



Shrimp Trawl Bycatch Industry Workgroup
April 4, 2018

*Department of Environmental Quality
Division of Marine Fisheries*



Shrimp Trawl Bycatch Industry Workgroup Background



Shrimp Fishery Management Plan

- 2012: Revision Recommended
- 2013: Advisory Committee formed
- 2014: Preferred Management Options
- 2015: Amendment 1 adopted
 - Management strategies implemented

Marine Fisheries Commission Management Strategy



- Convene a stakeholder group
- Initiate Industry testing
- 40-percent reduction
- Ocean and internal waters
- Three years
- Control net:
 - State Fisheye
 - Federally approved turtle excluder device
 - 1 ½ inch stretch mesh tailbag

Funding

- Conservation Fund
- Saltonstall-Kennedy Grant Program
- Bycatch Reduction Engineering Program
- National Fish and Wildlife Foundation
- Atlantic Coastal Fisheries Cooperative Management Act
- In-kind contributions from the industry



Workgroup Meeting Summary

- March 31, 2015
 - Reviewed existing BRD research
 - Selected designs to be tested
 - Developed operating procedures and protocols for gear testing in 2015
- January 25, 2016
 - Reviewed results from 2015 testing
 - Selected designs to be tested in 2016
 - Recommended acceptable shrimp loss between 3% and 5%
- January 9, 2017
 - Reviewed results from 2016 testing
 - Selected designs to be tested in 2017
- January 22, 2018
 - Reviewed results from 2017 testing
- April 4, 2018
 - Reviewed results from 2015-2017 testing
 - Make recommendations for consideration by the MFC



Gears Tested

- 2015: 3 large vessels inshore
 - 4 inch TED, Composite Panel with fish spooker cone, and 1 ½ inch tailbag
 - 3 inch TED, single state fisheye, and 1 ½ inch tailbag
 - 3 inch TED with square mesh panel and 1 7/8 inch tailbag
 - 4 inch TED, Ricky BRD, and 1 ½ inch tailbag
 - 4 inch TED, Double federal fisheyes and 1 7/8 inch tailbag
- 2016: 2 large vessels inshore
 - 4 inch TED, one state fisheye, Virgil Potter BRD, and 1 ½ inch tailbag
 - 4 inch TED, double federal fisheyes, and 1 ¾ inch tailbag
 - 3 inch TED, double federal fisheyes, and 1 ¾ inch tailbag
 - 4 inch TED, one state fisheye, Virgil Potter BRD, and 1 ¾ inch tailbag
- 2017: 1 small vessel inshore, 1 large vessel offshore, 2 small vessels offshore
 - 3 inch TED, one state fisheye, and 1 ½ inch tailbag
 - 3 inch TED, one state fisheye, and 1 5/8 inch tailbag
 - 3 inch TED, double state fisheyes and 1 5/8 inch tailbag
 - 3 inch TED, double federal fisheyes and 1 5/8 inch tailbag



Double federal fisheyes, 1 7/8-inch tailbag and 4-inch TED

- + Significantly reduces finfish bycatch (t-test: -40.8%, random: -40.1%)
- + Net gain in shrimp observed, not significant (t-test: +1%, random: +2.2%)
- + Reduces culling time due to less bycatch
- + Implements actions of Amendment 1 to the Shrimp FMP
- Cost associated with purchasing and installing gear (+\$600 per net)
- Untested on smaller vessels, skimmer trawls, and in Atlantic Ocean



Double federal fisheyes, 1 ¾-inch tailbag and 4-inch TED

- + Significantly reduces finfish bycatch (t-test: -57.2%, random: -54.0%)
- + Reduces culling time due to less bycatch
- + Implements actions of Amendment 1 to the Shrimp FMP
- Shrimp losses greater than 5%, not significant (t-test: -12.1%, random: -16.2%)
- Cost associated with purchasing and installing new gear (+\$600 per net)
- Untested on smaller vessels, skimmer trawls, and in the Atlantic Ocean



Double federal fisheyes, 1 ¾-inch tailbag, and 3-inch TED

- + Significantly reduces finfish bycatch (t-test and random: -44.9%)
- + Reduces shark bycatch, not significant (t-test and random: -18.6%)
- + Potential reductions in debris and jellyfish
- + Reduces culling time due to less bycatch
- + Observed shrimp losses less than 5%, not significant (t-test and random: -4.9%)
- + Implements actions of Amendment 1 to the Shrimp FMP
- Cost associated with purchasing and installing gear (+\$1,250 per net)
- Potential fouling issues in areas and times of high grass concentrations
- Untested on smaller vessels, skimmer trawls, and in the Atlantic Ocean



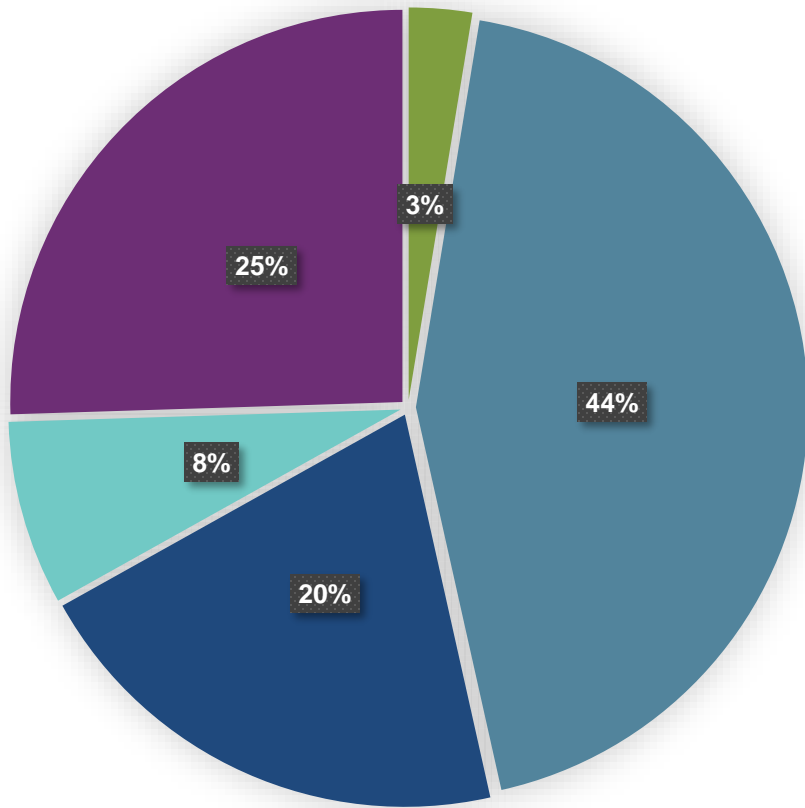
Single state fisheye, 1 ¾-inch tailbag, and Virgil Potter BRD

- + Significantly reduces finfish bycatch (t-test: -43.2%, random: -44.3%)
- + Reduces culling time due to less bycatch
- + Implements actions of Amendment 1 to the Shrimp FMP
- Costs associated with purchasing and installing new gear (+\$800 per net)
- Shrimp losses greater than 5%, not significant (t-test: -5.5%, random: -5.8%)
- Untested on smaller vessels, skimmer trawls, and in the Atlantic Ocean



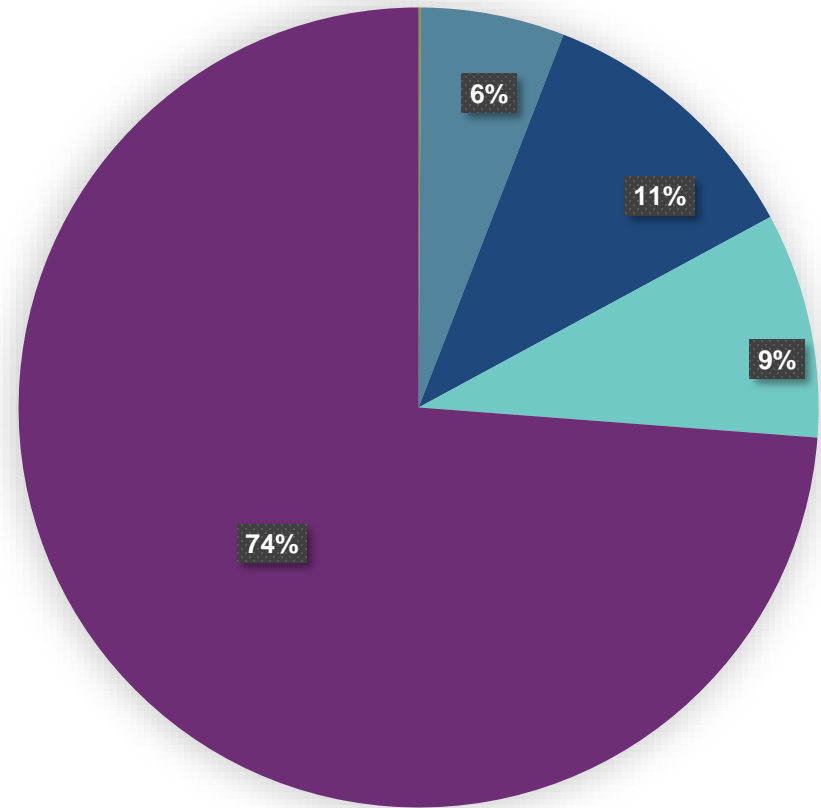
Estuarine Fleet and Landings (2007-2016)

Estuarine Vessel Length (feet)



0-15 16 to 30 31 to 45 46 to 55 > 55

Estuarine Landings (pounds)

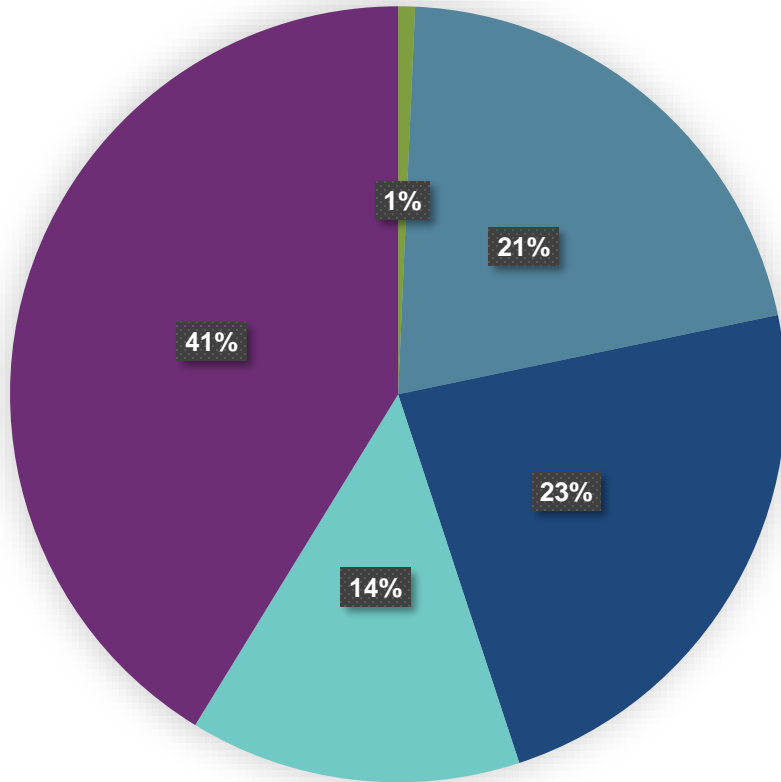


0-15 16 to 30 31 to 45 46 to 55 > 55



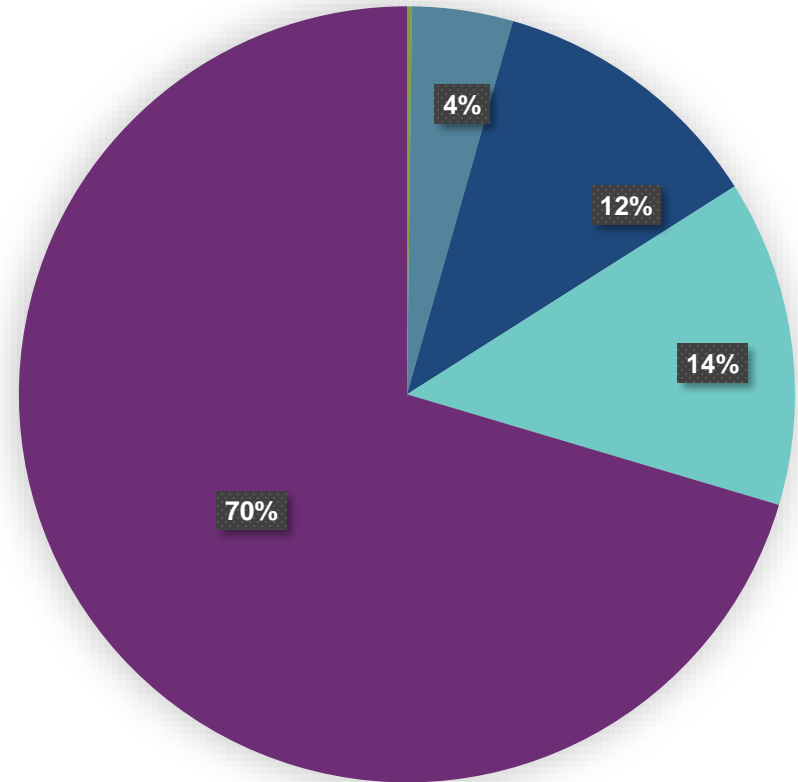
State Ocean Fleet and Landings (2007-2016)

**State Ocean Vessel Length
(feet)**



0-15 16 to 30 31 to 45 46 to 55 > 55

**State Ocean Landings
(pounds)**



0-15 16 to 30 31 to 45 46 to 55 > 55



Next Steps

- Develop policy recommendations to the MFC
 - Options presented are combinations that met 40% reduction goal
- Discuss future of the workgroup
- Presentation to MFC
 - May 17, 8:30 am



