



Better Bycatch Reduction Devices

Annual Report 2024



Project Status

Award Title: Better Bycatch Reduction Devices for the Gulf of Mexico Commercial Shrimp Trawl Fishery: Sea Grant's Role

- NOAA Award Number: NA21OAR4170095 (LA) & NA21OAR4170096 (TX)
- Investigators: PI - Julie Lively (Louisiana) and PI- Laura Picariello (Texas)
- Project Dates: 1/1/2021 to 12/31/2025
- Reporting Dates: 1/1/2024 to 12/31/2024

Award Title: Better Bycatch Reduction Devices for the Gulf of Mexico Commercial Shrimp Trawl Fishery: Sea Grant's Role Years 4-6

- NOAA Award Number: NA24OARX417C0163-T1-01 (LA) & NA24OAR417C0164-T1-01(TX)
- Investigators: PI - Julie Lively (Louisiana) and PI- Laura Picariello (Texas)
- Project Dates: 8/1/2024 to 7/31/2027
- Reporting Dates: 8/1/2024 to 12/31/2024



Background

This project is a collaborative effort amongst Louisiana Sea Grant (LASG), Texas Sea Grant (TXSG), NOAA Restoration Center and NOAA Fisheries to restore finfish populations injured by the Deepwater Horizon oil spill through development and certification of new BRDs for the shrimp industry throughout the Gulf.

Finfish bycatch in shrimp trawls impact both shrimpers and the environment. It causes additional labor for shrimpers who must sort and remove unwanted catch, and it is an environmental concern as many of these finfish species are commercially, recreationally and ecologically important.

This project aims to improve bycatch reduction by identifying and increasing use of more efficient bycatch reduction devices (BRDs) for the Gulf shrimp trawl fishery. Successful BRD designs could be certified for use to provide Gulf shrimpers with additional BRD options.

This is one of 18 Open Ocean Trustee Implementation Group Final Restoration Plan 2 projects selected to restore natural resource injuries caused by the Deepwater Horizon oil spill. Based on public input, this is one of several projects designed to increase opportunities for the fishing industry to engage in restoration efforts. For more information, please visit www.gulfspillrestoration.noaa.gov/restoration-areas/open-ocean.

NOAA Restoration's Monitoring and Adaptive Management (MAM) plan objectives:

Objective 1: Identify new advances in BRD system technology via regional surveys and domestic and international outreach

Objective 2: Evaluate bycatch reduction capabilities of new BRDs and certify BRDs that would provide a restoration benefit via bycatch reduction

Objective 3: Increase use of new BRD systems in the U.S. Gulf of Mexico shrimp fishery via outreach and incentives

Objective 4: Evaluate bycatch reduction of the new BRDs in the commercial shrimp fishery

Objective 5: Increase bycatch reduction by ensuring new BRD systems are used according to operational recommendations via outreach.

This document highlights the Year 4 progress (January 1, 2024 – December 31, 2024) by LASG and TXSG on activities as part of the Better Bycatch Reduction Device Project. Sea Grant is currently operating under two agreements with NOAA Restoration. The foundation for the project was the focus in Year 1 and Year 2 (2021–2022) through activities supporting MAM objectives. Year 3 (2023) continued these activities and increased shrimp industry involvement through research and outreach. In Year 4 (2024), shrimp industry activities continued in both research and outreach with new research opportunities occurring. Many outreach events supported multiple activities.

Sea Grant Primary Program Components:

Component 1: Communications and Outreach
Component 2: Research and Development
Component 3: New BRD Rollout
Component 4: Vessel Support
Component 5: Monitoring

2024 Key Accomplishments

- Finished industry pilot testing of potential new gear with recommendations to NOAA for BRD v BRD testing
- Initiated industry BRD vs BRD testing
- Applied and received a second exempted fishing permit (EFP) from Gulf Fishing Council
- Updated existing BRD Gear Installation Guides with current contacts
- Completed translations on whiteboard video on 'How BRDs work'
- Created videos and translations complementing industry-requested Quick Checks for most-used current BRDs (Fisheye and Composite Panel)
- Distributed and supported a survey gauging commercial shrimp fishers' economic 'willingness to accept' for potential new BRDs
- Held dockside outreach events to survey vessels' current BRD use, recruited participants for industry testing, ensured proper BRD installation including troubleshooting issues, and gathered feedback on industry's challenges
- Updated Stakeholder Working Group on project activities

Project Adaptations

Sea Grant monitored shrimp industry activity during the 2024 season to estimate the number of active federal fishing vessels. We saw a decrease in federally permitted vessels that fished in 2024 compared to previous years. Additionally, many boats and federal shrimp permits were (and still are) actively for sale, and interactions with industry throughout the year reflected a general negative attitude towards shrimp price and sales. These on-going economic pressures affected project participation and industry engagement which delayed key steps of Better BRD.

Major weather events affected the shrimp fleet during Year 4 (2024). At least two active vessels were overtaken by a strong storm event and sunk. The 2024 hurricane season was active with Hurricanes Beryl, Debby, Francine, Helene, Milton and Rafael impacting all states in the Gulf Region. While vessels may move for safety, the onshore docks and processors are also affected during these events, which may change how industry fishes.

Due to continuing setbacks from COVID-19, major hurricane landfalls, and industry hesitancy, Sea Grant requested and received a second no cost extension to finish activities (industry testing) under the current award. This extends the time period for completion of Agreement 1 activities to December 31, 2025.

Better BRD Agreement 2 started August 1, 2024, and helps continue coverage of communications, outreach activities and other project support.

Sea Grant Project Personnel

Sea Grant project personnel changes in Year 4 (2024) are highlighted below.
Two members left their positions (*), and one was filled (**). This list is up to date as of December 31, 2024.

Sea Grant Personnel	State	Work locale	Primary responsibility BBRD
Julie Lively	LA	Louisiana Sea Grant – Baton Rouge	Principal Investigator
Laura Picariello	TX	Texas Sea Grant – Galveston	Principal Investigator
Tiffany Pasco	LA	Louisiana Sea Grant – Baton Rouge	Program Manager
Matthew Kammann	TX	Texas Sea Grant – Corpus Christi	Program Manager
Merritt McCall Walker	LA	Louisiana Sea Grant – Baton Rouge	Program Manager
Sara Stewart	TX	Texas A&M – College Station	Graduate Student
Julie Falgout	LA	Louisiana Sea Grant – Houma	Industry Liaison
Corley-Ann Parker*	TX	Texas Sea Grant	Communications Team
Nick Perez**	TX	Texas Sea Grant	Communications Team
Roy Kron	LA	Louisiana Sea Grant – Baton Rouge	Communications Team
Robert Ray	LA	Louisiana Sea Grant – Baton Rouge	Communications Team
Thu Bui	LA	Louisiana Sea Grant – Abbeville	Extension Agent
Mark Shirley	LA	Louisiana Sea Grant – Abbeville	Extension Agent
Gary Graham	TX	Texas Fishery Liaison	Industry Liaison
Rex Caffey	LA	Louisiana Sea Grant – Baton Rouge	Economics Team
Jerrold Penn	LA	Louisiana State University Agricultural Center	Economics Team
Daniel Harris	LA	Louisiana State University Agricultural Center	Economics Graduate Student
Steve Midway	LA	LSU-Baton Rouge	Statistician
Tony Reisinger*	TX	Texas Sea Grant – Port Isabel	Extension Agent

Project Overview

• TRAINING AND OUTREACH

Provide support and materials on existing and new BRDs in the federal fleet

• PHASE 1: BRD HUNT

Identify new advances in BRDs

• PHASE 2: TESTING

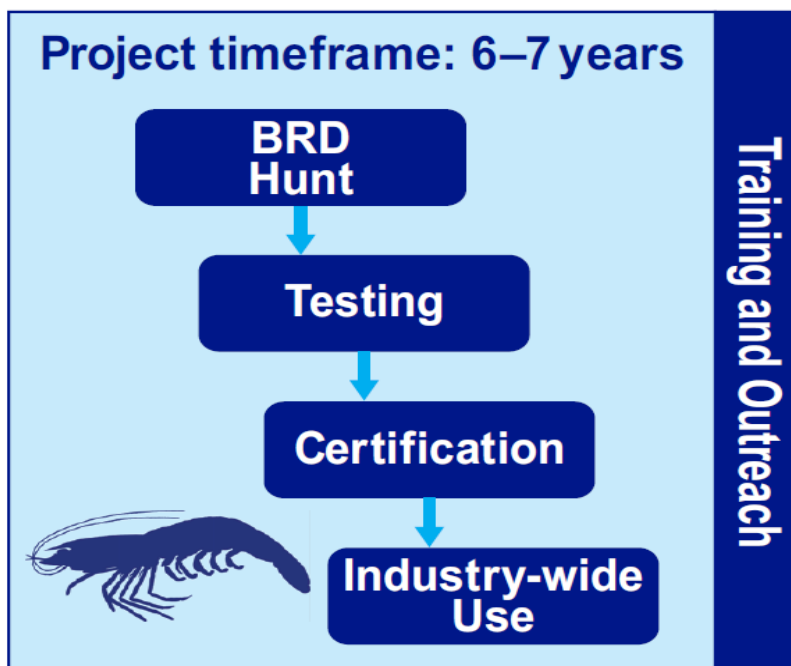
Test bycatch reduction and shrimp retention of new BRDs through research pilot testing

• PHASE 3: CERTIFICATION

Certify successful new BRDs for use in the Gulf shrimp industry

• PHASE 4: INDUSTRY-WIDE USE

Increase voluntary use of new BRDs via outreach and incentives



PROGRESS

This section documents progress towards meeting three of the five primary program components (1) communications and outreach, (2) research and development, and (4) vessel support. This report is part of (5) monitoring, and the project has not yet reached (3) new BRD rollout.

COMPONENT 1: TRAINING AND OUTREACH

The implementation of Better BRD requires training and outreach on all levels (project team and industry) across all stages of the project (MAM objectives 1-5).

Outreach and Communications

Better BRD team members were able to attend multiple industry meetings ([Table 1, page 5](#)) to present project updates, including opportunities for industry testing and to participate in the survey for 'willingness to accept'. Industry meetings were useful to find participants for industry testing. Interactions were informative for team members as dockside participation was decreased.

Emails were sent to various shrimp associations across the Gulf, and known industry members were contacted to aid in recruitment for both testing and the survey. Sea Grant utilized their social media platforms to inform followers of industry opportunities. Postcards were mailed to federal shrimp permit holders and net shops were mailed a packet of gear installation guides to pass to their customers.

Communication material was updated with current project contacts (BRD guides and contact card) as well as the website. Additionally, videos were created complementing the industry-requested Quick Check guides for the most common current BRDs. They were posted to the Sea Grant YouTube channels and are currently linked on the Better BRD website.

A full list of available Better BRD communication products can be found in [Table 2, page 6](#).





Image 1: Better BRD team member discussing project information with local public/industry.

Public Outreach

Sea Grant participated in the annual Ocean Commotion (November 1, 2024, Baton Rouge, LA) sponsored by Louisiana Sea Grant for elementary to middle school-aged children within the greater Baton Rouge area. Team members educated K-8 students on bycatch, ways to reduce bycatch in the shrimp fishery, and the Better BRD project through two interactive booths: one focusing on bycatch reduction within the net and the other showcasing catch sorting with various amounts of bycatch. Students and escorts self-reported learning goals about bycatch and net modifications using stickers.

Sea Grant attended several local coastal events with a seafood focus (Image 1, above; Table 1, page 5). These events served as an effective platform to inform the public and local government officials on project goals and current practices within industry. Better BRD team members are adding more of these coastal events to the outreach calendar for coverage across the coast.

Key Activities-Outreach and Communications

- Updated project website (www.laseagrant.org/outreach/projects/better-brds/) including:
 - Revised updated five current BRD installation guides
 - Better BRD project updates
 - Testing updates (BRD v BRD)
- Created video page
- Created Quick Check videos for Fisheye and Composite Panel.
- Attended local seafood events as booth presenter. (Public outreach)
- Attended Ocean Commotion as booth presenter. (Public outreach)

Trainings and Dockside Outreach

Part of ensuring the success of Better BRD is training not only the project team, but also extension agents from Sea Grant, state and federal agencies, and shrimpers (MAM 1).

No additional Sea Grant team members were trained on BRD installation (current gear) during 2024, but those present at dockside outreach were able to use gear measurement techniques. Sea Grant extension agents hosted industry meetings and scheduled dockside gear characterization events in coordination with NOAA Gear Monitoring Team (GMT) (Table 1, page 5, "Dockside Visits"). These industry outreach events had good participation and interactions (e.g. Intracoastal shrimpers meeting, Abbeville, LA). However, despite consistent effort for each year (2022 – 2024), dockside events scheduled with NOAA GMT have had decreased participation, with many shrimpers citing poor economic outlook (e.g. many boats staying docked with minimal buyers for domestic shrimp) for their absence. Better BRD team members continued BRD-use characterization across the coast by observing dockside and opportunistically aiding vessels when crew were present (Table 3, 4, page 7).

Table 1. 2024 (Year 4) Sea Grant or Sea Grant and NOAA Better BRD Outreach efforts.

In-Person Outreach Event	Location	Date	Total Attendees (#)
Dockside Visits	Brownsville, TX	2/22/2024	3
Industry Meeting	Abbeville, LA	3/12/2024	60
Net Shop Visits	Delcambre	3/12/2024	1
LASG Marine Extension Meeting	Crowley, LA	3/18/2024	20
Dockside Visits	MS/AL	4/2/2024	15
Dockside Visits	Brownsville, TX	4/3/2024	24
Industry Meeting	Chauvin, LA	4/16/2024	20
Dockside Visits	Terrebonne Parish, LA	4/17/2024	3
LA Shrimp Taskforce Meeting	Baton Rouge, LA	5/1/2024	30
Industry Meeting	Biloxi, MS	5/8/2024	13
Dockside Visits	Biloxi, MS	5/8/2024	16
Industry Meeting	Bayou La Batre, AL	5/9/2024	22
Dockside Visits	Bayou La Batre, AL	5/9/2024	6
Dockside Visits	Palacios, TX	6/4/2024	8
Industry Meeting	Tampa, FL	6/13/2024	4
Dockside Visits	Texas Coast	6/24-28/2024	49
Industry Meeting	Port Arthur, TX	7/2/2024	75
Industry Meeting	Port Isabel, TX	12/11/2024	33
Seafood Market	Delacroix, LA	9/28/2024	350
Seafood Festival	Galveston, TX	9/28/2024	214
Seafood Festival	Palacios, TX	10/26/2024	108
Ocean Commotion	Baton Rouge, LA	11/1/2024	1,852
		Total	2,964
Industry Engagement	Type of Engagement	Date	Individuals Engaged (#)
Economic Survey Save the Date	By Mail	3/11/2024	759
Economic Survey Announcement	Email	5/13/2024	1,000 minimum
Resources for Net Shops	By Mail	10/18/2024	24
SWG* Meeting Follow-up	Email	2/1/2024	12
SWG Gear Update	Email	4/1/2024	12
SWG Economic Survey Announcement	Email	5/16/2024	12
SWG End of Year Update	Email	12/18/2024	12
		Total	1,831
Total Individuals Engaged			4,795

*Stakeholder Working Group (SWG)

Dockside outreach and industry events proved effective at disseminating information on testing events and current gear options to those present. Applicants for industry testing reached out during or immediately after contact. Recruitment material was shared with all interested parties including current gear guides, contact cards and any other requested project information.

In conjunction with dockside outreach events, Sea Grant and NOAA team members visited known net shops and sought out others mentioned by local fishermen. Project team members were able to provide net shops with the updated and translated installation guides for current certified BRDs and recruitment materials. Net shops were sent additional materials in Fall 2024 as many had requested additional copies for their customers.

Table 2. Public-facing documents associated with Better BRD Project (December 31, 2024). Documents listed below, as well as additional information on testing, can be found on the project website or by request from the project team. (www.laseagrant.org/outreach/projects/better-brds/brd-resources)

2021-2022 Annual Report	X		
2023 Annual Report	X		
2024 Contact Card	X		
Project Info Card	X	X	X
Better BRD Overview	X	X	X
Current BRD Construction and Installation Guides (Fisheye, Composite Panel with Square Mesh Panel, Composite Panel with Cone, Jones-Davis, and Modified Jones-Davis)	X	X	X
Current State and Federal BRD Regulations	X		
Quick Check - Fisheye	X	X	X
Quick Check - Composite Panel (Cone and Square Mesh Panel)	X	X	X
How do BRDs Work? - Video	X	X	X
Fisheye Quick Check - Video	X	X	X
Composite Panel Quick Check - Video	X	X	X
BRD v BRD Testing Flyer	X		

Key Activities: Trainings and Dockside Outreach

- Dockside outreach for all Gulf states
- Net shop outreach in all Gulf states – 22 shops.
- Presentations at industry-focused meetings in all Gulf states

Stakeholder Working Group

The project's Stakeholder Working Group received email updates throughout 2024. The group, formed to provide practical advice on gear considerations, successfully supported the project's launch of industry testing. This year, members were updated on gear used in industry testing, results and recommendations from pilot testing, and initial progress with BRD vs. BRD industry testing. They were also encouraged to participate in testing opportunities and surveys during 2024.

The project has a final Stakeholder Working Group meeting planned once all industry testing results are available, at which point the group's future role will be evaluated. (MAM objectives 1-5)

Key Activities: Stakeholder Working Group (SWG)

- SWG updated with testing information
- SWG participated in the economic survey

COMPONENT 2. RESEARCH AND DEVELOPMENT

BRD Hunt

The Better BRD team closed the NOAA-led BRD Hunt at the end of 2022 after potential gear was identified from industry to increase bycatch reduction across the Gulf. The database designed for the BRD Hunt remains the data repository for routine gear evaluations from this project. Sea Grant conducted quality control and accuracy checks once during 2024.

Industry Survey for potential uptake

Sea Grant, with help from Louisiana State University Agricultural Center economists, requested industry input on their willingness to accept potential new gear from Better BRD. The survey was opened and closed within two months. Results from the survey will inform incentives for potential new gear for the industry, as new use is voluntary.

Table 3. Total 2024 vessels inspected from Sea Grant and NOAA efforts.
Shown is the total number of boats by state for each group.

Total # of Vessels Inspected (2024)	NOAA	Sea Grant	Sea Grant and NOAA	2024 Total
Total	18	123	68	209
Alabama	2	7	13	22
Florida	13	0	0	13
Louisiana	3	0	34	37
Mississippi	0	14	21	35
Texas	0	102	0	102

Table 4. Total 2024 nets from Sea Grant and NOAA efforts.
Shown is the total number of nets by state for each group effort.

Total # of Nets Inspected (2024)	NOAA	Sea Grant	Sea Grant and NOAA	2024 Total
Total	47	125	76	248
Alabama	4	7	17	28
Florida	40	0	0	40
Louisiana	3	0	34	37
Mississippi	0	14	25	39
Texas	0	104	0	104



Testing

Two types of evaluations of candidate BRDs are being used to identify gear that will move to the certification stage: NOAA Testing and Sea Grant-led Industry Trials.

NoAA Testing (see 2021–2022 report for summary or reference the Better BRD website)

Sea Grant-led Industry Trials

Industry trials are designed to put potential new gear through commercial fishing conditions. Phase one (Pilot Testing) was successfully completed in June of 2024. These trips focused on qualitative information on test gear from commercial fishermen. This included how the test gear pulled in the net, changes seen in bycatch or shrimp levels and any other noticeable differences. They were then asked to make any adjustments, or modifications, that they thought would increase device effectiveness. The goal was at least two vessels testing each device as well as testing across fisheries across the Gulf, for at least 10 vessels testing during this phase. We had 13 vessels successfully complete Pilot Testing (*Table 5, below*).

From Pilot Testing, five different BRDs were taken to BRD vs BRD industry testing. During this phase of testing, a researcher is onboard taking precise measurements of catch in both an experimental and control net (the current fisheye BRD). This testing will help inform NOAA certification efforts. Testing began in 2024 and continues into 2025 (*Table 5, below*).

Testing gear for both phases was purchased from local net shops used by test vessels. This allowed net shops to benefit from Better BRD project activities in addition to vessels compensated for testing. As of December 2024, 15 netmakers across the Gulf were engaged to build equipment for gear testing.

Phase two testing (BRD vs. BRD) continues into 2025. Four successful trips have been completed, and trips are expected to begin again as bycatch levels increase in the early summer months of 2025.

Since the project initiation, all potential new BRDs have been tracked with each project step. Reasons or adjustments made to each device are noted within a comprehensive tracking document. This document was updated within 2024 to reflect project updates.

Table 5. The breakdown of applications received for industry testing from 2023 – 2024

	Phase One - Pilot Testing	Phase Two - BRD vs. BRD Testing
Num. Applications Received	20	13
Num. Applications Accepted	16	8
Num. Contracts Signed	15	4
Num. Contracts Completed	13	4

Permits

As previously reported, TXSG applied for and received an EFP that covered activities through December 2024. The EFP was updated to include each vessel that joined the program. In December 2024 as part of activities under the second Better BRD agreement, TXSG applied for and received a second EFP to cover future testing. In addition to the EFP, Sea Grant holds a Letter of Acknowledgement (LOA) for testing to cover BRDs using modified turtle excluder devices as part of their build. The LOA continues to be updated for test vessels.

Key Activities: Research and Development

- BRD database reviewed for accuracy by Sea Grant
- Created factsheets, datasheets and other documents to aid BRD v BRD industry testing
- Completed pilot testing
- Four vessels participated in 2024 BRD vs BRD testing
- “New gear summary chart” updated with industry testing events
- Successfully applied for and obtained a second EFP for industry testing

COMPONENT 4: Vessel Support

Lynker remains the contracting entity assisting with vessel support. They successfully tracked participants from initial application to contract close-out. Additionally, they created a vessel application and contract (professional service agreement or PSA) for use during BRD vs BRD testing and a supporting tracking database. They have regularly met with Sea Grant through 2024 and will carry their duties through industry testing and Agreement 2.

Key Activities: Vessel Support

- Lynker successfully closed all contracts under pilot testing
- Lynker and Sea Grant finalized vessel application and PSA for BRD vs BRD testing
- Lynker established a BRD vs BRD participant tracking sheet to follow vessels through the various contracted, testing and closeout stages
- Lynker created response emails for testing applicants