Sport fish tag and release in Mississippi coastal water and the adjacent Gulf of Mexico

Hendon and Franks 2010

SEDAR28-RD23

2 February 2012



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FINAL REPORT: Project F-132, Segments 7-9

SPORT FISH TAG AND RELEASE IN MISSISSIPPI COASTAL WATERS AND THE ADJACENT GULF OF MEXICO

PROJECT PERIOD: December 2006 - November 2009

Prepared by:

J. Read Hendon & James S. Franks Center for Fisheries Research & Development Gulf Coast Research Laboratory University of Southern Mississippi 703 E. Beach Drive Ocean Springs, MS 39564

Submitted to:

Mississippi Department of Marine Resources Biloxi, MS & U.S. Fish and Wildlife Service Sport Fish Restoration Program Atlanta, GA

THE UNIVERSITY OF SOUTHERN MISSISSIPPI



Gulf Coast Research Laboratory

703 East Beach Drive Ocean Springs, MS 39564 228.872.4202 www.usm.edu/ gcrl

February 16, 2010

Mr. Dale Diaz Director, Office of Marine Fisheries Mississippi Department of Marine Resources 1141 Bayview Avenue, Suite 101 Biloxi, MS 39530

Dear Dale:

Enclosed please find five (5) copies of the final report for the research project "Sport Fish Tag and Release in Mississippi Coastal Waters and the Adjacent Gulf" (Project F-132, Segments 7-9) for the period of December 1, 2006, through November 30, 2009. Three (3) copies of the report are for your files, and the remaining two (2) are the required copies for the U. S. Fish and Wildlife Service, Sport Fish Restoration office in Atlanta, Georgia.

As always, we greatly appreciate the continued support of the Mississippi Department of Marine Resources and the U.S. Fish and Wildlife Service, Sport Fish Restoration Program and look forward to a continued working relationship with you. Please contact me at your convenience with any questions, comments or concerns you may have.

Sincerely,

Kead Hendon

Read Hendon Assistant Director Center for Fisheries Research and Development

cc: B. Buchanan R. Burris

PROJECT OBJECTIVES

- 1. Continue the angler-cooperative tag and release of spotted seatrout (Cynoscion *nebulosus*) in Mississippi coastal waters specifically to obtain data on the seasonal movement patterns of fish 14 inches and larger.
- 2. Continue the angler-cooperative tag and release of cobia (*Rachycentron canadum*) in Mississippi coastal waters and the adjacent Gulf of Mexico in order to obtain data on seasonal movement patterns of this sport fish.
- 3. Continue the angler-cooperative tag and release of tripletail (Lobotes surinamensis) in Mississippi coastal waters and the adjacent Gulf of Mexico in order to obtain data on the seasonal movement patterns of this sport fish.
- 4. Initiate angler-cooperative tag and release programs for tarpon (Megalops atlanticus) and Florida pompano (Trachinotus carolinus).
- 5. Coordinate a series of public workshops to provide for the exchange of information on fisheries research and management procedures regarding the sport fishery in Mississippi coastal waters.

PROJECT PERIOD

The project period for this report is December 1, 2006, through November 30, 2009.

MATERIALS & METHODS

General Tag & Release Methodology

Because the majority of objectives of this research required coordination with volunteer anglers, great efforts were made to recruit local and regional anglers by using newspapers, sport fishing magazines, television media and public workshops held at the Gulf Coast Research Laboratory (GCRL). Throughout the project period, GCRL personnel distributed tagging kits to volunteer anglers in Mississippi and throughout the southeastern U.S. either by mail, at workshops or at fishing tournaments and captain's meetings. Anglers could also pick up kits from GCRL. Tagging kits were comprised of dart tags manufactured by Hallprint Pty Ltd, tagging data cards, a tag applicator, an instruction booklet and a pencil. Each tag was imprinted with the GCRL contact number and address and a unique tag number and prefix. Each tag was attached to a tagging data card that had a corresponding tag number. All materials were placed in a waterproof container before being issued to anglers.

Once an angler tagged a fish, the angler recorded on the data card the tagging date, tagging location, total length (TL) or fork length (FL) of the fish in inches (in), condition of the

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fish upon release, angler's name and address and any comments. The data card was then to be mailed to GCRL personnel, at which time the data were archived in a database program. When an angler caught a tagged fish (recapture), that angler would notify project personnel and provide them with the species of fish, tag number, date of recapture, location of recapture, length of the fish, whether the fish was released again with the tag intact, recapturing angler's name and address and any comments. Recapture data were then matched with the original tagging data from the database, and time-at-liberty ("Days Out"; number of days from when the fish was tagged to when it was recaptured) and distance traveled ("Distance"; number of miles from tagging location to recapture location) were calculated. Distance traveled was measured in ArcView 3.2 mapping software. In order to assist in statistical analyses, tagging and recapture locations were assigned to a general zone for each species ("Zone"). A recapture report was then composed and mailed to both the tagging and recapturing anglers.

To alert anglers and the general public to the tagging programs in general and to the potential of catching a tagged fish, informational posters have been placed at most coastal boat landings and bait shops in Mississippi and were mailed to marinas in Louisiana, Alabama and Florida.

Public Workshops

The general format of the workshop remained the same as previous years, with various personnel from GCRL and the Mississippi Department of Marine Resources (MDMR) given the opportunity to present research findings from several different projects during each annual workshop (Appendix I). The second half of each meeting was reserved for public comments and open discussion from attendees.

To alert the public to the date and location of the public workshop each year, project personnel contacted prior workshop attendees and anglers who were currently involved in the tagging programs and provided them with a meeting announcement. Project personnel appeared on the local news and also provided information to local television stations. Press releases and interviews were provided to local newspapers.

RESULTS & DISCUSSION

Data summaries for recaptures of cobia and tripletail can be found in Appendix II; all tagging and recapture data are on file at GCRL.

Cooperative Tagging of Spotted Seatrout in Mississippi Coastal Waters

The objective of this job was to acquire information on the seasonal movements of spotted seatrout within Mississippi's coastal waters, focusing on fish 14-in TL or longer. For the project period, a total of 226 spotted seatrout were tagged and released, and three fish (1.3%) were reported as being recaptured. Since the program changed in 2001 to targeting only spotted seatrout 14-in or longer, the numbers of fish tagged have decreased dramatically, primarily because many anglers are unwilling to release those larger fish. The extremely low number of spotted seatrout tagged since that change suggests that the continuation of this portion of the project should be annually re-evaluated to determine if resources could be better used for an alternative species.

Tagged spotted seatrout ranged in size from 10.0 to 25.0 inches TL with 14-inch fish being the dominant size class (Fig. 1). In a spatial context, Zone 4 which includes the Mississippi coastal barrier islands produced the most tagged spotted seatrout (n = 89), while Zone 3 (Jackson County) also contributed relatively high numbers of tagged fish (Fig. 2).

Of the three fish recaptured during the project period (Table 1), no fish exhibited extraordinary movements, and each fish was recaptured in the same geographic zone in which it was tagged. The longest distance traveled was 13 miles, from the Bay St. Louis Bridge to the Long Beach harbor, over a period of 22 days.

Tag	Та	g/Release Information			Recapture Information		Days	Miles
No.	Date	Location	TL (in)	Date	Location	TL (in)	Out	Traveled
31158	11/23/2008	south of Sioux Bayou	19.50	4/24/2009	Singing River Island	19.5	153	5
32207	3/31/2009	north side of Cat Island	18.00	5/1/2009	north side of Cat I	17.00	32	1
31702	10/25/2009	BSL Bridge Car Bridge	14.00	11/15/2009	Long Beach Harbor	14.75	22	13

Table 1. Recapture data for tagged spotted seatrout, Dec 2006 through Nov 2009.

<u>Conclusion</u> – Recapture data are consistent with prior findings of limited geographic movements by spotted seatrout in Mississippi coastal waters. Results from 2009 project tagging are promising in that the number of spotted seatrout tagged increased significantly in 2009 (n=122) relative to 2008 (n=35) and 2007 (n=65); as such, it is recommended that the angler-cooperative tagging of spotted seatrout through this program continue through 2010 if funds are available.

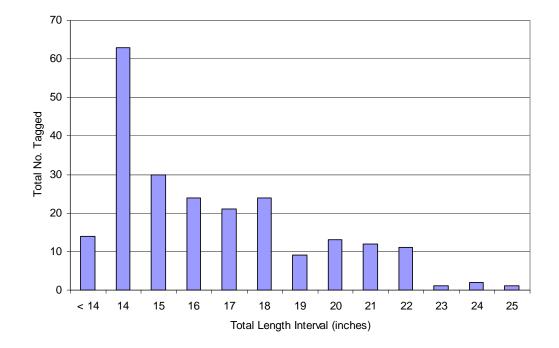


Figure 1. Length frequency (TL) distribution of spotted seatrout tagged and released, Dec 2006 - Nov 2009.

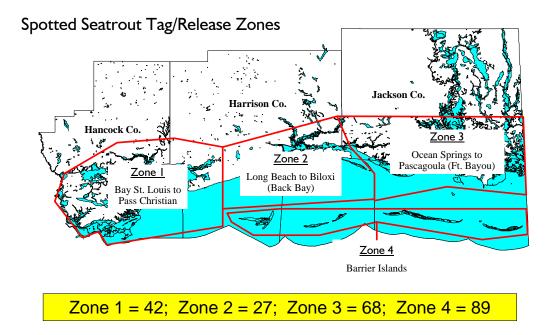


Figure 2. Spatial distribution of spotted seatrout tagged and released, Dec 2006 - Nov 2009.

Cooperative Tagging of Cobia in Mississippi Coastal Waters and the Adjacent Gulf of Mexico

The objective of this job was to continue to acquire information on the seasonal movements of cobia in Mississippi coastal waters and the adjacent Gulf of Mexico. During the project period, a total of 1,689 cobia were tagged along the U. S. Gulf and Atlantic coasts, and 106 (6.3%) tagged cobia were reported as recaptured (Appendix II-A). Due to the high participation of anglers along the Florida panhandle, cobia tagging peaked during April (Fig. 3), which coincides with the seasonal occurrence of this species in waters from off Panama City to Pensacola, Florida. As with previous years, the majority of cobia was tagged in the northcentral Gulf of Mexico (Fig. 4), with most fish being tagged off northwestern Florida.

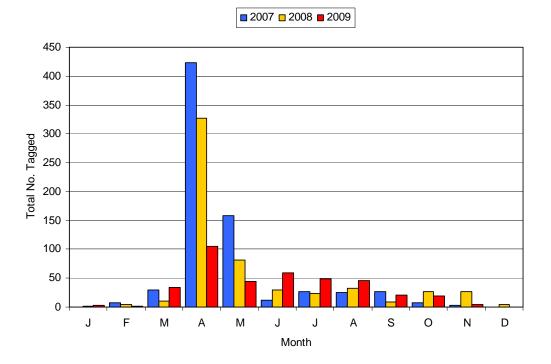


Figure 3. Total number of cobia tagged and released by month and year, Dec 2006 – Nov 2009.

Fork length (in) for tagged cobia during the project period ranged from 10.0 to 61.0 in, with 67% of tagged fish being less than the 33-in FL (or 37-in TL) Gulf-wide minimum size limit (Fig. 5). An unusually high number of small (<24-in FL) cobia were tagged and released during the 2008 project year, accounting for 44% of all tagged fish that year; overall length data for the project period are thus skewed toward the lower size ranges.

Time-at-liberty for cobia recaptured from December 2006 through November 2009 ranged from less than one week to 213 weeks (Fig. 6). Approximately 64% of the recaptured fish had been at liberty for one year or less, and 89% had been at liberty for less than two years. During the same period, 51% of tagged cobia traveled 100 miles or less upon recapture, and 65% traveled 200 miles or less (Fig. 7). One cobia traveled more than 1,605 miles, the

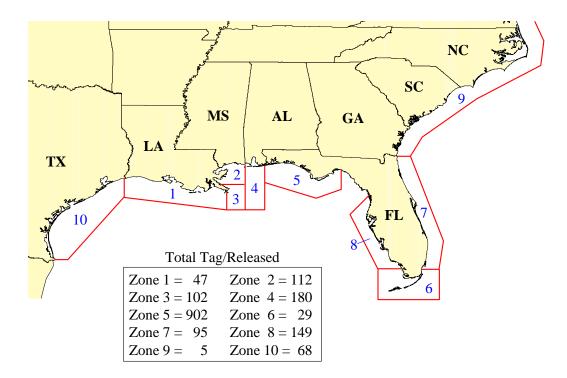


Figure 4. Total number of cobia tagged and released by tag zone, Dec 2006 - Nov 2009.

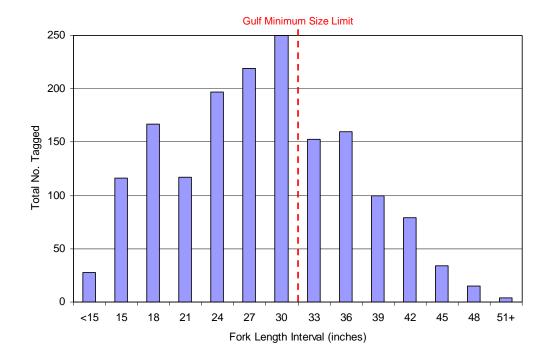


Figure 5. Length frequency (FL) distribution of cobia tagged and released, Dec 2006 - Nov 2009.

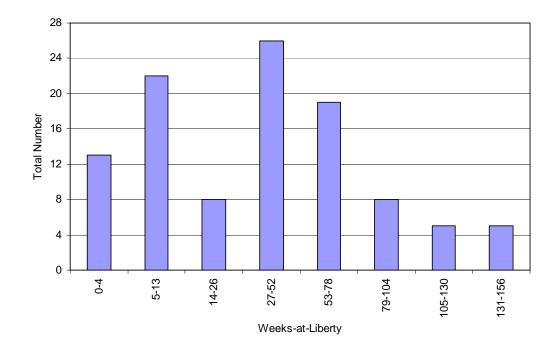


Figure 6. Time-at-liberty (weeks) for recaptured cobia, Dec 2006 - Nov 2009.

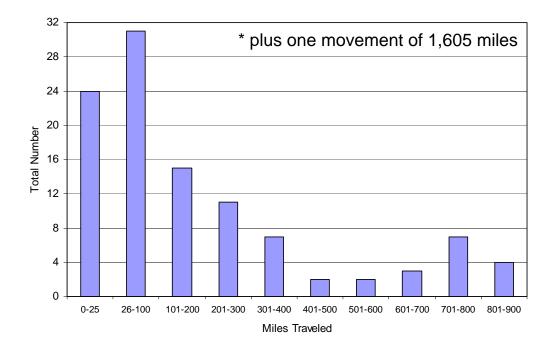


Figure 7. Distance traveled (miles) by recaptured cobia, Dec 2006 - Nov 2009.

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longest distance reported to date for this research program. That fish (Tag No. RC40292) was tagged off Dog Keys Pass, Mississippi, in August 2006 and recaptured off Hatteras Inlet, North Carolina in April 2009 (Appendix II-A, C).

A detailed summary of all cobia tag-release and recapture data collected since 1988 has been presented in previous reports¹ in an effort to maintain one ongoing data source for this research. Therefore, selected tables and figures have been updated with current project data and are included in Appendix III of this report. Note that numbering of those tables/figures is preceded by "Hendon and Franks, 1999" to coincide with past reports¹.

<u>Conclusion</u> - Tagging and recapture data during the project period suggest a similar trend of cobia migration as has been observed in the past¹. Most cobia in the northern Gulf appear to over-winter in the warm waters of south Florida and as spring approaches begin a northward migration up the eastern or western Florida coastlines. In the northern Gulf, cobia begin to appear off western Florida (Destin, Pensacola) and Alabama in March and April and continue westward through summer. As winter approaches, those fish possibly follow the same route (in reverse) back to south Florida. The existence of a potentially non-migratory group of cobia in the northern Gulf has been proposed in past reports and was again supported during the project year in the form of a cobia recaptured off Chandeleur Island (eastern Louisiana) in December 2007 (Tag # RC44612).

¹ Hendon, J. R. and J. S. Franks. 1999. Studies on the seasonal movements and migratory patterns of cobia, *Rachycentron canadum*, in Mississippi marine waters and the adjacent Gulf of Mexico. U. S. Fish Wild. Serv., SFR Final Rep. Proj. No. F-91. 108 pp.

Cooperative Tagging of Tripletail in Mississippi Coastal Waters and the Adjacent Gulf of Mexico

The objective of this job was to continue to acquire information on the seasonal movements of tripletail in Mississippi coastal waters and the adjacent Gulf of Mexico. Because tripletail are not currently a managed species in Louisiana or Mississippi, soliciting the assistance of anglers from those states has been difficult, because there were no established requirements for those anglers to release fish under a certain minimum size or once a daily bag limit had been reached. As a result, the majority of fish tagged have been from Florida and Alabama, where both minimum size and daily bag limits are in place. Note: In 2010, Mississippi enacted management measures for tripletail in its coastal waters, which will hopefully lead to increases in the number of tripletail tagged by Mississippi anglers.

During the project period, a total of 620 tripletail were tagged and released in U.S. Gulf and Atlantic waters, and a total of 84 tagged fish (13.5%) were reported as recaptured (Appendix II-B). Tripletail were tagged throughout each year (Fig. 8), with numbers peaking from late-spring through summer; increased tagging during summer of 2009 was primarily attributable to anglers in Mobile Bay, Alabama. The east and west coasts of the Florida Peninsula (Fig. 9, Zones 7 & 8) yielded the most tagged tripletail (41%) during the project period, and anglers

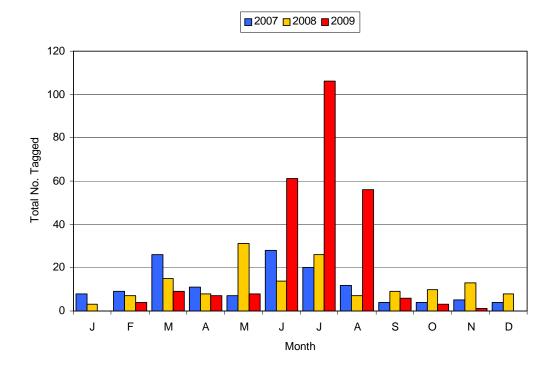


Figure 8. Total number of tripletail tagged and released by month and year, Dec 2006 - Nov 2009.

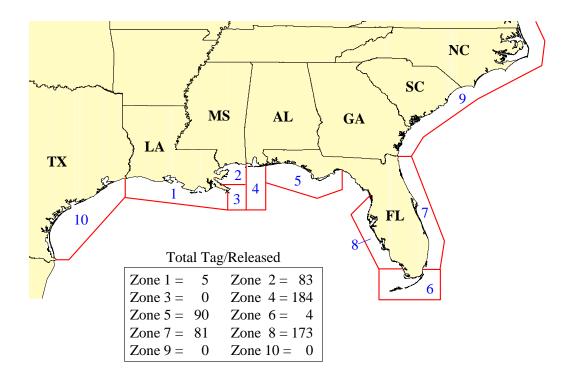


Figure 9. Total number of tripletail tagged and released by tag zone, Dec 2006 - Nov 2009.

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in Mobile Bay, Alabama, (Zone 4) contributed significantly more effort (30% of total fish tagged) than in previous years. Most tripletail tagged and released were less than the Florida minimum size limit of 15-in TL (47%) and the Alabama limit of 16-in TL (56%), and mean (\pm SE) size for the project period was 16.0 \pm 0.17 inches TL (range = 6.0 - 31.5 in; Fig. 10).

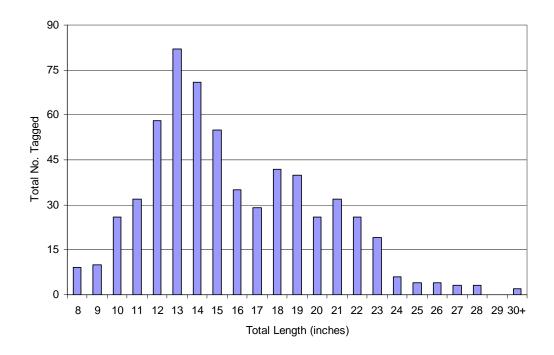


Figure 10. Length frequency (TL) distribution of tripletail tagged and released, Dec 2006 - Nov 2009.

Time-at-liberty for recaptured tripletail during the project period ranged from less than one week to 105 weeks (Fig. 11). Two tripletail were at liberty for 100 or more weeks (Tag Nos. 3522 and 30233); the first was tagged and recaptured 740 days later in Estero Bay, Florida, and the second moved 12 miles from Englewood to Venice, Florida, over 706 days. Overall, 51 (62%) of the tagged tripletail which were recaptured had moved 10 miles or less from the tagging location (Fig. 12), and 88% moved 50 miles or less. The longest distance traveled during the project period was 295 miles (Tag No. 8908), from Apalachicola, Florida, to Sanibel Island, Florida, in 208 days. One reported recapture involved interstate movement, from Biloxi, Mississippi, to Lake Borgne, Louisiana (Tag No. 7352).

Eight double-recaptures of tripletail occurred during the project year and are summarized in the respective recapture reports in Appendix II-C. Three of those double-recaptures occurred in waters off the western Florida Peninsula, two of which involved limited overall movement (Tag Nos. 4751 and 6205) and one that encompassed movement of 122 total miles (Tag No. 4780). Two limited movement double-recaptures were reported from each of the Florida regions of Apalachicola (Tag Nos. 5161 and 6668) and Cape Canaveral (Tag Nos. 7111 and 7121), and the final double-recapture was reported involved Tag No. 7352, which moved from off Biloxi, Mississippi, to Lake Borgne, Louisiana, over a total period of 55 days.

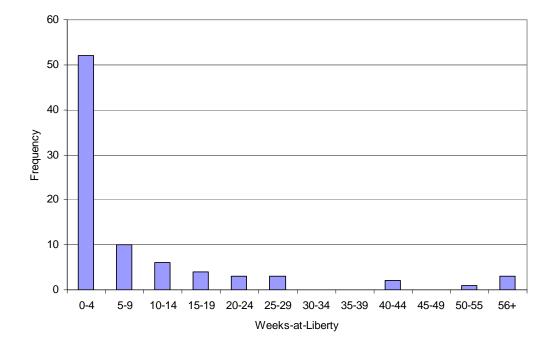


Figure 11. Time-at-liberty (weeks) for recaptured tripletail, Dec 2006 - Nov 2009.

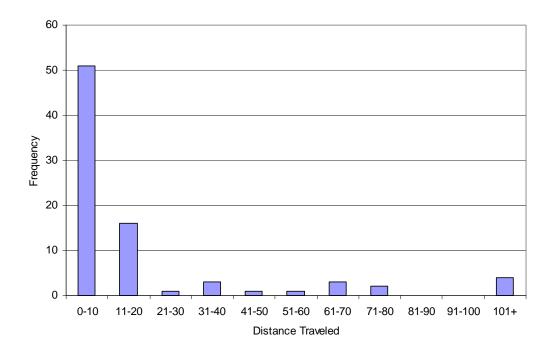


Figure 12. Distance traveled (miles) by recaptured tripletail, Dec 2006 – Nov 2009.

Tag		Tag/Release Information			Recapture Information		Days	Miles
No.	Date	Location	FL (in)	Date	Location	FL (in)	Out	Traveled
4751	12/6/2006	Naples	12.5	1/7/2007	Blind Pass, Sanibel Island	13.0	33	32
4751	1/7/2007	Blind Pass, Sanibel I.	13.0	7/1/2007	off Sanibel	15.5	176	13
4780	10/21/2008	Bonita Beach	12.0	11/21/2008	2 ml off Bonita Beach	14.0	31	2
4700	11/21/2008	2 mls off Bonita Bch	14.0	4/28/2009	Madeira Beach	15.0	158	120
5161	6/10/2007	7 mile, Apalachicola Bay	9.0	7/17/2007	Apalachicola Bay, Green Point	13.0	38	15
5101	7/17/2007	Green Point, Apalachicola	13.0	7/22/2007	5 mile Apalachicola	11.0	6	13
6205	3/23/2006	Naples	12.5	3/7/2007	2 miles off Wiggins Pass	19.0	350	10
0203	3/7/2007	2 miles off Wiggins Pass	19.0	3/10/2007	Sanibel Island	20.0	4	20
6668	7/5/2007	11 mile, Apalachicola Bay	13.0	7/20/2007	1 ml E of Big Bayou, south side	14.0	16	1
0000	7/20/2007	1 mile E of Big Bayou	14.0	7/28/2007	same as tag/release	14.0	9	0
7111	5/28/2008	Port Canaveral	15.0	6/5/2008	Port Canaveral #10	14.0	9	0
7.1.1	6/5/2008	Port Canaveral #10 can	0.0	6/14/2008	Port Canaveral #9B	15.5	10	0
7121	5/30/2008	Port Canaveral	15.5	6/10/2008	Port Canaveral, FL	17.0	12	0
1121	6/10/2008	Port Canaveral	17.0	7/12/2008	Port Canaveral	17.8	32	0
7352*	6/7/2009	Biloxi Channel Marker 4	21.0	7/10/2009	west of Katrina Reef	22.0	33	3
1332	7/10/2009	west end Katrina Reef	22.0	8/1/2009	30.02.660N 89.36.936W	23.0	22	52

Table 2. Double-recapture summary data for tripletail, Dec 2006 through Nov 2009.

* original tag removed and fish re-tagged with T8855

<u>Conclusion</u> - Because no minimum size limits or daily bag limits were in place for tripletail in Louisiana or Mississippi during the project period, tagging a large number of fish in the northcentral Gulf presented a challenge; however, the recent establishment of regulations for tripletail in Mississippi waters and the increase in Alabama angler participation will hopefully result in continued gains in the knowledge of northern Gulf tripletail habits. Project personnel continue to work closely with anglers to increase project awareness and with various media outlets to publicize this research.

Cooperative Tagging of Tarpon and Florida Pompano in Mississippi Coastal Waters and the Adjacent Gulf of Mexico

New tagging programs for tarpon and Florida pompano in Mississippi coastal waters were initiated in 2009. As with prior tagging research, the ultimate goal of data acquisition is not reached in the initial years of the program, rather the primary focus is on establishing an angler base and promoting the programs to recruit new participants. During the 2009 year of the project period, tagging kits were distributed to local anglers for both species, but no fish were tagged (based on the absence of any tagging data cards being returned to project personnel). Project personnel will continue to promote these programs to expand the angler base and monitor the subsequent data acquisition, as funds allow.

Coordination of Public Workshop on Marine Fisheries

The annual Workshop on Mississippi's Marine Fisheries provides for the exchange of information between Mississippi biologists/fisheries managers and the local public and is traditionally held during November or December of each project period. The 2007-08 workshop was held on January 24, 2008, with an estimated attendance of 80 individuals; the 2008 workshop was held on December 4, 2008, with an attendance of 27 individuals; and,

the 2009 workshop was held on December 10, 2009, with 72 participants. Each workshop featured presentations by GCRL and MDMR researchers and graduate students, and specific topics for each workshop are given in Appendix I.

The annual workshops supported by this project are an important tool for the dissemination of information to the fishing public and provide an opportunity for the public to relay any concerns they may have regarding Mississippi's marine fisheries. Because both GCRL and MDMR personnel participate in each workshop, there is a wealth of knowledge available to address attendees' concerns or answer any questions. In turn, both agencies have the opportunity to hear first-hand the concerns, questions and comments by local citizens. Given its importance as both an educational forum and a source of open communication, annual workshops will continue to be an integral component of this research project.

ACKNOWLEDGMENTS

We would like to thank all of the anglers who have participated in this research over the years; this is, in effect, their project. Many thanks to Bill Dempster, John Anderson, Gary Gray and Eric Hoffmayer for their efforts in tagging target species while involved in other research projects. We are especially grateful to Dr. William Walker, William "Corky" Perret, Dale Diaz, Michael Buchanan and Rick Burris of the Mississippi Department of Marine Resources for their continued support of this research through funds provided by the U.S. Fish and Wildlife Service, Sport Fish Restoration Program, administered by Mr. Bob Gasaway, Atlanta, Georgia.

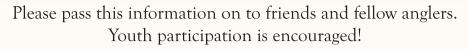
APPENDIX I

Meeting Announcement and Agenda for the 2007-2009 Workshops on Mississippi's Marine Fisheries You are invited to attend the 2007-2008 Workshop on

MISSISSIPPI'S MARINE FISHERIES

Thursday, January 24, 2008 7:00 p.m. Caylor Auditorium Gulf Coast Research Laboratory 703 East Beach Drive Ocean Springs, Mississippi





FOR MORE INFORMATION OR FOR DIRECTIONS: Read Hendon 228.872.4202

Directions also available online at http://www.usm.edu/gcrl/location/index



SCHEDULED PRESENTATIONS

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Mississippi Spotted Seatrout

Read Hendon, Fisheries Biologist GCRL

Management Considerations for Mississippi Tripletail

Jim Franks, Fisheries Biologist GCRL

Federal Management Issues

Dr. Tom McIlwain, Chair Gulf of Mexico Fishery Management Council

Seatrout Population Enhancement Cooperative (SPEC) Update

Dr. Reg Blaylock, Associate Research Professor GCRL

Mississippi Coastal Shark Update

Dr. Eric Hoffmayer, Fisheries Biologist GCRL

Emergency Disaster Relief Program Fishery Data Collection

Matt Hill, Fisheries Biologist Mississippi Department of Marine Resources

Also Scheduled:

Open Forum Discussion Door Prizes Refreshments Awards for Top Local Taggers





This workshop is coordinated in conjunction with and funded by the Mississippi Department of Marine Resources through the Sport Fish Restoration Program.

Join us!

MISSISSIPPI'S MARINE FISHERIES

2008 Workshop

Thursday, December 4, 2008 7:00 p.m. Caylor Auditorium Gulf Coast Research Laboratory 703 East Beach Drive Ocean Springs, Mississippi

Fish illustrations courtesy of Marty Wilson, Art FX Studios







Invite your friends and fellow anglers. Youth participation is encouraged!

FOR MORE INFORMATION, CALL: Read Hendon at **228.872.4202**

Directions also available online at www.usm.edu/gcrl/location





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AA/EOE/ADAI - 11/09

This workshop is coordinated in conjunction with and funded by the Mississippi Department of Marine Resources through the Sport Fish Restoration Program.

SPEAKERS AND TOPICS

Bill Hawkins Update on SPEC Program and Cedar Point Development

Bill Walker Habitat Issues Facing Mississippi

Read Hendon Spotted Seatrout Monitoring and Tag-Release Updates

Matt Hill Comparison of Fisheries Data Programs

Jim Franks Tarpon Occurrences in Mississippi

> Eric Hoffmayer Spotted Seatrout Spawning Habitat

> > Jay Dieterich Striped Bass Habitat and Tracking

Open Forum Discussion Door Prizes Refreshments

Join us!

MISSISSIPPI'S MARINE FISHERIES

2009 Workshop

Thursday, December 10, 2009 7:00 p.m. Caylor Auditorium Gulf Coast Research Laboratory 703 East Beach Drive Ocean Springs, Mississippi

Fish illustrations courtesy of Marty Wilson, Art FX Studios







Invite your friends and fellow anglers. Youth participation is encouraged!

FOR MORE INFORMATION, CALL: Read Hendon at **228.872.4202**

Directions also available online at www.usm.edu/gcrl/location





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AA/EOE/ADAI - 11/09

This workshop is coordinated in conjunction with and funded by the Mississippi Department of Marine Resources through the Sport Fish Restoration Program.

SPEAKERS AND TOPICS

Bill Hawkins Welcome

Read Hendon Mississippi Spotted Seatrout Update

Kerwin Cuevas Mississippi Artificial Reef Program

Jim Franks Satellite Tracking of Dusky and Silky Sharks

Eric Hoffmayer Spotted Seatrout Spawning Habitat Results

Read Hendon Tag-Release Program Update and Awards

Open Forum Discussion Door Prizes Refreshments

APPENDIX II

Recapture Data for Cobia (A) and Tripletail (B)

Category Definitions for Appendix II-A

LTSD = long-term (> six months), short distance (< 200 miles) LTLD = long-term (> six months), long distance (> 200 miles) STSD = short-term (< six months), short distance (< 200 miles) STLD = short-term (< six months), long distance (> 200 miles)

and

Recapture Report for RC40292 (C)

Appendix II-A. Tag/recapture data for cobia recaptured during 2007-2009 project periods.

TAG		TAG-RELEASE INFORMATIC	N				RECAPTURE INFORM	ATION					SUMMARY	
NO.	Date	Location	FL (in)	TL (in)	Zone	Date	Location	FL (in)	TL (in)	WT (lbs)	Zone	Days Out	Distance	Categ.
43483	04/21/06	Lido Key, Sarasota	29.0	32.0	8	11/29/06	5 miles off Marco I. on reef	36	39		6	223	115	LTSD
43472		Lido Key, Sarasota	32.0	34.5	8	01/24/07	Naples, FL E		39		8	282	95	LTSD
41506	04/15/06	Pensacola	33.0	36.0	5	02/09/07	23 miles off New Smyrna Beach	41.0			7	301	895	LTLD
44554	11/13/06	Naples	35.0	38.0	8	02/12/07	24 42.551N 81 58.645W	37.0			6	92	95	STSD
1597	03/11/06	9 miles out Port Canaveral	28.0		7	03/29/07	24.28'N 81.55'W	44		24	6	383	355	LTLD
44322	06/24/06	45 ml S of W end of Horn I.	31.0	35.0	3	04/20/07	Triple Rig, S of Petit Bois I.	36			2	301	41	LTSD
42140	04/24/05	Navarre	38.0		5	04/24/07	off Orange Beach, AL	51.5		64	4	730	45	LTSD
44093	04/23/07	Phillips Inlet, FL	37.5		5	04/24/07	Pensacola Beach	39.0	43.0		5	2	85	STSD
43509	03/04/06	Siesta Key	28.0	31.0	8	04/25/07	S. Mat Lacha Pass, Sanibel I.	38			8	418	75	LTSD
44206	04/22/07	Seagrove	37.5		5	04/26/07	Liberty Ship 8 miles off Destin		35.0		5	5	28	STSD
48128	04/21/07	Pensacola Beach	36.0	41.0	5	04/27/07	4 miles off Pensacola, FL TL est	50.0		42.00	5	7	0	STSD
41627	04/24/07	Pensacola	45.0		5	04/28/07	north end of Chandeleur I.	50.5		46.50	2	5	105	STSD
42129	04/20/05	Destin	36.0		5	05/02/07	East Pass, Destin			40	5	743	0	LTSD
44854	04/30/07	Destin	40.0	43.0	5	05/02/07	S curves - Pensacola	44.0	49.0		5	3	45	STSD
27879	04/05/05	Pensacola	36.5	40.0	5	05/05/07	Main Pass 108	44		33	2	761	105	LTSD
43594	05/05/07	Block 93 South of Chandeleur		39.0	2	05/09/07	Chandeleur shallow field		41.5	18.50	2	5	0	STSD
48480	04/16/07	200 yds off Florabama	33.0	37.0	5	05/10/07	35 mls off Cameron, LA	42.0		22.80	1	25	390	STLD
41679	04/28/07	Orange Beach	33.0		4	05/12/07	West Delta 143		46.0		1	15	165	STSD
48154		Pensacola, FL	40.0		5	05/13/07	South Pass 70 est TL		48.0	34.00	1	19	140	STSD
45039	03/13/07	Siesta Key	24.0	27.0	8	05/27/07	Green Key Beach, Pasco County		26.0		8	76	75	STSD
48088	04/16/07	Pensacola Beach	39.0	42.0	5	05/31/07	40 miles south of Galveston E		42.0		10	46	490	STLD
38838	04/26/03	Pensacola Beach	37.0	40.0	5	06/01/07	Main Pass 299			38.00	3	1496	120	LTSD
48197	04/22/07	Pensacola	40.0		5	06/02/07	Eugene I 218	36.0		27.00	1	42	310	STLD
43489	03/10/07	Siesta Key	32.5	35.0	8	06/08/07	Tampa Bay - NE side	35.0			8	91	45	STSD
44016	04/21/06	Pensacola Beach	36.0		5	06/10/07	Ship Shoal 200				1	416	290	LTLD
435	06/01/06	3000.079 8851.974	21.1	23.5	2	06/10/07	data buoy (42007?) off Horn I.	36.0	39.0		2	375	10	LTSD
44553	11/13/06	Naples	35.0	39.0	8	06/12/07	Crystal River, FL				8	212	215	LTLD
44155	04/07/06	Pensacola Beach	42.0	46.0	5	06/14/07	off Cocodrie, LA			38	1	434	240	LTLD
25214	04/01/06	10 mls E Pt Canaveral, date&TL = E	25.0		7	06/16/07	Chesapeake Bay, Hampton, DO=E		36.0	28.00	9	442	735	LTLD
43473	04/18/06	Lido Key, Sarasota	31.0	34.5	8	06/16/07	Cedar Key, FL	01.0	35	12.5	8	425	130	LTSD
44802	04/29/07	Pensacola, FL	31.0		5	06/16/07	rig 7 miles out of Mobile Bay	34.0		07.00	4	49	45	STSD
48252	03/29/07	Orange Beach, AL	45.0		4	06/24/07	10 ml S of Perdido Pass	41.0		27.00	4	88	10	STSD
43435	04/15/06	Perdido Pass, FL	00.0	00.0	5	06/30/07	Vermilion Block 215 E	38.0		00.00	1	442	330	LTLD
48583	04/23/07 04/23/07	Pensacola	30.0 38.0	33.0	5	06/30/07 07/03/07	30 ml SE of Dauphin I E West Delta 96	20.0		20.00 30.00	4	69 72	42 205	STSD STLD
48584		2 miles east Portafino		41.0	5 2	07/03/07		38.0			1	295	205 15	
29506	09/18/06	inside Ship I. buoys	30.0	33.5			farewell buoy, Horn Island	37		20	2	295 77	180	LTSD STSD
48162	04/28/07	Orange Beach AL	40.0	44.0	4	07/13/07	Grand Isle 78		48	33.00	1	463		
44156	04/08/06	Pensacola Beach	40.0 29.7	44.0 33.8	5	07/14/07 07/14/07	15 ml off Dauphin Island		48	40 35.00	4	463 991	65 170	LTSD LTSD
145 48422		Cat Island btw OrBch and PenBch Date = E	29.1	აპ.Ծ	2	07/14/07	2914.183N 8957.200W 35 ml off Port Aransas, TX - DO= E	31.0		JD.CC	1 10	991 97	625	STLD
48422	04/15/07	Orange Beach, AL	40.0		4	07/20/07	Horseshoe Rigs	31.0	48.0	40.00	3	97 87	94	STED
41685	04/25/07	2937.78N 8842.10W	40.0 30.0	32.5	4	07/20/07	12 ml south of west end (Dauph.I?)	31.5	48.0 35.0	40.00 9.60	3	87 84	94 37	STSD
42518	04/29/07	Pensacola Beach	30.0	32.5 39.0	3 5	07/21/07	Grand Isle 82 E	44.0	33.0	9.00	4	84 1184	205	LTLD
40529	04/25/04	Dune Allen	24.0	26.0	5 5	07/22/07	3003.890N 8734.190W	33.3		14.50	4	95	205 81	STSD
48407	04/29/07	Dune Allen	24.0	20.U	Э	08/01/07	3003.890N 8734.190VV	ა ა.ა		14.50	4	95	01	5150

Appendix II-A. Tag/recapture data for cobia recaptured during 2007-2009 project periods.

TAG		TAG-RELEASE INFORMATIO	DN									SUMMARY				
NO.	Date	Location	FL (in)	TL (in)	Zone	Date	Location	FL (in)	TL (in)	WT (lbs)	Zone	Days Out	Distance	Categ.		
38639	04/28/07	CA-25-A	31.0	33.0	3	08/08/07	Buoy 42007		39.5		2	103	21	STSD		
44841	05/02/07	Destin	40.0	43.0	5	08/10/07	West Delta 45	38.5		30.00	1	101	229	STLD		
46998	05/06/07	West Ship Channel	31.0	36.0	2	08/19/07	Gulfport Ship Channel	37.0		23.20	2	106	0	STSD		
44057	04/22/07	Navarre Beach, FL	26.0	29.0	5	09/01/07	3006.700N 8725.300W			26.00	5	133	36	STSD		
40512	04/22/07	Sandestin	32.0	35.0	5	09/15/07	off Fort Myers, FL		38.0	28.00	8	147	382	STLD		
42043	04/28/06	Navarre	24.0	27.0	5	09/29/07	South Timbalier 128	36			1	520	240	LTLD		
44612	09/16/06	Data Buoy	27.0	30.0	3	12/13/07	MRGO	38	42.5	28.1	3	453	41	LTSD		
48392	05/02/07	Pensacola Beach Gulf Pier	36.0	39.0	5	01/11/08	9.5 miles SE of Pt Canaveral, FL	36.5		21.70	7	255	895	LTLD		
48330	04/20/07	Pensacola	35.0		5	03/01/08	off Jupiter Inlet, FL	45.0		45.00	7	315	745	LTLD		
42817	02/23/06	Siesta Key	33.0	36.0	8	03/13/08	off Englewood, FL	51.5		38.50	8	749	25	LTSD		
31672	05/01/07	Destin, FL	34.0	38.0	5	03/28/08	off Jupiter, FL	42.0			7	333	763	LTLD		
44541	04/25/07	Pensacola	40.0	43.0	5	03/30/08	off Perdido Pass	42.0		37.00	5	340	25	LTSD		
40519	04/20/07	Okaloosa Island, FL	36.5		5	04/13/08	Pensacola (again 4/13/08)	38.0			5	358	35	LTSD		
44855	05/01/07	Pensacola	38.0	41.0	5	04/17/08	Pensacola, FL	47.0		46.26	5	352	0	LTSD		
46090	12/03/07	Palm Beach Co.	33.0	36.0	7	04/18/08	Jupiter, FL	32.0			6	137	15	STSD		
47068	04/25/08	Navarre Beach	38.0	42.0	5	04/26/08	1 miles west of Pensacola Pier		43.0	37.00	5	2	15	STSD		
42574	04/12/06	Pensacola	35.0	40.0	5	04/26/08	off Cocodrie, LA			35.00	1	744	245	LTLD		
47088	04/17/08	Navarre Beach	42.0	46.0	5	05/01/08	Orange Beach, AL	46.0		42.00	4	14	42	STSD		
46097		St. Marks, FL	31.0	33.0	5	05/07/08	St. Marks, FL	36.0			5	304	0	LTSD		
37830	05/14/05	29 32.582N 88 37.062W	31.0	35.0	3	05/09/08	Grand Isle Block 90 E		45.0		1	1090	115	LTSD		
43493	09/10/06	Shallow Field	40.0		3	05/10/08	West Delta 34-2		47.3	48.00	1	607	100	LTSD		
44661	09/27/06	#25 GPT channel	33.5	37.0	2	05/13/08	50 Miles SSW of Marco I.		50.0		8	593	605	LTLD		
47076	04/27/08	Navarre Beach	35.0	38.0	5	05/18/08	Horseshoe Rigs			42.00	3	22	130	STSD		
41532	05/29/05	Pensacola Beach	44.0		5	06/01/08	120CA Main Pass		54.0	63.00	3	1098	105	LTSD		
47065	04/25/08	Navarre Beach	28	32	5	06/03/08	9 ml S of Pensacola Pass	33.5		16	5	40	28	STSD		
44054	04/20/07		26.0	29.0	5	06/12/08	Grand Isle 82 E	39.0		23.00	1	418	215	LTLD		
45634	04/08/08	East Pensacola Pier	40.0	45.0	5	06/13/08	60 miles S of Orange Beach E			52.00	4	67	68	STSD		
44056	04/21/07	Navarre Beach, FL	38.0	42.0	5	06/14/08	South Marsh Island 33			43.50	1	419	335	LTLD		
47063	04/24/08	Navarre Beach	39	42	5	06/24/08	rig 10 ml S of Petit Bois	41			2	62	98	STSD		
31652	11/05/07	NE Port Canaveral, 120'	34.0	37.0	7	07/02/08	Cocoa Beach, FL	36.5		18.00	7	240	20	LTSD		
44550	04/27/07	Pensacola, FL	30.0	33.0	5	07/04/08	20 ml off Grand Isle				1	433	205	LTLD		
48987	04/24/08	Orange Beach	35.0		4	07/27/08	2 ml S of Perdido Pass	33.5		14.00	4	95	0	STSD		
47078	04/27/08	Navarre Beach	38.0	42.0	5	07/28/08	35 miles south of Petit Bois E		40.0		3	93	105	STSD		
46088	12/12/07	Juno Pier	30.0	33.0	7	08/05/08	north of St. Lucie Inlet				7	237	25	LTSD		
44197	05/01/06	Pensacola Beach	45.0	48.0	5	11/08/08	15 miles off Clearwater (60')				8	921	295	LTLD		
46712	06/07/08	St. Marks, FL	24.0	28.0	5	11/16/08	30.01.044N 84.10.470W St. Marks	33.8	37.3	13.50	5	131	0	STSD		
48080	04/17/07	Pensacola Beach	38.0	41.0	5	12/06/08	Jupiter, FL (off Jupiter Inlet)	41.7	47.0	31.30	7	598	760	LTLD		
45320	01/30/08	Juno Pier	28.0	32.0	7	12/18/08	Jupiter, FL	34.0			7	323	5	LTSD		
49219	11/15/08	FL Keys - Gulf	36.0	40.0	6	12/29/08	50 mls off Islamorada, bay side	38.0			6	45	25	STSD		
46925		MP102C		30.0	3	02/06/09	MP299			46.00	3	573	23	LTSD		
44849	05/03/07	Pensacola	33.0	36.0	5	02/22/09	12 ml off Cape Canaveral		49.5	40.00	7	660	885	LTLD		
48372	04/20/08	Pensacola Beach	18.0	19.0	5	03/11/09	3 miles off Jupiter Inlet, FL	31.5			7	325	770	LTLD		

Appendix II-A. Tag/recapture data for cobia recaptured during 2007-2009 project periods.

TAG		TAG-RELEASE INFORMATIO	N				RECAPTURE INFORM	ATION				S	SUMMARY	
NO.	Date	Location	FL (in)	TL (in)	Zone	Date	Location	FL (in)	TL (in)	WT (lbs)	Zone	Days Out	Distance	Categ.
46177	08/07/08	2642.988 8205.544 CharHarb	19.5	22.5	8	03/21/09	Charlotte Harbor E	24.0			8	226	0	LTSD
47089	04/17/08	Navarre Beach	36.0	39.0	5	04/04/09	Marathon, FL			20.00	6	352	530	LTLD
44794	04/27/07	Pensacola, FL	34.0		5	04/22/09	30 ml SE of Freeport, TX		44.0	38.00	10	725	510	LTLD
48992	04/19/08	Long Beach, PCB		26.5	5	04/24/09	btw Navarre and FWB		36.0	22.00	5	370	58	LTSD
44907	05/03/07	Pensacola	33.0	36.0	5	05/01/09	N of Horseshoe Rigs	40.0	45.0	30.00	3	110	728	STLD
46639	04/17/09	Navarre FL	40.0		5	05/02/09	not reported	41.5		25.00	-	15	I	—
49220	11/15/08	FL Keys - Gulf	32.8	35.0	6	05/06/09	25o30', 81o45'	35.0			6	192	50	LTSD
46610	04/30/08	Pensacola Beach	38.0	42.0	5	05/07/09	Stuart Sandpile - 2 miles out	43.0	47.0	34.00	7	372	765	LTLD
40292	08/01/06	Farewell buoy - Dog Keys Pass	24.0	27.0	2	05/13/09	off Hatteras Inlet, NC	46.0		40.00	9	1016	1605	LTLD
45760	05/10/08	25 ml S Marco Island	32.0	35.0	6	05/13/09	13 miles off Stump Pass	40.0		42.00	8	368	105	LTSD
47969	04/18/09	east of Destin	44.0		5	05/28/09	High Island 170			40.00	10	41	475	STLD
48985	04/23/08	Orange Beach	37.0	41.0	4	06/17/09	Vermilion 161	42.3		38.00	1	420	345	LTLD
47784	04/27/08	Orange Beach	26.3	28.0	4	06/24/09	7 miles S of Dauphin I.	36.0			4	423	35	LTSD
28976	04/21/07	Pensacola Beach, Fl	43.0	46.5	5	07/18/09	22 miles off Port O'Conner Tx		52.0	42.50	10	818	615	LTLD
45154	07/24/08	lower FL Keys	29.5	33.5	6	07/18/09	15 miles N of Big Pine Key	36.0			6	359	18	LTSD
47864	10/30/08	2611.48 9703.05	27.8	31.3	10	07/19/09	30 mls E of Port Mansfield, TX	27.0			10	263	27	LTSD
42821	03/14/08	9 ml E Port Canaveral	34.0		7	08/07/09	off St. Augustine, FL	38.0			7	511	115	LTSD
45847	06/21/09	28 30 3091 80 20 7106	29.0	34.0	7	08/07/09	Flagler Beach, FL	31.0			7	47	80	STSD
37181	09/28/07	West Delta 62	36.0	40.0	1	08/22/09	Ship Shoal 214	43.0	48.8	30.00	1	693	85	LTSD
45330	11/28/08	28 11' 60"N 80 14' 37"W	28.5	32.0	7	11/17/09	off Sebastian Inlet	38.0		22.00	7	354	25	LTSD

Appendix II-B. Tag/recapture data for tripletail recaptured during 2007-2009 project period.

TAG		TAG-RELEASE INFORMATION		-		RECAPTURE INFORMATION	- . (1.)		_		MARY
NO.	Date	Location	FL (in)	Zone	Date	Location		WT (lbs)		Days Out	Distance
6932	11/27/06	Ft Myers Beach	18.0	8	12/03/06	Siesta Key, Sarasota Beach, FL	22.0		8	7	80
4710	12/05/06	Venice	13.0	8	12/07/06	3.5 miles WNW of tag location	13.3		8	3	3.5
30430	02/16/06	Venice	10.0	8	12/12/06	3.25 miles SSE of tag location	21.8		8	304	3.3
6939	12/01/06	Naples	19.0	8	12/12/06	Vanderbilt Beach	19.0	6	8	12	10
4724	12/17/06	Englewood	12.0	8	12/21/06	3 miles ENE of tag location	12.3		8	5	3
4751	12/06/06	Naples	12.5	8	01/07/07	Blind Pass, Sanibel Island	13.0		8	33	32
6931	11/27/06	Bonita Beach	18.0	8	01/11/07	Bonita Beach	19.0		8	46	0
4753	12/07/06	Naples	18.0	8	01/15/07	between Marco I and Naples	19.0		8	40	11
6944	12/12/06	Vanderbilt Beach	18.0	8	02/07/07	off Marco I	20.0		8	60	40
6934	11/28/06	Vanderbilt Beach	14.0	8	02/07/07	2 miles off Fort Myers, FL	19.0		8	72	10
6205	03/23/06	Naples	12.5	8	03/07/07	2 miles off Wiggins Pass	19.0	6.5	8	350	10
6993	12/15/06	Wiggins Pass, Bonita Beach (9 lbs	24.0	8	03/09/07	btw Naples and Marco I.		12	8	85	12
4792	03/05/07	Venice, FL	12.5	8	03/09/07	off Fort Myers Beach	12.8		8	5	65
6205	03/07/07	2 miles off Wiggins Pass, 2nd RECAP	19.0	8	03/10/07	Sanibel Island TL-E	20.0		8	4	20
6941	12/07/06	Naples	15.0	8	03/29/07	Englewood	16.0		8	113	65
6245	11/08/06	Naples	19.0	8	04/11/07	5 nm off Bonita Springs	19.0		8	155	14
4762	01/30/07	Bonita Beach	12.0	8	04/13/07	4 miles off Gomez Point, Panther Key	12.0		8	74	45
30222	11/21/05	Englewood	13.0	8	06/28/07	btw Suwanne R. and Horseshoe Bch	20.0		8	585	175
4751	01/07/07	Blind Pass, Sanibel I. 2ND RECAP	13.0	8	07/01/07	off Sanibel	15.5		8	176	13
6453	06/20/07	GPT Ship Channel	19.0	2	07/03/07	3 miles off St. Andrews Beach	18.0	4	2	14	19
6666	07/02/07	11 mile, Apalachicola Bay	14.8	5	07/05/07	11 mile, Apalachicola Bay	14.8		5	4	0
3522	07/05/05	Estero Bay (date and TL estimated)	15.0	8	07/14/07	Estero Bay	25.0	14	8	740	0
6950	03/23/07	Venice	13.5	8	07/15/07	Ft Myers, FL TL=E	16.0		8	115	65
5161	06/10/07	7 mile, Apalachicola Bay	9.0	5	07/17/07	Apalachicola Bay, Green Point E	13.0		5	38	15
6668	07/05/07	11 mile, Apalachicola Bay	13.0	5	07/20/07	1 ml E of Big Bayou, south side	14.0		5	16	1
6788	06/11/07	Point Clear, Mobile Bay	18.0	4	07/21/07	South Mobile Bay	19.7	6.4	4	41	9
5161	07/17/07	Green Point, Apalachicola - 2nd Rec	13.0	5	07/22/07	5 mile Apalachicola	11.0		5	6	13
6663	07/08/07	12-mile Apalachicola Bay	15.3	5	07/25/07	off Indian Pass	15.0		5	18	5
6668	07/20/07	1 mile E of Big Bayou	14.0	5	07/28/07	same as tag/release	14.0		5	9	0
7477	08/04/07	ICW 29, w of DI bridge	23.5	4	08/08/07	N of Gaillard I.	24.0		4	5	24
6574	05/06/07	Aplachicola Bay, 13 mile lease	14.0	5	08/22/07	Indian Pass, btw SVI and 13-ml	18.0	4.5	5	109	0
7478	08/19/07	Fly Creek, Fairhope	23.0	4	08/25/07	1 mile W of Fly Creek	22.0	10	4	7	1
30233	12/08/05	Englewood	12.3	8	11/14/07	Venice, FL	26.3	-	8	706	12
7587	03/28/08	Gulf, SW Knapps Point (Sanibel)	21.0	8	04/21/08	1/m ml off Sanibel Rocks	22.0		8	25	4
7677	05/24/08	1/2way btw MidBayLight & Mullet Pt	17.0	4	05/31/08	East Mobile Bay, Bon Secur	18.0		4	8	10
6297	05/29/08	Port Canaveral	17.0	7	06/04/08	Port Canaveral	18.0		7	7	0
7111	05/28/08	Port Canaveral	15.0	7	06/05/08	Port Canaveral #10	14.0		7	9	0
7118	05/29/08	Port Canaveral	15.0	7	06/05/08	Port Canaveral #10	14.0		7	8	0
7121	05/30/08	Port Canaveral	15.5	7	06/10/08	Port Canaveral, FL	17.0		7	12	0
7121	06/05/08	Port Canaveral #10 can (TL-14?)	0.0	7	06/14/08	Port Canaveral #9B (2nd Recap)	17.0		7	12	0
7125	06/01/08	Port Canaveral	15.0	7	06/14/08	Port Canaveral #10B	15.5		7	14	0
6276	03/04/08	Port Canaveral	10.0	7	06/27/08	Tomoka Basin, Ormond Beach	13.0		'	14	75
4774	03/04/08	Bonita Beach	15.0	8	07/05/08	Pine Island Sound #12 E	13.0		8	80	31
4903	06/21/08	West Bay, PCB	8.0	5	07/05/08	< 0.25 ml from tag location	11.0		о 5	14	0
4903	00/21/00	INCOLDAY, FOD	0.0	5	01/03/08		11.0		5	14	U

Appendix II-B. Tag/recapture data for tripletail recaptured during 2007-2009 project period.

TAG		TAG-RELEASE INFORMATION				RECAPTURE INFORMATION				SUM	MARY
NO.	Date	Location	FL (in)	Zone	Date	Location	FL (in)	WT (lbs)	Zone	Days Out	Distance
8861	07/01/08	Indian Pass inside	18.0	5	07/10/08	3 ml inside Indian Pass	17.5		5	10	2
7121	06/10/08	Port Canaveral - 2ND RECAP	17.0	7	07/12/08	Port Canaveral	17.8	3.4	7	32	0
7243	07/20/08	MS Sound 2 ml W of DI Bridge	20.0	4	07/19/08	lower Mobile Bay	19.0		4	-1	10
7679	07/18/08	1 ml E of DI Bridge	18.0	4	07/27/08	1/2 ml W of DI Bridge	18.5		4	10	1
7502	07/20/08	Lower Mobile Bay, Dauphin I.	19.0	4	08/08/08	east of Dauphin I. bridge	20.0		4	20	0
7216	08/11/08	1 ml E of Indian Pass	8.8	5	08/20/08	btw West and Indian Passes			5	10	6
7464	06/21/08	south Mobile Bay Ship Channel	15.0	4	08/20/08	Mobile Bay marker 42 E	18.0		4	61	5
4780	10/21/08	Bonita Beach	12.0	8	11/21/08	2 ml off Bonita Beach	14.0	1.5	8	31	2
7109	11/03/08	Vanderbilt Beach	15.0	8	11/21/08	3 mls W of Wiggins Pass	14.8		8	19	3
4972	02/22/08	Englewood, FL	12.5	8	12/20/08	Englewood, FL	19.5	5	8	302	0
8908	08/03/08	11-mile Apalachicola E	14.0	5	02/27/09	4 ml off Sanibel I.	17.5	4	8	208	295
2033	02/22/09	2825.620N, 8033.740W	13.5	7	03/19/09	4 miles E of Cocoa Beach	14.0		7	26	7
4780	11/21/08	2 mls off Bonita Bch (2nd recap)	14.0	8	04/28/09	Madeira Beach	15.0		8	158	120
5200	06/08/09	Indian Pass - 1/4 ml inside	14.5	5	06/09/09	Apal R outlet, near bridge	18.0		5	2	15
7317	06/18/09	30 18.97 88 05.87	18.5	4	07/01/09	Dauphin I bridge	18.0		4	13	2
8890	06/27/09	30.17.017 87 52.939	17.0	4	07/03/09	Bon Secour Bay	18.0		4	7	
8889	06/27/09	30.17.036 87 52.588	13.0	4	07/04/09	Bon Secour	16.0		4	8	2
7387	07/03/09	West Pass	13.0	5	07/04/09	1 miles from tagging location	13.0		5	1	1
5196	06/08/09	Appal. Bay	12.0	5	07/07/09	Indian Pass	15.8		5	30	12
7245	05/30/09	30 18.14 88 14.58	19.0	4	07/10/09	mouth of Mobile Bay	21.8	7.5	4	42	13
8855	06/07/09	Biloxi Channel Marker 4	21.0	2	07/10/09	west of Katrina Reef	22.0		2	33	3
7332	06/10/09	Gulf Park Estates - Bellefountain	17.0	2	07/10/09	OS Channel #13	17.5		2	30	1
8881	06/27/09	30 17.337 88 06.136	16.0	4	07/10/09	N of Middle Bay Lighthouse	17.0		4	14	13
7254	06/07/09	30 21.36 88 17.54	18.5	4	07/14/09	Bayou la Batre channel - 1 ml off	20.0		4	37	1
7320	06/25/09	DI 26or29 - not "tag broke"		4	07/16/09	Portersville Bay	18.0		4	21	5
8876	07/10/09	N 33 18.515 W 88 10.771	20.0	4	07/16/09	Portersville Bay, AL			4	6	8
7307	06/27/09	Marker#26 ICW	20.0	4	07/18/09	MS Sound - Mobile Bay	22.0	8	4	21	5
10096	07/11/09	N 33 17.619 W 88 07.365	19.0	4	07/24/09	outside of Heron Bay	19.8		4	13	3
7352	07/10/09	west end Katrina Reef (was 8855)	22.0	2	08/01/09	30.02.660N 89.36.936W	23.0	9	2	22	52
10143	07/11/09	Mobile Bay South	14.0	4	08/02/09	channel marker Mobile Bay	13.0		4	22	
7316	06/18/09	Bayou La Batre Channel	15.0	4	08/05/09	1/2 ml E of DI bridge	19.0		4	48	12
7302	06/27/09	Marker#32 ICW W.Si. D.I. Bridge	19.7	4	08/07/09	1 mile W of DI bridge	22.0	9	4	41	4
7250	05/30/09	30 17.05 88 10.99	16.0	4	08/08/09	Bayou la Batre channel		9	4	71	7
10138	07/12/09	south Mobile Bay	14.0	4	08/09/09	Weeks Bay, AL	15.5		4	28	10
4876	03/31/09	2503.8 8105.5	10.0	6	08/27/09	Fort Myers Beach	18.0		8	149	110
4929	06/12/09	.25 Mi. So. Of Deer Isle (crab pot)	7.0	2	08/29/09	off Graveline	13.0		2	79	12
6797	08/21/09	Lake Borgne	20.0	2	09/07/09	Lake Borgne	19.0		2	17	0
8764	05/04/09	3 ml off S end Sanibel (date est)		8	10/29/09	north Captiva		6.5	8	178	19



SEDAR28-RD23 THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Gulf Coast Research Laboratory Center for Fisheries Research & Development 703 East Beach Drive Ocean Springs, MS 39564

SPORT FISH TAG & RELEASE RECAPTURE REPORT

February 16, 2010 – The following information pertains to a cobia which was tagged, released and later recaptured. We thank you for your participation in this important research program.

Movement Details for Cobia - RC40292

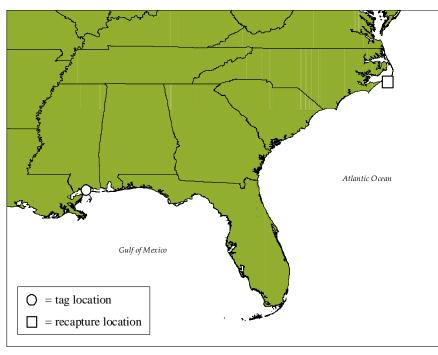
TAG/RELEASE INFORMATION

Date:	Summer 2003*	Location:	Gulfport Ship Channel, Mississippi
Fork Length:	n/a	Angler:	Paxton Ponson (Ocean Springs, MS)
Total Length:	n/a	Captain:	Paxton Ponson (Ocean Springs, MS)

RECAPTURE INFORMATION

Date:	13 May 2009	Location:	οι	ut of Hatteras Inlet, North	Carolina
Fork Length:	46.0 inches	Angler:		Justin Stewart (Kitty Haw	k, NC)
Weight:	40.0 lbs	Days Out:	> 5 years	Distance Traveled:	1,605 miles

Comments: * Tag card lost - time of tagging approximated. Longest distance traveled by any tagged cobia in more than 20 years of the program! Thanks for your assistance. Read



Daytime Phone: 228.872.4202



Research Partners:

Mississippi Department of Marine Resources U.S. Fish & Wildlife Service, Sport Fish Restoration Email: read.hendon@usm.edu



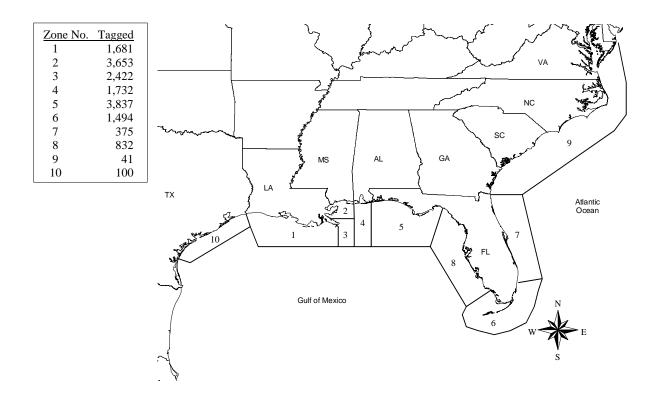
APPENDIX III

Updated Tables & Figures for the Cobia Tag and Release $\mathsf{Project}^1$

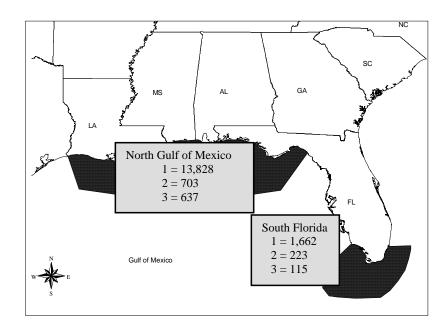
¹ Hendon, J. R. and J. S. Franks. 1999. Studies on the seasonal movements and migratory patterns of cobia, *Rachycentron canadum*, in Mississippi marine waters and the adjacent Gulf of Mexico. U. S. Fish Wild. Serv., SFR Final Rep. Proj. No. F-91. 108 pp.

Tag/R	Release											Year Re	captured	I											Recap g Year
Year	No.	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	No.	%
1988	113	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4.4%
1989	487		13	22	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	8.8%
1990	1,000			34	33	15	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	8.8%
1991	1,409				42	38	17	7	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	107	7.6%
1992	1,273					39	45	19	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	115	9.0%
1993	981						18	32	16	5	0	0	1	0	0	0	0	0	0	0	0	0	0	72	7.3%
1994	1,457							27	22	15	3	3	2	1	0	1	0	0	0	0	0	0	0	74	5.1%
1995	1,221								23	26	12	3	4	2	2	0	0	0	0	0	0	0	0	72	5.9%
1996	1,205									38	37	18	9	2	1	0	0	0	0	0	0	0	0	105	8.7%
1997	759										11	14	5	2	0	0	0	0	0	0	0	0	0	32	4.2%
1998	662											16	13	5	1	1	0	3	0	0	0	0	0	39	5.9%
1999	563												6	13	0	0	1	0	0	0	0	0	0	20	3.6%
2000	783													14	10	10	1	2	1	0	0	0	0	38	4.9%
2001	452														6	5	6	1	0	0	0	0	0	18	4.0%
2002	495															7	14	4	1	0	0	0	0	26	5.3%
2003	469																7	15	1	2	1	0	0	26	5.5%
2004	371																	7	10	3	2	0	0	22	5.9%
2005	434																		13	15	3	2	0	33	7.6%
2006	302																			17	18	6	1	42	13.9%
2007	732																				28	13	7	48	6.6%
2008	578																					8	16	24	4.2%
2009	386																						3	3	
Total	16,132	3	15	56	80	95	81	90	69	89	65	54	40	39	20	24	29	32	26	37	52	29	27	1052	6.5%

Hendon and Franks, 1999 - Table 1. Number of cobia tagged and recaptured by year, 1988 - 2009. (updated)



Hendon & Franks, 1999 - Fig. 2. Number of cobia tagged/released by tag zone, 1988 to 2009. (updated)



Hendon & Franks, 1999 - Fig. 14. Number of cobia tagged and recaptured in the northern Gulf of Mexico area and southernmost Florida area: 1988 - 2009: 1 = total no. tagged in area; 2 = total no. recaptured in area; 3 = total no. recaptured in same area as tagged. (updated)

Hendon & Franks, 1999 - Table 6A. Cobia recaptures. Categories/sub-categories of recaptured cobia tagged and released <u>1988 - 2009</u>. Sub-categories based upon time at liberty (days-out) and location of recapture. Number of fish per sub-category shown within parenthesis. (updated)

I. Recaptured cobia which were tagged and released in the northern Gulf of Mexico:

A. Long term¹/long distance² recaptures

- 1. Winter recaptures off Florida Keys (21)
- 2. Spring recaptures off FL Keys or southwest/west-central coast of mainland Florida)
- 3. Summer recaptures off Florida Keys or southwest mainland Florida (7)
- 4. Fall recapture off Florida Keys (3)
- 5. Winter recaptures off central/southeast mainland Florida (16)
- 6. Spring recaptures off southeast/central-east mainland Florida (15)
- 7. Summer recaptures off southeast/central-east mainland Florida (10)
- 8. Recaptures off Louisiana, west of Miss. River delta (tagged east of Miss River delta off Louisiana, Mississippi, Alabama or northwest Florida) (35)
- 9. Summer recapture off the Florida Keys (tagged off Louisiana west of Miss. River delta) (1)
- 10. Recaptures off Texas (tagged east of Miss. River delta) (13)
- 11. Winter recaptures in northern Gulf (3)
- 12. Spring recaptures in northern Gulf (11) (includes 3 west of Miss. River, tagged east of Miss. River)
- 13. Spring/summer recaptures off Georgia, South Carolina and North Carolina (4)
- 14. Fall recapture off southeast mainland Florida (1)
- 15. Fall/winter recaptures off west-central/southwest mainland Florida (7)
- 16. Winter recapture off Bimini Island, Bahamas (1)
- 17. Recaptures off Texas (tagged west of the Miss. River delta) (2)
- 18. Spring recaptures off the Dry Tortugas (2); winter recapture, Dry Tortugas (1)
- 19. Recapture off NW Florida (tagged west of MS River) (1)
- 20. Winter recapture off southwest mainland Florida (2)
- 21. Spring recapture off northeast Florida mainland (St. Augustine) (1)

B. Long term¹/short to moderate distance³ recaptures

- 1. Recaptures at or very near tag-release site (97)
- 2. Recaptures in the "general area" of tag-release site (less than 200 nautical miles from tag release site (2 tagged-recaptured off Texas) (203)
- 3. Winter recaptures in northern Gulf, including 5 tagged east of Miss. River delta and later recaptured west of Miss. River delta (15)

¹Greater than 6 months from time of tag-release to recapture.

⁴From 1 day to 6 months from time of tag-release to recapture.

²Greater than 200 nautical miles ("estimated coastline distance") from tag-release site.

³Less than 200 nautical miles ("estimated coastline distance") from tag-release site.

Hendon & Franks, 1999 - Table 6A continued:

C. Short term⁴/long distance² recaptures

- 1. Summer recaptures off east coast of mainland FL (2); summer recapture off Dry Tortugas (1) or Florida Keys (1)
- 2. Winter recaptures off south FL/FL Keys, including 2 recaptured off the Dry Tortugas (9)
- 3. Winter recaptures off east coast of mainland Florida (2)
- 4. Fall recapture off Florida Keys (2)
- 5. Fall recapture off southeast Florida (2)
- 6. Fall recapture off west-central mainland Florida (3)
- 7. Summer recapture off northwest Florida (tagged off western Louisiana) (1)
- 8. Summer recapture off LA(west of MS River delta; tagged east MS delta) (16)
- 9. Summer recapture off Texas (tagged off northwest Florida) (6)
- 10. Spring recaptures off northcentral (1) or west-central mainland Florida (1) (2)
- 11. Summer recapture off southwest Florida (tagged off Florida Keys in winter (1))
- 12. Fall recapture off Texas (1)
- 13. Spring recapture off Louisiana (4)
- 14. Spring recapture off Texas (2)

D. Short term⁴/short to moderate distance³ recaptures (all were fall/spring recaptures)

- 1. Recaptures at or very near tag-release site (119)
- 2. Recaptures in the "general area" of tag-release site, less than 200 naut miles from tag-release site (one a winter recapture) (92)
- 3. Winter recapture off LA (2) (includes 1 tagged east of the MS River delta and recaptured west of the delta)
- 4. Summer recaptures in the "general area" of tag-and-release site, less than 200 naut miles from tag-release site (21)

II. Recaptured cobia which were tagged and released <u>off the Florida Keys (Gulf and Atlantic) or</u> <u>east/west coast of mainland Florida</u>:

E. Long term¹/long distance² recaptures (all were spring/fall recaptures)

- 1. Recaptures off LA west of the Miss. River delta (tagged in fall/winter (7) or summer/spring (2))
- 2. Recaptures off southeast mainland Florida (tagged off Florida Keys) (2)
- 3. Recaptures off NW FL (tagged in spring/summer off FL Keys) (13), central-east FL (1), or southwest Florida (1)
- 4. Recaptures off northwest Florida (tagged in fall/winter off Florida Keys) (10)
- 5. Recapture off Mississippi (tagged in winter (2), spring (2), or summer (1) off Florida Keys) or central-east FL (1))
- 6. Recaptures off Alabama (tagged in winter (3) or spring (1) off Florida Keys)
- 7. Recapture off west-central coast of Florida (6)
- 8. Recapture off Texas (1)
- 9. Recapture off North Carolina (1)
- 10. Recapture off Florida Keys (3)
- 11. Recapture off Virginia (1)

Hendon & Franks, 1999 - Table 6A continued:

F. Long term¹/short to moderate distance³ recaptures

- 1. Recaptures at or very near tag-release site (56)
- 2. Recaptures off southeast mainland Florida less than 200 nautical miles from tag-release site off southeast mainland coast (2 tagged in summer) (10)
- 3. Recaptures off west-central mainland Florida less than 200 nautical miles from tagrelease site (tagged in Florida Keys = 6; tagged off west-central coast = 9)
- 4. Recapture off central-east mainland Florida (tagged off Florida Keys = 3; tagged off central-east mainland Florida = 9)
- 5. Recapture off Florida Keys (3)
- 6. Recapture off Florida Keys (or Dry Tortugas) (tagged in spring (1) or summer (3) off FL Keys))

G. Short term⁴/long distance² recaptures

- 1. Spring recapture off central Gulf coast of Fla. (tagged in spring off Fla. Keys) (1)
- 2. Spring recapture off northwest Gulf coast of FL (7)
- 3. Summer recapture off northwest Gulf coast of Florida (or off Alabama) (4)
- 4. Spring recapture off northwest Gulf coast of Florida (tagged in spring off east coast of mainland Florida (1)
- 5. Spring recapture off the central Gulf coast of FL (tagged in winter off FL Keys) (3)
- 6. Summer recapture off LA, west of Miss. River (tagged off east coast of mainland Florida) (1)
- 7. Spring recapture off Alabama (tagged in fall off SW mainland Florida) (1)
- 8. Spring recapture off LA(west of MS River delta;tagged off SW mainland FL (1)
- 9. Summer recapture off Virginia (tagged in spring off east-central mainland FL) (1)
- 10. Spring recapture off North Carolina (1)
- 11. Fall recapture off south Florida (1)

H. Short term⁴/short to moderate distance³ recaptures

- 1. Spring recaptures off Florida Keys or off southwest mainland Florida (tagged in winter or spring off Florida Keys (16) or off southwest mainland FL (3))
- 2. Summer recaptures off Fla. Keys (tagged in spring or summer off FL Keys) (5)
- 3. Winter recaptures off FL Keys (tagged in fall/winter off FL Keys (18) or southwest Florida (1))
- 4. Summer recapture off central-east mainland Florida (tagged in spring off central-east mainland Florida (1) or in winter in Florida Keys (1))
- 5. Summer recapture near tag-release site (tagged in summer) (1)
- 6. Summer recapture off Florida Keys (tagged in winter (2) or spring (1) off Florida Keys) (3)
- 7. Fall recapture off Florida Keys (tagged in summer/fall off Florida Keys) (2)
- 8. Winter recapture off Florida Keys (tagged in summer (2) or spring (1) off Florida Keys) (3) or west-central Florida coast (1)
- 9. Spring recapture off central-east Florida (tagged off central-east Florida in winter (1) or spring (1))
- 10. Summer recapture of central-west Florida (tagged off central-west Florida in spring (3) or summer (2))
- 11. Fall recapture off central-west (1) or central-east Florida (1)
- 12. Spring recapture off west-central Florida (2)
- 13. Spring recapture off southeast Florida (1)

Tag/Release Area	Time/Distance Sub-Category	Total Number
	Long term/Long distance	186
Northern Gulf of Mexico	Long term/Short distance	321
Normerin Guil of Mexico	Short term/Long distance	55
	Short term/Short distance	229
	Long term/Long distance	57
Off central/south Florida	Long term/Short distance	100
mainland, including FL Keys (Gulf and Atlantic coasts)	Short term/Long distance	23
(Our and Atlantic Coasts)	Short term/Short distance	68
]	TOTAL	1,039*

Hendon & Franks, 1999 - Table 6B. Total numbers of cobia recaptured by tag/release area and time/distance subcategories, 1988 to 2009. (updated)

* some cobia recapture reports were submitted with no date or location for the recaptured fish