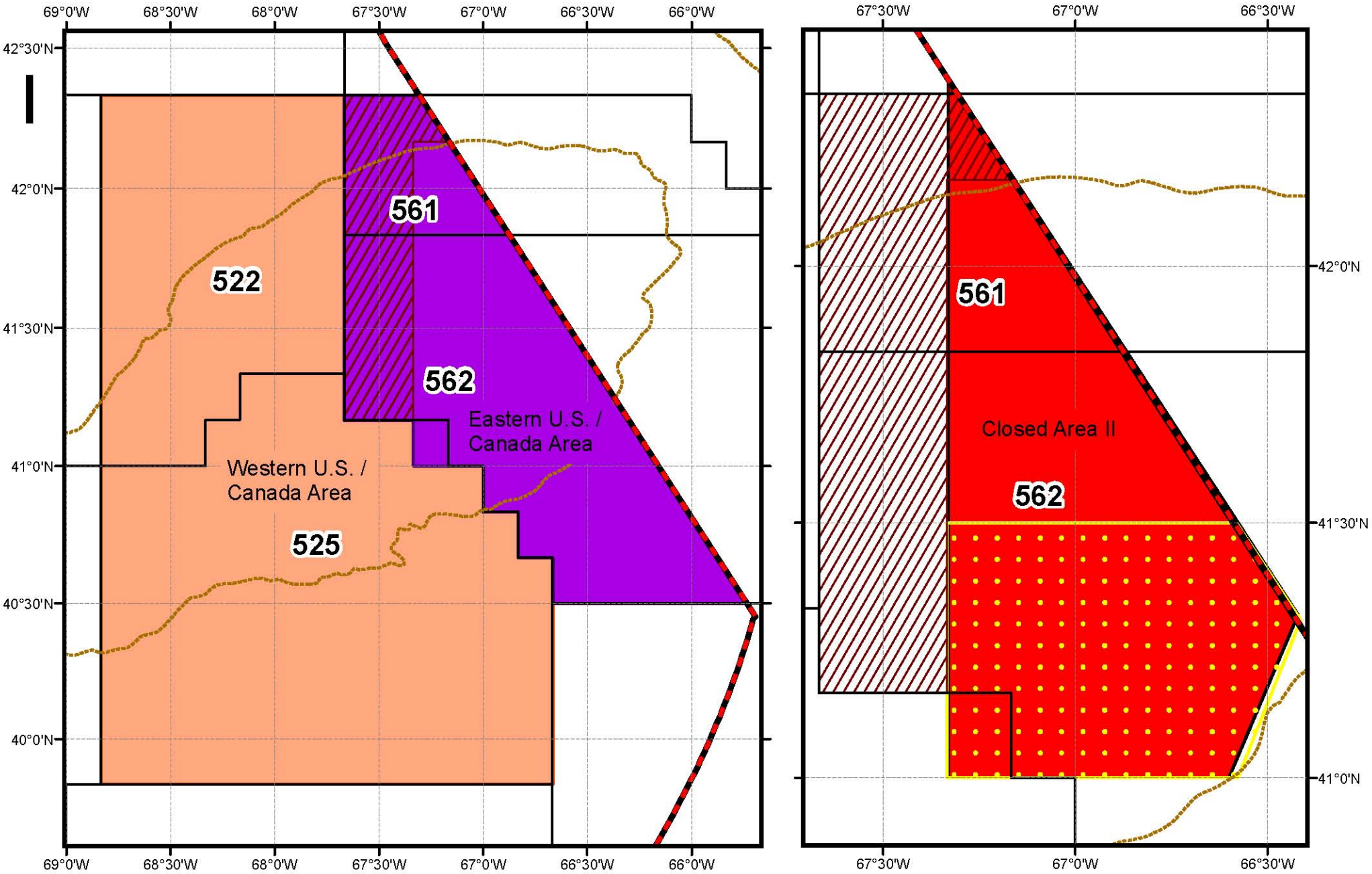


Chart 4. Detail of US/Canada Management Area and SAPs

Do not use for navigation

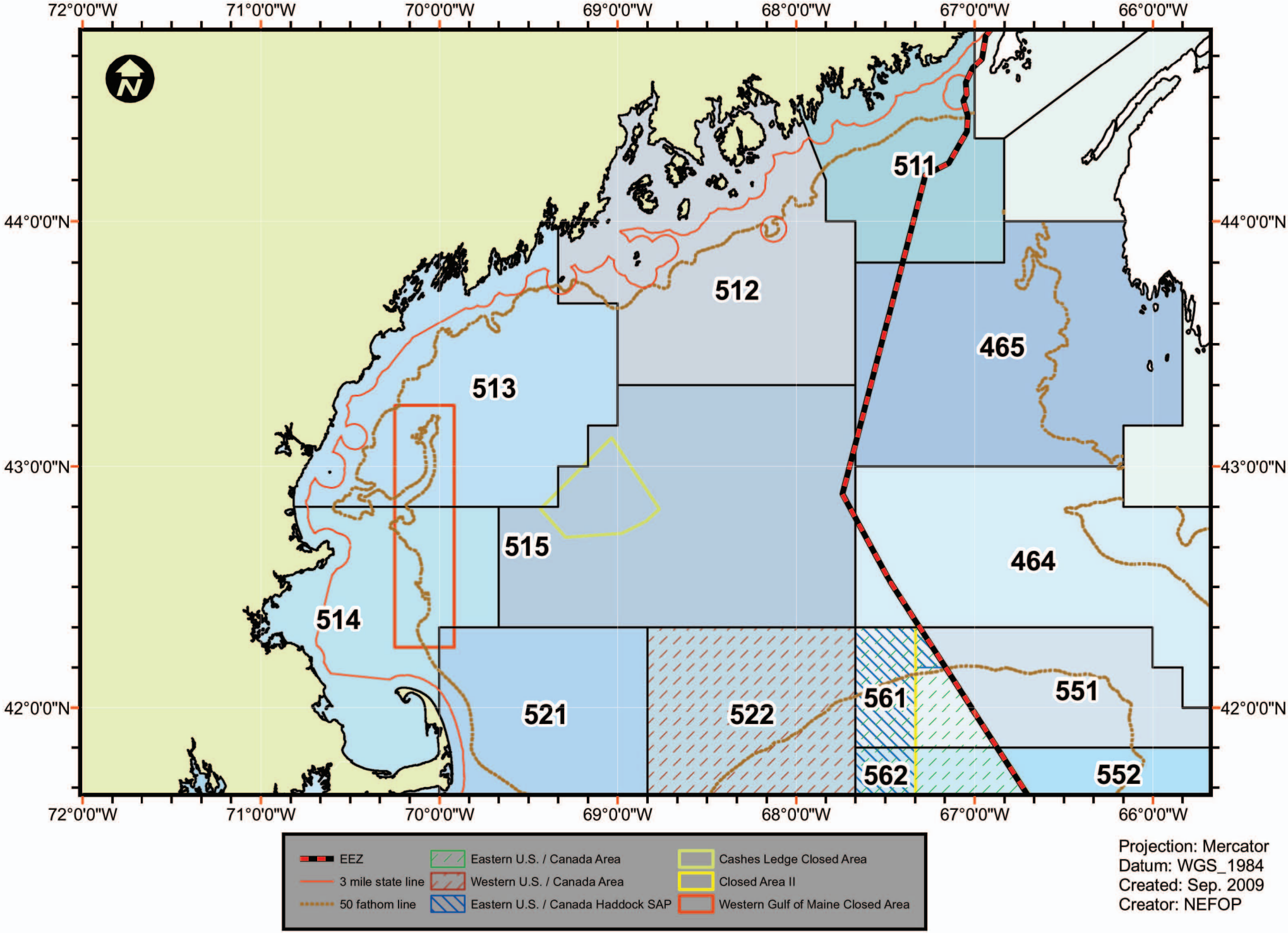


EEZ
50 fathom line
Eastern U.S. / Canada Area (VMS Area 2)
Western U.S. / Canada Area (VMS Area 4, 4+)
Closed Area II
Eastern U.S. / Canada Area Haddock SAP
Closed Area II Scallop Access Area

Projection: Mercator
Datum: WGS_1984
Created: June 2009
Creator: NEFOP

Chart 2a. Gulf of Maine

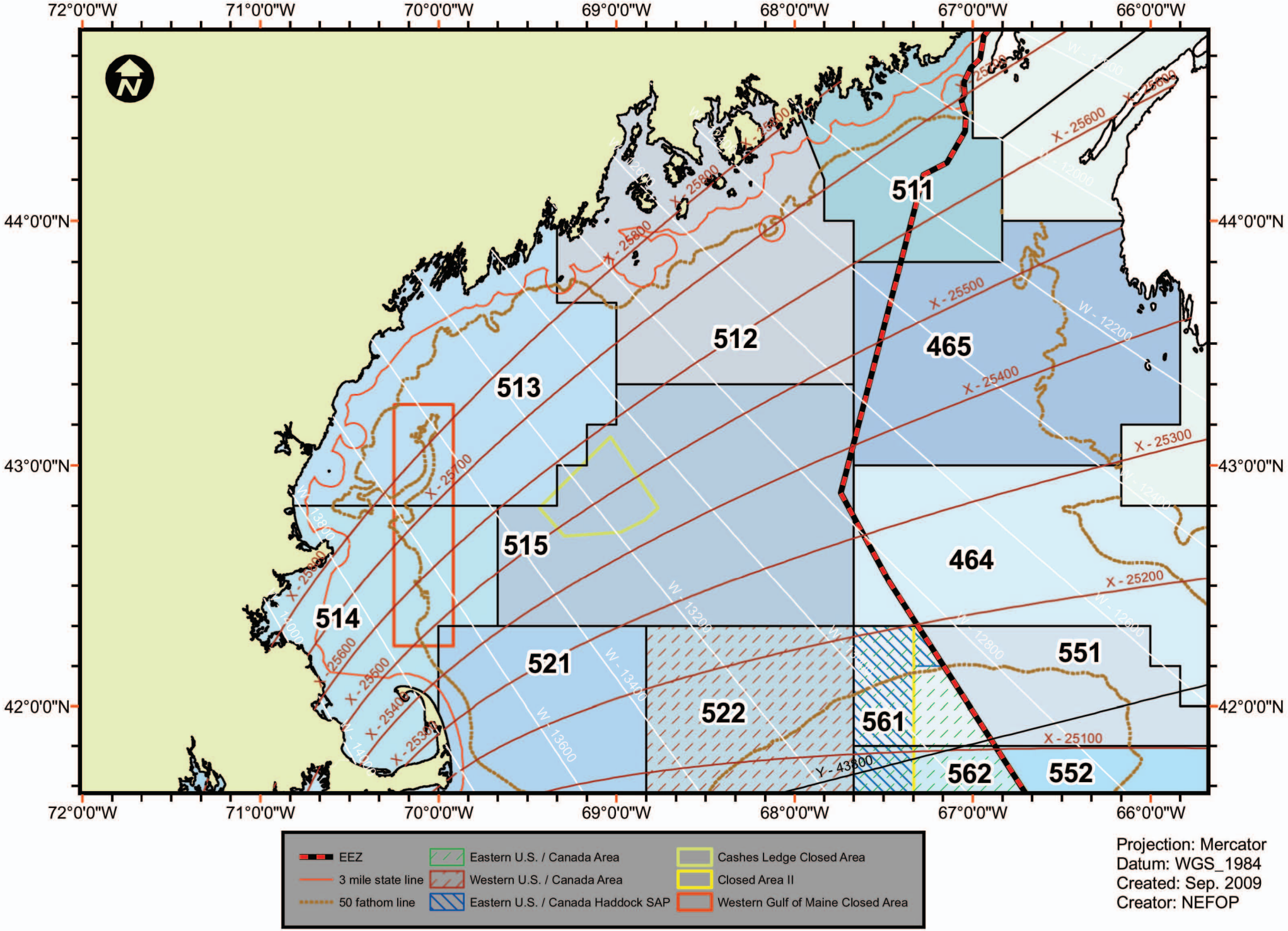
Do not use for navigation



Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 2b. Gulf of Maine with Loran Lines

Do not use for navigation

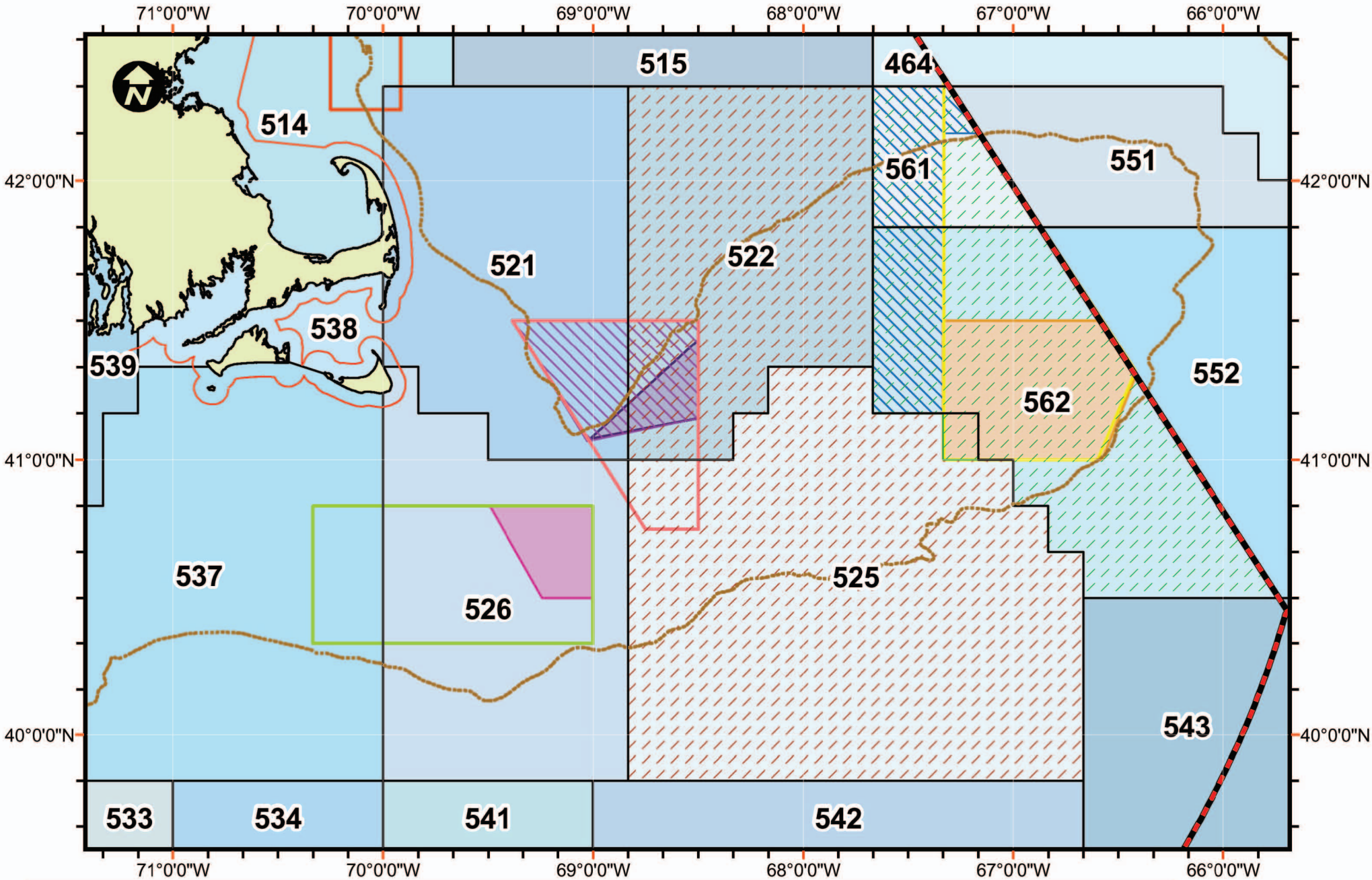


EEZ	Eastern U.S. / Canada Area	Cashes Ledge Closed Area
3 mile state line	Western U.S. / Canada Area	Closed Area II
50 fathom line	Eastern U.S. / Canada Haddock SAP	Western Gulf of Maine Closed Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 3a. Georges Bank

Do not use for navigation

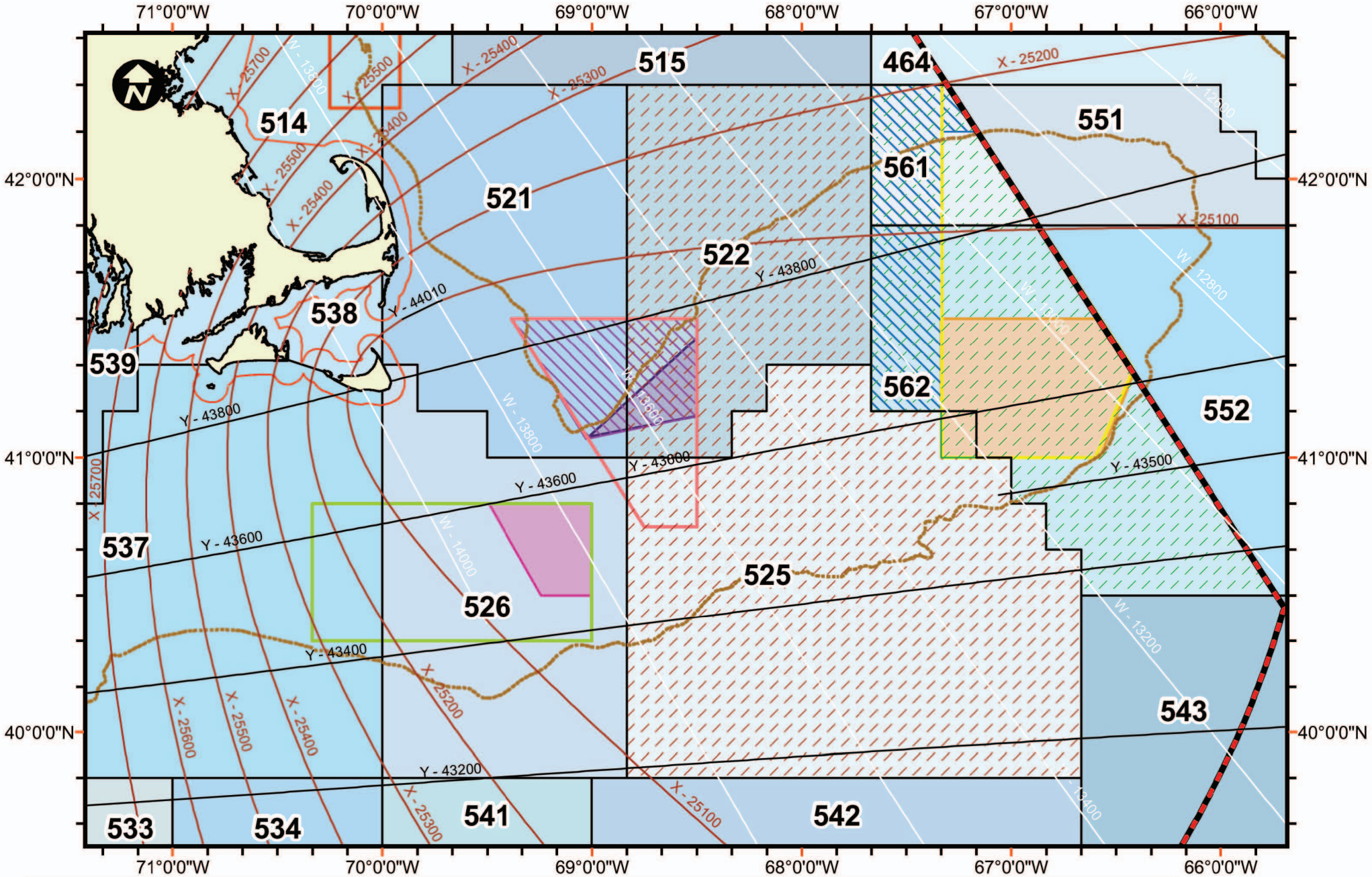


EEZ
3 mile state line
50 fathom line
Eastern U.S. / Canada Area
Western U.S. / Canada Area
Closed Area I
Closed Area II
Nantucket Lightship Closed Area
Western Gulf of Maine Closed Area
Closed Area I Hook Gear Haddock SAP
Eastern U.S. / Canada Haddock SAP
Closed Area I Access Area
Closed Area II Access Area
Nantucket Lightship Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 3b. Georges Bank with Loran Lines

Do not use for navigation

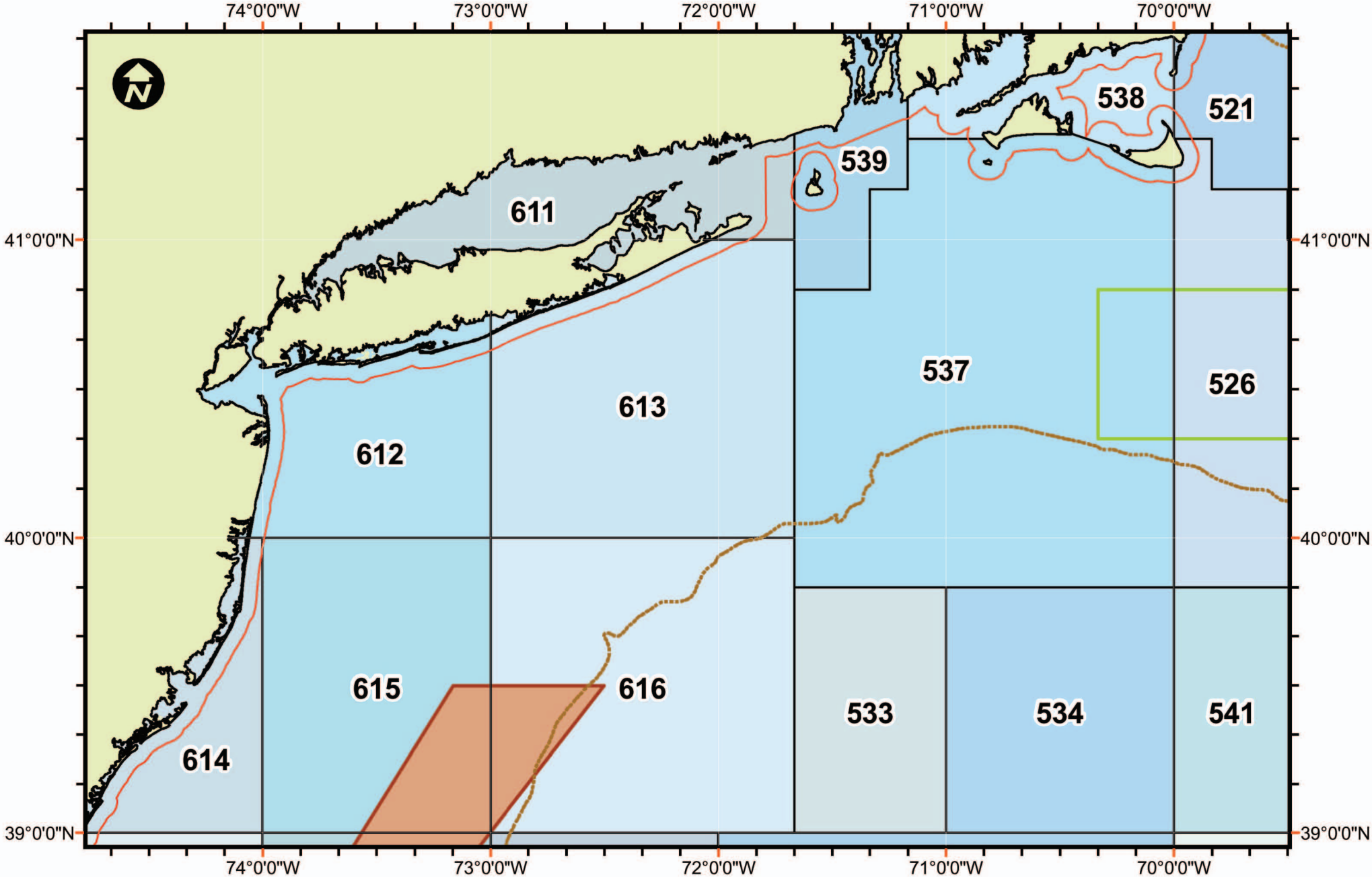


EEZ
3 mile state line
50 fathom line
Eastern U.S. / Canada Area
Western U.S. / Canada Area
Closed Area I
Closed Area II
Nantucket Lightship Closed Area
Western Gulf of Maine Closed Area
Closed Area I Hook Gear Haddock SAP
Eastern U.S. / Canada Haddock SAP
Closed Area I Access Area
Closed Area II Access Area
Nantucket Lightship Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 5a. Southern New England

Do not use for navigation

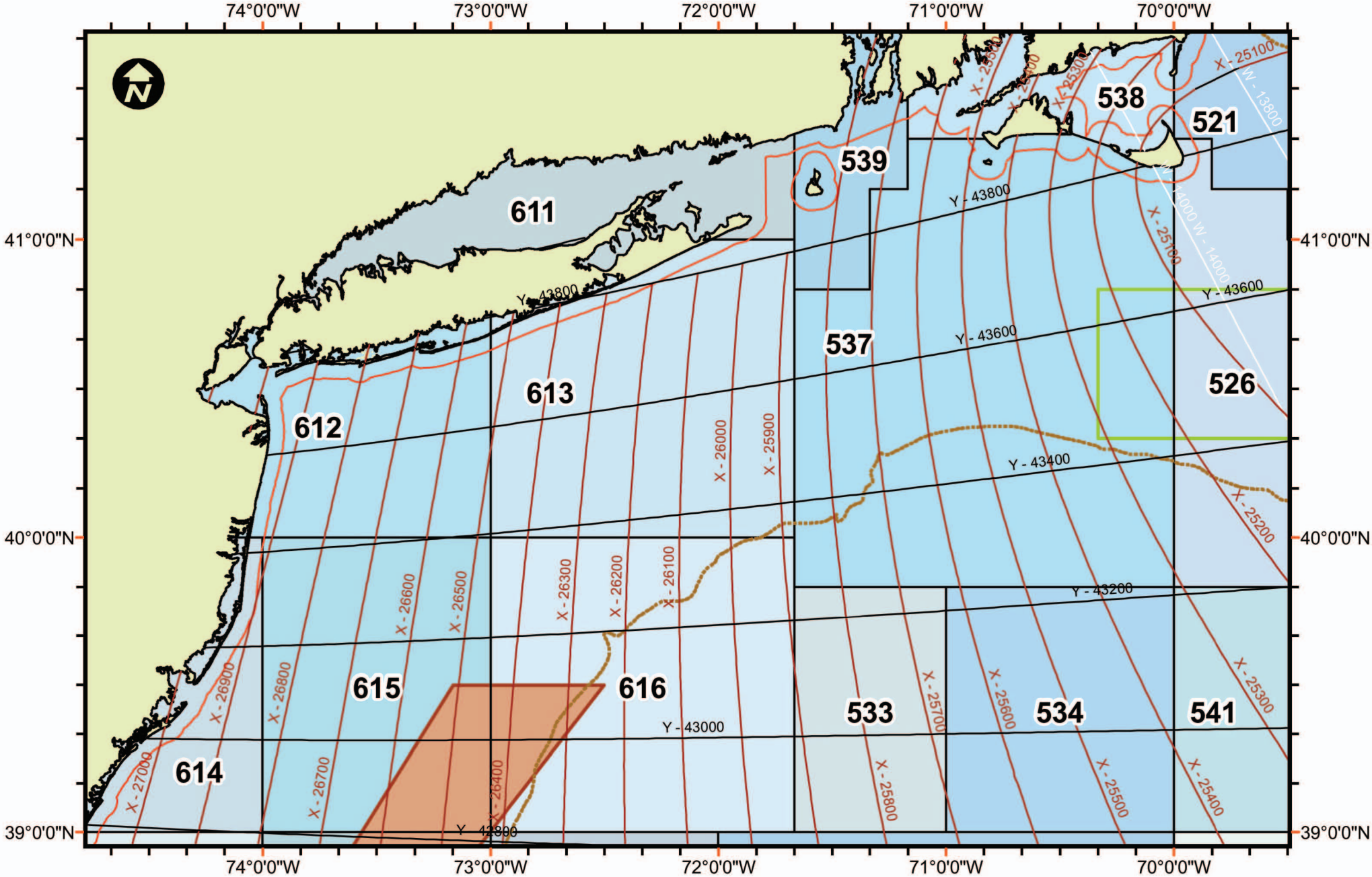


3 mile state line
50 fathom line
Nantucket Lightship Closed Area
Hudson Canyon Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 5b. Southern New England with Loran Lines

Do not use for navigation

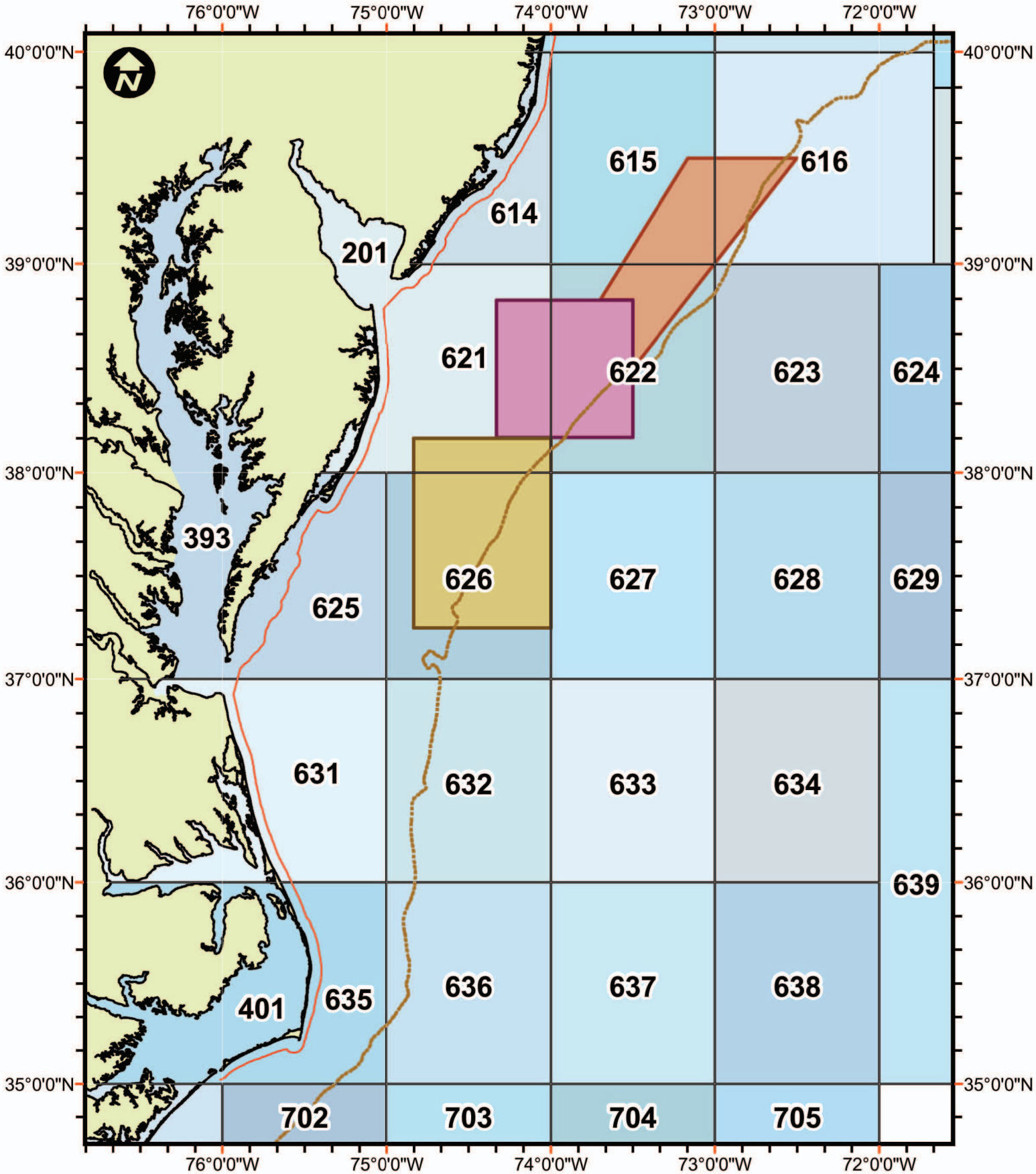


3 mile state line
50 fathom line
Nantucket Lightship Closed Area
Hudson Canyon Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 6a. Mid-Atlantic

Do not use for navigation

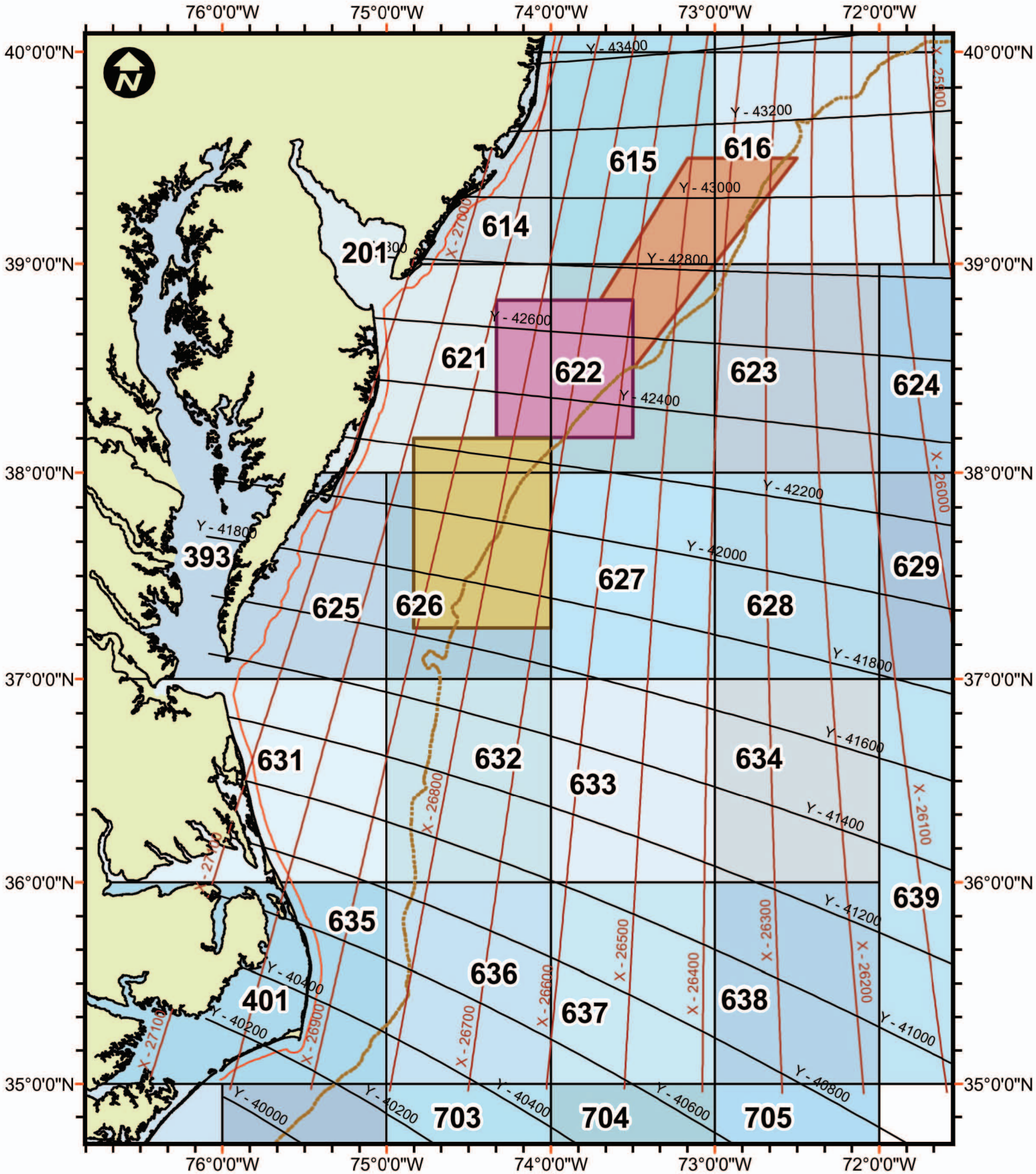


3 mile state line
50 fathom line
Hudson Canyon Access Area
Elephant Trunk Access Area
Delmarva Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP

Chart 6b. Mid-Atlantic with Loran Lines

Do not use for navigation



3 mile state line
50 fathom line
Hudson Canyon Access Area
Elephant Trunk Access Area
Delmarva Access Area

Projection: Mercator
Datum: WGS_1984
Created: Sep. 2009
Creator: NEFOP