

Modified Jones-Davis Bycatch Reduction Device

DESCRIPTION

The Modified Jones-Davis Bycatch Reduction Device (BRD) is a funnel-style BRD shown to reduce bycatch by 33 percent by weight while retaining upwards of 97 percent of shrimp in nets. It has two parts to be considered legal: a funnel and a fish deflection cone (See Figure 1).

The Modified Jones-Davis BRD extension consists of two internal panels of netting sewn diagonally to center. The panels form a funnel for shrimp to pass into the codend (bag) while creating an area of reduced water flow for fish escapement through four openings (two on each side) cut into the BRD extension. The Cone is semi-rigid and installed behind the funnel to stimulate fish through the openings. It is made of a cable hoop and two triangular pieces of netting anchored to the rear of the funnel and within the extension.

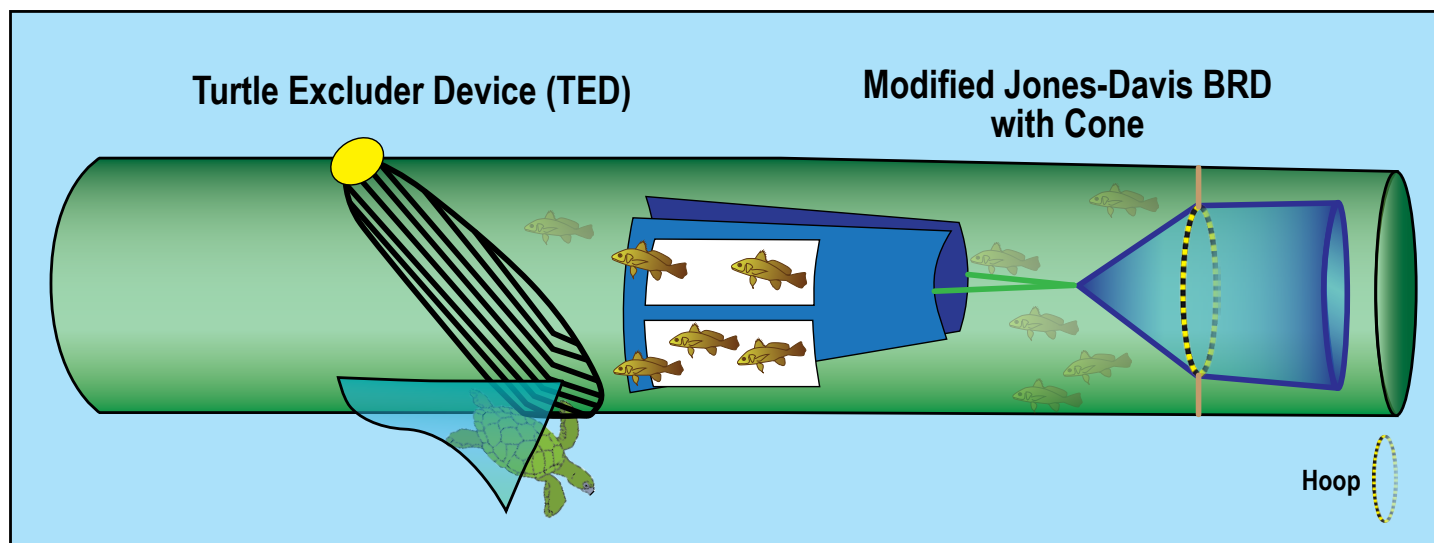


Figure 1. The Modified Jones-Davis BRD.

CONSTRUCTION AND INSTALLATION

Step 1: Construction of the BRD Extension

The BRD extension is a single piece of 1-5/8-inch (41 mm) netting measuring 39.5 meshes by 150 meshes (See Figure 2). Choose a 150-mesh side to be the leading edge for orientation. Note: This will be joined at the short sides to form a tube.

Step 2: Cutting the Escape Openings

The escape openings are rectangles that measure 6 meshes wide by 12 meshes deep. Count 30 meshes along the leading edge of the BRD extension from top-left corner. Then, count 7 meshes inward. Start cutting the 6-mesh side parallel to the leading edge. Turn and cut 12 meshes deep. Complete the sides of the rectangle. The second escape opening must start 4 meshes to the right (along the leading edge) with the same dimensions (6 mesh by 12 mesh rectangle).

The second set of escape openings mirror the first. Start from the top-right corner and count 30 meshes along the leading edge and repeat the previous steps for a total of four openings. Double selvedge for strength.

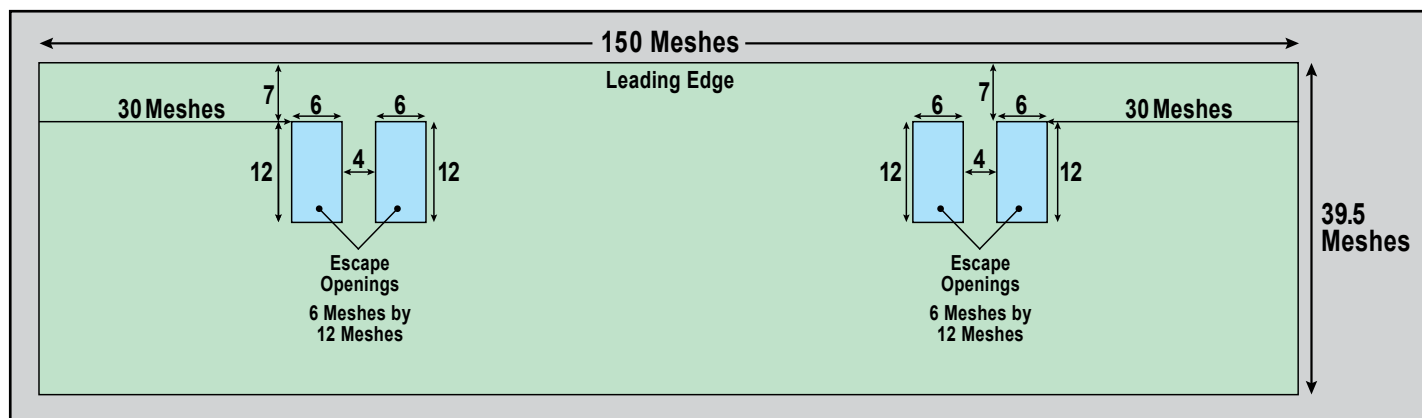


Figure 2. Construction details of the BRD extension.

Step 3: Construction of the Funnel

The two panels are two pieces of 1-5/8-inch (41 mm) heat-set and depth-stretched polypropylene or polyethylene netting 25 meshes on the leading edge by 21 meshes deep (See Figure 3). The panels are attached inside the BRD extension with one covering each set of escape openings.

Starting 25 meshes in and 2 meshes back from the leading edge of the BRD extension, sew the 25-mesh edge of the panel evenly into the extension. The 21-mesh edges are attached to the BRD extension netting on a 9 bar, 1 mesh angle. This creates the V-shaped funnel once the extension is closed. Repeat for the second panel.

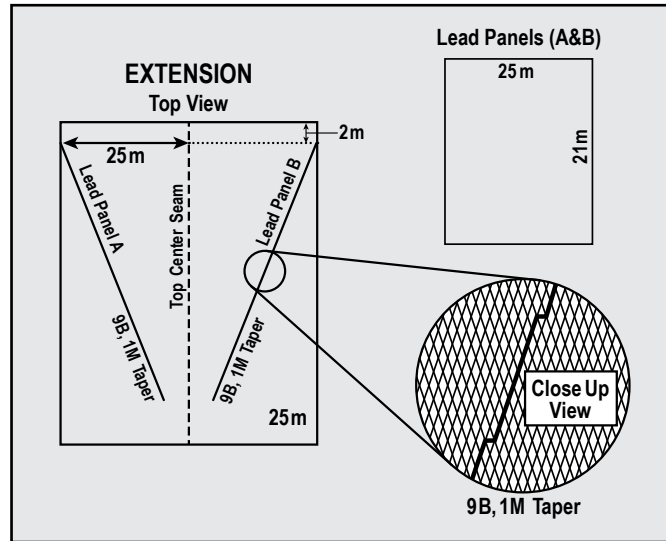


Figure 3. Construction details of the funnel.

Step 4: Sew Sides Together to Make Cylinder

The 39.5-mesh sides of the BRD extension netting are joined to form a tube. The seam is the top of the BRD extension.

Step 5: Cone Construction

The cone is constructed of 2 pieces of 1-5/8-inch (41 mm) polypropylene or polyethylene netting, 40 meshes wide by 20 meshes in length. Cut the 20-mesh sides evenly on the bar to form a triangle (See Figure 4). Starting at the point, sew the two triangles together on the sides and leave the 40-mesh base open.

Construct a hoop using 5/16-inch (8 mm) or 3/8-inch (9.5 mm) cable that is 34.5 inches (88 mm) in length and join it at the ends with a 3-inch aluminum pipe (3/8-inch, 9.5 mm) pressed with a 1/4-inch (6.4 mm) die. The hoop is attached with heavy twine inside the netting cone at 10 meshes from the point (See Figure 4).

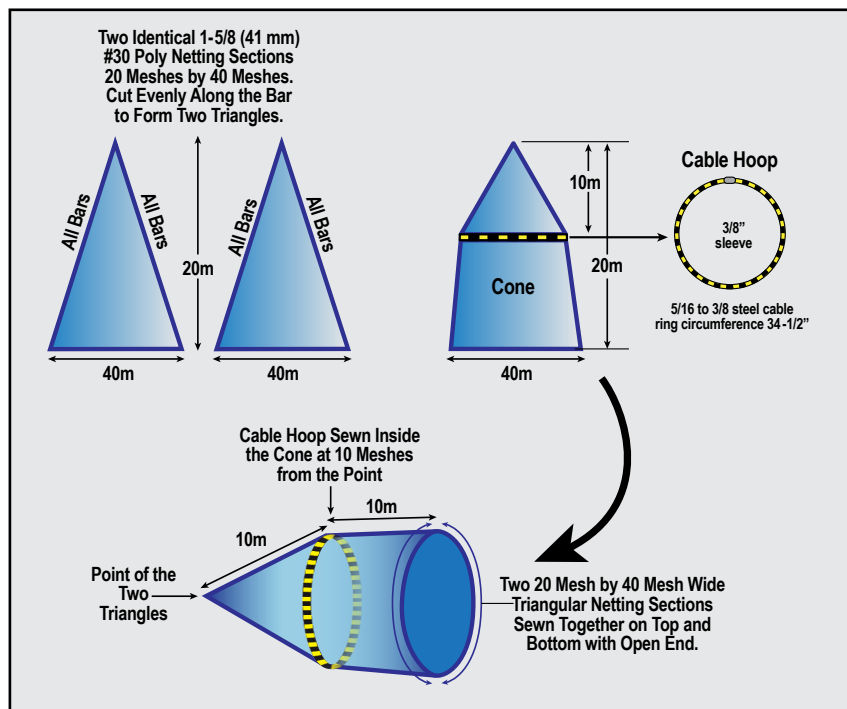


Figure 4. Details of the Cone construction.

Step 6: Cone Installation

The cone tip must be 12 inches (30.5 cm) or less behind the back edge of the funnel, and the cone attached in four places (See Figure 5).

Cut a three-foot piece of #60 twine (OR a minimum 4 mesh wide strip of #21 or heavier netting). Attach the midpoint to the cone tip. Center and attach the ends 5 meshes or closer on the back edge of the funnel. To secure the cone, attach two 12-inch (30.5 cm) pieces of #60 (or heavier) twine to the top and bottom of the cone hoop. The opposite ends of twine attach to the top and bottom center of the extension netting to keep the cone from moving forward into the funnel.

The cone may extend beyond the BRD extension, but this is allowed.

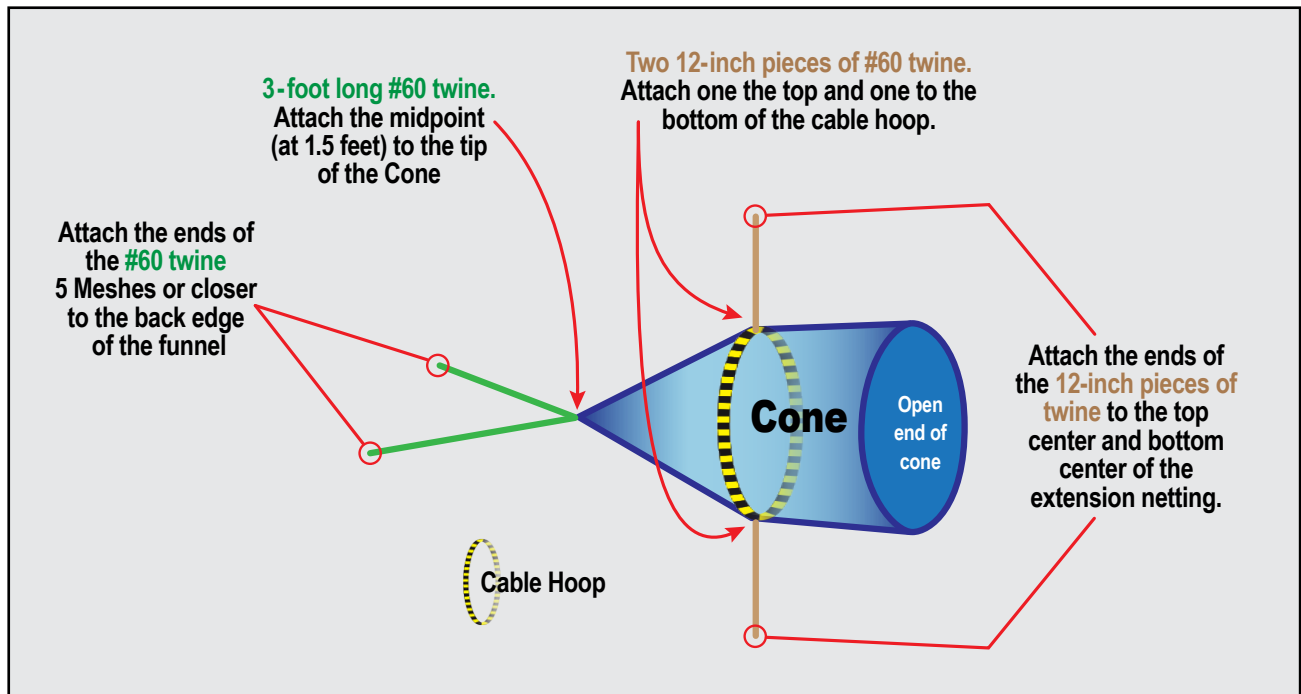


Figure 5. Details of the Cone installation.

Step 7: Connect to TED Extension

The Modified Jones-Davis BRD connects to the TED extension no more than 4 meshes from the back edge of the TED grid (top or bottom shooting). Remove excess TED extension netting on an even row. Attach the BRD extension so the seam is located on top of the trawl when towing. Complete the installation by attaching the codend (bag) to the trailing edge of the BRD extension making sure the cone can move within the net. The escape windows should be no more than 18 inches from the back edge of the TED grid.

CONTACT US

Sea Grant:

Matthew Kammann
mkammann@tamu.edu
(361) 480-8587

Tiffany Pasco
tpasco1@lsu.edu
(859) 321-2492

NOAA Southeast Fisheries Science Center Gear Research Branch:

Blake Price
blake.price@noaa.gov
(228) 369-8194

Bryan Wescovich
bryan.wescovich@noaa.gov
(251) 327-5465

For more information on the project, please visit
www.laseagrant.org/outreach/projects/better-brds/

This document was prepared for general informational purposes in October 2022 and has no legal force or effect. Please refer to the federal BRD regulations, 50 CFR part 622 and 622 Appendix D and the Federal Register for specific and controlling BRD requirements.

