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Lagniappe
Sea Grant LOUISIANA
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EXTENSION PROGRAMS
Agriculture and Forestry
Community Leadership
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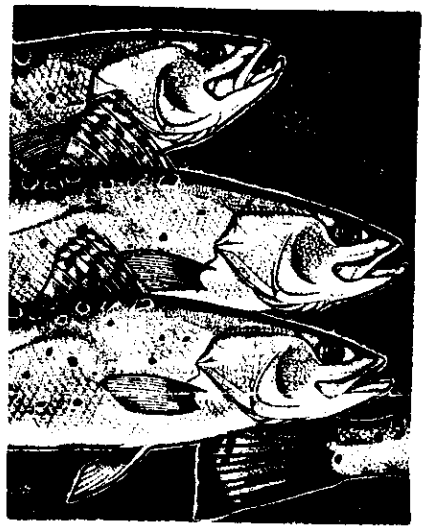
Environmental Sciences
Family and Consumer Sciences
4-H Youth Development
Natural Resources

BE A TROUT WATCHER!



Biologists can never have too much information about a fish, especially one as popular as the speckled trout. Some anglers like to catch lots of trout; others like to catch big trout. But everyone likes to catch trout, so demands on fisheries scientists are high. Biologists are now asking for help from trout fishermen.

Under a new program called **Louisiana Trout Watchers**, biologists with the LSU AgCenter's Sea Grant Program, the Louisiana Department of Wildlife and Fisheries, and the LSU Coastal Fisheries Institute are asking for anglers' help in gathering information on large speckled trout. While much is known about the biology of the fish, age and growth data on big trout is still somewhat sketchy. Some 6-pound and larger fish are genetically fast-growing 3-year old fish and some are 8 to 9-year old fish. Learning more about the make-up of the population of big fish is the goal of the **Louisiana Trout Watchers Program.**

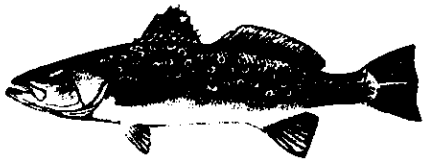
Anglers who volunteer for **Trout Watchers** will be trained in how to collect the data needed from their catch, including how to remove otoliths. By reading the growth rings in an otolith, scientists can determine the age of a fish. Anglers accepted for **Trout Watchers** will receive a cap and shoulder patch identifying them as **Louisiana Trout Watchers.**

Otoliths will only be accepted from speckled trout 25 inches long or longer (5.7 pound average). Anglers wishing to volunteer for the program should self-qualify themselves by asking **"Do I really catch at least one 25-inch trout per year?"** Qualified anglers who are interested in becoming a **Trout Watcher** may call Jerald Horst at 504/838-1170 or e-mail him at jhorst@agctr.lsu.edu to register.

More information on **Louisiana Trout Watchers** can be obtained by calling Randy Pausina, 225/765-2889, or Kevin Savoie, 337/491-2065.

TROUT MANAGEMENT MEETING

Speckled trout are easily the most popular fish amongst Louisiana saltwater anglers. Because of the popularity of the fish, a lot of interest has been generated on its management, including the possibility of managing for larger fish, especially in the Lake Calcasieu area. In an effort to provide fishermen with the latest scientific information on speckled trout, the Louisiana Department of Wildlife and Fisheries (LDWF) and the LSU AgCenter's Sea Grant Program are sponsoring a workshop, **Spotted Seatrout Management in Louisiana.**



The program is packed with wonderful biological information on this fascinating fish and its management. The program presenters are biologists Mike Harbison and Joey Shepard of LDWF. Harbison is the district biologist for Lake Calcasieu area and Shepard is a biological analyst. Both are well-informed on the subject.

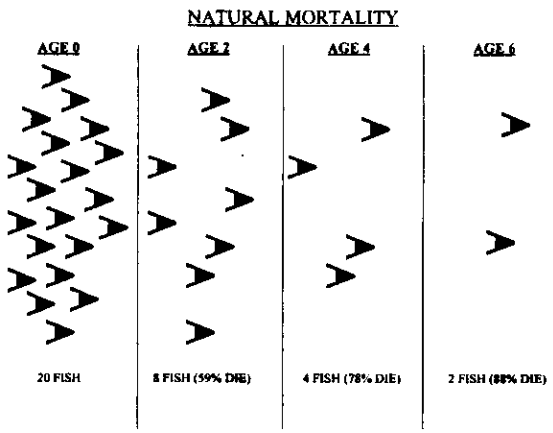
The meeting will be held at 6:30 p.m. on Tuesday, February 4 at the Calcasieu Parish LSU AgCenter office at 7101 Gulf Hwy, just south of Lake Charles. For more information, interested parties may call LSU AgCenter biologist Kevin Savoie at 337/491-2065 or LDWF biologist Mike Harbison at 337/491-2579. Attendance is free. Bring your thinking cap and a notebook.

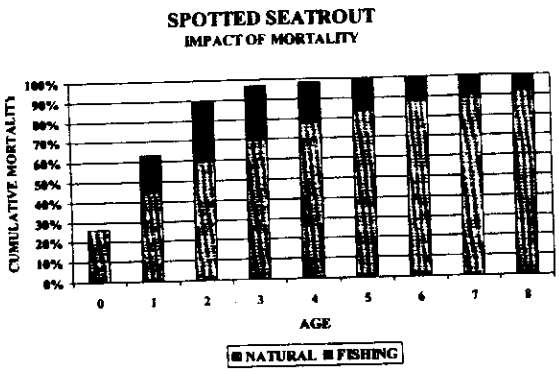
UNDERSTANDING MORTALITY

Merriam Webster's Collegiate Dictionary defines mortality as "the number of deaths in a given time or place" or "the proportion of deaths to population." To a fisheries biologist, mortality is the rate that fish are removed from a fish population, either due to fishing or natural causes.

Even if a population of fish is not fished, the number of fish from any given year's spawn (cohort) will decline through time. Fish die naturally for many reasons including predation by other fish, disease and harsh weather.

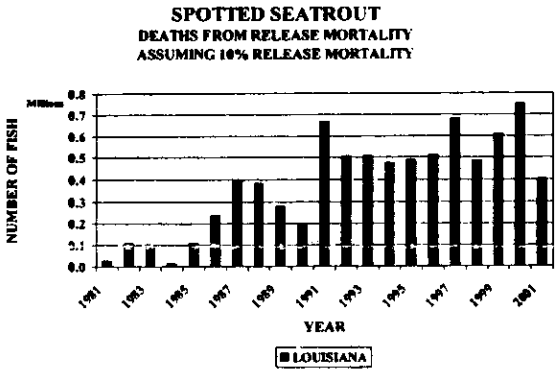
Mortality from fishing also occurs. Some of it replaces natural mortality and some of it is added to natural mortality. Of course, as the cohort ages and its numbers decline, the size of the average individual fish becomes larger. The result is that the biggest fish are also the most scarce.





Understanding mortality is very important to both fishermen and fisheries biologists. For example, in the graph at the left, the impact of natural and fishing mortality on a specked trout cohort can be seen. The impact of mortality is cumulative. For example, in their first year (age 0), over 25% of speckled trout die; in the second year (age 1), over 60% of what are left die. The graph should not be interpreted to read that in the first year 25+% of the fish die and that deaths in the second year brings mortality up to 60+% of the original number. Each year's mortality rate in the graph is on top of all mortality from previous years.

The enormous amount of natural mortality that takes place each year, may make "saving" fish from one year to the next difficult. Compounding the problem of saving fish from a fished population from one year to the next to grow larger, is release mortality. All too often, recreational anglers assume that all the fish that they release "live to fight again another day". The graph on the right illustrates the number of speckled trout that are estimated to die each year in Louisiana from injuries and stress after they are released.



Certainly, some fish do survive and certainly, fish that survive longer will average a larger size. However, at a certain point, the gain in producing larger average-size fish can be very expensive in reduced limits, primarily because of natural and release mortality. Many, many fish may have to "not be caught" to produce one more trophy fish. Making the decision about whether the costs are worth the gains may be a difficult decision.

Data Source: Louisiana Department of Wildlife and Fisheries Marine Fisheries Division.

IS THE GRASS GREENER?

The old saying that "the grass is always greener on the other side of the fence" really applies to speckled trout. Louisiana anglers looking across the Texas-Louisiana state line frequently express the opinion that the Texas speckled trout management system produces much larger fish than the Louisiana system does. Currently, Texas

manages with a 10 fish bag limit and a 15-inch minimum size, compared to the 25 fish bag limit and 12-inch minimum size in Louisiana. However, if the top 10 records from each state are any indication of the number of large specks present, Louisiana competes very well with Texas.

Rank	TEXAS			LOUISIANA		
	Weight	Angler	Date	Weight	Angler	Date
1	13.69	James Wallace	February 1996	12.38	Leon Mattes	May, 1950
2	13.56	P.M. Blackwood	March, 1975	11.99	Kenneth Kreeger	January, 1998
3	13.13	Lanny Myers	May, 1969	11.24	Jason Troullier	September, 1999
4	11.50	Kelly Rising	March, 1999	11.16	Timothy Mahoney, II	May, 2002
5	11.25	Lois Crowe	April, 1991	10.81	Kevin Galley	May, 1997
6	11.10	Mark Idoux	April, 1995	10.75	Randolph Green	August, 1970
7	10.90	Mark Idoux	January, 1999	10.63	John Kaparis	May, 1979
8	10.31	Greg Wagner	June, 1993	10.50	Dudley Vandenborre	April, 2002
9	10.20	Carl Rowland	May, 2001	10.50	Ed Sexton	April, 2000
10	10.19	Jay Wester	February, 1999	10.25	Alfred Mouton, Jr.	April, 2002

The Texas Parks and Wildlife Department (TPWD) has recently completed a study process on speckled trout management involving a task force of interested parties, a biological data review, and public meetings. From the process, several changes for speckled trout management have been proposed. The recommendations do not affect the 10 fish bag limit nor the 15-inch minimum size, but would add a maximum length limit of 25 inches, with anglers only being allowed to keep one trout daily over 25 inches long.

Also proposed is a boat limit for charter boats. This limit would be the combined daily limit for all the customers, not including the guide. The guide would still be able to fish, but his catch would count against the boat limit. According to a TPWD news release, this measure would have the least impact on the average angler, but would have the most impact on reducing harvest, because of the effectiveness of guides at catching fish.

According to Hal Osburn, TPWD Coastal Fisheries Division director, "The percent increase effect of this maximum size limit, combined with the guide boat limit would be a 13 percent increase in the spawning biomass." He added, "Our modeling efforts also indicate these changes would produce a 39 percent increase in the population of trout over 25 inches.

Since 1990, the number of coastal anglers in Texas has increased by 19%. Since the early 1980s, the number of Texas fishing guides has grown by 300 percent. Also proposed is a fee increase on charter guides more in line with their impact on the fishery resource. After public meetings, the Texas Parks and Wildlife Commission will make final regulation changes in April. Currently Texas fishing guides pay a $75 license

fee with no reduced or no-license walk-on fees for customers. Resident anglers between 17 and 65 years old pay $19 for a fishing license, plus $10 for a saltwater stamp.

DEFENDING AQUACULTURE

Several months ago, we summarized a report by the Pew Oceans Commission on the effects of aquaculture and mariculture (marine aquaculture) on natural (wild) fisheries and fisheries habitat. While observers have for many years predicted that aquaculture/mariculture will grow to pick up the slack between stable wild harvests and increasing worldwide seafood demand, it has come under increasing criticism by the environmental community. In 2001, the European Molecular Biology Organization (EMBO) issued a report defending aquaculture (including mariculture) against some of the charges made against it as being harmful to the environment and wild fisheries.

The report opens by pointing out that fish provide about 16% of the animal protein consumed by the world's human population. Consumption of food fish has increased by 115% from 1970 to 1998, and is expected to increase even more. The growth in consumption is primarily due to increases in human population rather than people making fish a larger percentage of their diet.

Over 80% of the world supply of fisheries comes from the wild rather than from aquaculture, and landings from the wild have increased by 5 times from 1950 to 1990. But the growth in supply from the wild has only increased by 9% between 1990 and 1997, while fish consumption has increased by 31% during the same period. To meet increased consumption, aquaculture has increased rapidly and is now the fastest growing food-producing industry in the world. At its current 11% per year growth rate, worldwide aquaculture production will pass beef production by 2010.

This rapid growth in aquaculture has led to some environmental concerns. One concern is that tropical shrimp aquaculture has resulted in the loss of large areas of coastal mangroves. The EMBO report points out that more than 90% of the mangrove loss has been due to clearing for rice production, grazing, human housing, fuel, lumber harvest, and tourism. They add that almost all of the new shrimp pond construction has not been in mangrove areas, as the soils in these areas have proven to be too acidic for good shrimp production.

Another environmental concern addressed by the report is "biological pollution." The term refers to the interbreeding of fish bred for culture with wild fish. Experts say that aquacultured fish are bred to survive best in captivity and not the wild. By interbreeding, they could possibly pass this on into wild populations and reduce their survivability. This is of most concern with salmon. The EMBO report says that this threat is balanced by the large production of aquacultured salmon, which has lowered salmon prices and decreased fishing pressure on wild salmon. The report also points out that the large declines in wild salmon populations took place long before salmon aquaculture started in the 1970s.

Another criticism is that the growth in aquaculture will result in a growth in demand for fish meal for fish feeds. This demand will result in heavier fishing pressure on the menhaden, sardine and herring stocks that are fished for fish meal. The EMBO report admits that the percentage of fish meal used for aquaculture has increased from 10% in 1988 to 35% in 1998, but says that total worldwide fish meal production has changed very little over the past 15 years. The report says that the use of fish meal for fish food may be its best use, since fish need less of it to grow a pound of flesh than farm animals on land do. Additionally, aquacultured fish generally need to eat less food for growth than wild fish.

The report closes by saying "there are not too few fish — there are too many people." If aquaculture had not developed for land animals, not enough food would exist for the current human population. Aquaculture development is a form of agriculture development and if aquaculture is unfairly assigned a negative label, it could injure its development and end up causing negative effects on both wild fish stocks and human populations.

Source: *Fish as Food: Aquaculture's Contribution: Ecological and Economic Impacts and Contributions of Fish Farming and Capture Fisheries.* James H. Tidwell and Geoff L. Adam. EMBO Reports. European Molecular Biology Organization. 2001.

MPAs PROPOSED FOR SOUTH CAROLINA

South Carolina has become the latest state to have marine protected areas (MPAs) proposed for waters off of its coast. The South Atlantic Fishery Management Council reduced its proposal there from ten areas to three, each covering 25-50 square miles and being 45-60 miles offshore. Under the proposal, only bottom fishing would be outlawed, with the intent being to protect snappers and groupers. Fishing for open-water species such as mackerel, billfish, wahoo, and dolphin would be allowed.

The original plan for 10 closed areas drew much anger from recreational fishermen. Even with the number reduced to 3, the South Carolina Coastal Conservation Association is skeptical, with spokesman Willie Dodds saying "We don't agree with arbitrarily excluding recreational fishing if its not scientifically proven that recreational fishing is contributing substantially to the fisheries problem in question." He adds "We don't agree with blanket closures with no end in sight." Federal scientists say that limiting the number of fish that can be caught has not proven successful. Deepwater fish often die when pulled to the surface, so release programs don't work well with these species.

South Carolina joins North Carolina, Georgia, and Florida in dealing with MPA proposals. In October, the California Fish and Game Commission approved a plan to create a network of MPAs off of their coast. Public hearings on the South Carolina

MPAs will be held during the next 2 years, with plans not becoming final until 2004, if approved.

Source: *Ocean Fishing off South Carolina may be Limited.* WorldCatch Wave, October 28, 2002.

SCIENTIST KNOCKS M.P.A.s

In a recent report, paid for in part by the American Sportfishing Association's FishAmerica Foundation, University of South Alabama biologist Robert L. Shipp has dubbed the use of "no-take" marine protected areas (nMPAs), as inappropriate for the management of most marine fish species. This is the latest salvo in the heated debate between those for and those against the creation of such areas. The American Sportfishing Association, which represents the U.S. recreational fishing industry and fishing tackle manufacturers, has been one of the loudest voices in opposition to the concept of protecting some marine areas from all harvest.

Marine protected areas burst upon the scene several years ago as a tool proposed to benefit fish species, and to preserve biodiversity, ecosystems, bottom habitat, and cultural heritage. Other possible benefits from nMPAs were the creation of scientific study areas, and areas for ecotourism, and a reduction in conflicts between user groups such as divers and fishermen. The nMPA concept receives support from some fisheries management and research scientists, and even stronger support from the environmental community, who view them as the equivalent to national parks on land.

In his analysis of nMPAs, Shipp focused only on their effect as a fisheries management tool. He stated that for an nMPA to be an effective fisheries management tool, there has to be a need for the tool, in other words the fish (or fish stocks) must be overfished or close to being overfished. Of the more than 350 fish stocks that he examined, less than 2% would benefit from nMPAs, either because they are not overfished, or because the species is too mobile and not likely to stay put in an area set aside as an nMPA.

Two of the major proposed benefits of nMPAs as fisheries management tools are that the fish on the nMPA add to the overall population of the fish by producing large numbers of eggs and larvae that restock all areas, and that larger, even trophy-sized fish, will "spillover" by wandering from the nMPA into areas open to fishing. Shipp disputes both of these ideas.

He maintains that the addition of eggs and larvae from an nMPA would only be beneficial for a severely overfished stock. In all other cases, the number of larvae produced is higher than what the habitat can support as adults anyway. Concerning spillover, the positive effects are overestimated, he says. Species that are quite mobile won't be on the nMPA long enough to benefit, and species that don't move much and are likely to benefit from the nMPA, are not likely to produce much spillover. The

positive effects of spillover will never be as large as those gotten from properly managing fish without nMPAs, Shipp says.

Shipp adds that creating nMPAs for the very few species that are both overfished and sedentary (not likely to move), will prevent the harvest of the many other species that occur in the area and are not overfished. Even if the overall harvest isn't reduced, fishing pressure in nearby open areas will increase and fishing efficiency will decrease, he says.

He does note that in some special instances, nMPAs can provide fisheries benefits. For example, when a species forms concentrated spawning groups (aggregations) or when one sex can be more heavily harvested than the other, a seasonal closure may help. Other instances are when a fish stock is severely overfished and no management is occurring, where habitat is damaged by certain fishing practices, or possibly for a limited time, where the ratio of targeted versus non-targeted species is out of balance.

Overall, Shipp maintains that the use of traditional management methods may be a better choice to restore overfished fish stocks than the use of nMPAs. Such traditional methods include size and bag limits, quotas, seasonal or area closures, gear restrictions, bycatch reduction, fish hatcheries, and protection of critical habitat.

Source: *No Take Marine Protected Areas (nMPAs) as a Fishery Management Tool, a Pragmatic Prospective: A Report to the FishAmerica Foundation.* Robert L. Shipp. University of South Alabama. 2002.

MISSISSIPPI TRAWL BYCATCH RESEARCH

That some bycatch of unwanted finfish occurs in shrimp trawls is well known. In offshore waters, trawl bycatch has become an issue in red snapper management. Offshore shrimpers disagree with the National Marine Fisheries Service (NMFS) estimates of trawl bycatch. Even less bycatch research has been done in shallow inshore waters than offshore waters. Bycatch numbers are based on the NMFS estimate of 6 million trawling hours in the Gulf and nearby waters. Shrimpers say that this is too high and leads to an overestimate of bycatch.

To get a better understanding of shrimping effort, fishery managers are considering requiring vessel operators to keep logbooks or having vessels carry either satellite tracking systems or human observers. A Mississippi Sea Grant biologist conducted a project with shrimpers in 2000-2001 to get them involved with producing good data on shrimping effort and bycatch in inshore and nearshore waters. Most Mississippi shrimp boats are small. In 1997, 688 of 1,098 resident shrimp licenses (63%) were for boats less than 45 feet in length and 327 were for boats under 30 feet long.

The study consisted of two parts, a shrimp vessel logbook program and a bycatch reduction device (BRD) testing program. Eight vessels representing the inshore shrimp fleet were contracted to keep logbooks on dates fished, vessel position, length of tows, shrimp catch, gear problems, and environmental conditions. Only vessels that used single or twin trawls with no more than a total of 50 feet of headrope were contracted. Logbooks were kept for May-November, 2000 and February-December, 2001.

The results showed that Mississippi inshore shrimpers concentrate their effort in Mississippi and Louisiana territorial waters less than 30 feet deep, and usually shallower than 12 feet. The fishing grounds included Timbalier-Terrebonne Bays, Chandeleur and Breton Sounds, Lakes Borgne and Pontchartrain, Mississippi Sound, and all of the shallow-water area forming the western boundary of Chandeleur Sound, known locally as the "Louisiana marsh." With the exception of season openings, most captains preferred to fish close to their home ports. Many of their shrimp were sold directly to the public, bringing an average price of $1.50 per pound over the wholesale price.

A total of 5,326 tows were logged in 1,711 days at sea and 516,489 pounds of shrimp were recorded. Average tow time was around 3½ hours. Tows were longer in the winter, due to lower catches and bycatch, and shorter in the summer. Captains who sold directly to the public usually limited tow times in the summer to around 2 hours to deliver top-quality product.

Peak catches in both years occurred in May, followed by June. Overall, for the whole study, shrimp catch averaged about 30 pounds per hour. Numerous gear problems were recorded, especially the clogging of TEDs with debris such as grass, logs, jellyfish, and crab traps. The 8 logbook vessels reported catching 267 crab traps during the study. Clogged TEDs result in loss of shrimp catch.

For the second part of the study, two double-rigged vessels were contracted for BRD testing. Each vessel pulled a trawl with a 6½ x 11½ inch "fisheye" BRD on one side and a trawl without a BRD on the other side (called a control trawl) for comparison. After 15 tows, the nets were exchanged from side to side. Each vessel made 30 tows during white shrimp season during 2001.

The two vessels contracted were the 65 foot A*imee Lynn* (A.L.) and the 42-foot *Kar-Lyn-Dawn* (K.L.D.). For the brown shrimp season, the *Aimee Lynn* was rigged with 25-foot semi-balloon trawls, and the BRD was installed in the top center of the trawl 8 feet 10 inches from the tie off rings and 2 inches in front of the attachment of the elephant ears. The trawls were made of 1½-inch polyethylene webbing. The *Kar-Lyn-Dawn* used 25-foot flat nets with 1⅜-inch poly webbing. The BRD was installed in the top center of the net 10 feet in front of the bag tie off rings and 8 inches in front of the elephant ear attachments. Brown shrimp season results are shown in the table below.

BROWN SHRIMP SEASON RESULTS

Catch Type	A.L. Control Trawl (lbs)	A.L. BRD Trawl (lbs)	Difference (%)	K.L.D. Control Trawl (lbs)	K.L.D. BRD Trawl (lbs)	Difference (%)
Shrimp	2,363.3	2,272.9	-3.8	744.0	763.9	+2.7
Total Finfish	8,443.2	6,498.1	-23.0	3,289.3	3,169.1	-3.7
Croaker	259.7	295.4	+13.7	131.8	125.0	-5.2
Sand Seatrout	82.0	127.9	+56.0	60.6	62.4	-3.0

On the *Aimee Lynn*, the finfish to shrimp ratio was 3.6 to 1 in the control net and 2.9 to 1 in the BRD net. For the *Kar-Lyn-Dawn,* the finfish to shrimp ratios were 4.4 to 1 for the control net and 4.1 to 1 for the BRD net. Croaker and sand (white) trout were separated out from the other species because they are almost always the top bycatch species. The only tows where these two species were not dominant were when a school of menhaden was hit. Note that for some reason, on both vessels, croaker and white trout bycatch was higher in the control trawl tows than the BRD trawl tows, even though overall finfish bycatch was lower in the BRD net. Species like menhaden are stronger swimmers than small croaker and white trout, and were able to swim out of the BRD opening. The average individual weight of the croakers and white trout in the bycatch was one-third to two-thirds of an ounce.

The same tests were repeated with the same two vessels during the fall white shrimp season. Bycatch was expected to be greater because high-opening trawls are used for white shrimp. The *Aimee Lynn*, used two 25-foot nets made of 1¾-inch nylon webbing. The BRD was installed 8 feet 4 inches in front of the tie off rings and 17 inches behind the attachment point of the elephant ears.

On the *Kar-Lyn-Dawn,* the same trawls were used as during the brown shrimp season except that each had a bib, and an extra bridle added. The BRD was installed 8 feet 6 inches ahead of the tie off rings instead of the 10 feet during the brown shrimp season. This change noticeably reduced finfish bycatch. The results of the tests are below.

WHITE SHRIMP SEASON RESULTS

Catch Type	A.L. Control Trawl (lbs)	A.L. BRD Trawl (lbs)	Difference (%)	K.L.D.Control Trawl (lbs)	K.L.D. BRD Trawl (lbs)	Difference (%)
Shrimp	841.1	849.9	+1.1	526.9	552.3	+4.8
Total Finfish	6,472.7	4,210.8	-34.5	2,094.4	1,205.9	-42.2
Croaker	106.3	94.1	-11.5	97.0	104.3	+7.5
Sand Seatrout	33.0	40.8	-23.6	31.7	28.9	-8.8

For the *Aimee Lynn*, the finfish to shrimp ratio was 7.7 to 1 in the control net and 5.0 to 1 in the BRD net. For the *Kar-Lyn-Dawn*, the ratio was 4.0 to 1 in the control net and 2.2 to 1 in the BRD net. The large reductions in total finfish were due to the presence of strong swimming menhaden and butterfish, which found their way out of the BRD opening better than croakers and white trout.

The researcher concluded that BRDs did reduce bycatch of strong swimming species. From this and other tests, he concluded that the recommended place to install

the "fisheye" BRD in 25-foot trawls was 8 feet 6 inches in front of the tie off rings. He also noted that most of the finfish caught as bycatch in the inshore fishery are short-lived species that have shown no long-term population declines. During the entire BRD tests, only 11 speckled trout and no redfish were caught. He said that while there was no pressing need to make BRDs mandatory in inshore trawls, BRDs could be an effective tool when finfish are so numerous that trawling is difficult. Finally, he said that some shrimpers have seen value in BRD use to reduce sorting time and produce better quality shrimp.

Source: *Inshore Shrimp Fishery Effort and Gear Evaluations to Mitigate Natural Disaster Impacts on the Mississippi Inshore Brown Shrimp Fishery.* David D. Burrage, Final Report for the Mississippi Department of Marine Resources. May, 2002.

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THE GUMBO POT

Baked Oysters with Mushrooms

6	dozen medium oysters with liquor	2	tbsp butter
4	tbsp butter	8	egg yolks (beaten)
1	cup chicken stock	2	tbs lemon juice
2	small onions (chopped)		fresh minced parsley
4	cups mushrooms (chopped)		salt & pepper
6	tbsp butter		bread crumbs
4	tbsp flour	2	tbsp butter

Add oysters with liquor, 2 tbsp butter, and chicken stock to saucepan. Cook until the edges of the oysters curl. Remove the oysters from liquid and set both aside. In another pot sauté the onions and mushrooms in 6 tablespoons of butter until soft. Stir in the flour and 2 tablespoons of butter and cook another 2 minutes. Add oyster liquor, heat while stirring until thick. Add oysters and egg yolks. Remove from heat and season with lemon juice, parsley, salt, and pepper. Put mixture in buttered baking dish. Cover with bread crumbs and dot with butter. Bake in 350°F oven until brown. Serves 4.

Sincerely,

Jerald Horst
Associate Professor, Fisheries