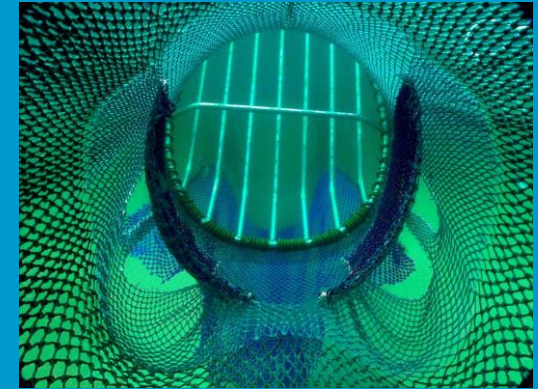


# Bycatch Reduction Device (BRD)/BRD Combination Testing Results Summary 2015–2017



Blake Price  
Laura Lee



# 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

## 2015 Finfish

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	Double FF	32	88.3	52.9	<b>-40.1</b>	<b>-40.8</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Summer	Composite Panel	60	177	128	<b>-27.6</b>	<b>-25.8</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Summer	3in TED ext	51	102	74.1	<b>-27.5</b>	<b>-25.3</b>	<b>0.00730</b>	<b>&lt;0.001</b>
Summer	3in TED	19	113	89.8	-20.4	<b>-16.2</b>	0.217	<b>0.0278</b>
Summer	Ricky BRD	15	100	95.5	-4.55	-6.61	0.793	0.503

## 2015 Shrimp

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P Value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	Double FF	32	60.6	61.9	2.16	0.999	0.862	0.778
Summer	Composite Panel	60	67.3	65.2	-3.13	-0.654	0.776	0.754
Summer	3in TED ext	51	67.3	65.2	-3.04	-1.94	0.775	0.309
Summer	3in TED	19	48.2	45.5	-5.63	-7.35	0.739	0.0778
Summer	Ricky BRD	15	35.4	33.3	-6.06	-9.87	0.728	0.449

\*No significant loss or gain in shrimp catches for gears tested in 2015

## 2016 Finfish

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P Value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	4 Inch	23	164	75.6	<b>-54.0</b>	<b>-57.2</b>	<b>&lt;0.001</b>	<b>0.00113</b>
Summer	3 Inch	30	115	63.6	<b>-44.9</b>	<b>-44.9</b>	<b>0.00740</b>	<b>&lt;0.001</b>
Fall	Virgil Potter	25	172	96.1	<b>-44.3</b>	<b>-43.2</b>	<b>0.00140</b>	<b>&lt;0.001</b>
Summer	Virgil Potter	33	149	107	<b>-28.5</b>	<b>-26.9</b>	<b>0.00450</b>	<b>&lt;0.001</b>

## 2016 Shrimp

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P Value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	4 Inch	23	28.1	23.6	-16.2	-12.1	0.280	0.215
Summer	3 Inch	30	27.0	25.7	-4.85	-4.85	0.706	0.435
Fall	Virgil Potter (fall)	25	31.3	29.5	-5.78	-5.46	0.691	0.0545
Summer	Virgil Potter (summer)	33	61.8	67.0	8.51	<b>9.92</b>	0.696	<b>0.0498</b>

## 2017 Finfish

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P Value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	3" TED, 1 5/8" tailbag, 2 state FEs	30	146	98.5	<b>-32.6</b>	<b>-32.6</b>	<b>0.00200</b>	<b>&lt;0.001</b>
Summer	3" TED, 1 5/8" tailbag, 1 state FE	22	34.9	27.8	-20.4	<b>-22.8</b>	0.341	<b>0.0187</b>
Fall	3" TED, 1 5/8" tailbag, 2 state FEs	30	57.5	54.9	-4.58	-4.57	0.890	0.670
Summer	3" TED	5	12.3	12.9	5.06		0.732	
Fall	3" TED, 1 5/8" tailbag, 2 federal FEs *	30	75.6	97.7	29.3	29.3	0.250	0.204

## 2017 Shrimp

Season	Gear Tested	n All	Average Catch All (kg)		Percent Change		P Value	
			Control	Experimental	All	w/ Drops	Randomization	t-Test
Summer	3" TED, 1 5/8" tailbag, 2 state FEs	30	2.86	2.67	-6.64	<b>-6.80</b>	0.598	<b>0.0394</b>
Summer	3" TED, 1 5/8" tailbag, 1 state FE	22	11.6	10.6	-9.04	-7.82	0.556	0.294
Fall	3" TED, 1 5/8" tailbag, 2 state FEs	30	9.75	8.31	-14.8	<b>-14.9</b>	0.365	<b>&lt;0.001</b>
Summer	3" TED	5	18.7	17.3	-7.79		0.827	
Fall	3" TED, 1 5/8" tailbag, 2 federal FEs *	30	17.3	15.1	-12.5	<b>-9.04</b>	0.234	<b>0.00231</b>

# Important Gear Parameters (overall)

- Number of state FFEs (7.86%)
- Mesh size of tailbag (5.64%)

# Other Factors Affecting Catch

- Time of Day (0 to 37%)
- Tow side (not quantified, but sometimes significant)
- Spatial location (0 to 32%)