

Fisheye Bycatch Reduction Device for the Gulf of Mexico EEZ

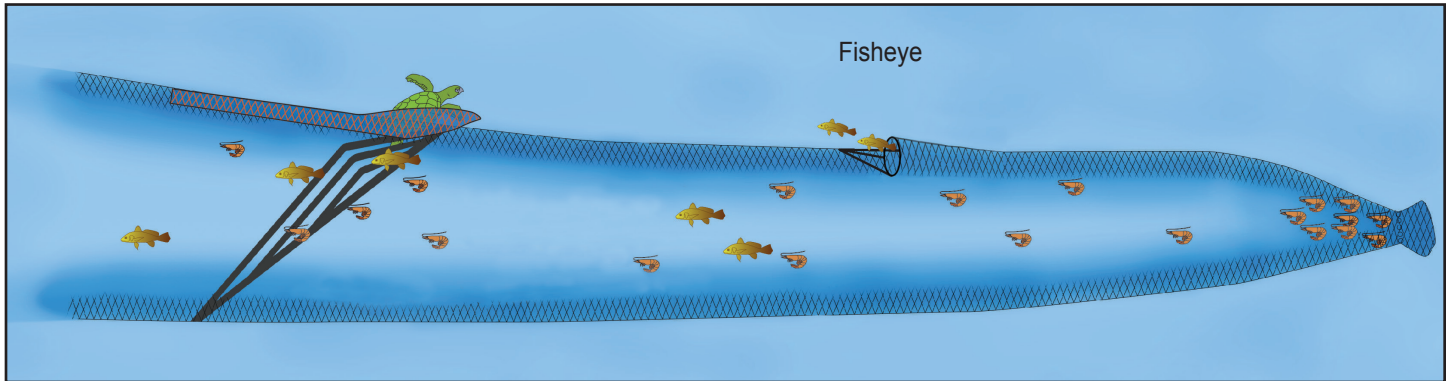


Figure A: Image of a fisheye BRD frame in the codend behind the TED.

DESCRIPTION

The fisheye bycatch reduction device (BRD) is a simple and effective design installed in the codend of a shrimp trawl to provide an opening for fish to escape from the net (Figure A). The fisheye BRD has been found to have 37 percent bycatch elimination and 90 percent shrimp retention by weight when properly installed.

The fisheye BRD supports a permanent escape opening in the top seam of the codend using a metal brace. The majority of fish escapement occurs during haul back at the surface. For the fisheye to work correctly, the escape opening must remain open and unobstructed by the lazy line attachment system or other net additions at all times while in the water. The rigid metal frame requires little additional maintenance.

CONSTRUCTION AND INSTALLATION INSTRUCTIONS

Step 1: Fisheye frame

The fisheye BRD is cone-shaped and made from steel or aluminum rods at least $\frac{1}{4}$ inch (6.35 mm) diameter (Figure B). The base of the BRD is, at minimum, 5 inches (12.7 cm) wide in any direction and forms an escape opening no smaller than 36 square inches (91.4 cm²). The opening may take any shape so long as it follows the minimum dimension rules (See Figure C). Three 12 inch (304.8 mm) brace bars attached to the base on one side form the support “body” of the cone and join at the apex (“point”).

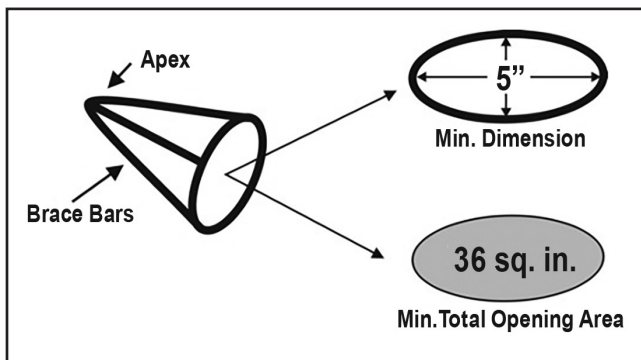


Figure B: Image of a fisheye BRD body and escape opening base with clear dimension indications.

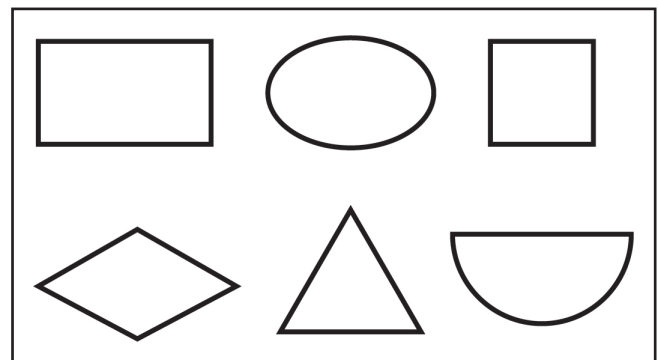


Figure C: Potential shapes for fisheye opening. Each must have a minimum 36 square inch area and the shortest “side” must be a minimum of 5 inches.

Step 2: Locate the installation site

First, locate where on the codend the fisheye BRD will be installed. In the Gulf of Mexico, the fisheye BRD must be installed in the top center of the codend with the escape opening no further forward than 9 feet (2.7 m) from the codend drawstring or tie-off rings (Figure D). The escape opening will face the leading edge or mouth of the trawl once installation is complete. The opening must not be covered by any part of the lazy line attachment system, such as elephant ears or choker straps or any other covering. It may be helpful once the location is measured to mark it on the net.

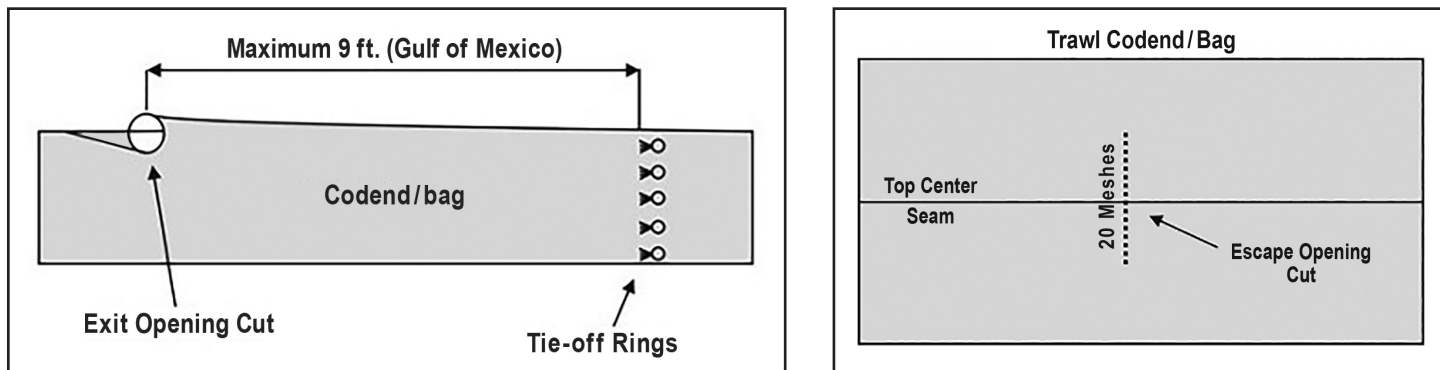


Figure D: Placement of escape opening from side view (left) and from overhead (right).

Step 3: Cut escape opening

Once the installation site is located, cut the codend meshes perpendicular to the center seam (Figure D). This cut must be large enough to fit the fisheye base. For a 12-inch wide (304.8 mm) fisheye base, the cut will be approximately 20 meshes, with 10 meshes being cut on each side of the center seam.

Step 4: Orient the fisheye and secure the escape opening

Place the fisheye BRD base on the newly cut escape opening with the apex pointing upward and the center brace bar oriented toward the mouth of the trawl (Figure E). Use heavy twine to attach the edges of the escape opening evenly around the perimeter of the fisheye base.

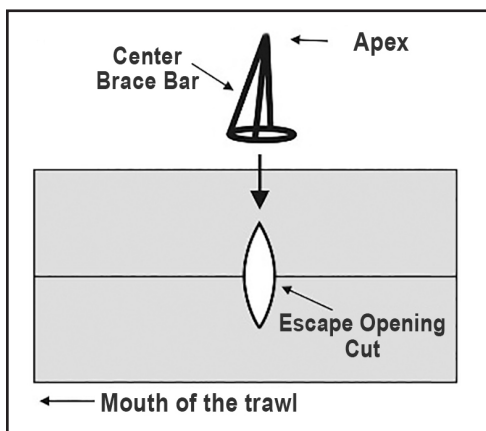


Figure E: Image of the fisheye BRD being installed into the codend.

Step 5: Finish attaching the fisheye BRD

With the escape opening attached, rotate the frame onto the net so that the apex points to the mouth of the trawl and the brace bars lay on the codend (Figure F). Attach the fisheye brace bars to the codend using heavy twine until it is securely attached all around. Ensure that the escape opening is unobstructed (Figure G).

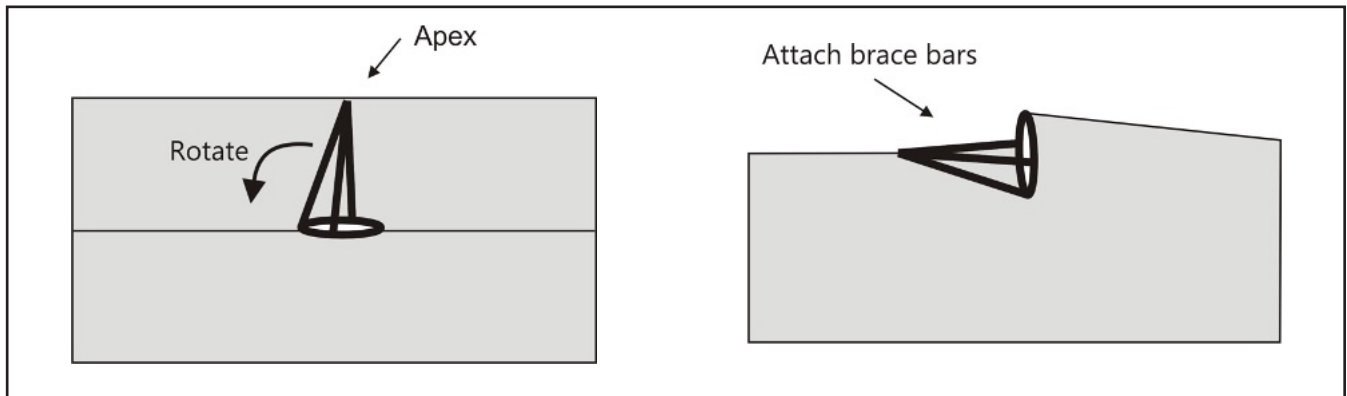


Figure F: Images of the fisheye being sewn into the codend.

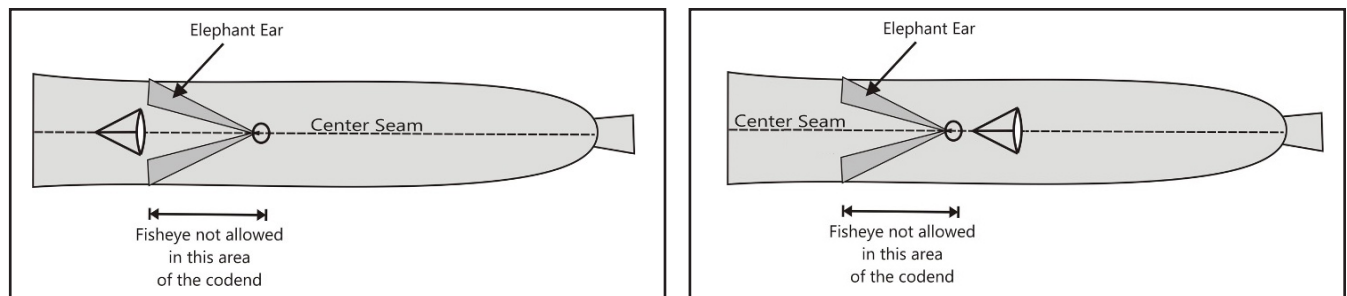


Figure G: Image on the left has the fisheye in front of the Elephant Ear and the image on the right shows the fisheye behind the Elephant Ear. Both locations are correct.

TROUBLESHOOTING:

Excessive bycatch issues: There can be no obstructions of the fisheye BRD opening. Ensure that the elephant ears and the lazy line, or any other net modifications, do not cover or overlap the fisheye BRD. This will prevent fish from escaping and increase bycatch.

Escape opening issues: The fisheye has a minimum escape opening dimension of 5 inches and a minimum total escape opening of 36 square inches. Regularly check the BRD to ensure the frame is not accidentally crushed out of shape. This makes the fisheye BRD ineffective and may be a violation. Do not purposely collapse or bend the BRD.

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

This document was prepared for general informational purposes in December 2021 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.

