ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

SH-2-2022

PROCLAMATION

RE: SHRIMP TRAWL - BYCATCH REDUCTION DEVICE AND TURTLE EXCUDER DEVICE REQUIREMENTS – CROATAN AND ROANOKE SOUNDS, PORTIONS OF THE PAMLICO, BAY, AND NEUSE RIVERS, CORE SOUND AND SOUTH TO THE SOUTH CAROLINA STATE LINE, AND SKIMMER TRAWLS STATEWIDE – INTERNAL COASTAL FISHING WATERS

This proclamation supersedes proclamation SH-4-2019 dated May 14, 2019. It updates information in Section VI. and maintains bycatch reduction device and turtle excluder device requirements for taking shrimp with trawls (except as described in Section IV.) in Croatan and Roanoke sounds, portions of the Pamlico, Bay, and Neuse rivers, Core Sound, and the Internal Coastal Fishing Waters south to the North Carolina-South Carolina State Line where up to 90 feet of combined headrope is allowed. These restrictions also apply in Coastal Fishing Waters (including the Atlantic Ocean) for all skimmer trawls.

Kathy B. Rawls, Director, Division of Marine Fisheries, hereby announces that effective at 12:01 A.M. July 1, 2022 the following restrictions apply to shrimp trawls:

I. **AREA DESCRIPTIONS**:

A. It is unlawful to take shrimp with trawls, except as described in Sections II., III., and IV., in Internal Coastal Fishing Waters listed below:

1. North of the 35° 46.3000' N latitude line;
2. Core Sound south of a line beginning at a point 34° 59.7942' N - 76° 14.6514' W on Camp Point; running easterly to a point 34° 58.7853' N - 76° 09.8922' W on Core Banks; to the South Carolina State Line;
3. Pamlico River upstream of a line from a point 35° 18.5882' N - 76° 28.9625' W at Pamlico Point; running northerly to a point 35° 22.3741' N - 76° 28.6905' W at Willow Point;
4. Bay River upstream of a line from a point 35° 11.0858’ N - 76° 31.6155’ W at Bay Point; running southerly to a point 35° 09.0214’ N - 76° 32.2593’ W at Maw Point; and
5. Neuse River southwest of a line from a point 34° 58.2000' N - 76° 40.5167' W at Winthrop Point on the eastern shore of the entrance to Adams Creek; running northerly to a point 35° 01.0744' N - 76° 42.1550' W at Windmill Point at the entrance of Greens Creek at Oriental.

B. It is unlawful to take shrimp with skimmer trawls in Coastal Fishing Waters (including state ocean waters) except as described in Sections II., III., and IV.

II. **GEAR RESTRICTIONS**:

In the areas described in Section I., it is unlawful for a person to use a shrimp trawl with mesh lengths less than one and one-half inch stretch mesh and without authorized North Carolina Division of Marine Fisheries (NCDMF) Bycatch Reduction Devices (BRD) properly installed

and operational in the tail bag/cod end of **EACH** net as outlined below. Authorized NCDMF BRDs include:

A. **Florida Fish Excluder (FFE) (Figure 1 and Table 1):**
   1. Description: Cone-shaped rigid frame constructed from aluminum, steel, or stainless-steel round bar or tubing which is inserted into the tail bag/cod end to form an escape opening. Minimum construction and installation requirements stated below.
   2. The FFE shall be installed on the outside of the trawl. The webbing of the trawl attached to the FFE cannot cover more than 50% of the FFE.
   3. The escapement opening of the FFE shall be diamond in shape and shall remain unobstructed at all times. Diamond shaped FFE shall measure at least 5 1/2 inches x 6 1/2 inches or 6 inches x 6 inches, inside diameter (Figure 1).
   4. Placement of the apex (narrow end) of the FFE shall be toward the headrope of the trawl (forward).
   5. A FFE shall have at least three (3) legs and no more than four (4) legs and measure at least 12 inches in length (see Figure 1).
   6. The opening of the FFE shall be installed on the outside of the tail bag/cod end of the trawl no further forward than 65% of the functional tail bag/cod end length measured from the tail bag/cod end tie-off rings (Table 1).
   7. The center of the FFE escapement opening shall be installed no more than 19 meshes from the top centerline of the tail bag/cod end.
   8. A FFE shall be constructed from aluminum, steel, or stainless-steel round bar or tubing.

B. **Eight (8) inch PVC "Sea Eagle" Fish Excluder (Figure 2 and Table 2):**
   1. Description: The “Sea Eagle” Fish Excluder is a cone-shaped device similar to the Florida Fish Excluder and is constructed out of PVC pipe and has a trap door that is designed to close on haul back to prevent escapement of shrimp. The device is inserted into the tail bag/cod end to form an escapement opening. Minimum construction and installation requirements stated below.
   2. Placement of the apex (narrow end) of the "Sea Eagle" shall face the tail bag/cod end of the trawl (aft).
   3. The opening of the "Sea Eagle" shall be eight (8) inches in diameter and installed in the tail bag/cod end of the trawl no further forward than 38% of the functional tail bag/cod end length from the tail bag/cod end tie-off rings (Table 2).
   4. The center of the "Sea Eagle" escapement opening shall be installed on either side of the tail bag/cod end between 0 and 15 meshes from the top centerline of the tail bag/cod end.
   5. The escapement opening of the "Sea Eagle" shall be unobstructed (the escapement flap shall be free to move and a fish retention grate shall not be present).

C. **General Eight (8) Inch and Ten (10) Inch Large Mesh and Extended Mesh Funnel BRD (Figures 3, 4, 5, 6, and 7):**
   1. Description: Devices consist of a funnel of small mesh netting within a cylinder of large mesh netting, held open by one semi-rigid hoop, and are installed in the trawl net behind a National Marine Fisheries Service (NMFS) certified Turtle Excluder Device (TED). One side of the funnel is extended vertically to provide passage for shrimp to the tail bag/cod end and to create an area of reduced water flow to allow for fish escapement through the larger

mesh outer netting. Minimum construction and installation requirements stated below.

2. The small mesh funnel and large mesh section shall be positioned within extension sections constructed of 1 5/8 inch stretched mesh # 30 nylon twine. The extension section shall be 120 meshes in circumference. The extension section in front of the large mesh section shall be 6 1/2 meshes long, and the extension section behind the large mesh section shall be 23 meshes long. The small mesh funnel shall be constructed from four (4) pieces of 1 1/2 inch stretched mesh, size # 24 twine or larger, depth stretched, and heat set polyethylene webbing.
3. The small mesh funnel shall have a circumference of 120 meshes at the leading edge and 78 meshes at the trailing edge. The short side of the funnel shall be 23 meshes long, while the long side of the funnel shall be 38 1/2 meshes long. The leading edge of the funnel shall be attached three (3) meshes forward of the leading edge of the large mesh section. The eight (8) meshes at the back edge of the top and bottom sections are attached three (3) meshes behind the soft cable hoop and are centered at the top and bottom of the extension webbing, mesh for mesh. The long side section of the funnel shall be attached to the extension webbing on the top and bottom beginning at the back edge of the top and bottom section. The sewing sequence for this section shall be two (2) meshes down, one (1) mesh over toward the top and bottom centerlines.
4. The large mesh outer section shall be 10 inch stretched mesh netting, 10 mm polyester, or # 120 nylon or heavier, hung on the square, with a circumference of 19 meshes (95 inches) and a length of three (3) meshes (15 inches), or the large mesh outer section shall be 8 inch stretched mesh netting, 4 mm polyester, or # 120 nylon or heavier, hung on the square, with a circumference of 23 meshes (95 inches) and a length of four (4) meshes (15 inches).
5. The leading edge of the large mesh section shall be attached to the trailing edge of the front extension. The trailing edge of the large mesh outer section is attached to the leading edge of the back extension.
6. A single hoop, constructed from 1/2-inch (0.5 inch) plastic coated cable measuring **94 1/4 inch** in length (30-inch diameter), shall be attached five (5) meshes back from the leading edge of the back extension.
7. The large mesh escapement opening must be unobstructed.
8. This BRD is installed between the TED and the tail bag/cod end. When installed behind a hard TED, the leading edge of the 6 1/2 mesh front extension is attached five (5) meshes behind the posterior edge (trailing edge) of the TED. Any part of the TED extension greater than five (5) meshes long must be removed. When installed behind a soft TED, the device is placed between the TED extension and the tail bag/cod end.

D. **Eight (8) Inch and Ten (10) Inch Inshore Large Mesh and Extended Funnel BRD (Figures 3, 4, 5, 6, and 7):**

1. Description. Devices consist of a funnel of small mesh netting within a cylinder of large mesh netting, held open by one semi-rigid hoop, and are installed in the trawl net behind a National Marine Fisheries Service (NMFS) certified Turtle Excluder Device (TED). One side of the funnel is extended vertically to provide passage for shrimp to the tail bag/cod end and to create an area of reduced water flow to allow for fish escapement through the larger

mesh outer netting. Minimum construction and installation requirements stated below.

2. The small mesh funnel and large mesh section shall be positioned within extension sections constructed of 1 3/8 inch stretched mesh # 18 nylon twine. The extension section shall be 120 meshes in circumference. The extension section in front of the large mesh section shall be 6 1/2 meshes long and the extension section behind the large mesh section shall be 23 meshes long.
3. The small mesh funnel shall be constructed from four (4) pieces of 1 3/8 inches stretched mesh, size # 18 twine or larger, depth stretched, and heat set polyethylene webbing.
4. The small mesh funnel shall have a circumference of 120 meshes at the leading edge and 78 meshes at the trailing edge. The short side of the funnel shall be 23 meshes long, while the long side of the funnel shall be 38 1/2 meshes long. The leading edge of the funnel shall be attached three (3) meshes forward of the leading edge of the large mesh section. The eight (8) meshes at the back edge of the top and bottom sections are attached three (3) meshes behind the soft cable hoop and are centered at the top and bottom of the extension webbing, mesh for mesh. The long side section of the funnel shall be attached to the extension webbing on the top and bottom beginning at the back edge of the top and bottom section. The funnel shall be attached to the extension's webbing on the top and bottom. The sewing sequence for this section shall be two (2) meshes down, one (1) mesh over toward the top and bottom centerlines.
5. The large mesh outer section shall be 10 inch stretch mesh netting, 10 mm polyester, or # 120 nylon or heavier, hung on the square with a circumference of **14 1/2 meshes (75 inches)** and a length of three (3) meshes (15 inch), or the large mesh outer section shall be 8 inch stretched mesh netting, 4 mm polyester, or # 120 nylon or heavier, hung on the square, **with a circumference of 19 meshes (75 inch)** and a length of four (4) meshes (15 inch).
6. The leading edge of the large mesh section shall be attached to the trailing edge of the front extension. The trailing edge of the large mesh outer section is attached to the leading edge of the back extension.
7. A single hoop, constructed from 3/8-inch (0.38 inch) plastic coated cable measuring **75 1/2 inch** in length shall be attached five (5) meshes back from the leading edge of the back extension.
8. The large mesh escapement opening must be unobstructed.
9. This BRD is installed between the TED and the tail bag/cod end. When installed behind a hard TED, the leading edge of the 6 1/2 mesh front extension is attached five (5) meshes behind the posterior edge (trailing edge) of the TED. Any part of the TED extension greater than five (5) meshes long must be removed. When installed behind a soft TED, the device is placed between the TED extension and the tail bag/cod end.

E. **Large Mesh Funnel Excluder (LMFE) (Figures 3, 4, 5, 6, and 7):**

1. Description. This device consists of a funnel of small mesh netting within a cylinder of larger mesh netting, held open by two (2) semi-rigid hoops, and is installed in the tail bag/cod end of the trawl. This device must be installed behind a NMFS certified TED if a TED is required. This BRD shall meet the following specifications:
2. The small mesh funnel shall be made from two (2) sections of 1 1/2 inch or 1 5/8 inch, # 24 twine or larger, depth stretched and heat set polyethylene

webbing. Funnels having a leading edge of 100 meshes circumference must have a trailing edge of at least 40 meshes and not more than 60 meshes circumference. The funnel must be 30 meshes long. Funnels having a leading edge of 120 meshes circumference must have a trailing edge of at least 60 meshes and not more than 80 meshes in circumference. The funnel must be 30 meshes long.

3. The mesh escapement section shall be no smaller than 19 inches long and shall be 94 1/2 inches in circumference.
4. The large mesh escapement webbing shall be made from no smaller than 4 inch stretched mesh webbing hung on a square.
5. The mesh escapement opening shall remain unobstructed at all times.
6. The leading edge of the small mesh funnel and the leading edge of the large mesh escapement webbing shall be attached to a hoop, 94 1/2 inch in length (30 inch diameter), made from at least 3/8 inch diameter combination-cable or plastic coated towing cable. The trailing edge of the large mesh escapement webbing shall be attached to the second hoop constructed identical to the forward hoop.
7. The top and bottom ends of the trailing edge of the small funnel shall be attached to the top and bottom of the tail bag/cod end, respectively, so the funnel remains taut while being towed.

F. **Any one of the federally certified devices:**
Any federally approved Bycatch Reduction Devices (BRD) as specified in 50 CFR Part 622.207 Bycatch Reduction Device Requirements. These federal rules are incorporated by reference including subsequent amendments and editions. Copies of these rules are available via the Code of Federal Regulations posted on the Internet at https://www.govinfo.gov/content/pkg/CFR-2014-title50-vol12/pdf/CFR-2014-title50-vol12-sec622-207.pdf and at the Division of Marine Fisheries, P.O. Box 769, Morehead City, North Carolina 28557 at no cost.

III. **SECOND BYCATCH REDUCTION DEVICE REQUIREMENTS:**
In the areas described in Section I., it is unlawful for a person to use a shrimp trawl **without a second Authorized NCDMF BRD** as outlined in Section II. **OR** an additional ancillary BRD, both operational and properly installed in each net. Ancillary BRDs include:

A. Reduced bar spacing in a TED, to be considered ancillary BRD the bar spacing in the TED shall not exceed three inches from inside edge to inside edge of bars.
B. If the primary BRD is a Florida Fish Excluder (Section II. A.), and the second authorized BRD is a FFE then the second Florida Fish Excluder shall be installed in accordance with section I.A. with the exception that the second FFE can be installed no further forward than 5 meshes from the apex of the primary FFE and the same distance from the centerline as the primary FFE with the apex of the second FFE facing the headrope of the trawl and shall be exempt from requirement I.A.5. as to the 65% placement of the FFE.
C. A T-90 or square mesh (T-45) tail bag/cod end shall be installed in a minimum of half the effective tail bag/cod end length.
D. T-90 or square mesh (T-45) panels shall be constructed with a minimum of 2 inch stretched mesh, cover a minimum of the top one third of the effective circumference of the tail bag/cod end, be a minimum of 3 feet in length, and shall be installed no further forward than 6 feet from the tail bag/cod end tie-off rings.

IV. **GEAR EXEMPTIONS:**

These BRD restrictions do not apply to a single test trawl net (try net) with a headrope length of 12 feet or less and with a mesh size of one and one-half inch stretch mesh or greater, if it is operated under the following conditions:

A. net is either pulled immediately in front of another net or is not connected to another net in any way;
B. no more than one net is used at a time; and
C. net is not towed as a primary net.

V. **DEFINITIONS: For the purposes of this proclamation, the following terms are hereby defined:**

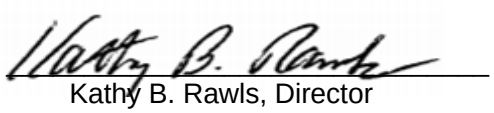
A. Bycatch reduction device (BRD) - any gear or trawl modification (including modifications to a TED that would enhance finfish exclusion) designed to allow finfish to escape from a shrimp trawl. BRD is defined based on its ability to facilitate the escape of finfish from a shrimp trawl.
B. Centerline - The line running from the center point of the headrope to the top center of the end of the tail bag/cod end.
C. Centerline - The line running from the center point of the headrope to the top center of the end of the tail bag/cod end.
D. Functional tail bag/cod end length - That length of the tail bag/cod end of a trawl beginning at the tail bag/cod end tie-off rings and extending forward for a maximum of 105 meshes or to the point where the straight extension ends and the trawl body taper begins, whichever is less. Trawls utilizing short tail bag/cod ends may include those meshes of the TED extension that are behind the TED grid and are in-line with the center of the FFE escape opening.
E. Skimmer trawl – a trawl that is fished along the side of the vessel and is held open by a rigid frame and a lead weight. On its outboard side, the trawl is held open by one side of the frame extending downward and, on its inboard side, by a lead weight attached by cable or rope to the bow of the vessel.
F. Square mesh panel (T-45) – Webbing turned 45°, such that panels are sewed in with the bar width facing the headrope.
G. T-90 – Webbing turned 90° (Figure 8).
H. Tail bag/cod end - That portion of the trawl net at which the trawl bodies taper ends and the straight extension begins, extending to the terminal end of the trawl.
I. Trawl – a conical net pulled through the water by one or more boats.
J. Try net – A net pulled for brief periods of time just before, or during, deployment of the primary net(s) in order to test for shrimp concentrations or determine fishing conditions (e.g., presence or absence of bottom debris, jellyfish, bycatch, seagrasses, etc.).
K. Turtle excluder device (TED) - An inclined grid or netting panel that prevents the passage of large animals such as sea turtles and large fish into the tail bag/cod end and guides them through an escape opening located in the tail bag/cod end. TED is defined based on its ability to exclude sea turtles from a shrimp trawl.

VI. **GENERAL INFORMATION:**

A. This proclamation is issued under the authority of N.C.G.S. 113-134; 113-134.1; 113-170.4; 113-170.5; 113-182; 113-182.1; 143B-289.52 and N.C. Marine Fisheries Rule15A NCAC 03J .0104(d).
B. **It is unlawful to use a shrimp trawl that does not conform with the federal requirements for Turtle Excluder Devices (TEDs) per N.C. Marine Fisheries Commission Rule 15A NCAC 03L .0103(h). For more details on approved TEDs please see 50 CFR §223.207 and**

https://www.fisheries.noaa.gov/southeast/bycatch/turtle-excluder-device-regulations.

C. The Florida Fish Excluder (Section II. A.) is measured diagonally from inside one corner edge to the inside edge of the opposite corner while the Fisheye (Section II.B.) and the Gulf Fisheye (Section II.C) are measured by measuring two inside leg lengths and multiplying those two distances to calculate the total square inches of the opening.
D. It is unlawful to violate the provisions of any proclamation issued by the Fisheries Director under their delegated authority per N.C. Fisheries Rule 15A NCAC 03H .0103.
E. Channel nets, float nets, fixed nets, and butterfly nets are not required to use BRDs.
F. The intent of this proclamation is to allow approved federal bycatch reduction devices to be approved as state bycatch reduction devices and to require a second authorized BRD in accordance with the N.C. Shrimp Fishery Management Plan Amendment 2 for trawls used in areas described in Section I. (except try nets).
G. Vessels operating in Coastal Fishing Waters outside of those areas described in Section I. (except skimmer trawls and try nets) must use authorized NCDMF BRDs as described in Proclamations SH-1-2022 and SH-3-2022.
H. Persons wishing to test BRD designs not covered by this proclamation may submit BRD designs to the NCDMF, Morehead City office, for consideration for field-testing.
I. This proclamation only sets the gear requirements for taking shrimp with trawls in these areas as described in Section I. A., area openings and closings are done through separate proclamations. Individuals should check the division website (http://portal.ncdenr.org/web/mf/) for proclamations opening and closing specific areas for the taking of shrimp.
J. Contact N.C. Division of Marine Fisheries, P.O. Box 769, Morehead City, NC 28557; 252-726-7021 or 800-682-2632 for more information or visit the division website at http://portal.ncdenr.org/web/mf/.
K. For more information on the installation of the Modified Jones Davis BRD visit: http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/shrimp/documents/pdfs/brds/mod_jones_davis_instructions.pdf and for more information on the installation of the Composite Panel BRD visit: http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/shrimp/documents/pdfs/brds/composite_brd_instructions.pdf.
L. In accordance with N.C. General Statute 113-221.1(c) All persons who may be affected by proclamations issued by the Fisheries Director are under a duty to keep themselves informed of current proclamations.
M. **This proclamation supersedes proclamations SH-4-2019 dated May 14, 2019. It updates information in Section VI. and maintains bycatch reduction device and turtle excluder device requirements for taking shrimp with trawls (except as described in Section IV.) in Croatan and Roanoke sounds, portions of the Pamlico, Bay, and Neuse rivers, Core Sound, and the Internal Coastal Fishing Waters south to the North Carolina-South Carolina State Line where up to 90 feet of combined headrope is allowed. These restrictions also apply in Coastal Fishing Waters (including the Atlantic Ocean) for all skimmer trawls.**

BY: 
Kathy B. Rawls, Director
DIVISION OF MARINE FISHERIES

March 16, 2022
1:09 P.M.

Table 1. Required placement of Florida Fish Excluders (FFE).

Functional Tail bag/cod end Length*	Maximum FFE Placement**	Functional Tail bag/cod end Length**	Maximum FFE Placement**
105 meshes or greater	68 meshes	82	53
104	68	81	53
103	67	80	52
102	66	79	51
101	66	78	51
100	65	77	50
99	64	76	49
98	64	75	49
97	63	74	48
96	62	73	47
95	62	72	47
94	61	71	46
93	60	70	46
92	60	69	45
91	59	68	44
90	59	67	44
89	58	66	43
88	57	65	42
87	57	64	42
86	56		
85	55		
84	55		
83	54		

* Functional Tail bag/cod end Length – That length of the tail bag/cod end of a trawl beginning at the tail bag/cod end tie-off and extending forward for a maximum of 105 meshes or to the point where the straight extension ends and the trawl body taper begins, whichever is less. Trawls utilizing short tail bag/cod ends may include those meshes of the TED extension that are behind the TED grid and are in-line with the center of the FFE escape opening.

** If your tail bag/cod end is not included in this table, you can figure the maximum placement for your net by following the formula: (mesh count multiplied by 65, divided by 100, using a 50 mesh tail bag/cod end as an example (50*65)/100=32.5).

Table 2. Required placement of “SEA EAGLE” Excluders.

Functional Tail bag/cod end Length*	Maximum “SEA EAGLE” Placement**	Functional Tail bag/cod end Length**	Maximum “SEA EAGLE” Placement**
105 meshes or greater	40 meshes	82	31
104	40	81	31
103	39	80	30
102	39	79	30
101	38	78	30
100	38	77	29
99	38	76	29
98	37	75	29
97	37	74	28
96	36	73	28
95	36	72	27
94	36	71	27
93	35	70	27
92	35	69	26
91	35	68	26
90	34	67	25
89	34	66	25
88	33	65	25
87	33	64	24
86	33		
85	32		
84	32		
83	32		

* Functional Tail bag/cod end Length – That length of the tail bag/cod end of a trawl beginning at the tail bag/cod end tie-off and extending forward for a maximum of 105 meshes or to the point where the straight extension ends and the trawl body taper begins, whichever is less. Trawls utilizing short tail bag/cod ends may include those meshes of the TED extension that are behind the TED grid and are in-line with the center of the “SEA EAGLE” escape opening.

** If your tail bag/cod end is not included in this Table, you can figure the maximum placement for your net by following the formula: (mesh count multiplied by 38, divided by 100, using a 50 mesh tail bag/cod end as an example: (50*38)/100=19).

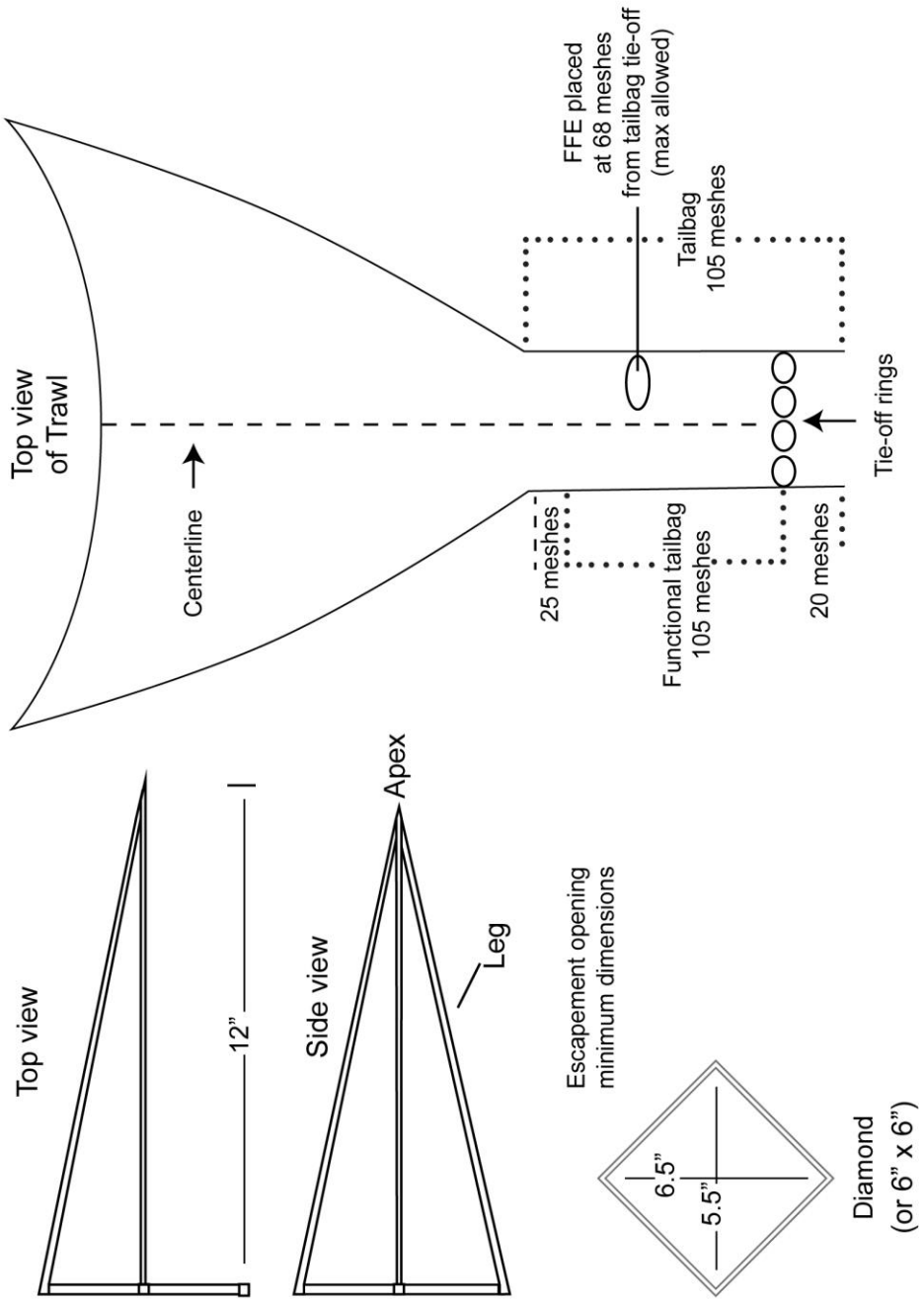


Figure 1. Diagram of Florida Fish Eye (FFE) (II.A.)

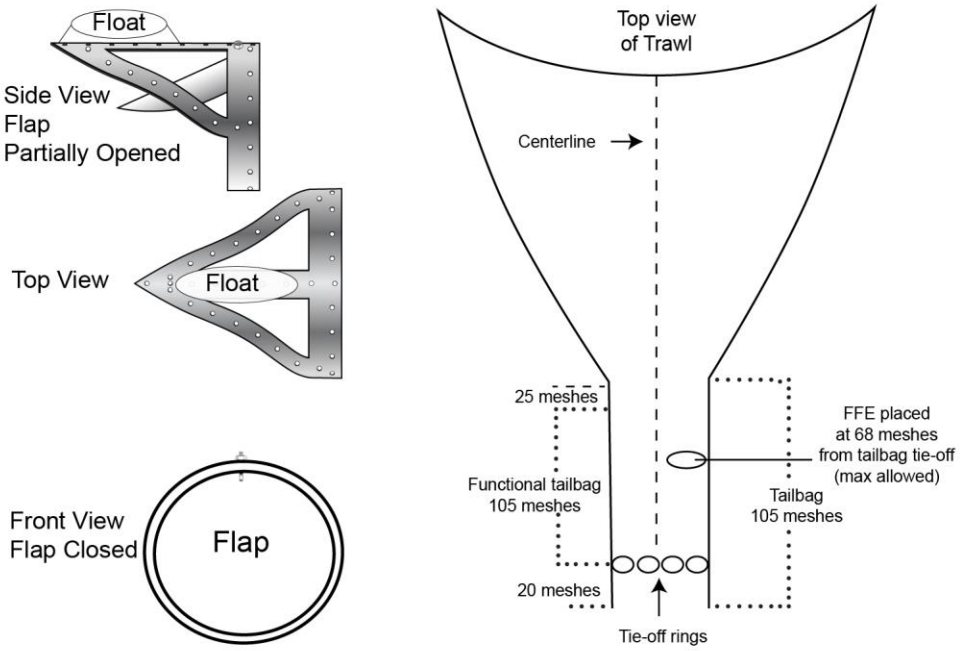


Figure 2. Diagram of "Sea Eagle" Fish Excluder (II.B).

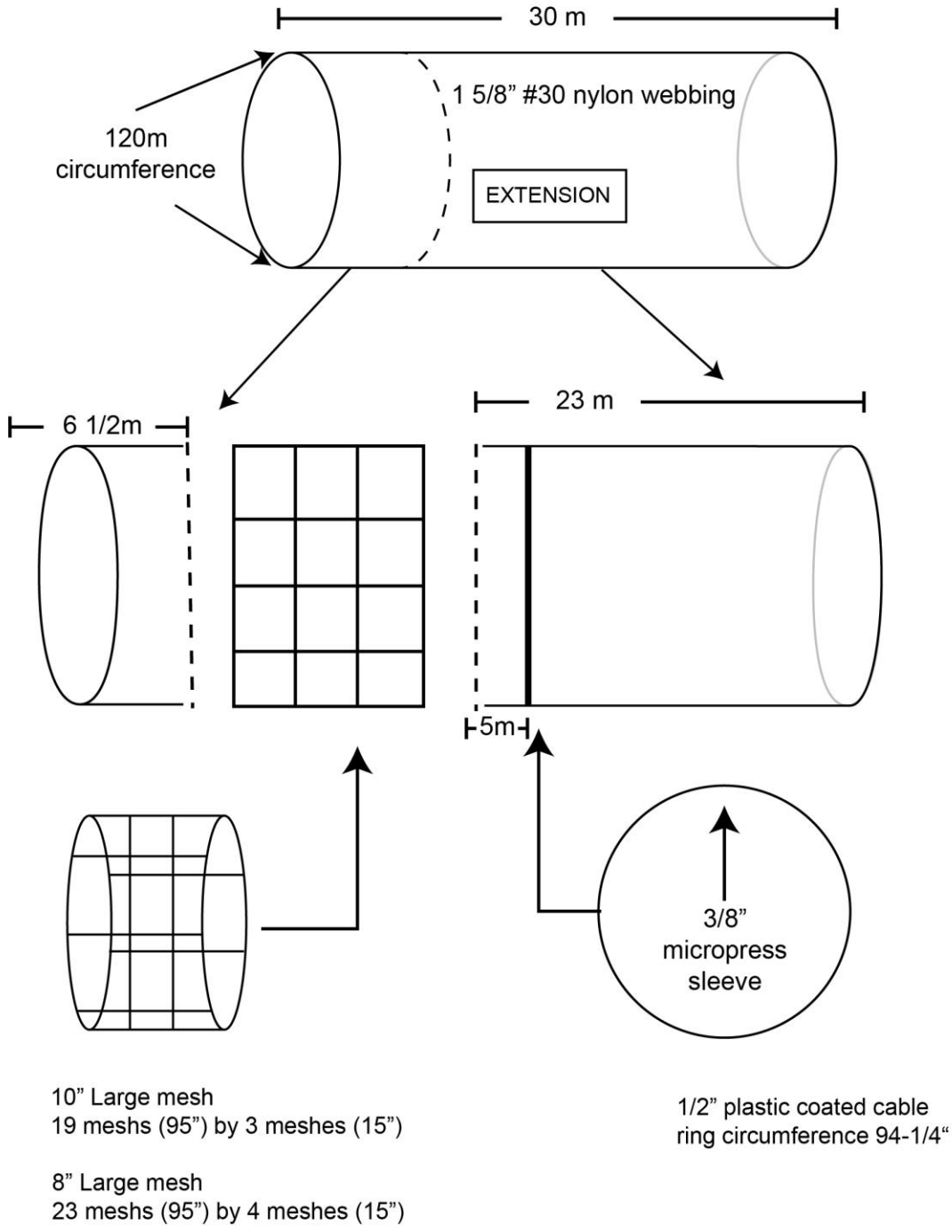


Figure 3. Diagram of the Large Mesh and Extended Mesh Funnel BRDs (II.C, II.D, and II.E.).

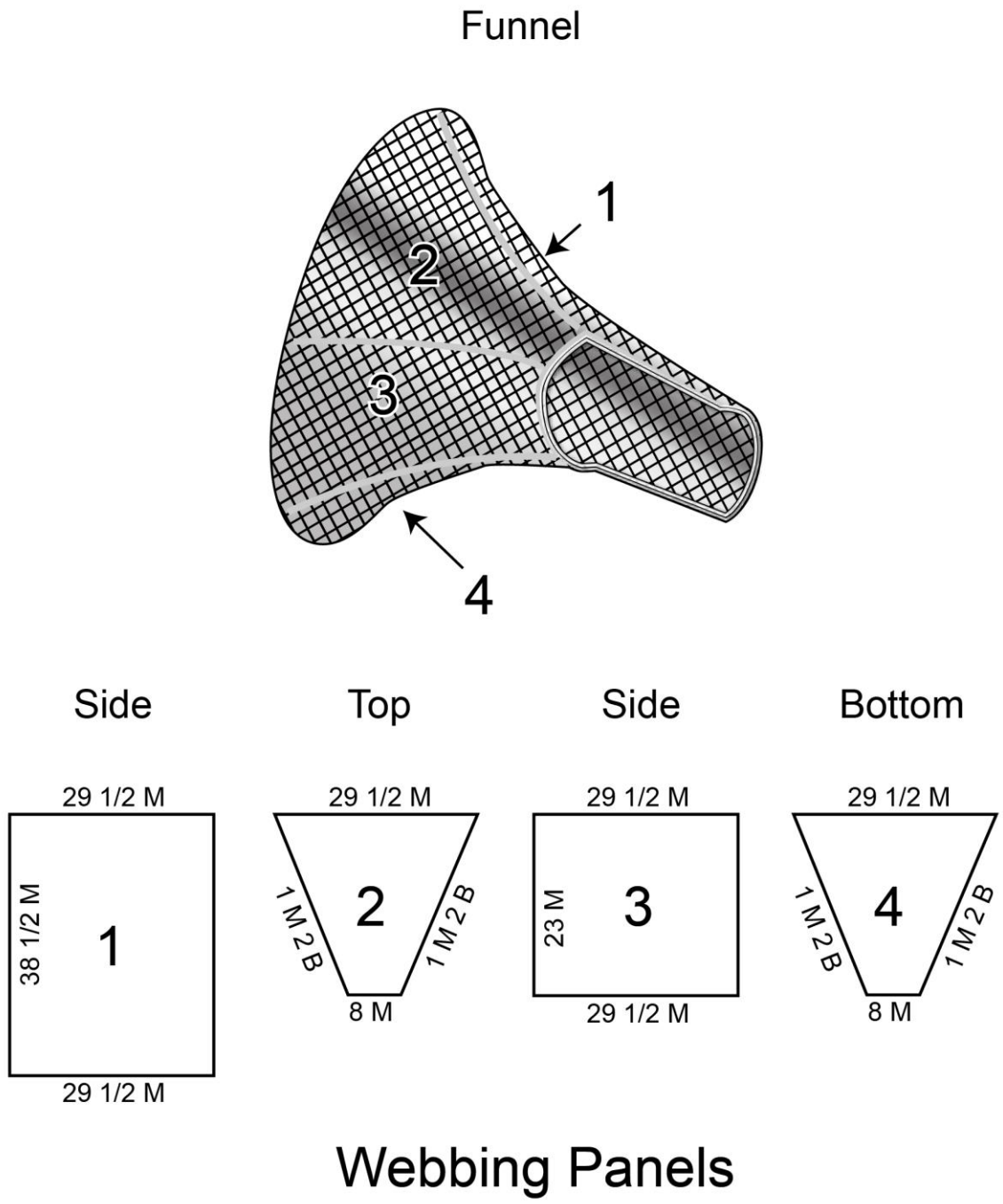


Figure 4. Webbing panels of the Large Mesh and Extended Mesh Funnel BRDs (II.C., II.D. and II.E.).

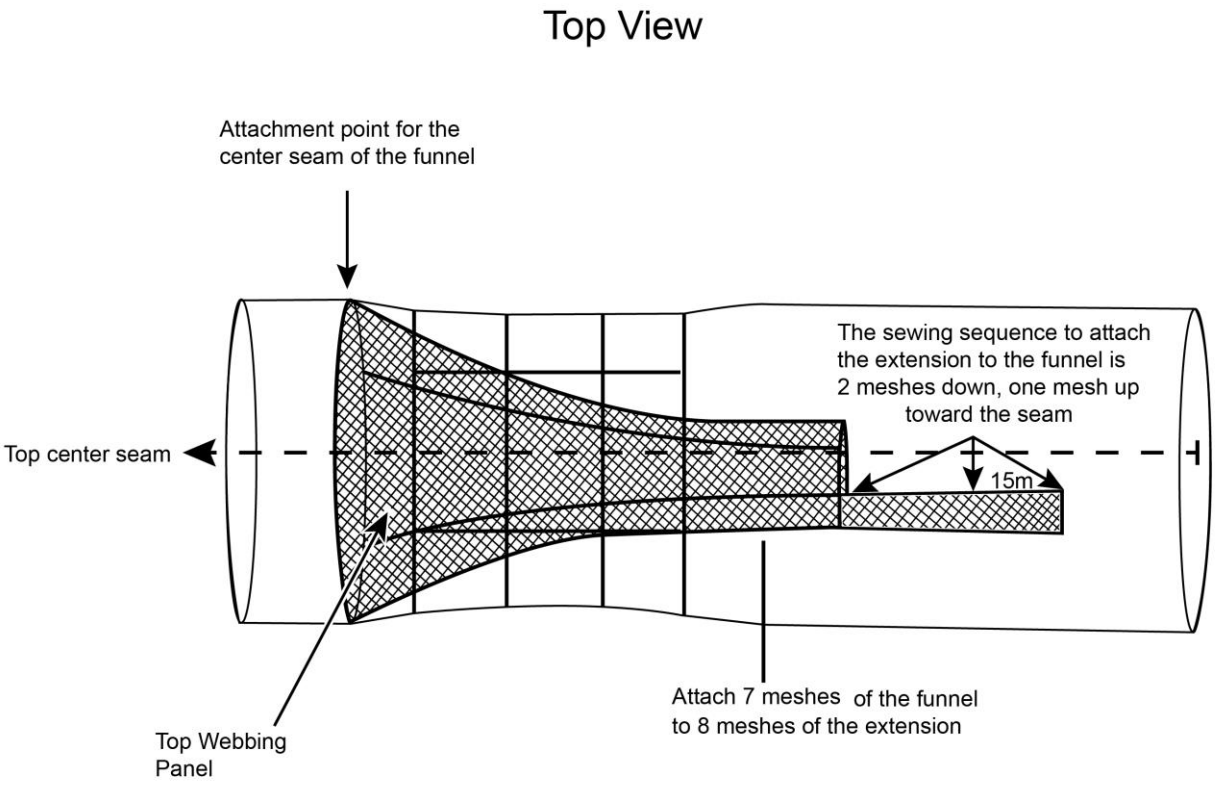


Figure 5. Top view of the Large Mesh and Extended Mesh Funnel BRDs (II.C., II.D., and II.E.).

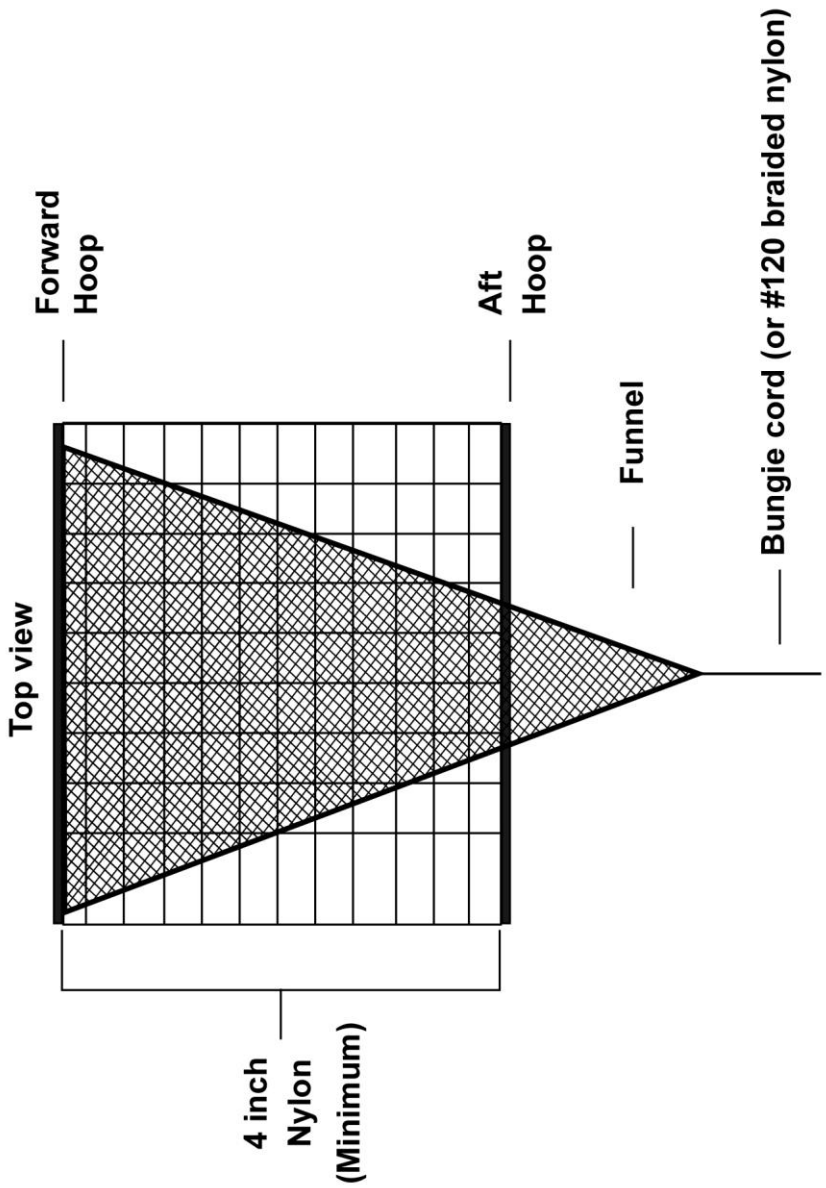
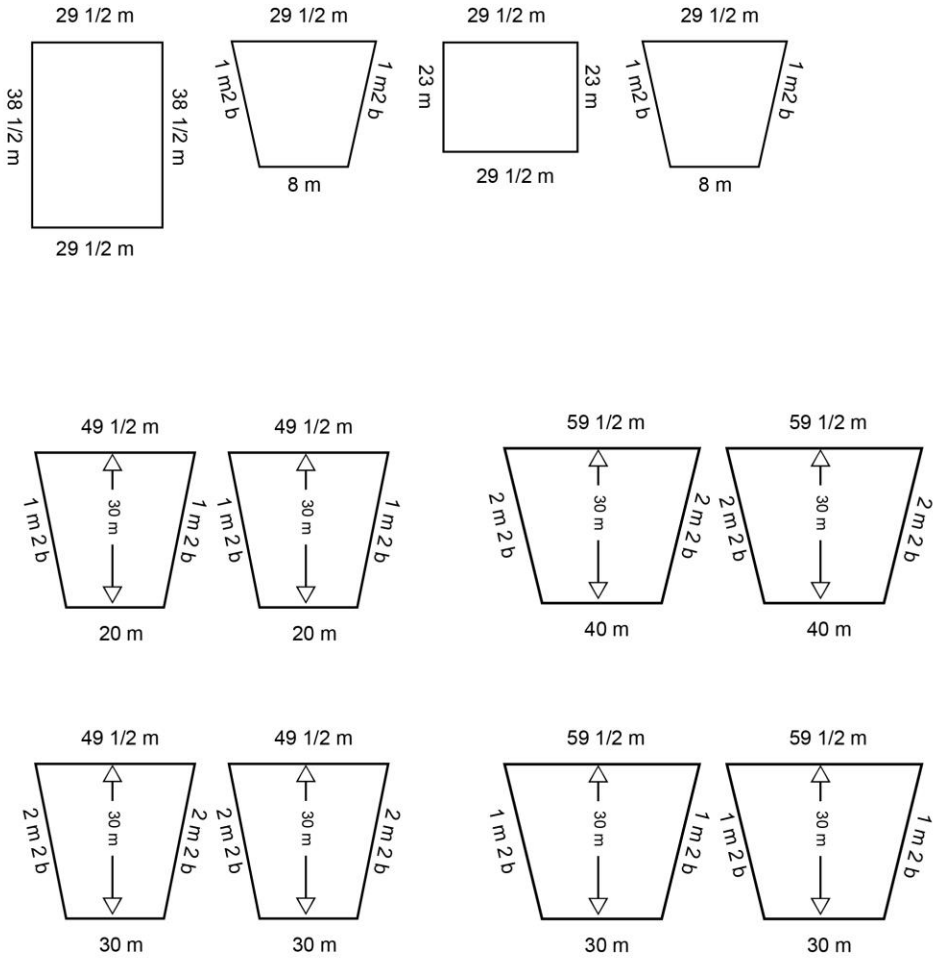


Figure 6. Diagram of the modified large mesh funnel excluder (LMFE) (II.E.)



* One of these four patterns may be used to construct the funnel for the large mesh funnel excluder.

Figure 7. Various funnel patterns of the Large Mesh Funnel Excluder (II.E.).

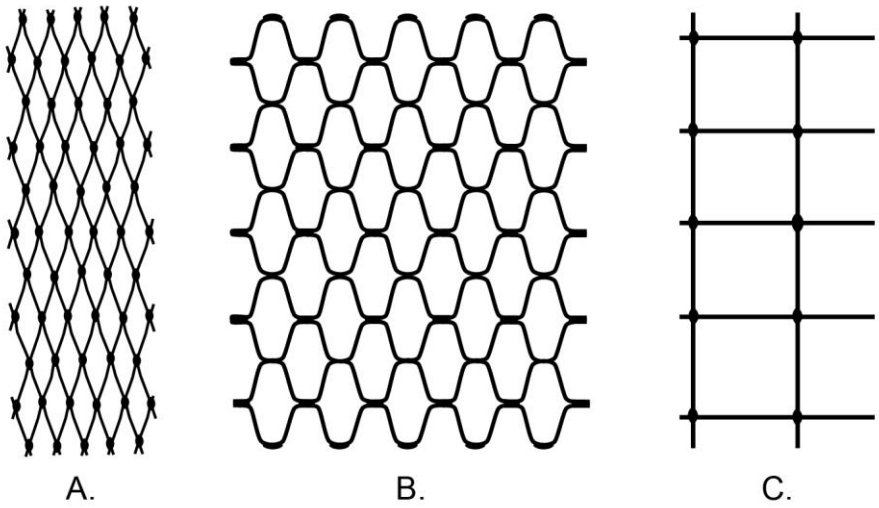


Figure 8. Illustration of (A) traditional (T-0) webbing and (B) T-90 webbing and (C) square mesh (T-45) webbing