

Common Code Lists

Program Codes

- 000** - Standard Sea Sampling Trip
- 010** - Training Trip
- 020** - Alternative Platform
- 042** - Atlantic States Marine Fisheries Commission
- 044** - NY State Observer Coverage
- 045** - Herring Groundfish Closed Area
- 101** - Pinger Tester Trips
- 130** - US/Canada Management Area
- 150** - Regular B-DAS Program
- 170** - Small Mesh Redfish Exemption
- 171** - SNE Monkfish ASM Exemption
- 201** - Scallop Access Area, Nantucket Lightship Closed Area
- 202** - Scallop Access Area, Closed Area I
- 203** - Scallop Access Area, Closed Area II
- 204** - Scallop Access Area, Hudson Canyon
- 206** - Scallop Access Area, Elephant Trunk
- 207** - Scallop Access Area, Delmarva
- 230** - At-Sea Monitoring (ASM)
- 231** - ASM, US/Canada Management Area
- 232** - ASM, Regular B-DAS Program
- 233** - ASM, Closed Area I Haddock Hook SAP
- 234** - ASM, Closed Area II Yellowtail/Haddock Hook SAP
- 235** - ASM, Small Mesh Redfish Exemption
- 240** - ASM, Closed Area EFP

Gear Codes

- Trawl, Otter
 - 050** - Bottom, Fish
 - 057** - Bottom, Haddock Separator
 - 054** - Bottom, Ruhle
 - 052** - Bottom, Scallop
 - 058** - Bottom, Shrimp
 - 053** - Bottom, Twin
 - 370** - Midwater
 - 170** - Midwater Paired
- Gillnet
 - 105** - Anchored-floating, Fish
 - 116** - Drift-floating, Fish
 - 115** - Drift, Large Pelagic
 - 117** - Drift-sink, Fish
 - 100** - Fixed/Anchored, Sink, Other/NK Species
 - 102** - Stake, Other
- Dredge
 - 386** - Clam, Hydraulic
 - 381** - Other/NK Species
 - 132** - Scallop, Sea
- Longline
 - 010** - Bottom
 - 040** - Pelagic
 - 060** - Troll Line, Other
- HandLine
 - 020** - Handline (Rod & Reel)
 - 021** - Auto Jig
- Purse Seine
 - 121** - Herring
 - 122** - Mackerel
 - 123** - Menhaden
 - 120** - Other/NK Species
 - 124** - Tuna
 - 360** - Scottish Seine
- Pot & Trap
 - 200** - Lobster Offshore, NK
 - 301** - Blue Crab
 - 183** - Conch
 - 300** - Crab Other
 - 181** - Fish
 - 186** - Hagfish
 - 180** - Other/NK Species
- Beam Trawl
 - 353** - Fish
 - 350** - Other/NK Species
 - 352** - Scallop
- Harpoon
 - 030** - Other/NK Species
 - 031** - Swordfish
- Other
 - 070** - Haul Seine, Beach, Common
 - 142** - Pound Net, Fish
 - 320** - Fyke Net, Other/NK Species

Time Lost Reason Codes

- 00** - Unknown.
- 01** - Gear conflict with another vessel
- 02** - Gear damage repair
- 03** - Engine repair
- 04** - Awaiting arrival of other vessel, e.g., pair trawling or offloading
- 05** - Coast Guard boarding
- 06** - Medical emergency, e.g., 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 (e.g., 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 (e.g., 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 the 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*

*Other/Combo - COMMENT

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*

Bait Kind Codes

- 00** - Unknown
- 01** - Mackerel
- 02** - Herring
- 03** - Squid
- 04** - Artificial
- 05** - Redfish
- 06** - Sardine
- 07** - Scad
- 08** - Skate
- 09** - Clams
- 10** - Fish with binders/casings
- 11** - Eel
- 12** - Menhaden
- 13** - Tuna
- 97** - Mixed*
- 99** - Other*

Bait Type Codes

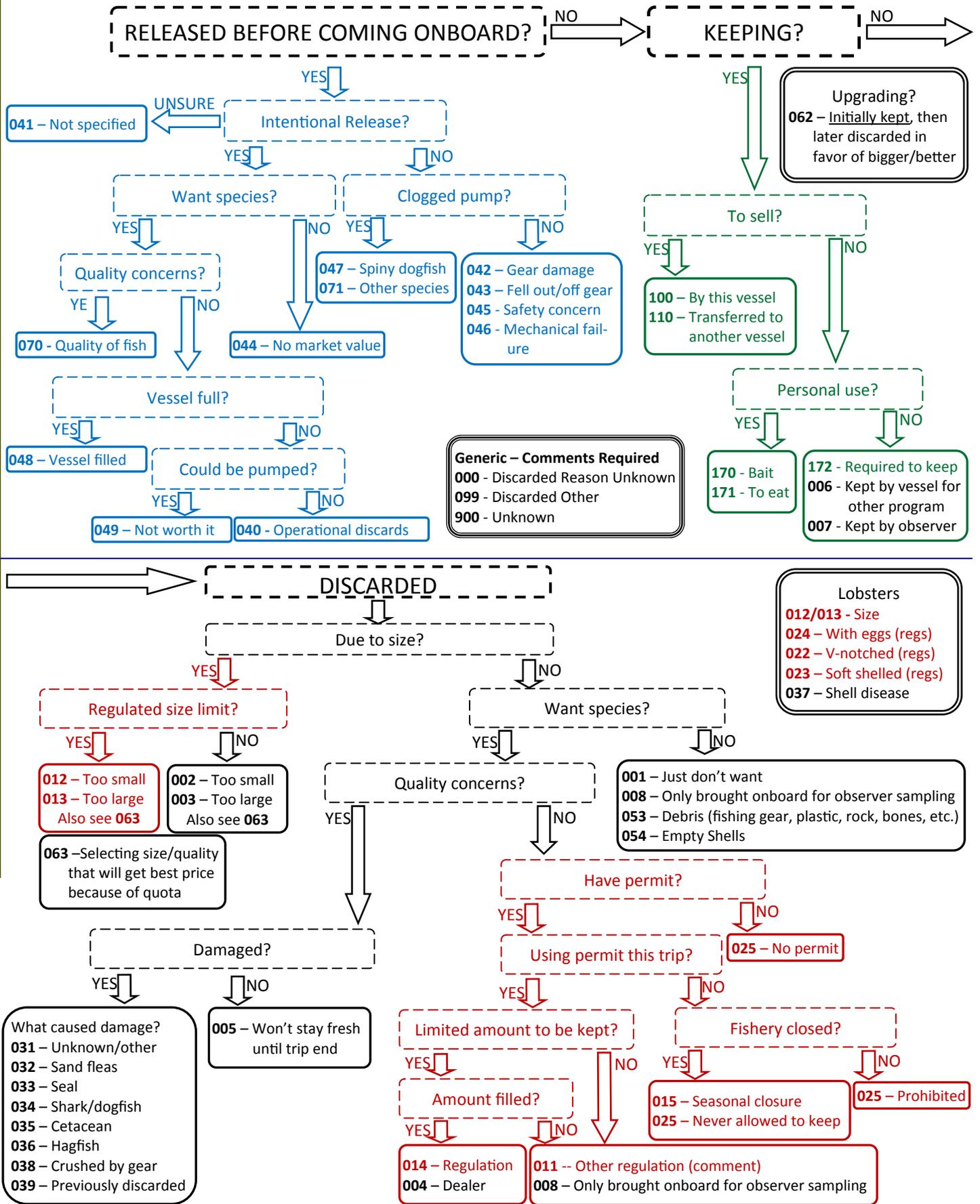
- 0** - Unknown
- 1** - Whole
- 2** - Cut
- 3** - Live
- 4** - Processed
- 9** - Other*

Bait Condition Codes

- 0** - Unknown
- 1** - Prev. frozen
- 2** - Fresh
- 3** - Salted
- 6** - Frozen
- 7** - Semi-frozen
- 8** - Combination*
- 9** - Other*

Disposition Codes

Full List OPM Appendix M (A.14)



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Gear Condition Codes

000 - Unknown
990 - Other. COMMENT

Bottom Trawl, Pair And Single Mid-water Trawl, Scallop Trawl, Twin Trawl

- 010 - No gear damage/very few small, scattered holes
- 020 - Wings twisted/torn, not exceeding 50% of meshes
- 030 - Wings twisted/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 25% of meshes
- 070 - Belly torn, exceeding 25% 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 of code 02, 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

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 54, but not total, net destruction.
- 580 - Total net destruction

Gillnet and Beach Seine Haul Log

- 210 - No gear damage/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/balled up
- 240 - 50% or more of the nets have less than 50% of the meshes torn/balled up
- 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/balled up
- 280 - 50% or more of the nets have 50% or more of the meshes torn/balled up
- 290 - Nets in the string totally balled up

Longline Haul Log

- 610 - No gear damage/only a few hooks missing
- 620 - Less than 50% of gear fouled, *e.g.*, weather/oceanic conditions caused the gear to become tangled/ otherwise lowered the fishability of the gear
- 630 - Greater than 50% of gear fouled, *e.g.*, weather/oceanic conditions caused the gear to become tangled/ 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/ completely lost

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 (*e.g.*, hose leak or blown, winch broken)
- 717 - Obstruction in the gear, such as large amount of fixed gear, boulders
- 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/insignificant gear damage
- 820 - Dredge turned over
- 830 - Towline fouled around hose
- 840 - Bag split
- 850 - Bottom of dredge fractured
- 860 - Bent knife frame
- 870 - Broken knife frame
- 880 - Broken knife/blade

Standard Conversions

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 (hundredth)
- milli = 0.001 (thousandth)

Nautical Units

- 1 fathom = 6 feet
- 1 fathom = 1.83 meters
- 1 nautical mile = 6076 feet
- 1 nautical mile = 1852 meters
- 1 nautical mile = 1.15 statute miles

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 statute mile = 5280 feet
- 1 statute mile = 1.61 kilometers
- 1 kilometer = 0.62 statute miles

Mass

- 1 pound = 453.59 grams
- 1 pound = 0.45 kilograms
- 1 kilogram = 2.20 pounds
- 1 standard ton = 2000 pounds
- 1 metric ton = 2204.60 pounds
- 1 metric ton = 10,000 kilograms

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

Gillnet Twine Size

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	-

LORAN Station Codes

W	1xxxx
X	2xxxx
Y	4xxxx
Z	6xxxx

Compass Bearings

N	0	S	180
NNE	23	SW	225
NE	45	WSW	248
E	90	W	270
ESE	113	WNW	293
SE	135	NW	315
SSE	158	NNW	326

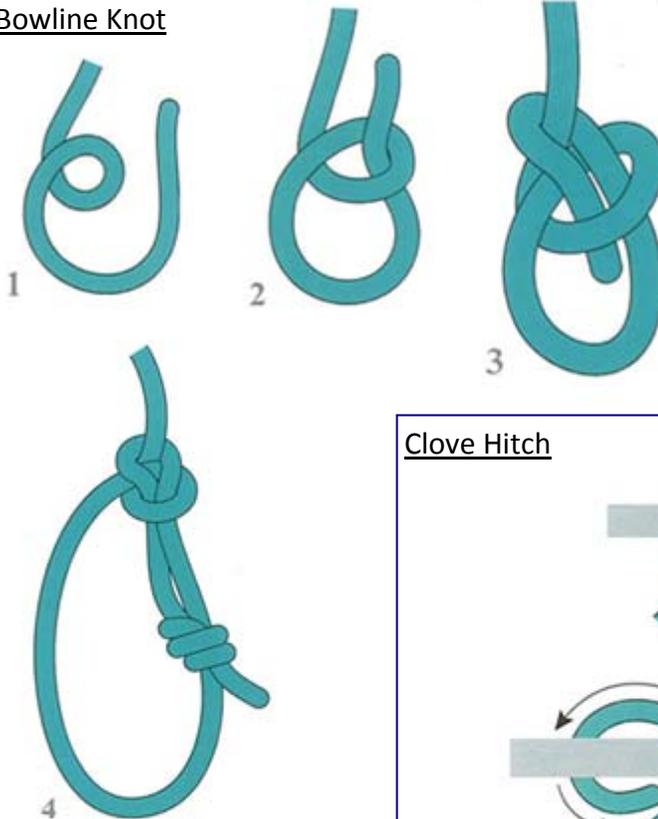
Minutes to Tenths of Hours

Minutes	Hours
0-2	0.0
3-8	0.1
9-14	0.2
15-20	0.3
21-26	0.4
27-32	0.5
33-38	0.6
39-44	0.7
45-50	0.8
51-56	0.9
57-59	1.0

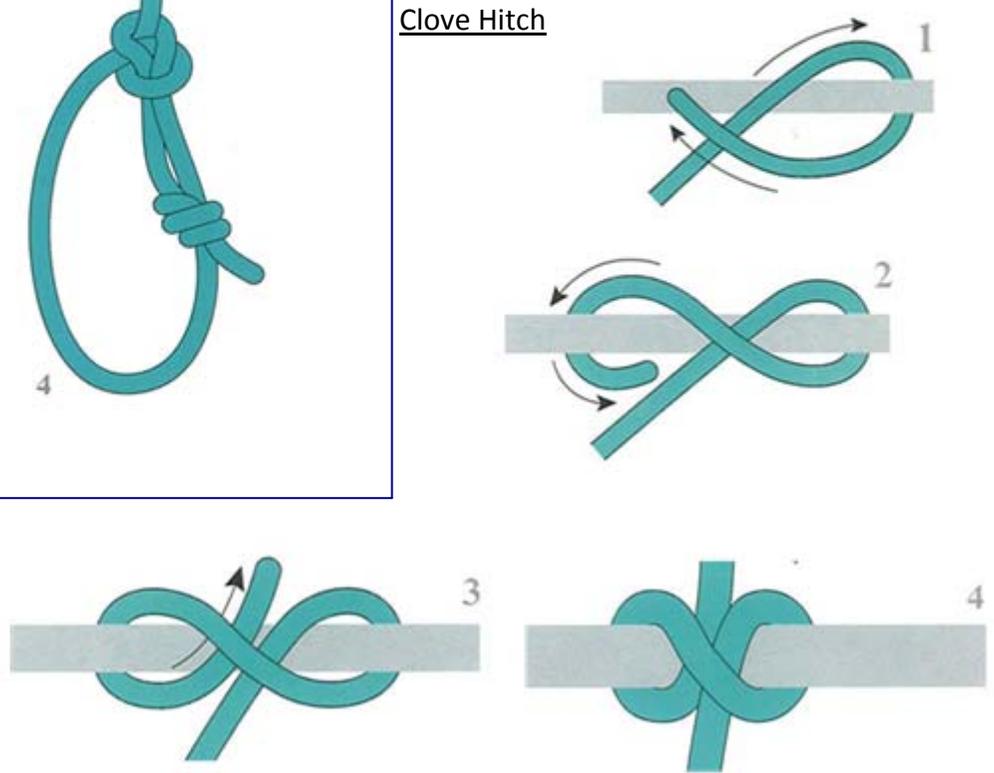
24-Hour Clock

12-hr	24-hr
12:00 am	0000
midnight	
1:00 am	0100
2:00 am	0200
3:00 am	0300
4:00 am	0400
5:00 am	0500
6:00 am	0600
7:00 am	0700
8:00 am	0800
9:00 am	0900
10:00 am	1000
11:00 am	1100
12:00 pm	1200
noon	
1:00 pm	1300
2:00 pm	1400
3:00 pm	1500
4:00 pm	1600
5:00 pm	1700
6:00 pm	1800
7:00 pm	1900
8:00 pm	2000
9:00 pm	2100
10:00 pm	2200
11:00 pm	2300

Bowline Knot



Clove Hitch

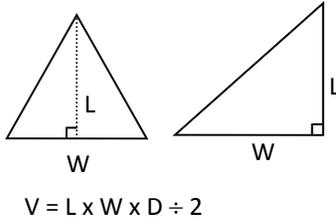


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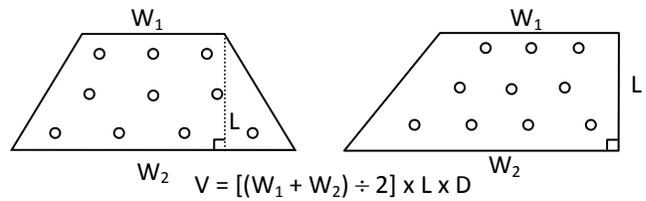
Area Calculation Examples

V = Volume
 L = Length
 W = Width
 D = Depth
 $\pi = 3.14$
 o = suggested locations to take depth measurements

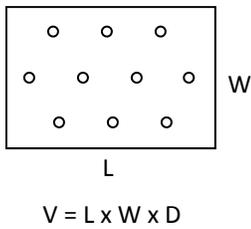
Triangle



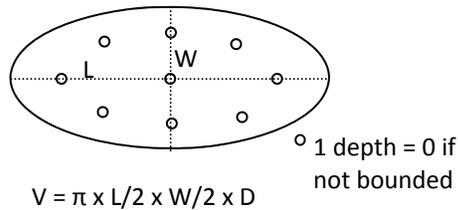
Trapezoid



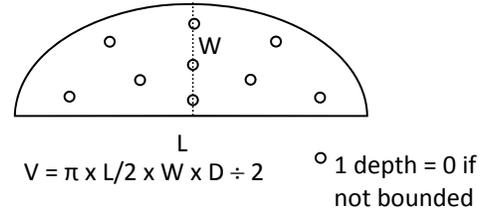
Rectangle



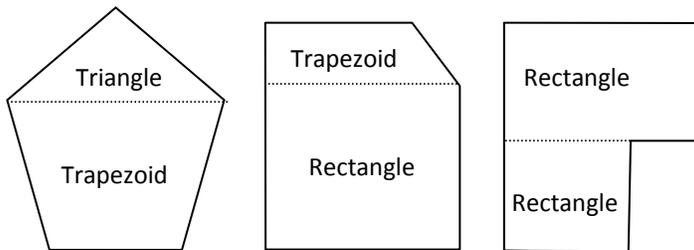
Oval



Half-Oval



Combination Shapes



Working with gaps in catch



Many Small Holes
 Spread catch to fill in holes



Checker Pen not Full
 Re-measure pile to only include area with catch; add 1 '0' depth

Standard Volumes

Orange Basket

$V = \pi \times (W_1^2 + W_1W_2 + W_2^2) \times D \times 4/3$
 FSB Standard:
 $W_1 = 1.42\text{ft}$ $W_2 = 1.12\text{ft}$ $D = 1.17\text{ft}$
 $V = 1.47\text{ft}^3$



Fish Tote

$V = (W_1 + W_2) \times L \times D \div 2$
 FSB Standard:
 $W_1 = 1.31\text{ft}$ $W_2 = 1.39\text{ft}$
 $L = 2.16\text{ft}$ $D = 0.91\text{ft}$
 $V = 2.65\text{ft}^3$



55-Gallon Barrel/Cylinder

$V = (\text{Circumference}^2 \times \text{Height}) \div (4\pi)$
 Example (no FSB standard):
 Circumference = 6.03ft $D = 2.92\text{ft}$
 $V = 8.45\text{ft}^3$



Volume-to-Volume Method Reminders

- Sketch and measure the checker pen or pile area
 - Include inside measurements for complicated shapes (not just perimeter)
- Collect 10 depths systematically
 - Before pen is flooded or catch is sorted
 - From all parts of the pile (tic-tac-toe)
 - Don't target high or low spots
 - Include a '0' for piles not bounded on all sides
- Collect representative subsamples
 - From multiple parts of the pile (top-middle-bottom)
 - Fill baskets and totes flush to the top, not heaped
 - Don't target certain species or animals
- Sort subsample by species and disposition
 - Ask captain or crew for help determining kept vs. discard
 - **Do not assume**
- Subsample weights must be actual, not estimates
 - For low weights, use your most precise scale
- Get actual weights on rare species



Subsampling Guide

Problem	Possible Solutions
Measuring checker pen area	Be prepared - calculate area on steam out, before fishing activity "Keep it simple" - stick to shapes listed on catch estimation worksheet Measure all dimensions to the tenths place
Obtaining depths	Visualize a grid (tic-tac-toe) and take a depth from each section Push depth stick in at angle until it hits the deck, then stand upright Measure down from the top of the checker pen boards, if easier
Conveyor belts Deckloading Fast-working crew	Communicate with crew before fishing starts Review sampling strategies Have a plan, and back-up plan Get subsamples as soon and as quickly as possible
Collecting subsample	Plan ahead - estimate volume of checker pen and determine how many baskets/totes will be needed (see table below) Visualize a grid (tic-tac-toe) overlaid on the pile and collect subsamples from each section
Storing subsample	Communicate with crew about sampling area Use totes instead of baskets Store sample in an unused checker or pen
Sorting subsample	Communicate with captain/crew Sort by species, then ask crew to sort by kept/discard Account for <u>all</u> species
Catch estimation worksheet Calculations/Documentation	Closely read formulas (trapezoids, ovals) Follow decimal place guides on worksheet Double-check calculations Compare to captain/visual estimates, comment when significantly different Avoid excessive species name abbreviations

Approximate Size	Est. Catch Volume	# Baskets OR # Totes needed for 10-20% subsample
5' x 5' x 1' or 5' x 10' x 0.5'	25ft ³	2 - 3 1 - 2
5' x 5' x 2' or 5' x 10' x 1'	50ft ³	3 - 7 2 - 4
5' x 10' x 1.5' or 10' x 10' x 0.8'	75ft ³	5 - 10 3 - 6
5' x 10' x 2' or 10' x 10' x 1'	100ft ³	7 - 14 4 - 8
5' x 10' x 2.5' or 10' x 10' x 1.3'	125ft ³	9 - 17 5 - 9
10' x 10' x 1.5' or 10' x 15' x 1'	150ft ³	10 - 20 6 - 11

Example: 5.6' x 11.2' x 0.8' is approximately 5' x 10' x 1', so you should aim for 3-7 baskets or 2-4 totes.
Reminder: Examples are rounded for simplicity. Continue to record actual measurements on your logs.



Strategies for Handling Deckloading

- Communicate with captain and crew to determine if they are going to deckload
 - Ask them not to throw discards overboard, especially finfish
- Be present for all hauls in a deckload period (may have to adjust On/Off-Watches)
- Be organized and keep track of pile measurements
- If crew sorts catch during the deckload, keep track of how many kept scallop baskets are removed and weigh any other removed species
- Once deckloading has stopped and crew finishes sorting catch, record baskets counts for kept scallops and actual weights for all other species

Scenario 1: Starting and ending with a clear deck

- Keep track of number of scallop baskets
 - Use basket count or volume-to-volume method to determine weights
- Record total actual weights for all other species for the entire deckload period
 - Separate by species and disposition code
 - If actual weights cannot be obtained, then use other catch estimation methods
 - Priority order: (1) tally/basket count, (2) volume-to-volume, (3) visual estimate
- Divide total weights evenly amongst all hauls (cumulative sum)
 - Round to nearest whole pound
 - All hauls will have the same weights

Scenario 2: Start with a clear deck and end with catch on deck

- Keep track of kept scallops and other catch (finfish) throughout entire deckload
- Measure the remaining volume of the catch pile before going Off-Watch
- Collect subsample baskets of the remaining pile from multiple locations (sample top, middle, and bottom)
 - Use volume-to-volume method to extrapolate weights
- Divide those weights by number of hauls in the deckload period
- *NOTE: may involve using combinations of catch estimation methods for individual species per disposition*
 - *Example: 98 = 02 + 07 (combination volume-to-volume and cumulative sum)*



Scenario 3: Start with catch on deck

- Must adjust sampling so catch from previous hauls are not accounted for on new observed hauls
- Measure volume of the remainder (existing pile)
- After the first pile (of the On-Watch) is dumped, measure the pile again
- Collect a subsample from just the top of the pile (the pile was just dumped)
 - **Volume** of new haul = **Total** volume after new haul dumped - **Remainder** volume before new haul dumped
 - Use volume-to-volume to extrapolate out weights of catch
- Repeat for all hauls in deckload period
- Do not include baskets from previous hauls during Off-Watch



Strategies for Handling Conveyors

Vessels with conveyors can pose additional challenges to observers. In the ideal conveyor situation there will be few enough discards that you can collect all actual weights. If actual weights cannot be obtained, do your best to utilize one of the 3 strategies within this guide. There are a few things to remember that will help you utilize these strategies.

- Communicate with the captain and crew to determine if the discard chute can be removed
- Take checker pen depths as soon as it is safe to do so because the checker pen may quickly be flooded or the conveyor may start moving catch
- Keep account of kept catch containers and calculate volumes of them when necessary

Sampling Strategy 1: Basket Count of Discards

When to use:

- Crew is picking all kept species off of conveyor, and
- Observer can collect discards at end of conveyor

What to Do:

- Collect and count baskets/totes of discards at end of conveyor by removing chute and allow all discards to drop into baskets/totes (total discards)
- Periodically save basket/totes for subsample (target 20%), dump others overboard
- Sort through basket/totes and obtain species weights
- Calculate total discards using the volume to volume section of the CEW
- Obtain actual weights or estimates of kept catch

8 baskets of discards X 1.473 = 11.76ft³
 3 basket subample X 1.473 = 4.41ft³
 Multiplier = 11.76ft³/4.41 ft³ = 2.67ft³

A) Total Haul Vol. 11 76 ft ³	B) Total Subsample Vol. 3 Basket(s) X 1.47 ft ³ = 4 41 ft ³ Tote(s) X 2.65 ft ³ = _____ ft ³ Other(s) X _____ ft ³ = _____ ft ³	C) Sample Weight Multiplier (A ÷ B) 2 67 >> Copy to Front >>
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Sampling Strategy 2: Subtract kept catch volume from total catch volume.

When to use:

- Not possible to use Strategy 1 due to high volume of discards or conveyor setup, and
- Crew is picking all kept catch off conveyor, and
- Observer can collect discards at end of conveyor

What to do:

- Obtain total catch volume from checker pen
- Collect subsample baskets/totes from the end of the conveyor at the beginning, middle and end of catch processing
- Sort discard subsample
- Obtain volume of kept catch by counting catch containers
- Obtain actual weights or basket/tote counts of kept catch

Total Volume = 100.59ft³
 Kept Volume = 19 totes X 2.65ft³ = 50.35ft³
 Discard Volume =(Total Vol - Kept Vol) = 100.59ft³ - 50.35ft³
 =50.24ft³

A) Total Haul Vol. 100 59 ft ³	B) Total Subsample Vol. 10 Basket(s) X 1.47 ft ³ = 14 70 ft ³ Tote(s) X 2.65 ft ³ = _____ ft ³ Other(s) X _____ ft ³ = _____ ft ³	C) Sample Weight Multiplier (A ÷ B) 3 24 >> Copy to Front >>
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Sampling Strategy 3: Standard volume to volume

When to use:

- Not possible to use strategy 1 or 2 because you cannot collect catch at the end of the conveyor(e.g., chute cannot be removed, winches in way, safety)

What to do:

- Obtain total catch volume from checker pen
- Collect subsamples directly from checker pen
- Obtain kept catch weights by actual weights, basket/tote counts, or tally counts (include kept catch estimates generated by volume to volume in comments for in house comparison)
- Sort Subsample and obtain weights for volume to volume: for species with kept and discarded
 - **A.** Have crew sort to distinguish, or
 - **B.** Keep kept and discard for species as one unit, extrapolate using volume to volume then subtract weight of calculated kept catch. Only use for species with 1 discard code, (see example below)

Strategy 3B.

220lbs of longfin squid in subsample X 5.7(multiplier) = 1255 lbs longfin squid total
 7 totes kept (100) longfin squid X 130lbs average = 910lbs kept longfin squid
 1255lbs total – 910lbs kept = 345lbs discard (012) longfin squid



Surface System Components

Surface System

Configuration of highflyer & buoy attached to the buoyline marking an end of fixed gear



Surface Buoy Marks

- Hull #, Vessel Permit # , or Vessel ID
- Identifies gear to vessel



Buoy Line Marks

- Identifies fishery
- Green = Gillnet
- Red = Lobster

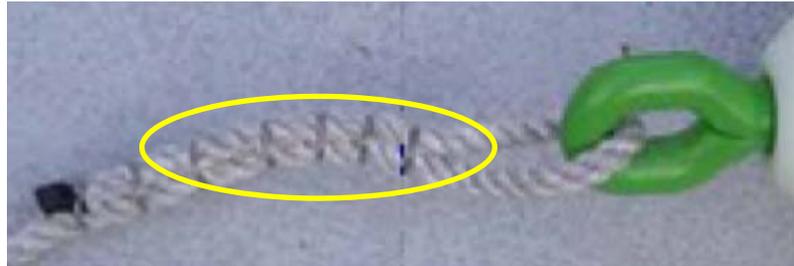


Weak Links:

Breakable components of the gear that will part when subjected to a certain tension load
Used for compliance with Atlantic Large Whale Take Reduction Plan (ALWTRP)



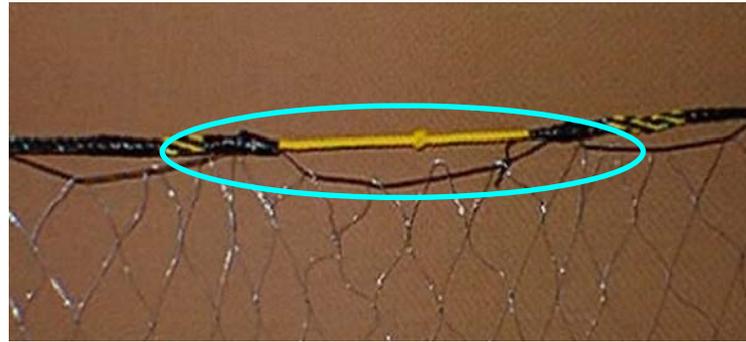
Off-The Shelf



Hog Rings: metal crimps that connect the line and part under a load



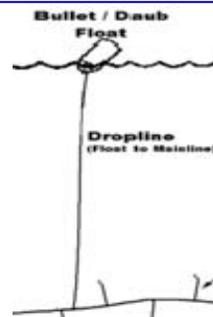
Rope of Appropriate Breaking Strength



Overhand Knot/Jumper Line

Floats & Droplines

Droplines attach a float to mainline or net & are found within a section of gear
Do not confuse with Surface System & Buoyline



Fixed Gear Components

Active Marine Mammal Deterrent Devices (Pingers)

*All 10 KHz

*Color Indicates Brand



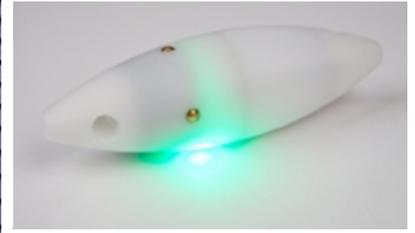
AIRMAR (Yellow)



DUKANE (Red)



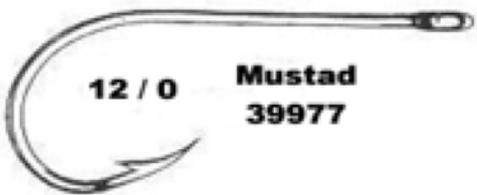
FUMUNDA (White)



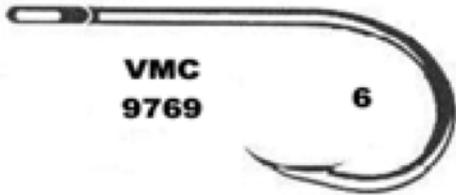
FUTURE OCEANS LED
(White/Green LED)

Hooks

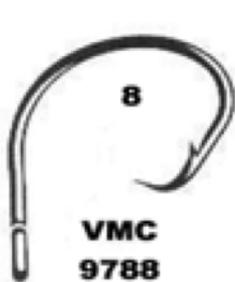
PARTIAL CIRCLE HOOKS



Approximate Scale



CIRCLE HOOKS



Mustad = MUS + 5-8 Digits (Shiny Finish)

VMC = VMC + 4 digits (Matte/Dull Finish)

- Photograph or obtain hook to send in with paper log data if possible
- Ask captain for box or packaging from sale
- Describe hook in comments if still unknown
- Hooks may bend from use (see above diagram)

Anchors

Dead Weight



Chain



Railroad Track



Mushroom

Danforth-Style (Burying Anchor)



Danforth

Other



Kedge



Grapnel

Additional Weights

- NOT anchors
- Used on the leadline
- Do not include the weight of the leadline itself.



Sash Weights

Communication Points for Identifying Trawl Gears

Raised Footrope Trawl*	<ul style="list-style-type: none"> • No ground gear on the sweep (bare wire or chain sweep) • Drop chains at least 42 inches long
Sweepless Trawl*	<ul style="list-style-type: none"> • No sweep attached to drop chains • Drop chains at least 42 inches long
Balloon Trawl*	<ul style="list-style-type: none"> • High mouth, high-rise net • Lighter net material and floats help net fish just off the bottom
Box Trawl	<ul style="list-style-type: none"> • Always 4-seam • Box-shaped, high rise net
Flynet*	<ul style="list-style-type: none"> • High profile net • Wing mesh size of 16-64 inches that slowly tapers • Headrope slightly longer than footrope • Large number of floats– keeps net slightly off bottom
Millionaire Trawl	<ul style="list-style-type: none"> • Always 4-seam, usually 3 bridles • Very large openings in mouth, large meshes in wings • Also called “40-footers”
Eliminator Trawl*	<ul style="list-style-type: none"> • Typically 4-seam, 3-bridle design • Large mesh in wings, square and bottom belly • Ruhle Trawl is a specialized type of Eliminator Trawl
Shuman Trawl*	<ul style="list-style-type: none"> • Very large meshes in mouth • High-opening net • May have kite panels
Monkfish Trawl*	<ul style="list-style-type: none"> • Large wing extensions • Also called an “OLAK”
Flatfish Trawl*	<ul style="list-style-type: none"> • A net targeting flatfish that does not meet the specific criteria for a Flounder Trawl (see back) and is not described by a more specific net type
Scallop Trawl*	<ul style="list-style-type: none"> • A trawl, or twin trawl, that may be used to target scallops • Headrope and footrope may be similar in length
Groundfish Trawl*	<ul style="list-style-type: none"> • Net targeting groundfish that is not described by a more specific net type

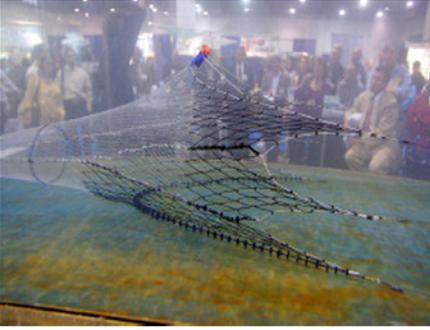
* = Net could either be 2-seam or 4-seam

Before recording “2-Seam Trawl” or “4-Seam Trawl” on a gear log, make sure that none of the gears listed here or on the next page are being used!



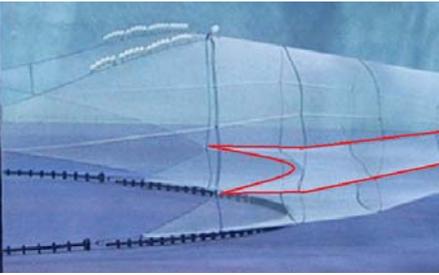
Communication Points for Identifying Trawl Gears

Ruhle Trawl (054)



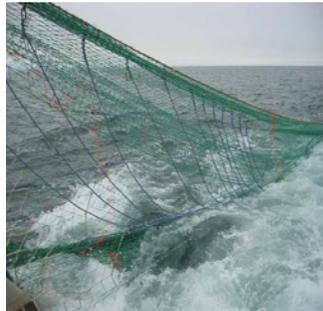
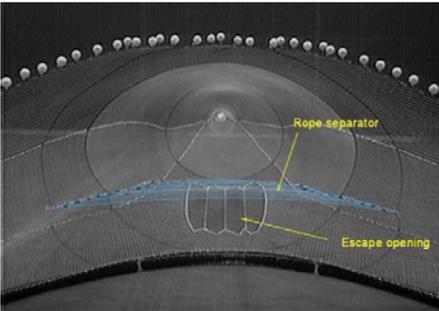
- Large leading meshes (~8 feet) that taper towards the codend
- Kite panels
- 3-bridle configuration
- 4-seam net
- If captain says it is a Ruhle Trawl but it doesn't have these characteristics, record "Eliminator Trawl" (including whether it has a liner or not)

Haddock Separator Trawl (057)



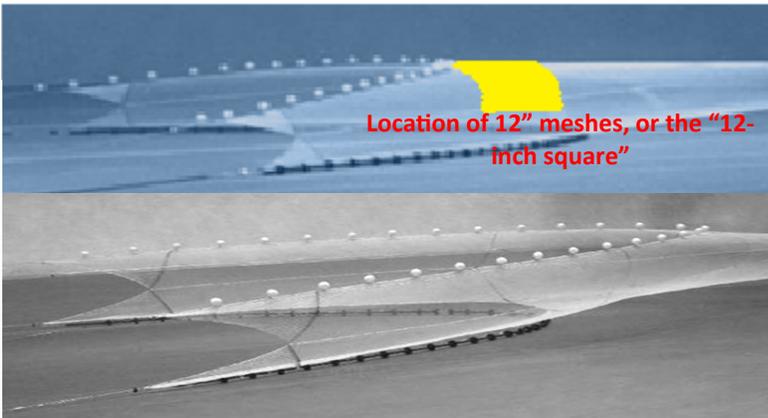
- Mesh separator panel separates closed codend on the top from escape outlet on the bottom
- If escape outlet is closed or the separator panel is removed during the trip and the gear is fished again, fill out a new gear log using gear code "050". Net type will be "Groundfish Trawl". Comment required.
- Could be either a 2-Seam or 4-Seam

Rope Separator Trawl (050)



- 4-seam net
- Horizontal separator panel made from parallel ropes spaced 1-2 feet apart
- Escape outlet in the bottom panel of net
- Vertical lines may be used to maintain the shape of the escape outlet
- If possible, comment on distance between ropes in separator panel and take photos

Flounder Trawl (050)



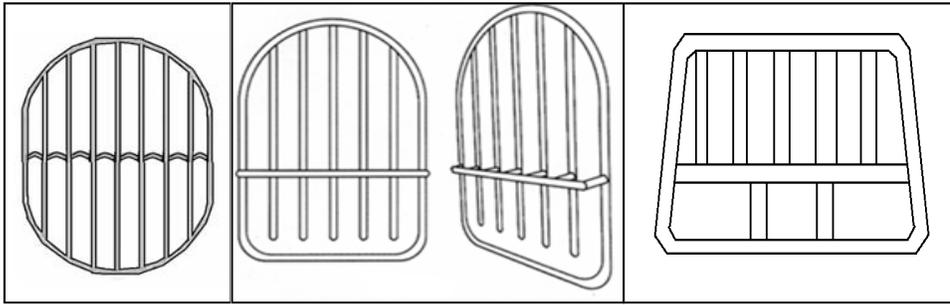
- Section of 12-inch meshes stretching back 10 feet behind head rope and from seam to seam (Sometimes called the 12-inch square)
 - 2-seam net
- Or**
- Headrope at least 30% longer than footrope, creating an "underbite" effect
 - 2-seam net

If captain says his net is a flounder trawl, but it doesn't meet either of the criteria listed above, record it as a flatfish trawl on your gear log



Excluder/Separator Devices and Escape Outlets

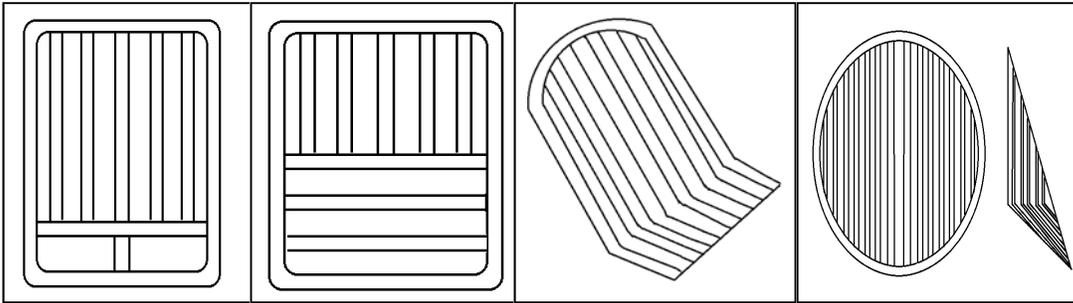
Turtle Excluder Device Types



Standard

Weedless

Whelk

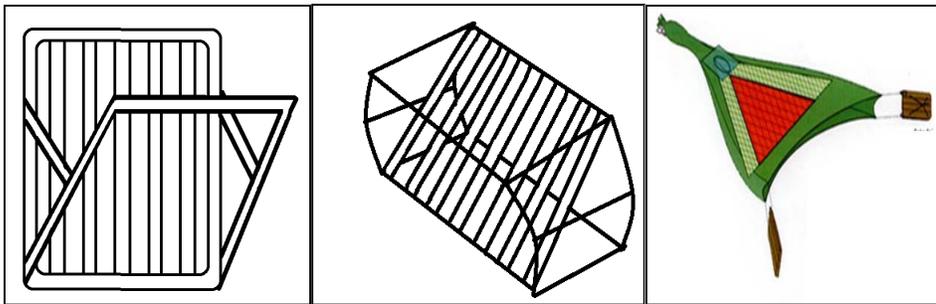


Conch

Flounder

Bent Pipe

Bent Rod

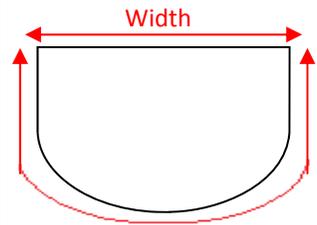
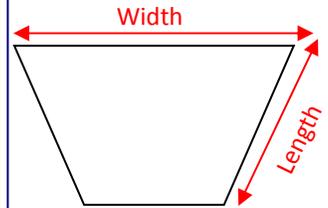
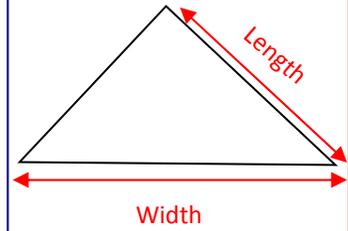


Fixed Angle

Hooped

Parker Soft

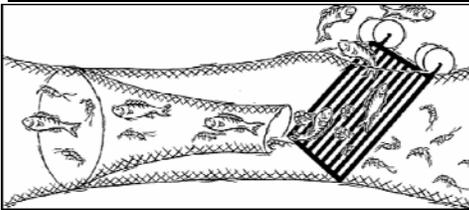
Measuring Bycatch Reduction Devices and Escape Outlets



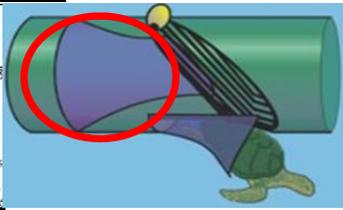
Length= Front to back of net (mouth to codend)
Width= Seam to seam

TRAWL REFERENCE

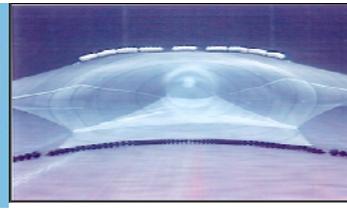
Examples of Excluder/Separator Devices



Grates



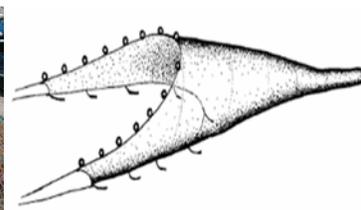
Guiding Device



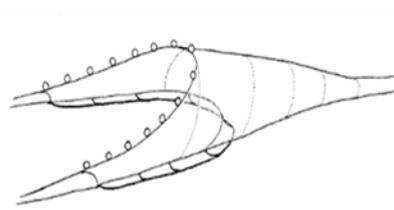
Separator Panel



Large Mesh



Sweepless Raised Footrope



Raised Footrope

Examples of Escape Outlets

- Section of large meshes
- Escape opening
- Drop chains/Raised Footrope
- Headrope longer than footrope



Atlantic States Marine Fisheries Commission (ASMFC) Biological Sampling Priorities

Program code 042

Bottom otter trawl (050), mesh size <5.5" (140mm)

Check with provider before deploying on small-mesh trips

Species	State Sailed	Stat Areas	Target # Samples (per trip)	Sample Type	Comments
Black Sea Bass	RI, NY, MD, VA	533-539, 611-636	25	Otoliths	If otoliths cannot be taken, scales are the second preference.
Bluefish	RI, NY, NJ, MD, VA	Any	25	Otoliths	Only collect otoliths from fish > 45 cm. Heads can be taken in lieu of otoliths.
Atlantic Croaker	RI, NY, NJ, MD, VA	Any	25	Otoliths	
Atlantic Herring	RI, NJ	511-562, 611-636	50	Otoliths	
Alewife	RI, NY, NJ, MD, VA	Any	20	Scales	Freeze samples when possible.
Blueback Herring	RI, NY, NJ, MD, VA	Any	20	Scales	Freeze samples when possible.
Scup	RI, NY, NJ	521-562, 611-636	25	Scales	Larger fish are priority (>23cm).
Summer Flounder	RI, NY, NJ, MD, VA	521-562, 611-636	25	Otoliths	
Weakfish	RI, NY, NJ, MD	Any	25	Otoliths	Freeze samples when possible.
Winter Flounder	RI, NY, NJ	521-562, 631-636	25	Otoliths	

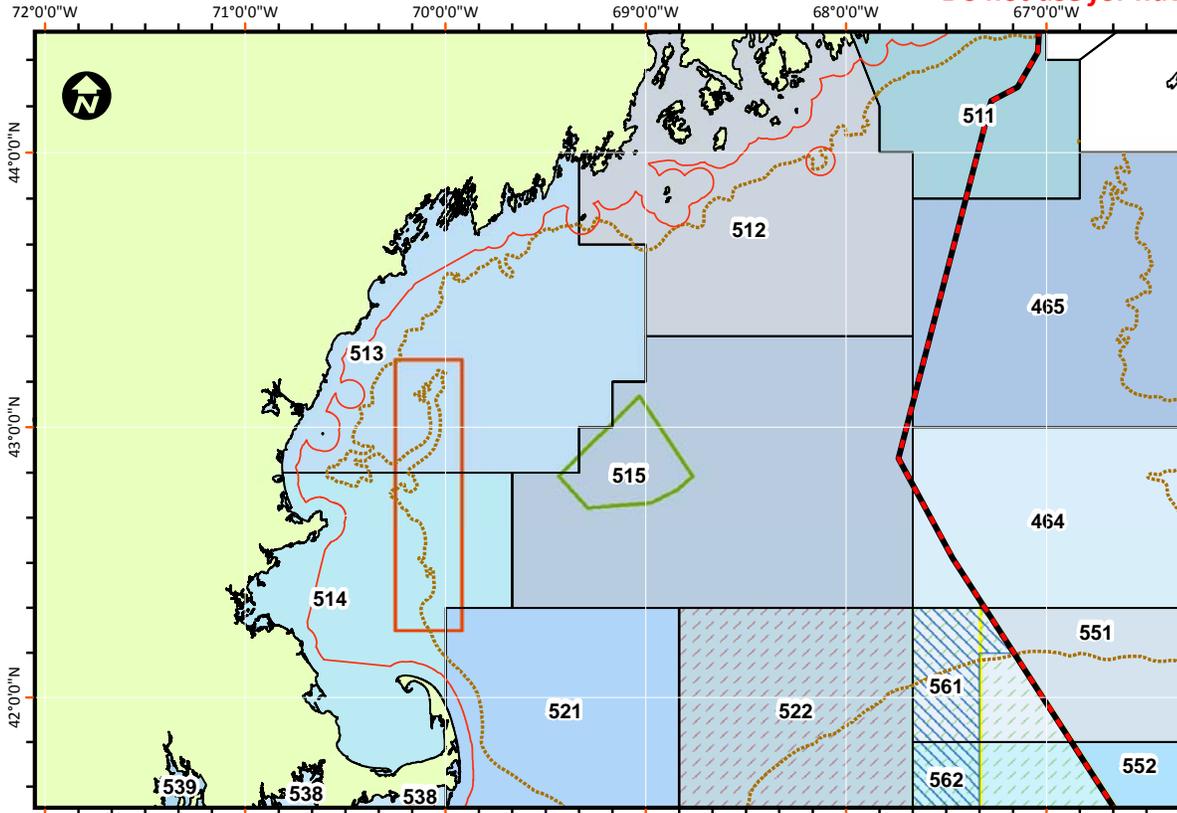
Note: This list supersedes traditional NEFOP priorities listed in the Biological Sampling Manual.



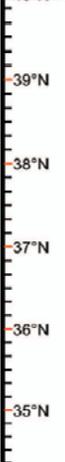
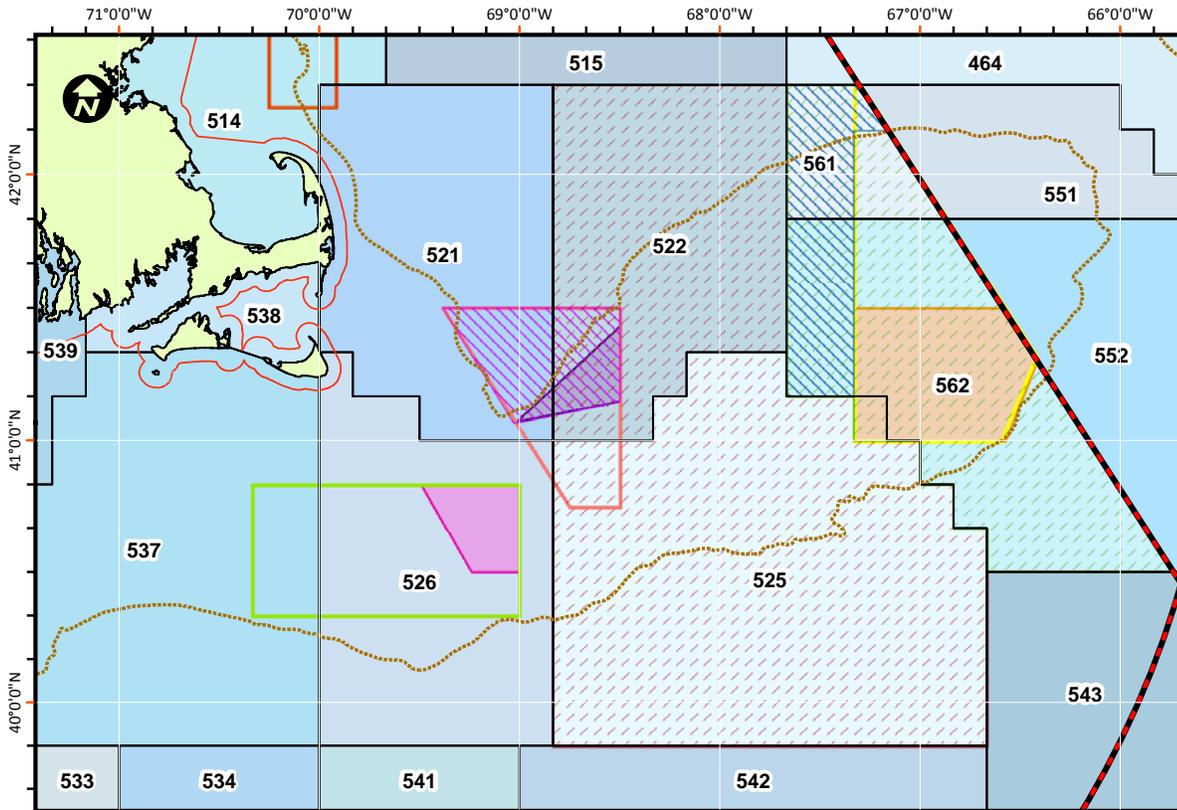
Gulf of Maine and George's Bank Areas

Do not use for navigation

CHARTS AND STATISTICAL AREAS



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



NEFOP

ASM

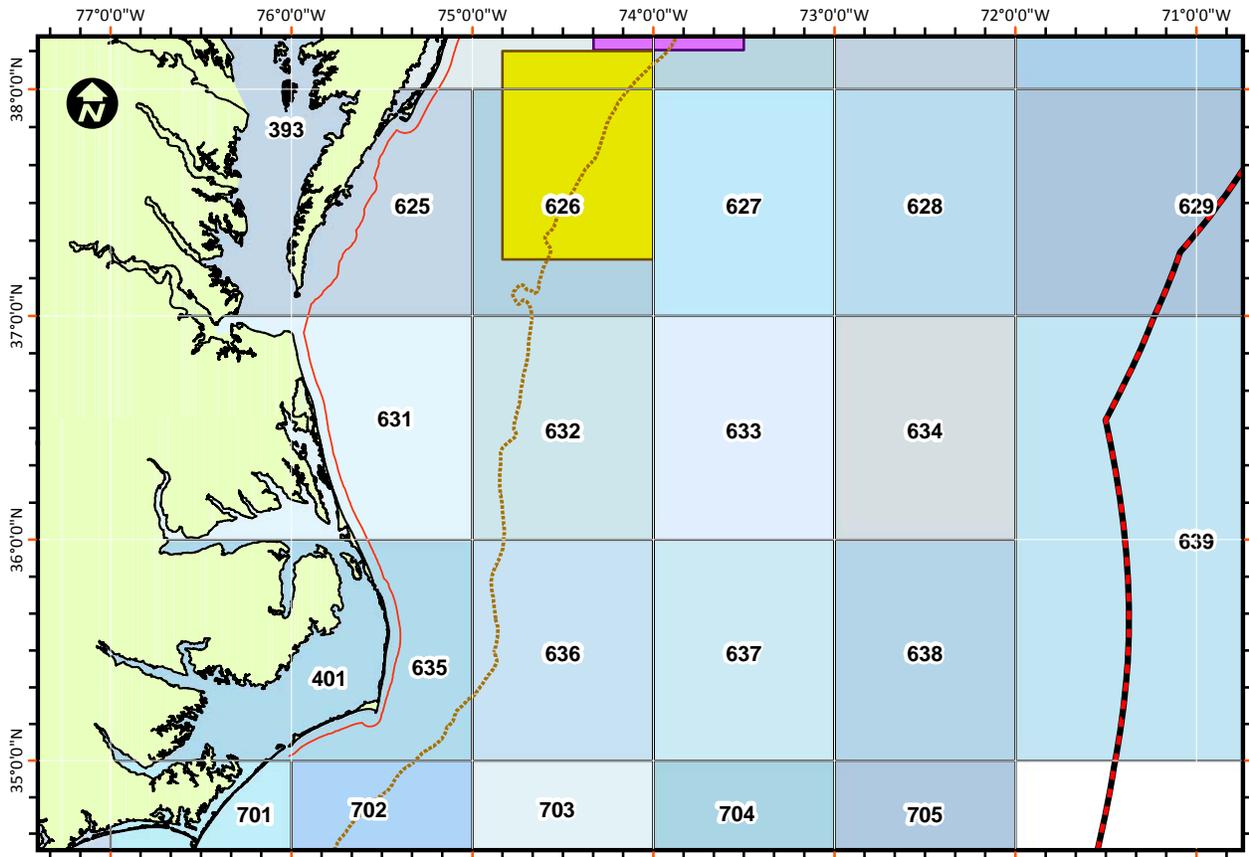
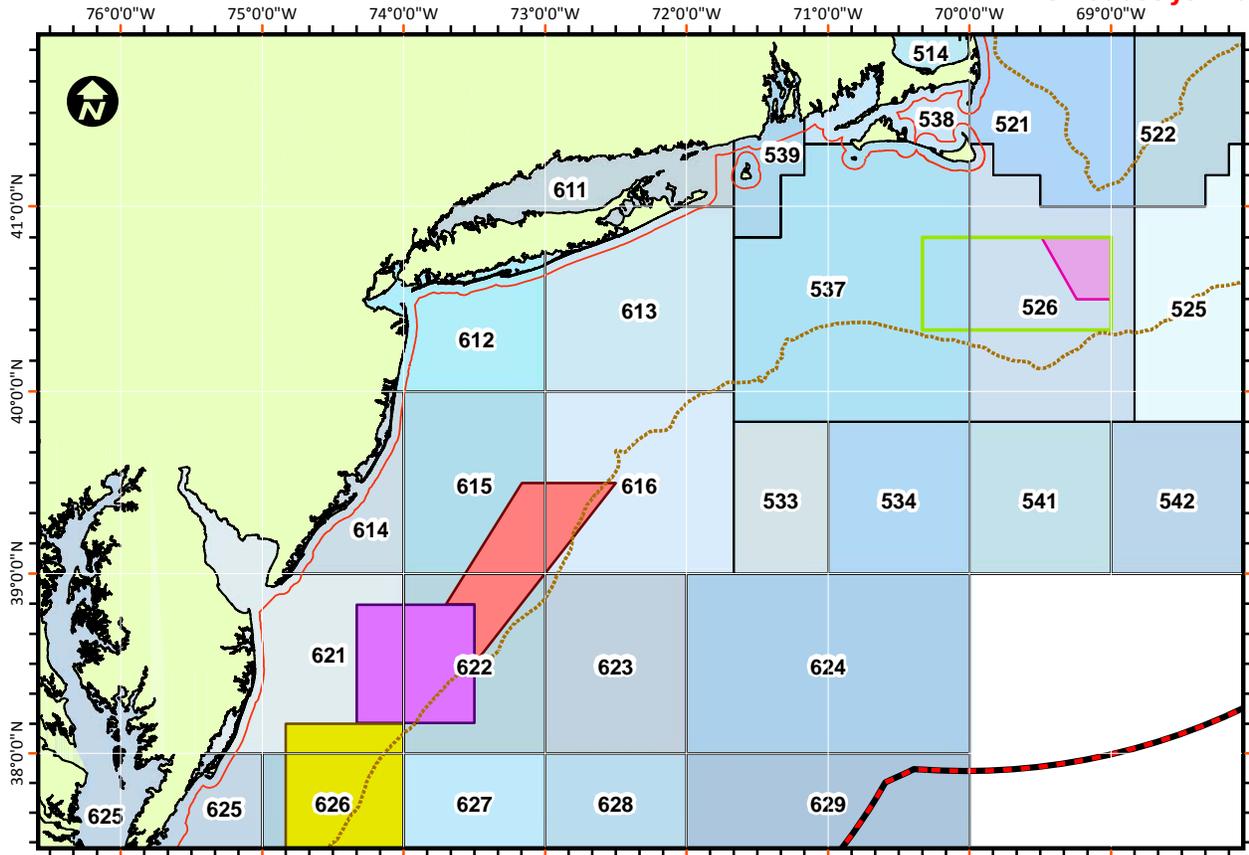
IFS

08/14



Southern New England and Mid-Atlantic Areas

Do not use for navigation



Species Verification Program Requirements

Please send in actual specimens and/or photographs of the following species each quarter

Miscellaneous	Code	Photograph 1	Photograph 2	Photograph 3
Scup	3295	whole animal (side shot)		
Longfin Squid	8010	whole animal (side shot)		
Shortfin Squid	8020	whole animal (side shot)		
Redfish	2400	whole animal (side shot)	inside of mouth	
Ocean Pout	2500	whole animal (side shot)		

Gadids	Code	Photograph 1	Photograph 2	Photograph 3
Cod	0818	whole animal (side shot)		
Haddock	1477	whole animal (side shot)		
Pollock	2695	whole animal (side shot)		
Red Hake	1520	whole animal (side shot)	pelvic and dorsal filaments	rakers above the flexion point
White Hake	1539	whole animal (side shot)	pelvic and dorsal filaments	rakers above the flexion point
Silver Hake	5090	whole animal (side shot)	all rakers on first gill arch (removed from body)	
Offshore Hake	5080	whole animal (side shot)	all rakers on first gill arch (removed from body)	

Skates	Code	Photograph 1	Photograph 2	Photograph 3
Barndoor	3680	whole animal (top of disk)	whole animal (bottom of disk)	
Clearnose	3720	whole animal (top of disk)		
Little	3660	whole animal (top of disk)	close-up of rough/smooth patch or claspers	
Smooth	3690	whole animal (top of disk)		
Thorny	3700	whole animal (top of disk)		
Winter	3670	whole animal (top of disk)	close-up of rough/smooth patch or claspers	

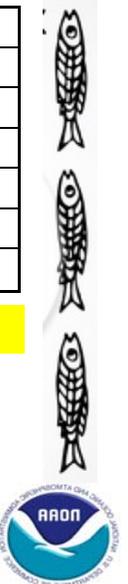
Flunders	Code	Photograph 1	Photograph 2	Photograph 3
Am. Plaice	1240	whole animal (eyed side)	whole animal (blind side)	
Summer	1219	whole animal (eyed side)	whole animal (blind side)	
Windowpane	1250	whole animal (eyed side)	whole animal (blind side)	
Winter	1200	whole animal (eyed side)	whole animal (blind side)	close-up of lateral line
Witch	1220	whole animal (eyed side)	whole animal (blind side)	
Yellowtail	1230	whole animal (eyed side)	whole animal (blind side)	close-up of lateral line

Herrings	Code	Photograph 1	Photograph 2	Photograph 3
Alewife	0010	whole animal (side shot)	gut lining	upper profile of lower jaw
Blueback	1120	whole animal (side shot)	gut lining	upper profile of lower jaw
Am. Shad	3474	whole animal (side shot)	rakers on first gill arch	upper profile of lower jaw
Hickory Shad	1730	whole animal (side shot)	rakers on first gill arch	upper profile of lower jaw
Atl. Herring	1685	whole animal (side shot)		
Menhaden	2210	whole animal (side shot)	dorsal view (scales in front of dorsal fin)	

The highlighted species and Atlantic mackerel (2120) must be sent in for every high volume trip and ANY trip targeting herring.

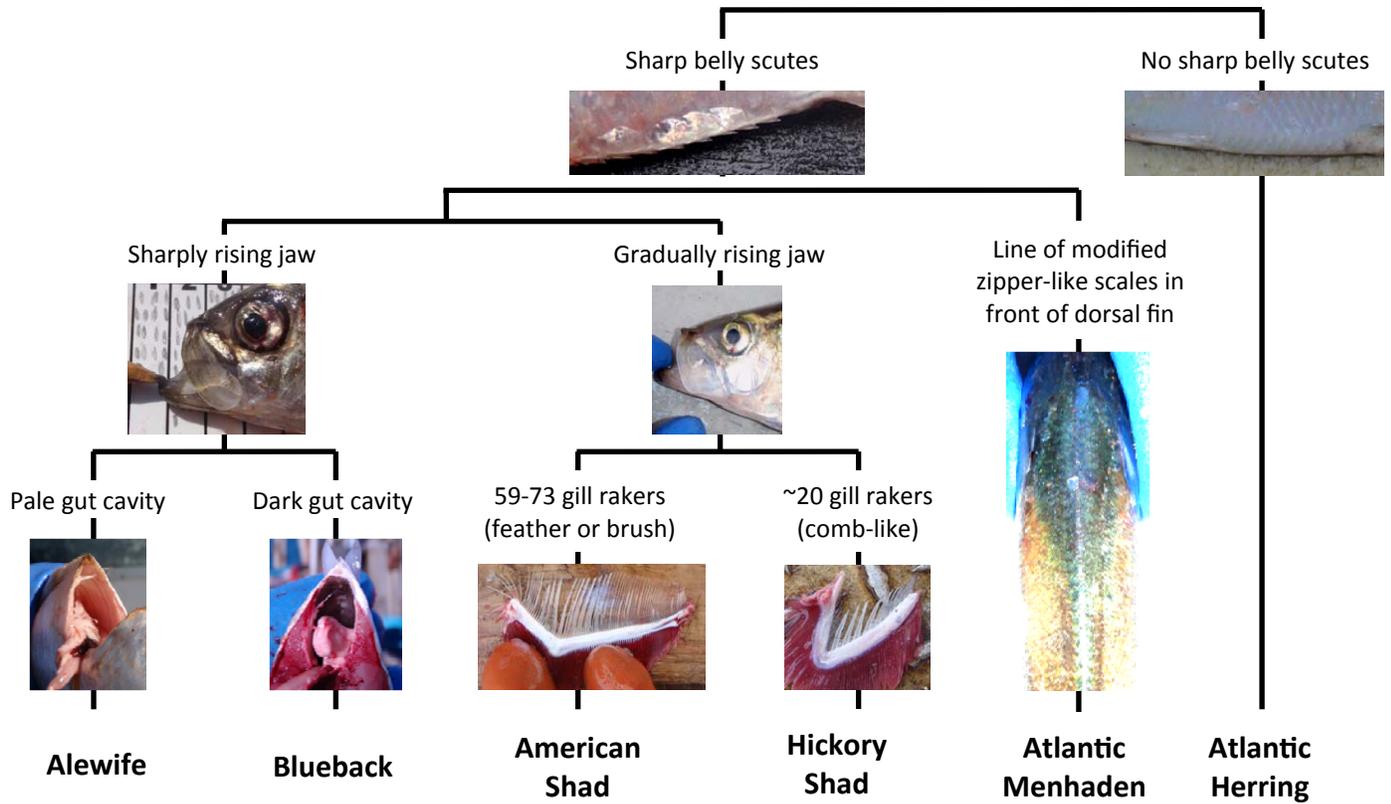
Bag, tag, and send in all Fish NK's along with photographs of the specimen.

Make sure to include something in each picture for scale.



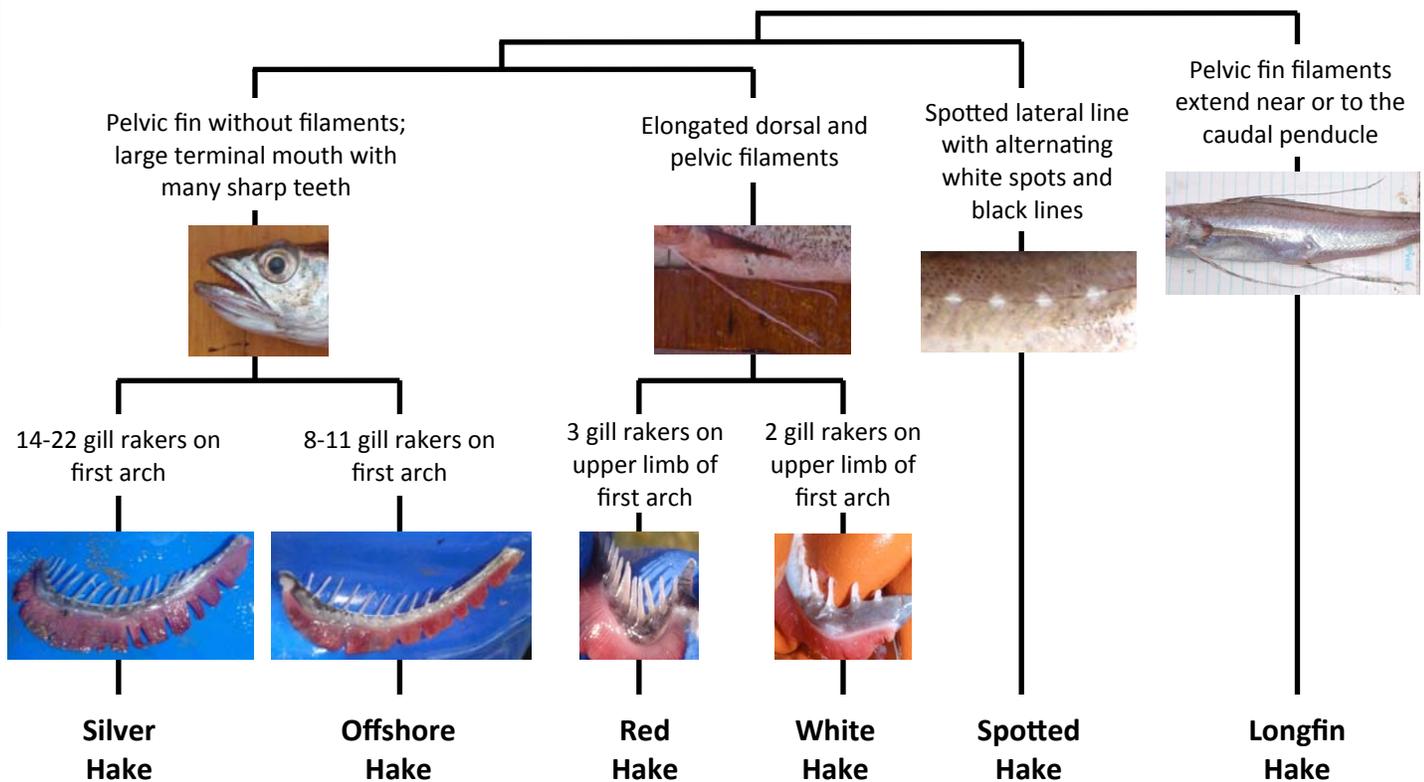
Identification Key for Common Herrings

Reminder: Use field guides for complete ID characteristics, and submit photos for verification if unsure.



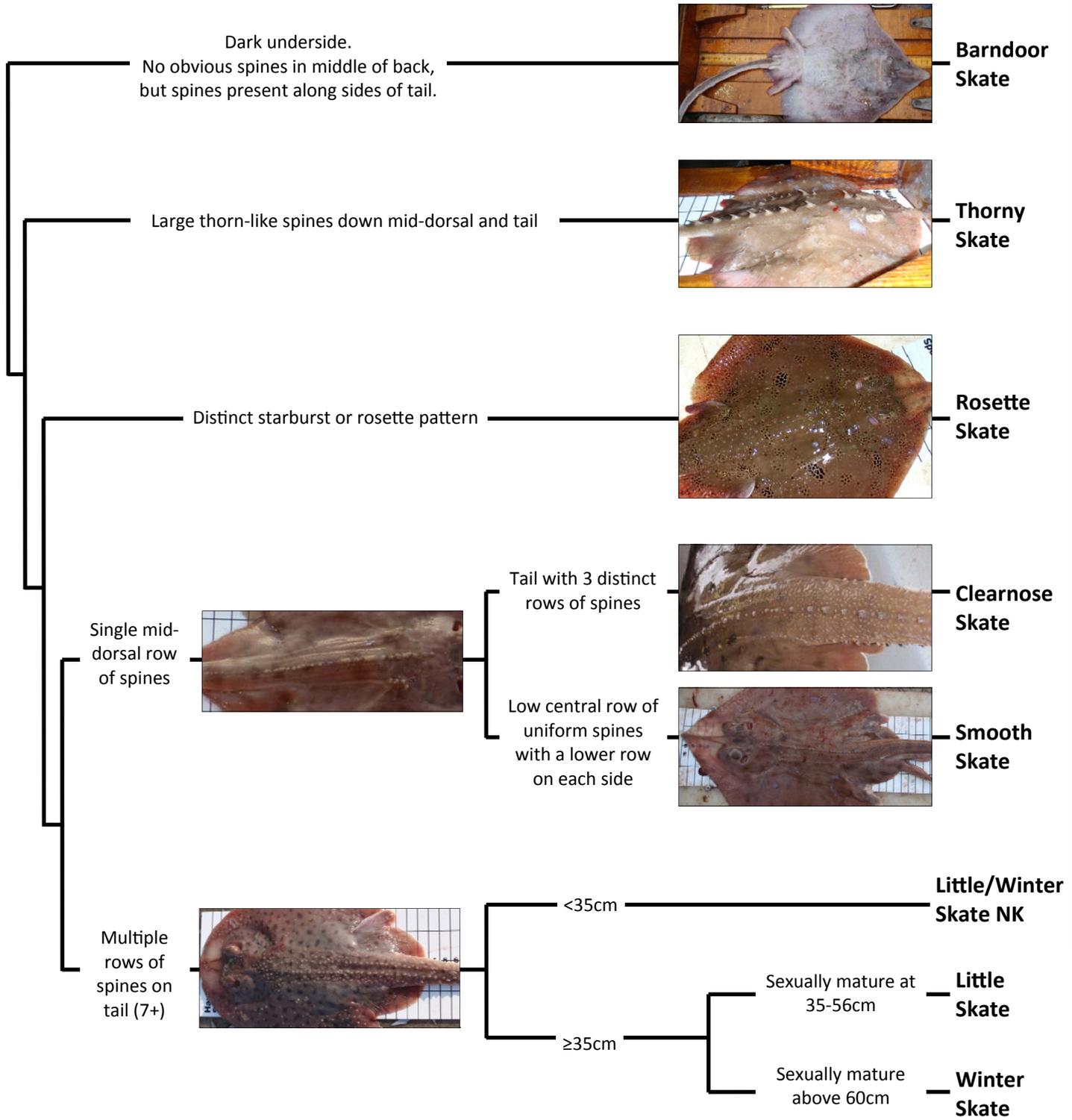
Identification Key for Common Hakes

Reminder: Use field guides for complete ID characteristics, and submit photos for verification if unsure.



Identification Key for Common Skates

Reminder: Use field guides for complete ID characteristics, and submit photos for verification if unsure.



SPECIES IDENTIFICATION AND VERIFICATION



Sexual Maturity

Males: calcified claspers extending beyond pelvic fins



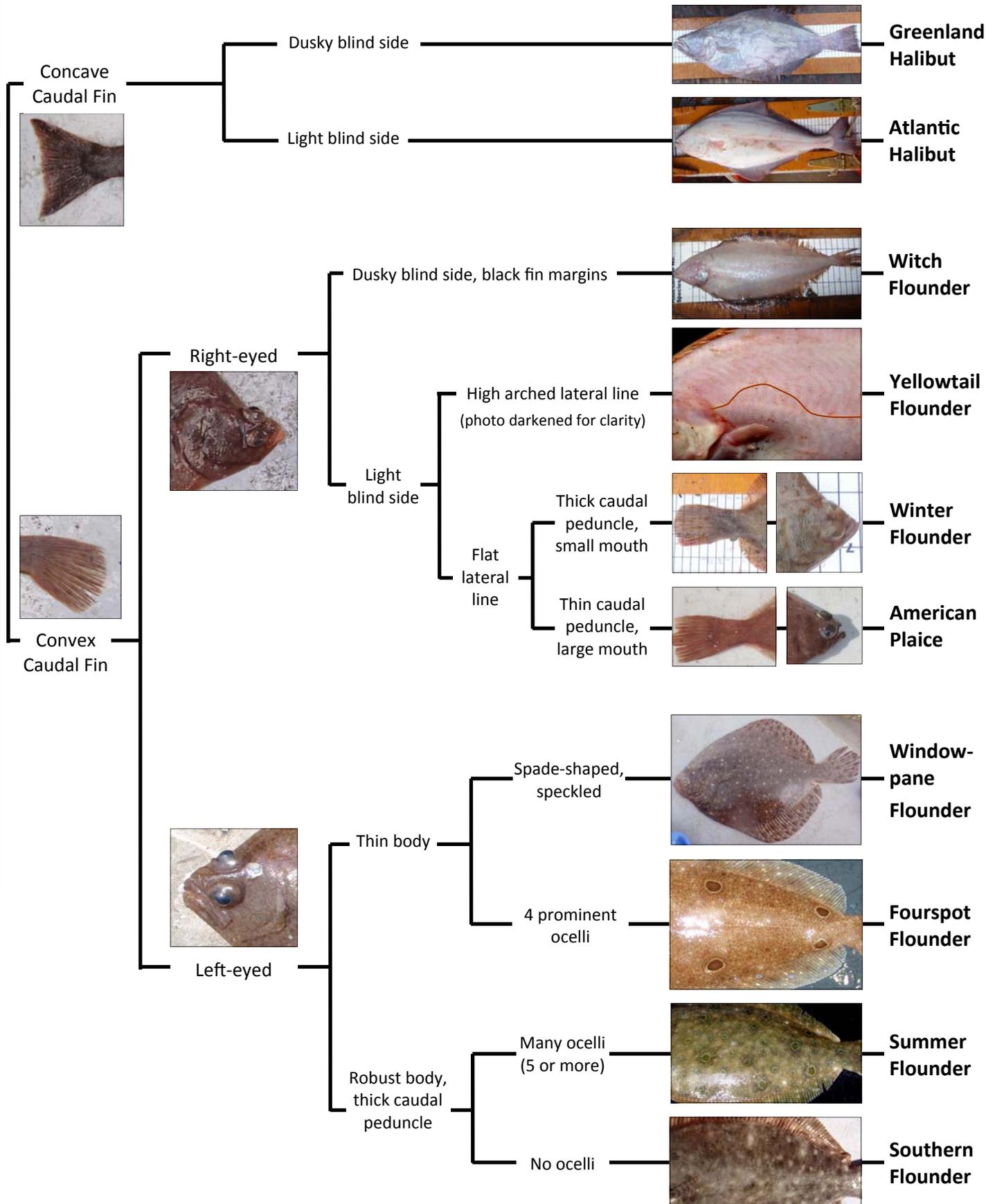
Females: patches of tiny spines beside vent that are rough to touch



SPECIES IDENTIFICATION AND VERIFICATION

Identification Key for Common Flounders

Reminder: Use field guides for complete ID characteristics, and submit photos for verification if unsure.



Identification Key for Sturgeons

Reminder: Use field guides for complete ID characteristics, and always submit photos for verification.

BE SURE TO PROVIDE ID CHARACTERISTICS IN THE COMMENTS SECTION.

Atlantic Sturgeon

Max Length: over 9'

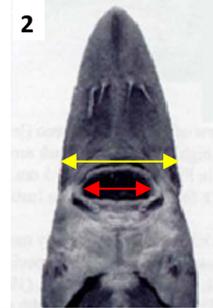
1. Post-dorsal fin plates above lateral plates
2. Width inside lips <60% interorbital width
3. 2-6 rows of bony plates between base of anal fin and lateral row of plates
4. More complex/paired post anal scutes
5. "Soft spot" on the head between dermal plates (raised) on skull



Shortnose Sturgeon

Max Length: 4'

1. No post-dorsal fin plates above lateral plates
2. Width inside lips >60% interorbital width
3. No bony plates between base of anal fin and lateral row of plates
4. Simple patterned post anal scutes
5. More contiguous with no "soft-spot"



Atlantic Sturgeon Biosampling

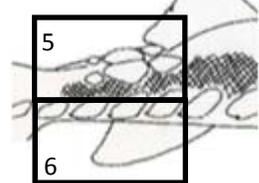
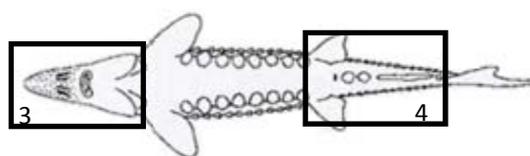
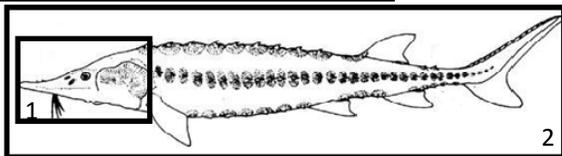
Gill Swab

1. Remove a sterile foam tipped applicator from packaging, firmly gripping the plastic handle, being careful not to contaminate the swab. Place the swab directly under the sturgeon's gill place, rubbing the foam tip along the inside for 30 seconds, soaking as much mucus as possible, ensuring not to damage the gills. Repeat using the opposite side of the foam tip. Remove swab from gills.
2. Carefully lift the paper cover of the FTA card to expose the circle sample area and roll the foam tip along the area from tip-to-tip 3 times. Turn the applicator over and repeat in the same area.
3. If the sample area appears dry, repeat with a new applicator, applying the sample to the second circle on the card.
4. Once complete, circle around the outside of each sample area using a pencil to indicate the presence of a sample. Allow the card to dry at room temperature. Refold the paper cover over the sample area and record the TRIPID, Haul #, and IAL sequence # on the outside of the card in PERMANENT MARKER. STORE CARDS IN A DRY PLACE — DO NOT REFRIDGERATE OR FREEZE.

Fin Clip

1. Using a CLEAN knife, cut a 1cm square sized piece of pelvic fin, place it into a vial of 95% non-denatured ethanol (one vial per fish).
2. Once you have screwed on the cap, wrap the cap in parafilm to minimize evaporation and leaking. Label the vial with TRIPID, Haul #, and IAL sequence # on the outside of the vial in PERMANENT MARKER.
3. Vials should be refrigerated and kept chilled for the first 23-48 hours. Otherwise, they can be stored at room temperature.

Sturgeon: Photographs to Take



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



IAL Species Shortlist: Commonly Misreported Species

Complete list: see Appendix O in the NEFSC Observer Program Manual

Tagged fish, shellfish, and crustaceans

Amberjack, NK

Barracuda, NK

*Bonito

Cobia

Cutlassfish, Atlantic

Grouper species

Houndfish

Mackerel, Frigate

*Mackerel, King

Needlefish, Atlantic

**Ray & Stingray species

*Tuna, Little (False Albacore)

*Tuna, Skipjack

Wreckfish

*The highlighted IAL species are recorded on Haul Logs in the gillnet fisheries.

**Bullnose & Cownose Rays are the only species of ray/stingray to be recorded on Haul Logs.

Sampling for Each Individual Animal

Photograph

Weight

Length(s): (BSM pg. 39)

Tag(s): Record all info from all tags and comment on animal condition at tag location

PIT tag scan: If you have a scanner

Sex sharks & rays: Look for claspers (BSM pg. 37)

Record ID characteristics: Even if you submit photos, record ID characteristics for each individual animal in comments. Be sure to only record characteristics you visually saw on the animal.

Photographs to Take

In General	Whole animal (Side shot)	Any unique characteristics: side shot close-up of head, chin barbs, fins extended, caudal fin		
Billfish	Whole animal (Side shot)	Dorsal fin extended	Anal fin distance from anus	
Tunas	Whole animal (Side shot)	Pectoral fin flat on body in relation to 2nd dorsal fin	Close up of 2nd dorsal fin and finlets	Spots along belly/caudal peduncle, if present
Sharks	Whole animal (Side shot)	Dorsal fin in relation to pectoral fin	Underside of snout	Caudal fin
Rays & Stingrays	Whole animal (Dorsal)	Whole animal (Ventral)	Fin folds	
Tagged Individuals	Close-up of tag location	See above for appropriate species-specific photos		
Sturgeon	See other side for detailed sampling protocols			

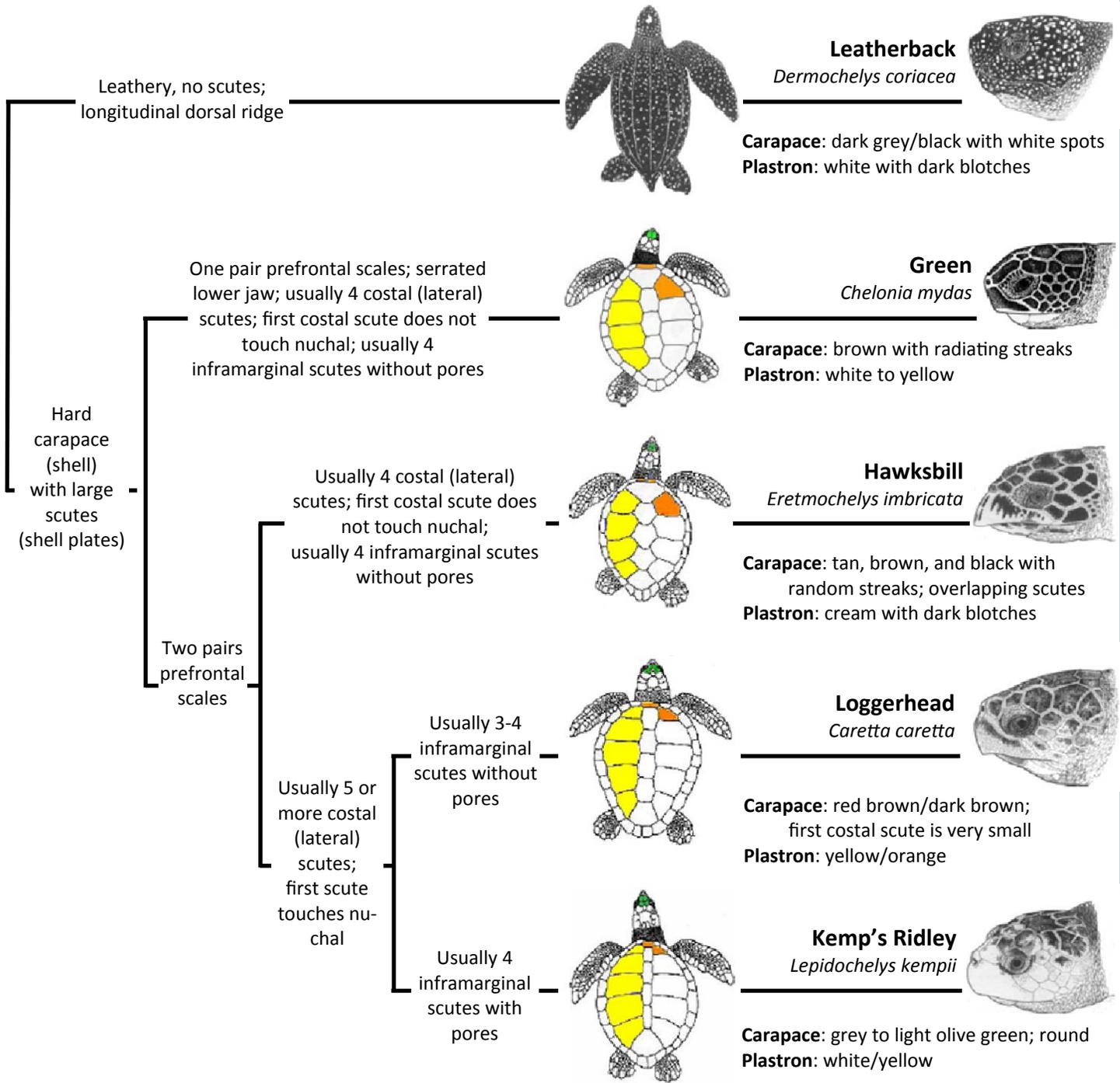
IAL Reminders

- Tagged individuals belong on IAL log. See BSM page 40 for tagged species sampling requirements.
- Limited gillnet trips still sample IAL species.
- Processing code is used to further describe the dressed condition when you obtained the weight.
- If you are only able to get an estimated length, record as a comment in the electronic upload.
- If you get a lot of IALs per haul, count the number of individuals for each species.
 - If able, also break down your count by sex (if applicable) and estimate length/weight groupings.
 - You will still write each animal separately on the IAL log.

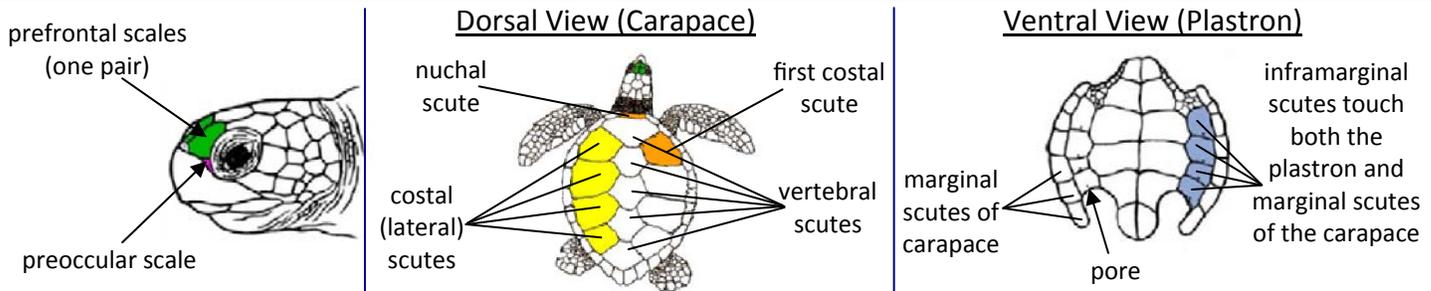


Identification Key for Common Sea Turtles

Reminder: Use field guides for complete ID characteristics, and always submit photos for verification.



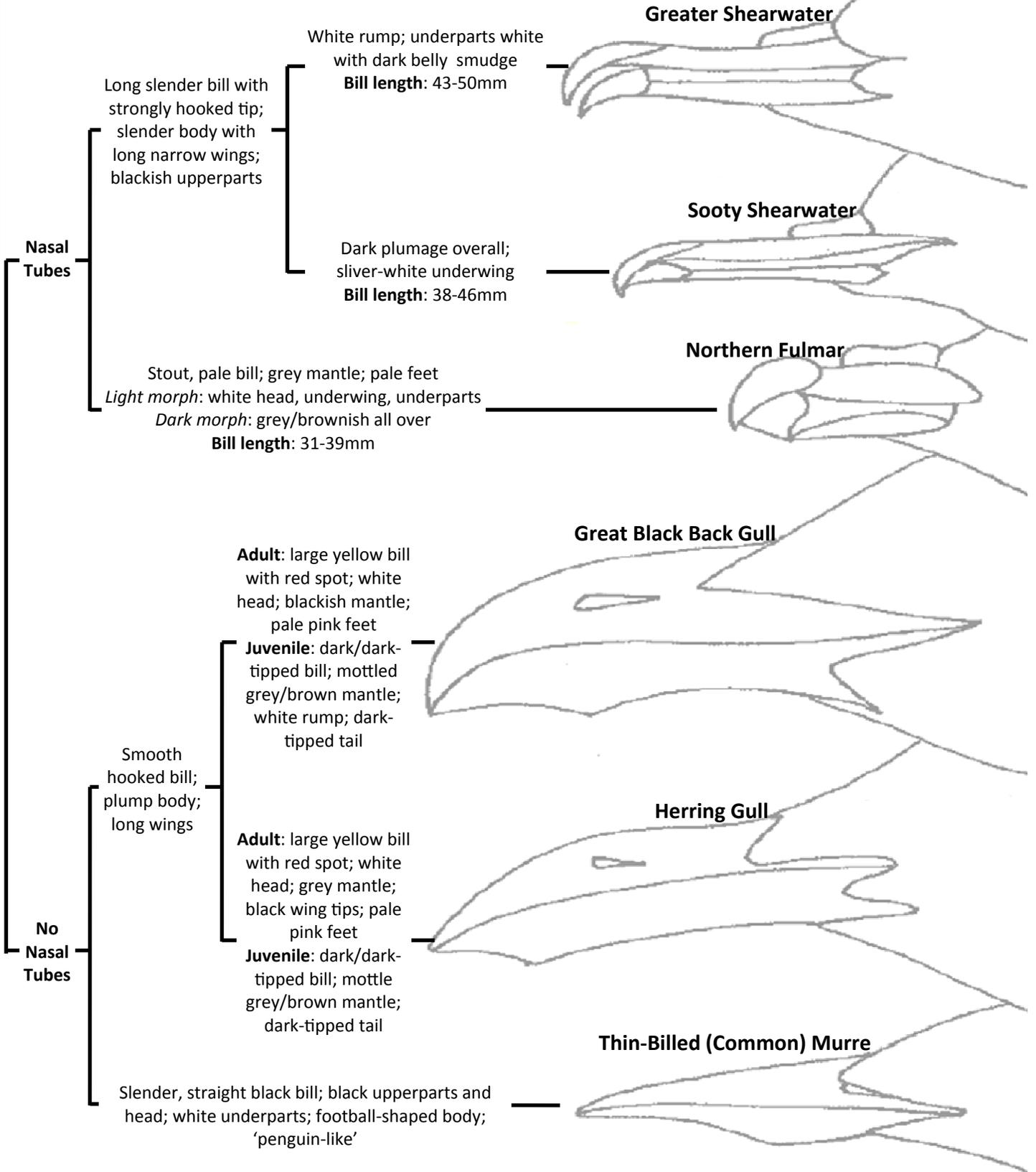
Typical adult colors are described here; colors may differ, particularly in hatchlings and juveniles.



Identification Key for Common Sea Birds

Reminder: Use field guides for complete ID characteristics, and always submit photos for verification.

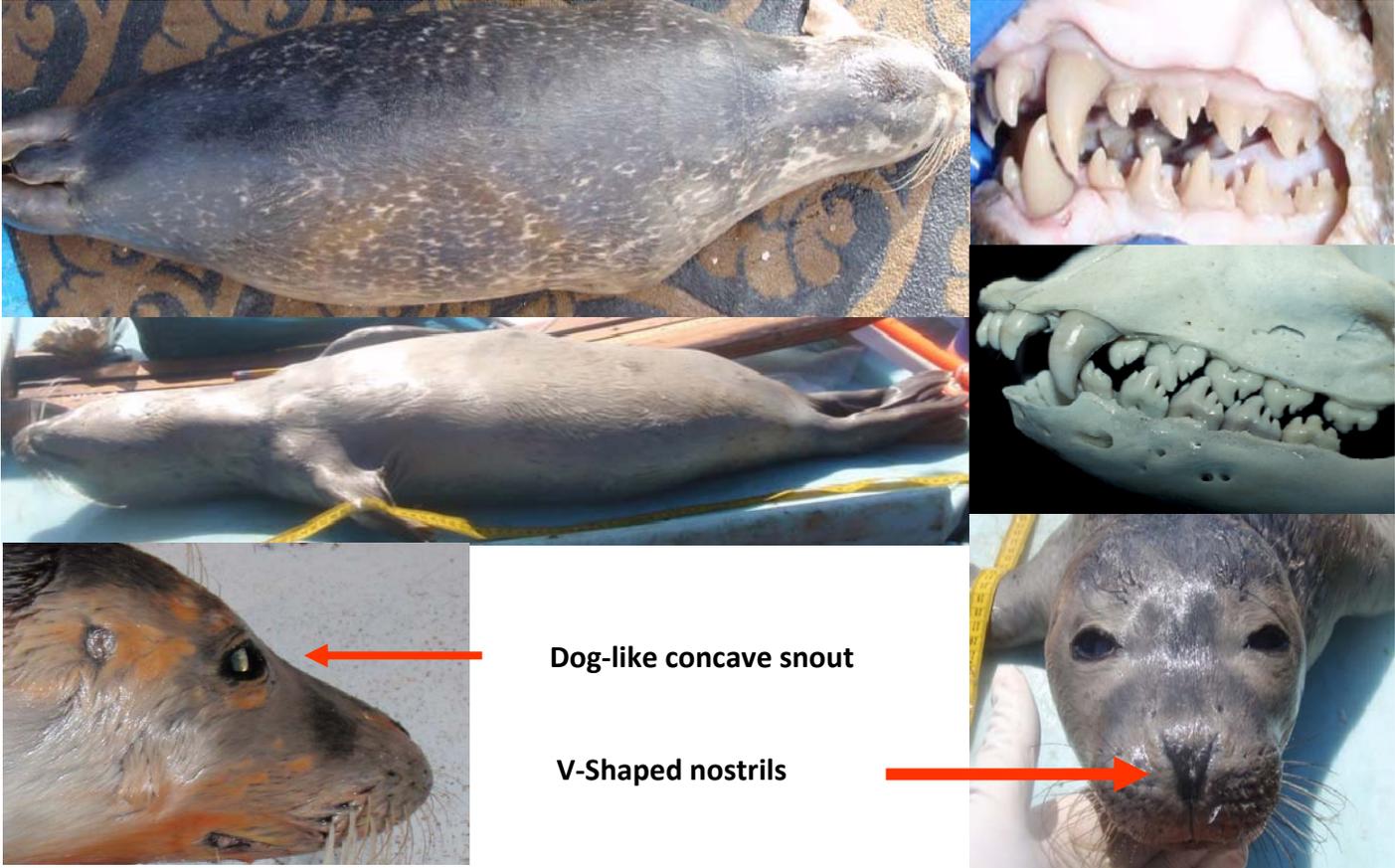
**Do not hesitate to consult your "Beached Birds" guide in the event that your specimen does not appear to fall into any of these categories.



Identification for Common Seals

HARBOR SEAL *Phoca vitulina concolor*

- Light to dark gray, tan or reddish brown; most are paler on ventral side.
- Light and dark speckles with ring-like patterns or halos.
- Dog-like head, short snout with slightly upturned nose & V-shaped nostrils.
- Distance from ear to eye and eye to end of snout nearly equal.
- Post-canines are multi-cusped & overlapping like roof shingles.



HARP SEAL *Pagophilus groenlandica*

- Pups have white-coats. Juveniles (below) have dark “ink-blotches” randomly scattered on coat. Adults are gray with black harp pattern on back.
- Post-canines are multi-cusped with distinct spaces between each tooth.



Identification for Common Seals

GRAY SEAL *Halichoerus grypus*

- Dark reddish brown, black to slivery gray. Males: Brown to black with light spots. Females: gray, yellowish tan with dark spots.
- Horse-like head with flattened snout with W-shaped nostrils.
- Distance from ear to eye much shorter than eye to end of snout.
- Post-canines are canine-like with small cusps on each side.



Horse-like flattened snout

W-Shaped nostrils



HOODED SEAL *Cystophora cristina*

- Takes in Gulf of Maine, pups only.
- Bluish gray back with sharply contrasting white belly.
- Post-canines are round and multi-cusped.

