Cobia (*Rachycentron canadum*), amberjack (*Seriola dumerili*), and dolphin (*Coryphaena hipurus*) migration and life history study off the southwest coast of Florida

MARFIN (KM Burns and CL Neidig) 1992

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COBIA (*Rachycentron canadum*) AMBERJACK (*Seriola dumerili*) AND DOLPHIN (*Coryphaena hippurus*) MIGRATION AND LIFE HISTORY STUDY OFF THE SOUTHWEST COAST OF FLORIDA

Award No. NA90AA-H-MF747 (MARFIN)
1991/1992 Final (November 1, 1990-April 30, 1992) Report

Submitted to:

Mr. David Pritchard
Program Officer, Division Chief
National Marine Fisheries Service
Duval Building
9450 Koger Boulevard
St. Petersburg, FL 33702

Submitted by:

Mote Marine Laboratory
1600 Thompson Parkway
Sarasota, FL 34236
(813) 388-4441

Richard H. Pierce, Ph.D.
Director of Research

Karen M. Burns
Principal Investigator

Carole L. Neidig
Co-Principal Investigator

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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PREFACE

The following information constitutes the Final (November 1, 1990 - April 30, 1992) Report by Mote Marine Laboratory (MML) on the 1991/1992 Cobia (*Rachycentron canadum*), Amberjack (*Seriola dumerili*) and Dolphin (*Coryphaena hippurus*) Migration and Life History Study off the Southwest Coast of Florida. Figures 1 and 2 show the study area and the tag release locations. This project is funded by MARFIN. This report covers the period from November 1, 1990, and ending April 30, 1992. Volunteers have and will continue to tag fish with previously purchased tags and equipment until supplies are exhausted. Tag returns also are current.

Presentations are made by task, beginning with movement and migration of cobia, amberjack and dolphin, followed by length/frequency data and stock identification/age and growth. Each task presentation follows the format developed by NOAA/NMFS Panama City Laboratory and Mote Marine Laboratory.

INTRODUCTION

This study was undertaken as part of an attempt to understand the migration and stock identity of cobia, *Rachycentron canadum*, amberjack, *Seriola dumerili*, and dolphin, *Coryphaena hippurus*, off the southwest coast of Florida. With MARFIN funding, Mote Marine Laboratory (MML) has been able to tag cobia, amberjack and dolphin (Figures 1 and 2), to collect length/frequency data and to obtain age and growth information through the collection and analysis of hard parts (otoliths, spines and scales).

This report outlines MML's success in achieving the above-mentioned goals.

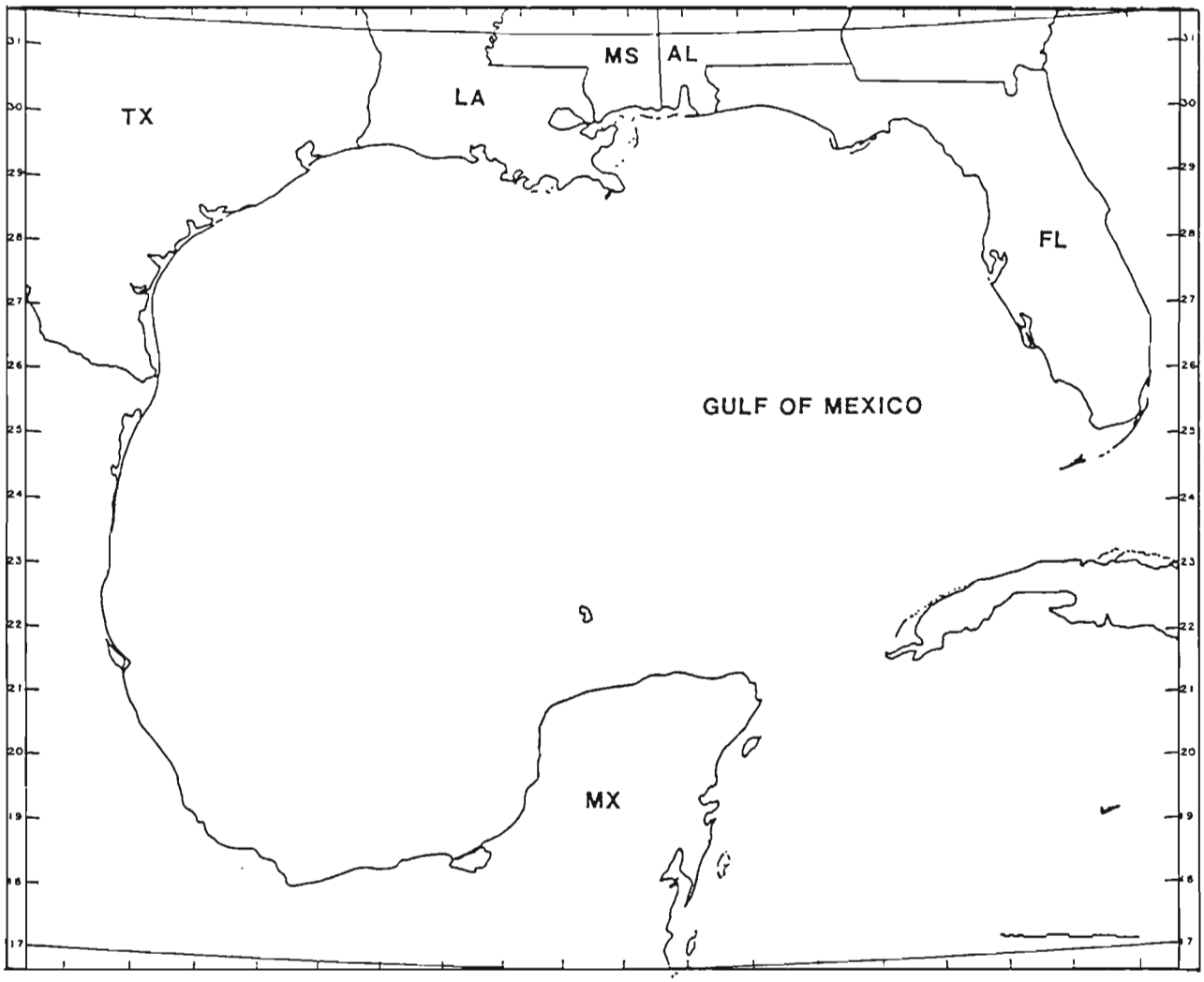


Figure 1. Cobia, Amberjack and Dolphin Study Area.

Figure 2. Cobia, Amberjack and Dolphin Tag and Release Locations for 1991/1992.

I. MOVEMENT AND MIGRATION OF COBIA, AMBERJACK AND DOLPHIN

A. Tagging Synopsis (November 1, 1990-July 23, 1992)

The Cobia, Amberjack and Dolphin Project (CAD) began in November, 1990, with orders being placed for tagging equipment and supplies. Green, plastic tipped dart tags (1.5 cm head) from Hallprint of Australia and tagging applicators were purchased for use in tagging all three species. Tagging forms were printed and a computer program for data entry was implemented. Volunteer taggers were recruited and trained.

In January 1991, tagging packets were assembled to be given to trained participating anglers to catch and release cobia, amberjack and dolphin. A total of three thousand (3,000) tags were purchased and distributed to participating anglers. MML tag packets were revised to include tag reporting postcards (Figure 3) rather than data sheets. Fish have been tagged by MML personnel and recreational and commercial fishermen.

All data from amberjack tagged on 6 October 1990 during the Second Annual Grouper Tournament sponsored by the Southern Offshore Fishing Association and the Fishermen's Environmental Fund were given to MML to be included in the CAD data base. Additional amberjack were tagged on 7 September 1991 during the Third Annual Grouper Tournament which targets grouper, snapper and amberjack.

Most of the cobia, amberjack and dolphin were tagged off the west coast of Florida; however, 42 were tagged off the Florida Keys and 73 were tagged off the east coast of Florida. A total of 1,023 fish (171 cobia, 785 amberjack and 67 dolphin) has been tagged during this project. Table 1 provides a breakdown of the tag and release totals by location and species. Tag releases according to tag number are included as Appendix I. Tagging locations are shown in Figures 4-6.

Table 1. Cobia (COB), amberjack (GAM), and dolphin (DOL) tag and release totals by location (October 6, 1990-July 23, 1992).

AREA	COB	GAM	DOL
Florida West Coast	121	777	10
Florida Keys	0	1	41
Florida East Coast	50	7	16
TOTALS	171	785	67

Cobia, Amberjack and Dolphin Tag Card_____

Date:_____ Tag Number

Tagger:_____Phone No:_____

Street Address:_____

City:_____State:_____ Zip:_____

Captain:_____Phone No:_____

Street Address:_____

City:_____State:_____Zip:_____

Vessel:_____

Species: C / A / D (circle one)

Tagging Location:_____Depth:_____

Actual Fork Length_____ cm / in. (circle one)

Actual Total Length_____cm / in. (circle one)

Bait & Tackle:_____Fish Swim Away? Yes / No (circle one)

Comments:_____

PLEASE RETURN COMPLETED TAG CARD TO MML A S A P. THANK YOU

Place
Stamp
Here

CAD TAGGING PROGRAM
Mote Marine Laboratory
1600 Thompson Parkway
Sarasota FL 34236-1004

Figure 3 . Examples of both sides of a tagging card.

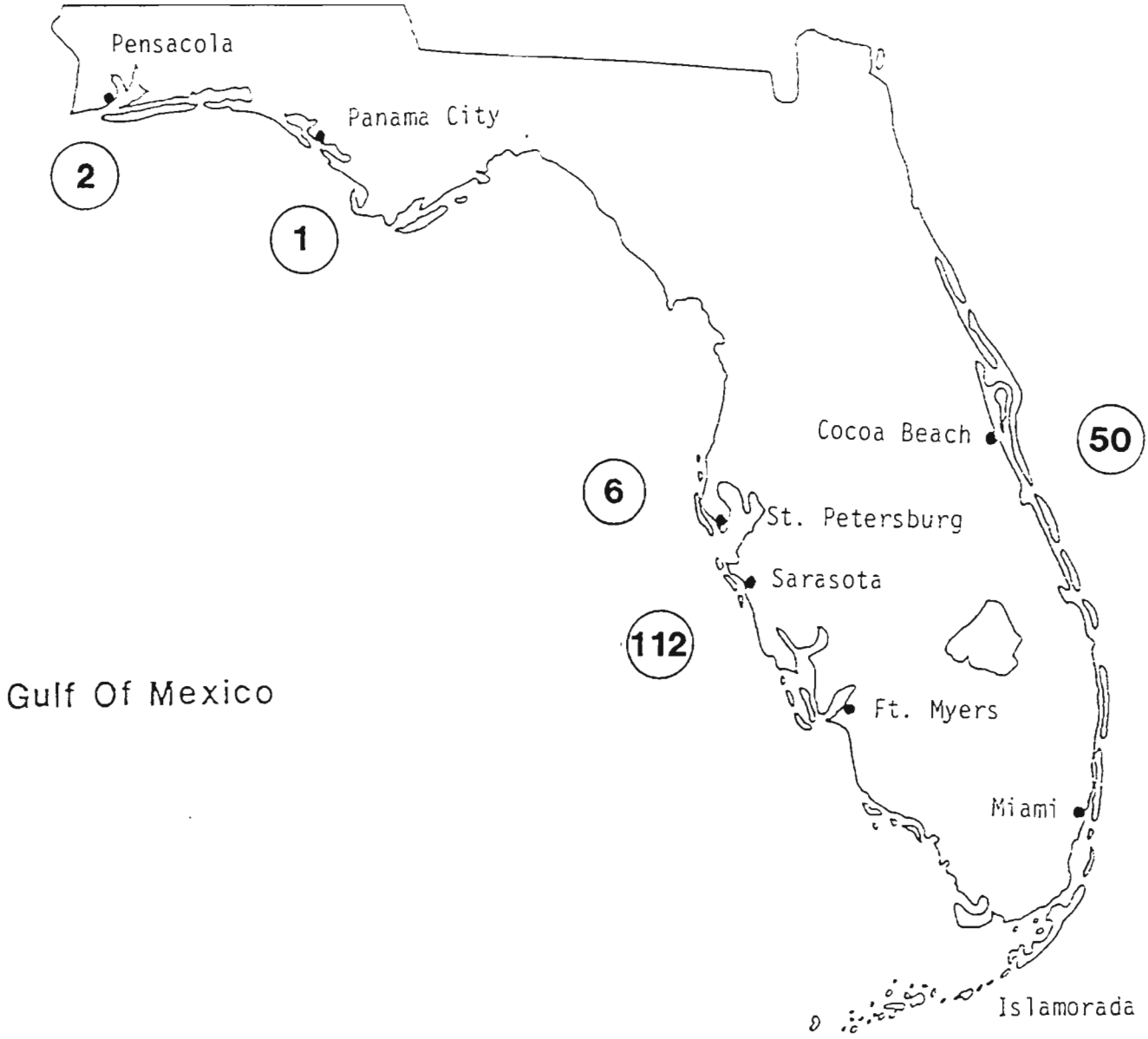


Figure 4. Number of Cobia Tagged off the Coast of Florida.

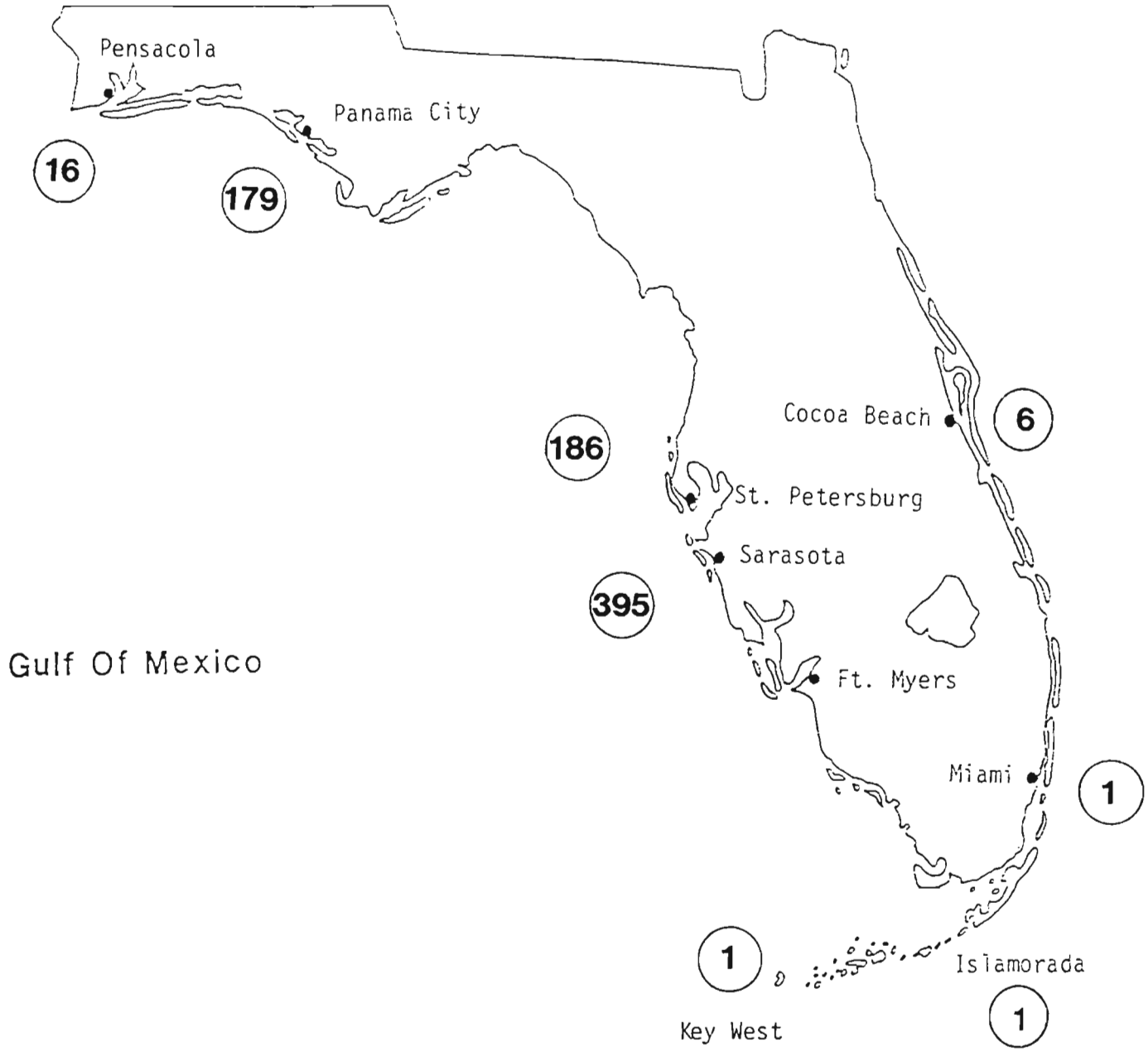


Figure 5. Number of Amberjack Tagged off the Coast of Florida.

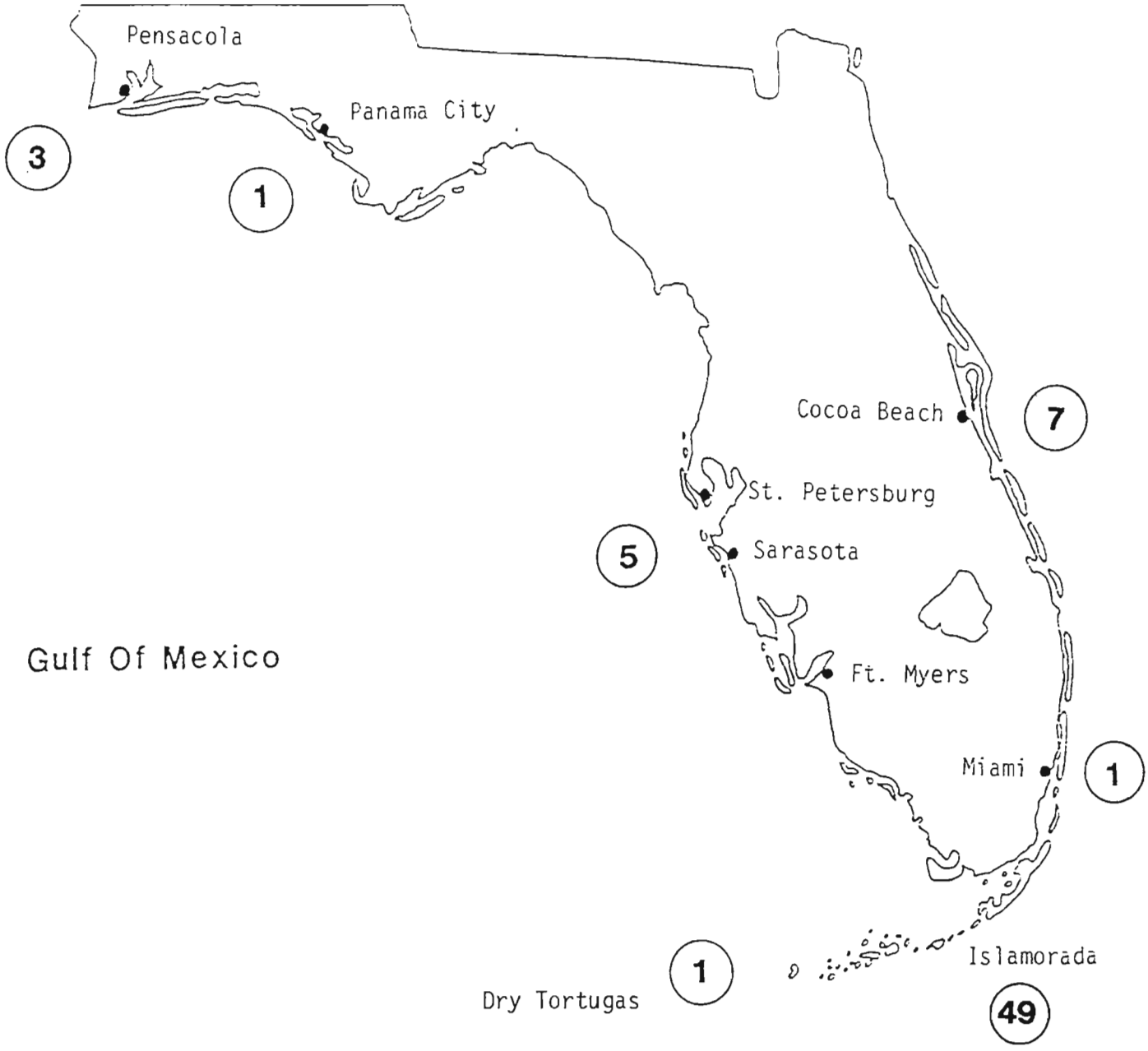


Figure 6. Number of Dolphin Tagged off the Coast of Florida.

An analysis of the type of bait used by fishermen participating in the study revealed that artificial, live and dead/cut baits were used. Table 2 presents a breakdown of the number of fish caught per species using each type of bait. Most of the cobia and amberjack were caught on live bait, while 85.1% of the dolphin were captured on dead/cut bait. When live bait was specified, three baits predominated: grunts, pinfish and shrimp (Table 3). Miscellaneous baits used when fishing for amberjack included bank sea bass, blue runner, squirrel fish and vermillion snapper.

Table 2. Breakdown of the types of bait used by fishermen in the study to capture cobia, amberjack and dolphin.

Species	Artificial Count (%)	Live Count (%)	Dead/Cut Count(%)	Total Count (%)
COBIA	5 (29.3)	114 (60.6)	19 (10.1)	138 (100)
AMBERJACK	65 (08.5)	523 (68.5)	175 (22.9)	763 (100)
DOLPHIN	7 (10.4)	3 (04.5)	57 (85.1)	67 (100)

Table 3. Live bait used by fishermen in the study to capture cobia, amberjack and dolphin.

Species	Grunt Count (%)	Pinfish Count (%)	Shrimp Count (%)	Total Count (%)
COBIA	10 (11.5)	19 (21.8)	58 (66.7)	87
AMBERJACK	20 (05.3)	300 (80.0)	55 (14.7)	375
DOLPHIN	0	0	0	0

Tag Returns

The total number of recaptured fish is 60 (10 cobia ,46 amberjack and 4 dolphin). This is an overall tag return rate of 5.9% (5.8% for cobia, 5.9% for amberjack and 6.0% for dolphin). Tag return information is presented by release area in Table 4. Appendix II lists tag returns by tag number.

Considering the short duration of this study, we consider the tagging and tag return portion of this study a success. This is in spite of the fact that

the majority of the fish tagged were tagged by volunteers and there was no publicized reward for tag returns. Although six plaques were awarded, they were not advertized until the middle of the project. Three $250.00 rewards (one per species) were paid to the winners of a drawing of tag returns. This drawing was not publicized until the end of the project. Participating taggers were kept motivated by persistent contact with MML consisting of telephone calls, written correspondence and Tagging Updates (see example in Appendix III). Many fishermen who returned tags became taggers after learning about the project.

A comment also is warranted concerning the type of tag used. Hallprint dart tags were used exclusively in the study. Currently there is a good deal of prejudice against dart tags based on the past performance of dart tags by other manufacturers. The Hallprint tag proved to be user friendly and, most importantly, a persistent tag. Jim Franks (GCRL) has had various cobia returns from fish tagged with the Hallprint dart tag that had greater than 900 days of freedom (Jim Franks, personal communication). The MML study did not last as long as Jim Franks' study but fish have been returned with greater than 250 days of freedom. One tag was recently returned by the U.S. Navy after the fish was killed by demolition maneuvers off Panama City, Florida.

Table 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag returns (October 6, 1990-July 23, 1992).
* = Previously unreported (received after last quarterly report)
R = Re-return

Tag #	Sp	Release Area	Release Date	Capture Date	Days of Freedom (DOF)	Dist. (mi.)	Capture Area
FLORIDA WEST COAST							
261	COB	Sarasota	03-Mar-92	10-May-92	68	12	Anna Maria, FL
* 687	COB	Sarasota	20-Oct-91	26-May-92	219	37	Tampa, FL
*1922	COB	Sarasota	01-Apr-92	03-Jun-92	63	50	St. Petersburg, FL
*1946	COB	Sarasota	14-Apr-92	20-May-92	36	0	Sarasota, FL
*3083	COB	Sarasota	20-Apr-92	11-Jul-92	82	30	St. Petersburg, FL
*3332	COB	Venice	24-Apr-92	15-May-92	21	30	Sarasota, FL
*3677	COB	St.Pete	19-Jun-92	03-Jul-92	14	5	St. Petersburg, FL
66	GAM	Panama City	16-Nov-91	03-Mar-92	108	0	Panama City, FL
197	GAM	Bradenton	06-Mar-91	21-Aug-91	168	45	St. Petersburg, FL
200	GAM	Bradenton	26-Mar-91	05-Apr-91	10	0	Bradenton, FL
311	GAM	Anna Maria	06-Oct-90	15-Jun-91	252	850	Galveston, TX
324	GAM	Anna Maria	06-Oct-90	15-Jan-91	101	40	Sarasota, FL

Table 4. (Continued)

Tag #	Sp	Release Area	Release Date	Capture Date	Days of Freedom (DOF)	Dist. (mi.)	Capture Area
FLORIDA WEST COAST (continued)							
1010	GAM	Panama City	29-Oct-91	09-Mar-92	132	0	Panama City, FL
1014	GAM	Panama City	29-Oct-91	27-Feb-92	121	0	Panama City, FL
1024	GAM	Panama City	11-Jan-92	29-Feb-92	49	0	Panama City, FL
1032	GAM	Panama City	11-Jan-92	28-Feb-92	48	0	Panama City, FL
1127	GAM	Dunedin	06-Oct-90	06-Apr-91	182	17	New Pt. Richey, FL
1207	GAM	Venice	06-Oct-90	18-Apr-91	194	50	St. Petersburg, FL
1372	GAM	Sarasota	27-Nov-91	01-Apr-92	126	3	Sarasota, FL
1372R	GAM	Sarasota	27-Nov-92	06-May-92	35	55	Sarasota, FL
1373	GAM	Sarasota	27-Nov-91	30-Nov-91	3	5	Sarasota, FL
1427	GAM	Englewood	23-Feb-92	01-Mar-92	7	0	Englewood, FL
1474	COB	Bradenton	27-Oct-91	15-Feb-92	111	200	25 mi W Key West, FL
*1488	GAM	Gasparilla	16-Nov-91	20-Jun-92	217	40	Naples, FL
1577	GAM	Sarasota	16-Nov-91	30-Dec-91	44	30	Venice, FL
*1632	GAM	Sarasota	22-Dec-91	18-May-92	148		
1733	GAM	Ft. Myers	12-Mar-92	25-Apr-92	44	0	Ft. Myers, FL
*1752	GAM	Panama City	30-Apr-92	18-May-92	18	0	Panama City, FL
*1769	GAM	Panama City	28-May-92	13-Jun-92	16	0	Panama City, FL
*1773	GAM	Panama City	29-May-92	11-Jun-92	13	0	Panama City, FL
*1779	GAM	Panama City	16-May-92	16-Jun-92	31	0	Panama City, FL
*1795	GAM	Panama City	23-May-92	20-Jun-92	28	10	Panama City, FL
*1799	GAM	Panama City	23-May-92	22-Jul-92	60	0	Panama City, FL
*1803	GAM	Panama City	01-Feb-92	28-Mar-92	56	0	Panama City, FL
*1804	GAM	Panama City	01-Feb-92	03-Jul-92	153	0	Panama City, FL
*1808	GAM	Panama City	01-Feb-92	25-May-92	114	0	Panama City, FL
1809	GAM	Panama City	01-Feb-92	29-Mar-92	57	0	Panama City, FL
1810	GAM	Panama City	01-Feb-92	29-Mar-92	57	0	Panama City, FL
*1833	GAM	Panama City	11-Feb-92	02-Jul-92	142	0	Panama City, FL
*1990	GAM	Venice	16-Apr-92	14-May-92	28	201	Key West, FL
*3077	GAM	Sarasota	19-May-92	09-Jun-92	21	0	Sarasota, FL
3102	GAM	Venice	25-Apr-92	02-May-92	7	0	Venice, FL
*3128	GAM	Venice	20-Apr-92	16-May-92	26	0	Venice, FL
*3230	GAM	Venice	25-Apr-92	30-May-92	35	30	Sarasota, FL
*3233	GAM	Venice	25-Apr-92	15-Jun-92	51	30	Sarasota, FL
*3243	GAM	Venice	24-Apr-92	19-May-92	25	0	Venice, FL
*3244	GAM	Venice	24-Apr-92	19-May-92	25	0	Venice, FL
*3335	GAM	Venice	24-Apr-92	10-May-92	16	0	Venice, FL
*3624	GAM	Panama City	30-May-92	06-Jun-92	7	0	Panama City, FL
*3650	GAM	Panama City	30-May-92	10-Jun-92	11	0	Panama City, FL
5702	GAM	Bradenton	07-Sep-91	13-Oct-91	36	18	St. Petersburg, FL
6763	GAM	Venice	07-Sep-91	18-Feb-92	164	55	Ft. Myers, FL
9518	GAM	Tarpon Spr.	18-Oct-91	21-Jan-92	95	0	Tarpon Springs, FL
*10826	GAM	Pensacola	26-May-92	30-May-92	4	0	Pensacola, FL

Table 4. (Continued)

Tag #	Sp	Release Area	Release Date	Capture Date	Days of Freedom (DOF)	Dist. (mi.)	Capture Area
FLORIDA EAST COAST							
572	COB	P.Canaveral	04-Aug-91	20-Sep-91	47	4	Port Canaveral, FL
* 583	COB	P.Canaveral	01-Apr-92	19-May-92	48	913	Panama City, FL
FLORIDA KEYS							
79	DOL	Islamorada	19-Jun-91	29-Jun-91	10	800	Cape Hatteras, NC
84	DOL	Islamorada	16-Jun-91	20-Jun-91	4	80	Key Biscayne, FL
* 134	DOL	Duck Key	12-Jun-92	28-Jun-92	16	70	Miami, FL
* 135	DOL	Duck Key	12-Jun-92	13-Jun-92	1	70	Miami, FL

The sixty tag returns are represented by Figures 7-9. Sixteen tag returns were significant either by days of freedom (168-252) or by distance traveled (45-913 miles). These returns are identified in Table 5 and also are shown in Figures 10-13. Figure 14 shows all tag returns versus distance and days of freedom.

Table 5. Synopsis of significant tag returns based on days of freedom and/or distance traveled (COB = cobia; GAM = greater amberjack; DOL = dolphin).

Tag #	Species	Days of Freedom (DOF)	Distance (miles)	Tagging Location	Return Location
583	COB	48	913	Pt. Canaveral, FL	Panama City, FL
687	COB	219	37	Sarasota, FL	Tampa, FL
1474	COB	111	200	Bradenton, FL	Key West, FL
1922	COB	63	50	Sarasota. FL	St. Petersburg, FL
197	GAM	168	45	Bradenton, FL	St. Petersburg, FL
311	GAM	252	850	Anna Maria Isl., FL	Galveston, TX
1127	GAM	182	17	Dunedin, FL	New Port Richey, FL
1207	GAM	194	50	Venice, FL	St. Petersburg, FL
*1372	GAM	35	55	Sarasota, FL	Ft. Myers, FL
1488	GAM	217	40	Gasparilla Isl., FL	Naples, FL
6763	GAM	164	55	Venice, FL	Ft. Myers, FL
1990	GAM	21	201	Venice, FL	Key West, FL
79	DOL	10	800	Islamorada, FL	Cape Hatteras, NC
84	DOL	4	80	Islamorada, FL	Key Biscayne, FL
134	DOL	16	70	Duck Key, FL	Miami, FL
135	DOL	1	70	Duck Key, FL	Miami, FL

*1372 was recaptured twice. The first time it was recovered after 126 days of freedom in the original tagging location.

COBIA TAG RETURNS

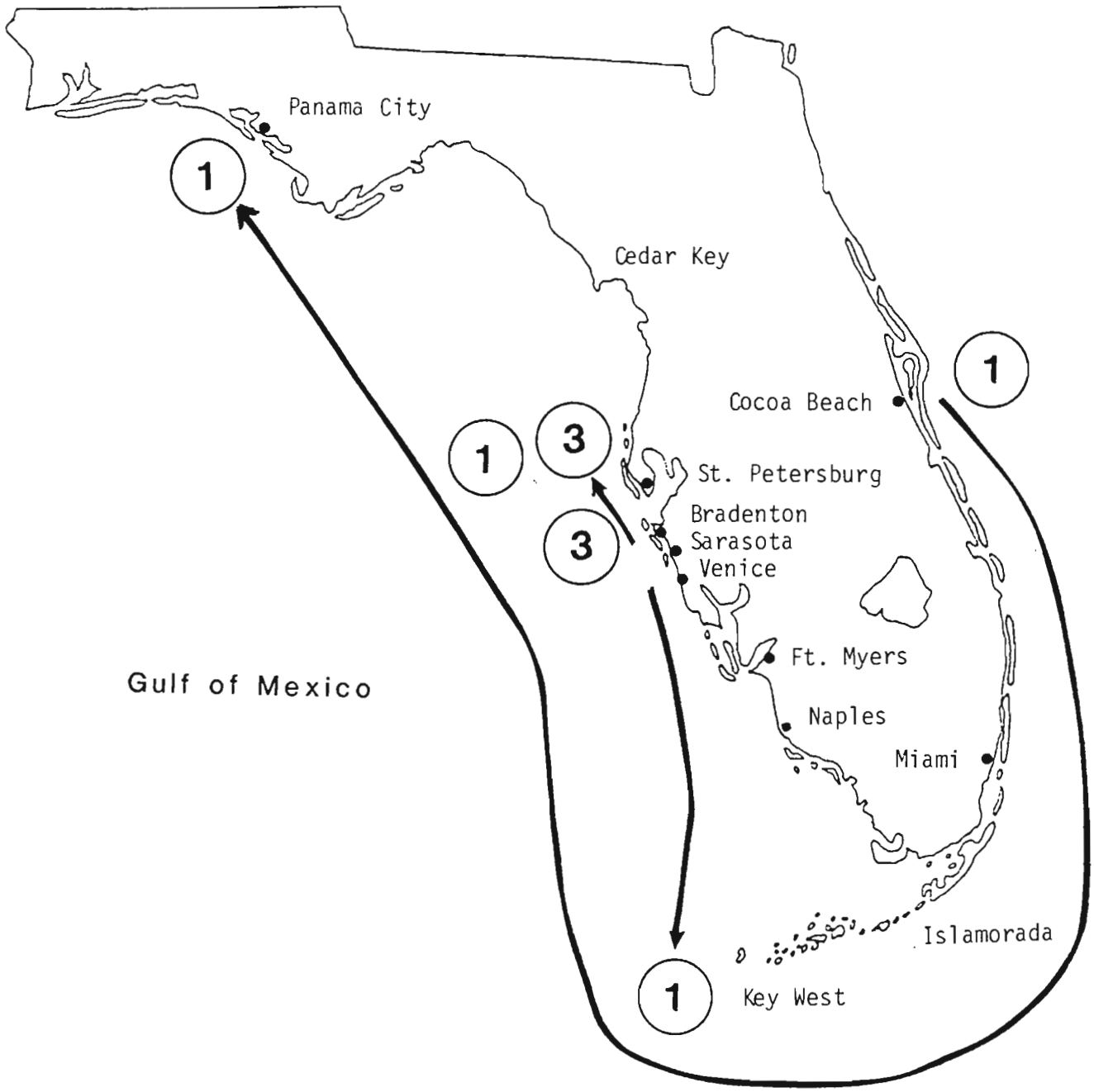


Figure 7. Number of cobia tag returns.

AMBERJACK TAG RETURNS

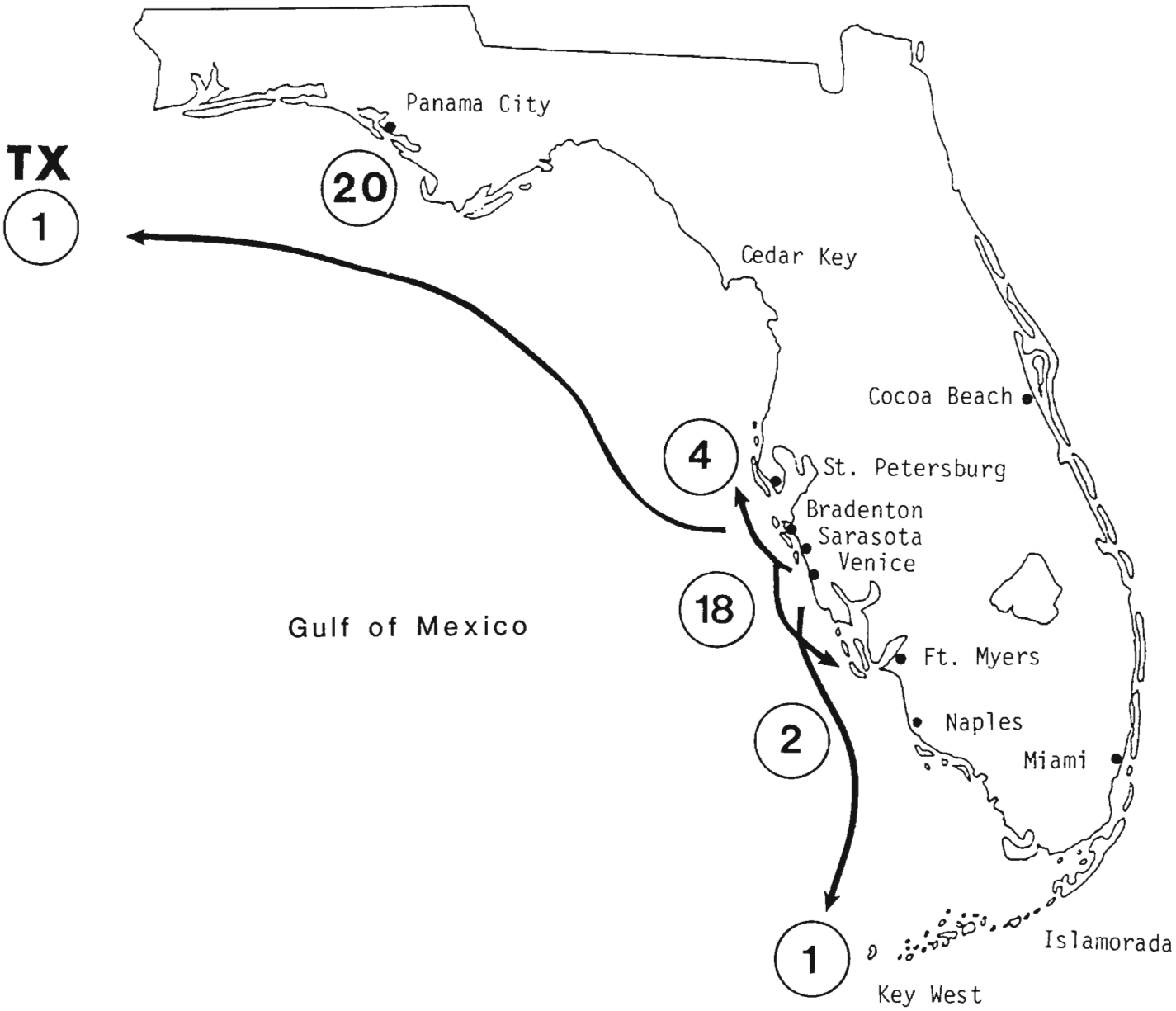


Figure 8. Number of amberjack tag returns.

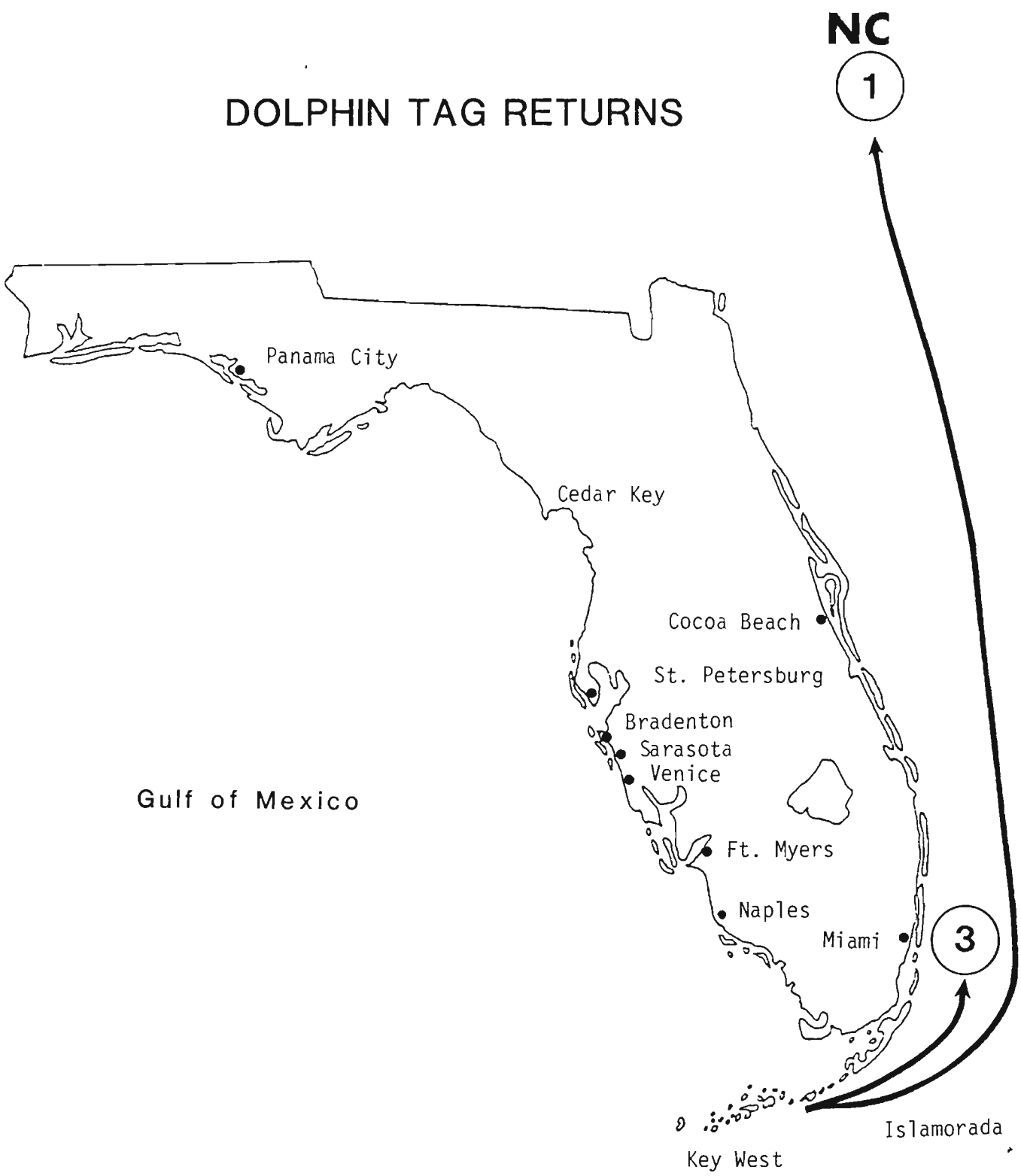


Figure 9. Number of dolphin tag returns.

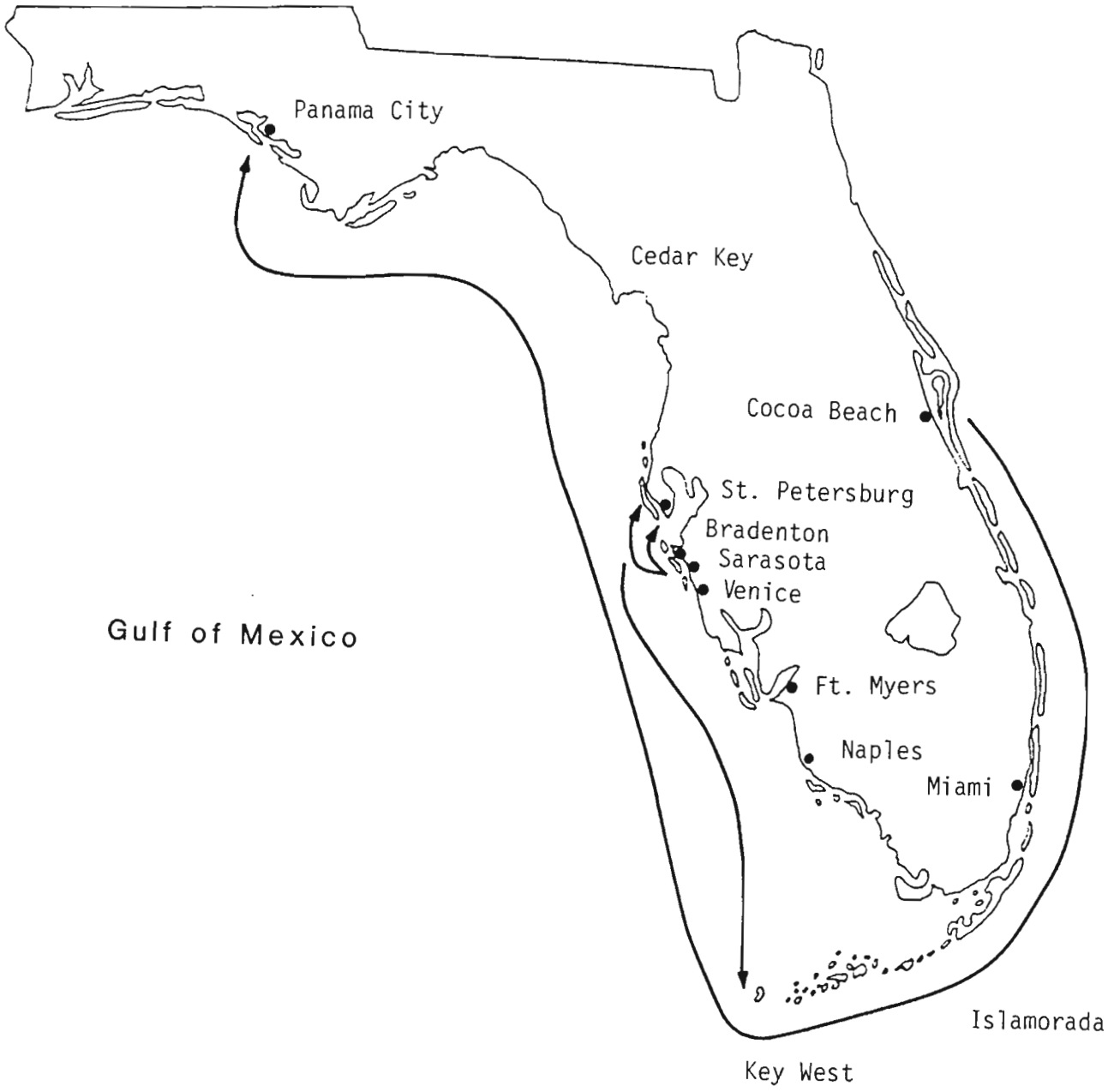


Figure 10. Significant long distance cobia tag returns off the coast of Florida.

Figure 11. Significant long distance amberjack tag returns off the coast of Florida.

Figure 12. Significant long distance dolphin tag returns off the coast of Florida.

Figure 13. Significant long distance tag returns from Florida to other states.

D = Dolphin

A = Amberjack

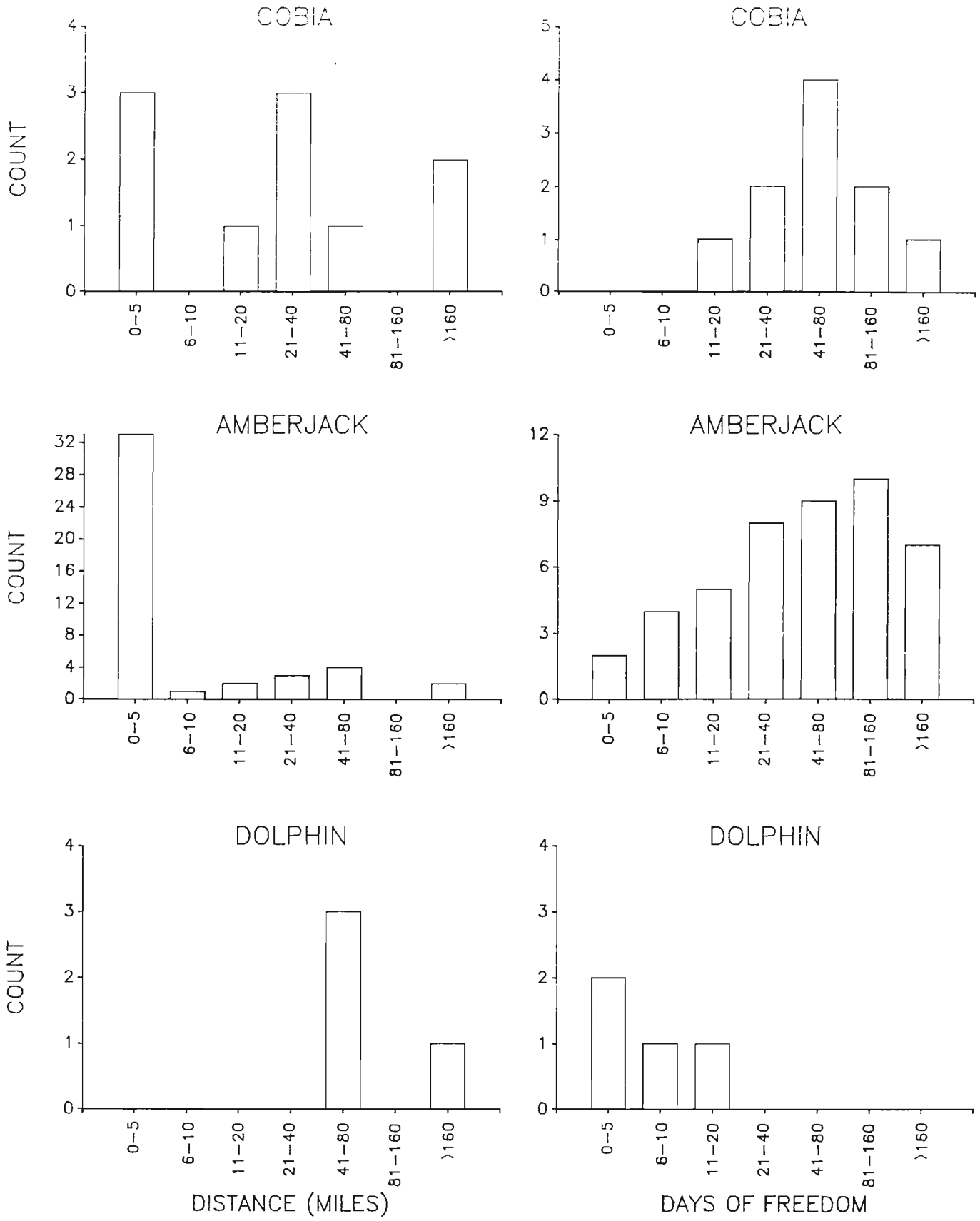


Figure 14. Number of cobia, amberjack and dolphin tags returned vs. distance (miles) and days of freedom exhibited by the fish. Distance - left column. Days of freedom - right column.

The cobia returns showed not only seasonal movement but also onshore/offshore distribution similar to those noted off South Carolina (Shaffer and Nakamura, 1989). The winter return showed a southern/offshore migration while the spring and summer recaptures demonstrated a northward/inshore movement.

Winter amberjack recaptures also showed a southern migration. However, spring recoveries were divided between north/south movements. The summer recapture was headed north and the fall recoveries were divided with one fish headed north and the other headed south.

In the MML Study, seven hundred eighty-five amberjack were tagged. Of the forty-six recaptures, only twelve fish showed any net movement. It is assumed that the majority of fish did not migrate. This agrees with the results found by Burch (1979). The MML study was not sufficiently long enough to determine if there are resident populations which are visited by migratory groups or whether as suggested by Burch (1979) that amberjack may temporarily leave an area and return to the area on an annual basis.

The only recoveries of dolphin tags occurred during the spring. All fish were tagged in the Florida Keys and were heading north when they were recaptured. The most notable recapture being a dolphin originally tagged off Islamorada, Florida and recaptured ten days later off Cape Hatteras, North Carolina.

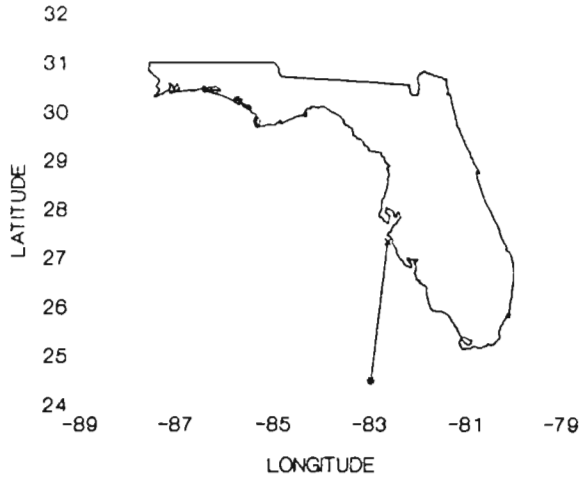
The seasonal movements of cobia, amberjack and dolphin are shown in Figures 15-17.

B. Public Information Program (PIP)

1. Publicity Poster Distribution

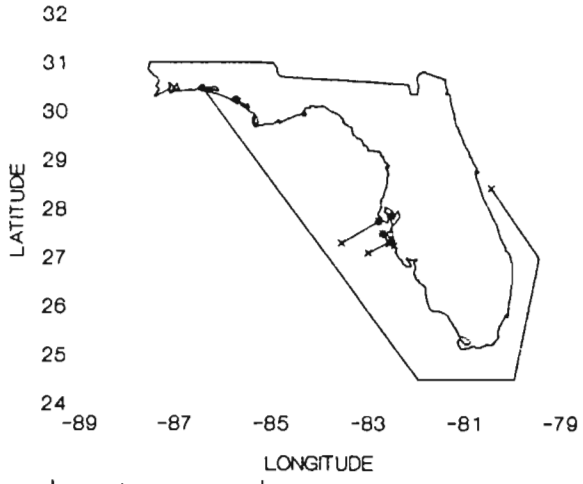
The distribution of CAD publicity flyers and posters (Figure 18) constitutes a major effort in informing the public about the program and the need for public participation. The publicity flyers and posters were distributed by mail and hand delivered by biologists and volunteers who had signed up to assist the project at one of the three tagging sessions. Over 200 project publicity flyers and posters were distributed to fish houses, marinas, marine laboratories and fishing clubs in Texas, Mississippi, Louisiana, Florida, South Carolina and Puerto Rico. In Florida, the posters and flyers were distributed from Panama City to Daytona Beach. Table 6 lists over 200 locations where posters and flyers were distributed during this project.

WINTER COBIA RECAPTURES



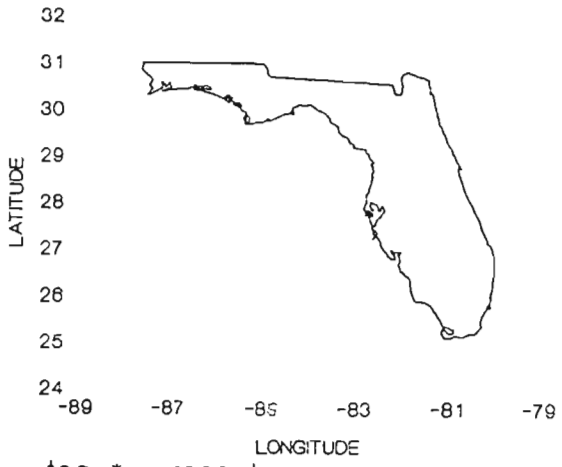
x = tag, * = recapture

SPRING COBIA RECAPTURES



x = tag, * = recapture

SUMMER COBIA RECAPTURES

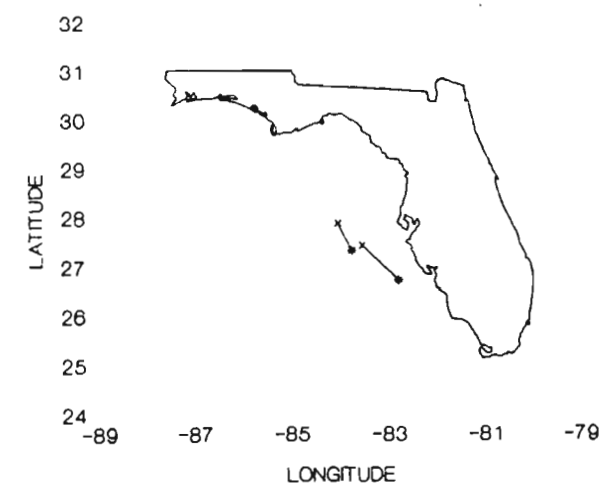


x = tag, * = recapture

COBIA	MOVEMENT		
	SOUTH	NORTH	TOTAL
WINTER	1	0	1
SPRING	0	5	5
SUMMER	0	1	1
TOTAL	1	6	7

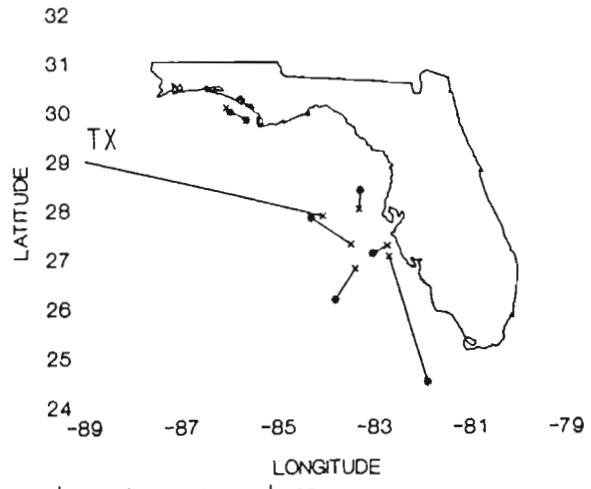
Figure 15. Seasonal movements of cobia based on tag return data.

WINTER AMBERJACK RECAPTURES



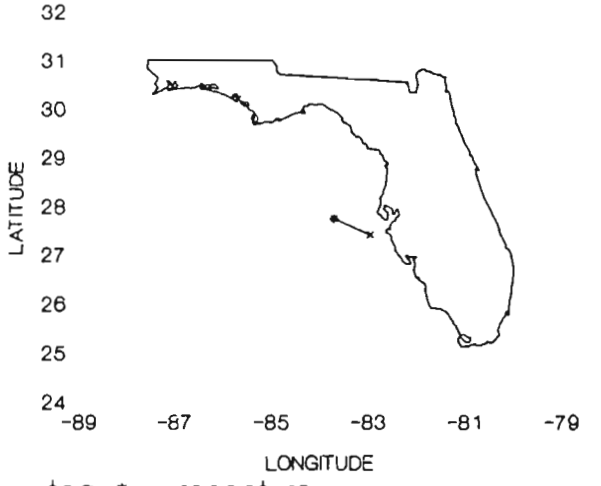
x = tag, * = recapture

SPRING AMBERJACK RECAPTURES



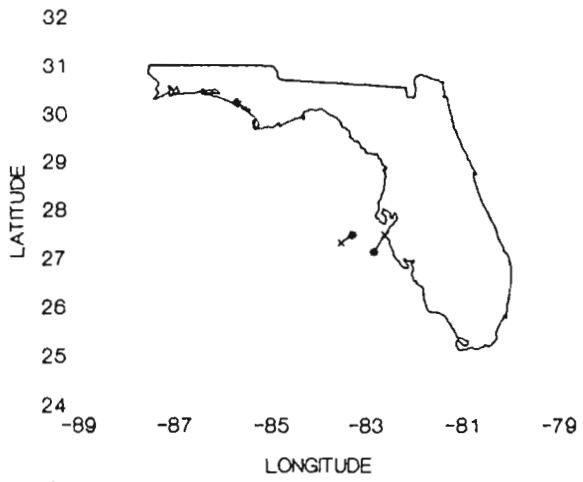
x = tag, * = recapture

SUMMER AMBERJACK RECAPTURES



x = tag, * = recapture

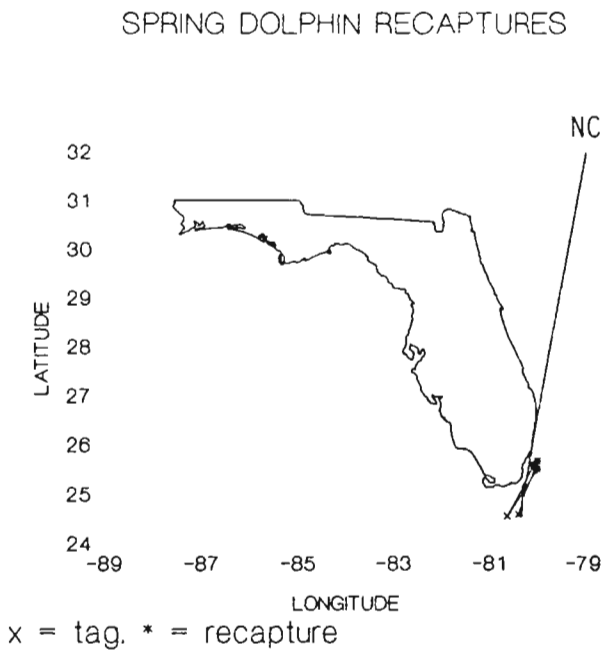
FALL AMBERJACK RECAPTURES



x = tag, * = recapture

AMBERJACK	MOVEMENT		TOTAL
	SOUTH	NORTH	
WINTER	2	0	2
SPRING	3	3	6
SUMMER	0	1	1
FALL	1	1	2
TOTAL	6	5	11

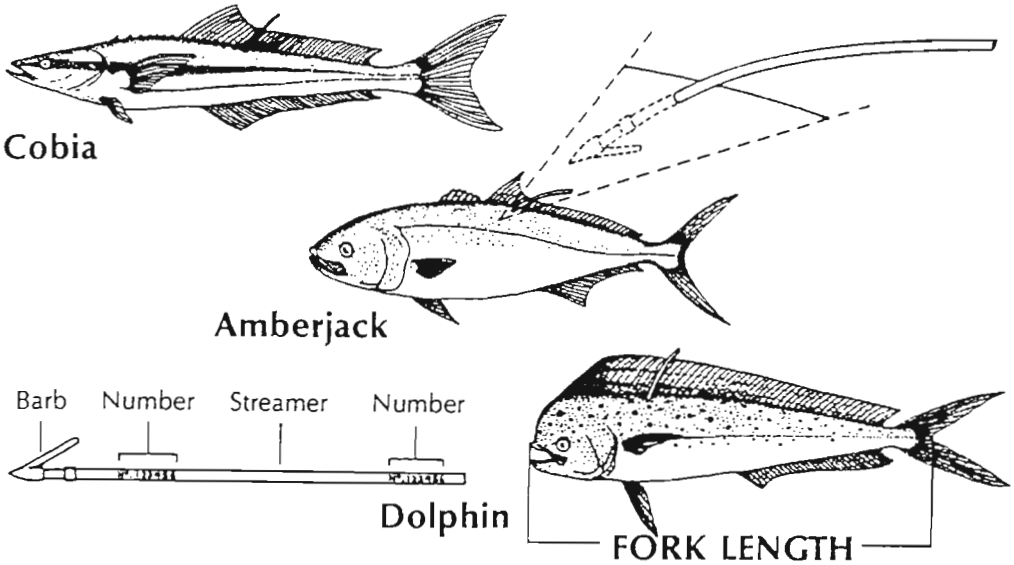
Figure 16. Seasonal movements of amberjack based on tag return data.



DOLPHIN	MOVEMENT SOUTH	NORTH	TOTAL
SPRING	0	4	4
TOTAL	0	4	4

Figure 17. Spring movement of dolphin based on tag recaptures.

NOTICE TO FISHERMEN



COBIA, AMBERJACK, and DOLPHIN are being tagged and released in the eastern Gulf of Mexico as part of a study to define distribution and migratory routes. Please return the TAG NUMBER (and tag if fish is kept) along with the following:

- ★ NAME AND ADDRESS
- ★ CAPTURE LOCATION AND DATE
- ★ FORK LENGTH
- ★ SPECIES CAUGHT
- ★ BAIT AND TACKLE USED
- ★ WEIGHT

TO:

CAD TAGGING PROGRAM
MOTE MARINE LABORATORY
1600 THOMPSON PARKWAY
SARASOTA, FL 34236
OR CALL (813) 388-4441

YOUR HELP IS GREATLY NEEDED AND APPRECIATED

Figure 18. Tag Publicity Poster.

Table 6. Cobia, amberjack and dolphin publicity poster/flyer distribution.

Place	City/State
Steve Qualia, Fish Trackers, Inc.	Corpus Christi, TX
Jim Franks, Gulf Coast Research Laboratory	Ocean Springs, MS
J & M Tackle	Orange Beach, AL
Sam's Stop-N-Shop	Orange Beach, AL
Orange Beach Marina	Orange Beach, AL
NOAA/NMFS Panama City Laboratory	Panama City, FL
Peter Wright	Destin/Fort Walton Beach, FL
Fisherman's Ice and Bait	Madeira Beach, FL
Dick's Seafood	Madeira Beach, FL
Fishin' Inc.	Madeira Beach, FL
Southern Offshore Fishing Association Club	Madeira Beach, FL
John's Pass Seafood	Treasure Island, FL
DNR Florida Marine Research Institute	St. Petersburg, FL
Capt. James Wood Fly-Tying Clinic	Terra Ceia, FL
Bob and Mary's	Ellenton, FL
Sneed Island Crab and Fish House	Palmetto, FL
Bright's Bait and Tackle	Bradenton, FL
Chum's Pro - Bait and Tackle	Bradenton, FL
Perico Harbor Marina	Bradenton, FL
Discount Tackle, Red Barn Flea Market	Bradenton, FL
Turner Marine	Bradenton, FL
Galaxy Bowling Lanes	Bradenton, FL
Public boat ramp at 59th Street	Bradenton, FL
Anna Maria City Pier	Anna Maria, FL
Five O'Clock Fishing Services	Anna Maria, FL
Rod and Reel Fishing Pier	Anna Maria, FL
Captain's Bait and Tackle	Holmes Beach, FL
The Home Hardware	Holmes Beach, FL
Island Discount Tackle	Holmes Beach, FL
Cortez Bait and Tackle	Cortez, FL
Annie's Bait and Tackle	Cortez, FL
Bell's Fishhouse	Cortez, FL
Bradenton Beach Fishing Pier	Bradenton Beach, FL
Beach Barn	Bradenton Beach, FL
Cannon's Marina	Longboat Key, FL
Walt's Fish Market on Rt. 301	Sarasota, FL
New Pass Bait Shop	City Island, FL
Walt's Seafood Restaurant	Sarasota, FL
Hart's Landing Bait Shop	Sarasota, FL
Flying Fish Charters at Marina Jack's	Sarasota, FL
Club Nautique Boat Rental at Marina Jack's	Sarasota, FL
Gulf Coast Taxidermy Shop	Sarasota, FL
Phillippi Creek	Sarasota, FL
Phillippi Shores Marina	Sarasota, FL
Blackburn Point Marina	Sarasota, FL
Captain's Cove Bait and Tackle	Osprey, FL
Casey Key Marina	Osprey, FL

Table 6. (Continued)

Place	City/State
Gulf Harbour Marina	Nokomis, FL
Fisherman's Wharf Bait and Tackle	Venice, FL
Cook's Sportland	Venice, FL
Sharky's Fishing Pier	Venice, FL
Venice Marina	Venice, FL
Marker Four	Venice, FL
Venice Marina	Venice, FL
Cajun Navy Bait and Tackle	Englewood, FL
King of Bait and Tackle	Englewood, FL
Becky's Bait Bucket	North Port, FL
Fishin' Frank's Bait and Tackle	Port Charlotte, FL
Bill's Tackle Shop	Punta Gorda, FL
Río Villa Bait and Tackle	Punta Gorda, FL
Boca Grande Marina	Boca Grande, FL
Millers Boat Marina	Boca Grande, FL
Gasparilla Boat Marina	Placida, FL
Golden Gate Bait and Tackle	Naples, FL
Port of the Islands	Naples, FL
Marco River Marina-Wiggins Pass	Naples, FL
Bay Marina	Naples, FL
Marco River Marina, Inc.	Marco Island, FL
Bill's Tackle Shop, Inc.	Key Largo, FL
Perdue-Dean Co., Inc.	Key Largo, FL
Key Largo Bait and Tackle	Key Largo, FL
Ocean Divers	Key Largo, FL
Key Largo Anglers Club	Key Largo, FL
Marina Del Mar Resort	Key Largo, FL
Bluewater Tackle	Key Largo, FL
Garden Cove Marina	Key Largo, FL
Tavernier Creek Marina	Tavernier, FL
Plantation Key Marina	Tavernier, FL
H.T. Chittum and Co.	Islamorada, FL
Abel's Tackle Shop	Islamorada, FL
Holiday Isle Resort and Marina	Islamorada, FL
Whale Harbor Marina	Islamorada, FL
Richmond's Landing	Islamorada, FL
Islamorada Tackle	Islamorada, FL
World Wide Sportsman	Islamorada, FL
Bud N' Mary's Marina	Islamorada, FL
Outdoor Resorts Marina	Long Key, FL
Faro Blanco Marine Resort	Marathon, FL
Clyde's 7 Mile Marina	Marathon, FL
Hawk's Cay Marina	Marathon, FL
Hall's Bait and Tackle	Marathon, FL
Sportfisherman Tackle Shop	Marathon, FL
Gulfside 59 Marina	Marathon, FL
Brown's World of Fishing, Inc.	Marathon, FL
Capt. Hook's Marina	Marathon, FL

Table 6. (Continued)

Place	City/State
Tournament Tackle	Marathon, FL
Sunshine Key Camping Resort	Big Pine Key, FL
Dolphin Marina	Little Torch, FL
Sea Boots Marina	Summerland Key, FL
T.J.'s Sugarshack Marina	Sugarloaf Shore, FL
Amberjack Pier	Key West, FL
City Marina	Key West, FL
Pelican Landing	Key West, FL
Half Shell Raw Bar-Lands End Marina	Key West, FL
Oceanside Marina	Key West, FL
First Key West Marina	Key West, FL
Garrison Bight City Marina	Key West, FL
Key West Yacht Club	Key West, FL
Monroe Marina	Key West, FL
Galleon Marina	Key West, FL
Waterfront Bait and Tackle	Key West, FL
Homestead Bayfront Park	Homestead, FL
A-OK Fish 'N Bait	Homestead, FL
Don's Bait and Tackle	Homestead, FL
Crandon Marina	Key Biscayne, FL
Key Biscayne Yacht Club	Key Biscayne, FL
Aquarius Rods and Tackle	Miami Springs, FL
Newport Fishing Pier	Sunny Isles, FL
Powerline Marine	Hialeah, FL
Mariner Seafood	S. Miami,FL
Susan Baker, MET Tournament Director	Miami, FL
Reel Fishin	Miami, FL
Kendall Bait and Tackle, Inc.	Miami, FL
Chief's Seafood	Miami, FL
Sea Shack	Miami, FL
Coral Reef Yacht Club	Miami, FL
Black Point Park Marina	Miami, FL
Phil's Bait and Tackle	Miami, FL
Crook and Crook	Miami, FL
Reef Bait and Tackle	Miami, FL
Capt. Harry's Fishing Supply	Miami, FL
Castaways	Miami Beach, FL
Haulover Resort Marina	Miami Beach, FL
Haulover Park Fishing Pier	Miami Beach, FL
Junior's Tackle Shop	Miami Beach, FL
Rod and Reel Club of Miami Beach	Miami Beach, FL
Competition Tackle	Ft. Lauderdale, FL
Tournament Angler, Inc.	Ft. Lauderdale, FL
T & R Tackle	Ft. Lauderdale, FL
Bill Boyd's Tackle Shop	Ft. Lauderdale, FL
Carl's Bait and Tackle	Ft. Lauderdale, FL
Sawgrass Recreation Park	Ft. Lauderdale, FL
The Lauderdale Marina	Ft. Lauderdale, FL

Table 6. (Continued)

Place	City/State
Beach Bait and Tackle	Ft. Lauderdale, FL
Hillsboro Rod ana Reel	Pompano Beach, FL
Fish City Charter Fleet	Pompano Beach, FL
Custom Rod and Gun	Lighthouse Pt., FL
Tackle Box Sport Shop	Lantana, FL
Capt. John's Bait and Tackle	Lantana, FL
Lott Brothers	Palm Beach, FL
Murray Bros. Sport Fishing	Rivera Beach, FL
Schneider Brothers	Rivera Beach, FL
Outdoor Sportsworld, Inc.	W. Palm Beach, FL
Tom Twyford, West Palm Beach Fishing Club	W. Palm Beach, Fl
Sailfish Marina	Palm Beach Shores, FL
Lott Brothers	N. Palm Beach, FL
North Palm Beach Marina	N. Palm Beach, FL
Hoods Automotive	Lakeland, FL
Jumpin' Dolphin Bait and Tackle	Juniper, FL
Pirate's Cove Marina	Port Salerno, FL
Mitchell Bait and Tackle	Port Salerno, FL
Manatee Marina	Port Salerno, FL
Gordo's Bait and Tackle	Palm City, FL
Salerno Bait and Tackle	Stuart, FL
Pocket Watch Marina	Stuart, FL
Fisherman's Depot	Jensen Beach, FL
Pelican Nest Marina	Jensen Beach, FL
Outrigger Harbour Marina	Jensen Beach, FL
Snook Nook of Jensen, Inc.	Jensen Beach, FL
Augie's South	Jensen Beach, FL
DeBrooks Fishing Corner	Ft. Pierce, FL
White's Tackle Shop	Ft. Pierce, FL
Taylor Creek Marina	Ft. Pierce, FL
Ramp Bait and Tackle	Ft. Pierce, FL
Harbourtown Marina	Ft. Pierce, FL
Shrimp Spot	Ft. Pierce, FL
Pelican Yacht Club	Ft. Pierce, FL
Grand Slam Fishing Center	Ft. Pierce, FL
Tom Castelman, Ft. Pierce Sport Fishing Assoc.	Ft. Pierce, FL
Headly's	Indian Harbor Beach, FL
Satellite Bait and Tackle	Satellite Beach, FL
Captain Jack's	Port Canaveral, FL
Cape Marina	Port Canaveral, FL
Tackle Locker	Port Canaveral, FL
Dolphin's Leap	Port Canaveral, FL
Port Canaveral Marina	Port Canaveral, FL
Port Canaveral Launch Pavillion	Port Canaveral, FL
Roger's Outboard	Titusville, FL
Nelson's Marine	Titusville, FL
Bait Shack	Port Orange, FL
Howard's Fish and Marine	Port Orange, FL
Fishing Shack	Daytona Shores, FL

Adventure Yacht Harbor	Daytona Beach, FL
"Villa del Ojo" Fishermen Assoc.	Aguadilla, Puerto Rico
San Juan Nautic Club	San Juan, Puerto Rico
"Esmeralda del Sur" Nautic Club	Patilla, Puerto Rico
"La Parguera" Nautic Club	Lajas, Puerto Rico
"Boquerón" Nautic Club	Cabo Rojo, Puerto Rico

The publicity posters reprinted in flyer format have been distributed to local anglers, charter boat and head boat captains during length frequency and hard-part collections. Flyers also have been included in all tagging packets distributed to participating anglers.

2. Media Coverage

In addition to poster and flyer distribution, MML personnel have publicized this program through statewide press releases (Figures 19 and 20) and multi-media events. Figures 21-23 are copies of news articles pertaining to the tagging program and training sessions, while Figures 24-25 are representative articles concerning the overall cobia, amberjack and dolphin project. Highlights from a tape depicting the various aspects of the project, recorded by the Turner Broadcasting Cable Network News (CNN) crew and by MML personnel, were broadcast by CNN and all of its national affiliates from November 20-24, 1991. This release lasted approximately three minutes, and was featured at various times during the day on their Science and Technology Program, and during special interest news item accounts.

3. Public Presentations

Publicity contacts with anglers and fishing clubs have generated further interest in the CAD tagging program. Several fishing clubs expressed an interest in having a CAD project presentation and tagging session at their monthly meetings. On February 27, 1991, MML biologists gave a presentation including project goals and a tagging session to thirty members of the Florida Sport Fishing Association at the Merritt Island Public Library. As a result of the presentation, an informative article on the MML CAD project and Dr. Jim Franks' (Gulf Coast Research Laboratory (GCRL), Ocean Springs, MS) cobia tagging program was published in the Florida Sport Fishing Association's newsletter, Backlash (Figure 26).

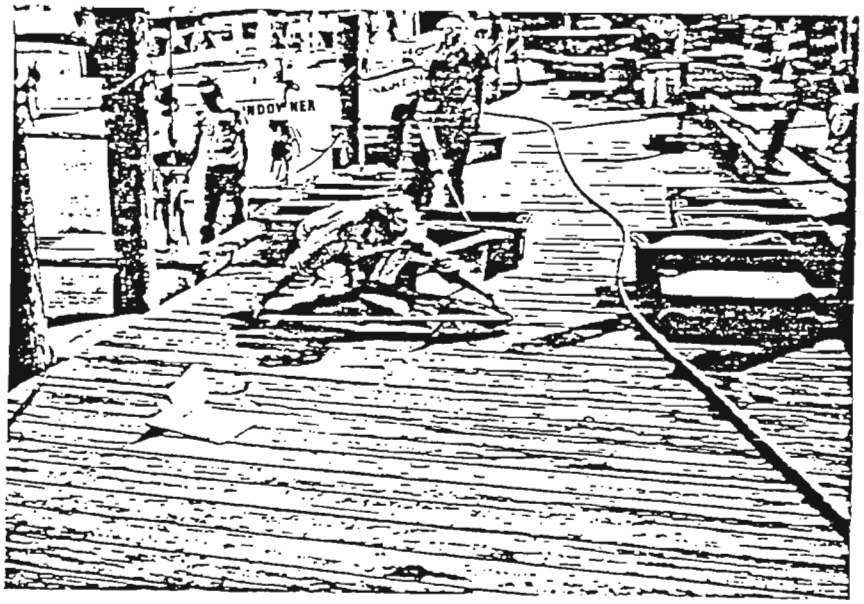
Mote Marine Laboratory Cobia, Amberjack and Dolphin Tagging Study

Mote Marine biologists will be conducting an intensive study of cobia, amberjack and dolphin migration patterns as well as analyzing age and growth data.

The study is funded by the Marine Fisheries Initiative (MARFIN), and will rely heavily on the active participation of fishermen. Anglers interested in tagging should attend the training session, Tuesday, February 19, 7 p.m., at the Mote Marine Science Aquarium.

Project Managers Karen Burns and Carole Neidig ask that any anglers who catch and keep tagged cobia, amberjack and dolphin please return the tag and capture information (captain's name, capture date and location, depth, gear type, bait, and fork length.) If a tagged fish is caught and released, please report the tag number, but do not remove the tag.

Information should be forwarded to; CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, Florida, 34236. For additional information, please call Pamela Phelps or Anthony Driefuss at (813) 388-4441.



Mote Marine Laboratory biologists will conduct a year-long cobia, amberjack and dolphin tagging study. Interested anglers should attend the training class Tuesday, February 19, 7 p.m. at the Mote Marine Sicence Aquarium. For information, call Pam Phelps at 388-4441. Pictured above, Phelps demonstrates the proper technique for measuring cobia.

Figure 19. Press Release Outlining the CAD Tagging Program and Announcing First Tag Session.

NEWS from MOTE

MOTE MARINE LABORATORY 1600 THOMPSON PARKWAY SARASOTA FLORIDA 34236

FOR IMMEDIATE
PRESS RELEASE:

Mote Marine Laboratory Cobia, Amberjack and Dolphin Tagging Study

The third tag session will be held Tuesday, March 26, 7 p.m. at the Science Aquarium. Anglers interested in tagging should attend the training session. Tagging is a large part of the Mote Marine Laboratory study of cobia, amberjack and dolphin migration patterns.

The study is funded by the Marine Fisheries Initiative (MARFIN), and will rely heavily on the active participation of fishermen. Anglers interested in tagging should attend the training session.

Project Managers Karen Burns and Carole Neidig ask that any anglers who catch and keep tagged cobia, amberjack and dolphin please return the tag and capture information (captain's name, capture date and location, depth, gear type, bait, and fork length.) If a tagged fish is caught and released, please report the tag number, but do not remove the tag.

Information should be forwarded to; CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, Florida, 34236. For additional information, please call Pamela Phelps or Anthony Driefuss at (813) 388-4441.

Figure 20. Press Release Featuring Information On the Third CAD Tag Session.

The Bradenton Herald

Sunday, February 17, 1991

Help Mote Marine — Area anglers can assist Mote Marine Laboratory two ways in a year-long tagging program to begin this month.

Volunteers are needed to catch, tag and release these species. And anglers can inform the Lab whenever tagged fish are caught.

Mote Marine researchers hope to compile valuable data concerning migratory patterns, age and growth rates.

Anglers willing to participate in the tagging are invited to attend a training session at the Mote Marine Science Aquarium on City Island in Sarasota on Tuesday, Feb. 19 at 7 p.m.

For additional information call Pamela Phelps or Anthony Driefuss at 388-4441.

ST. PETERSBURG TIMES ■ FRIDAY, FEBRUARY 22, 1991

■ **Tagging study:** Mote Marine Laboratory in Sarasota is looking for anglers to assist in a tagging study of cobia, amberjack and dolphin. The information gathered will help Mote biologists determine migration patterns as well as analyze age and growth data.

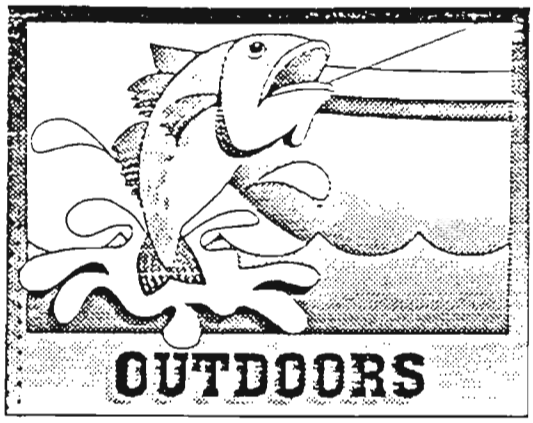
Anglers who catch and keep tagged cobia, amberjack and dolphin should return the tag and capture information (captain's name, capture date and location, depth, gear type, bait and fork length) to Mote Marine. If a tagged fish is caught and released, please report the tag number but do not remove the tag.

Anglers interested in participating in this program should call **Pamela Phelps** or **Anthony Driefuss** at (813) 388-4441.

Tagging information should be forwarded to CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, FL 34236.

Figure 21. Articles Advertising the First Tag Session and the CAD Tagging Program.

6C FLORIDA TODAY, Wednesday, February 27, 1991



Mote Lab biologists outline fish study

Two senior fisheries biologists with the Mote Marine Laboratory (MML) will outline a life history study of cobia, amberjack and dolphin at a free program on Merritt Island tonight.

Karen Burns and Carole Neidig will explain how anglers can help in the study at the meeting of the Florida Sport Fishing Association at 7:30 in the Merritt Island Public Library on SR 3.

Because little is known about the migration, age and growth, and reproduction of the three fish, private funding was made available to MML for the study.

Tagging is being used to determine migrations; to obtain age and growth information, scientists are collecting and analyzing otoliths, spines and scales.

Burns and Neidig will explain how East Coast fishermen can help by providing catch information and fish for sampling.

Members of the FSFA have been assisting in a cobia research project by the Gulf Coast Research Laboratory. More than 175 anglers have tagged more than 1,600 cobia, some off the coast of Port Canaveral.

—Bill Sargent

Figure 22. News Release Advertising the Second CAD Tag Session On Merritt Island.

SARASOTA HERALD-TRIBUNE/SUNDAY, MARCH 17, 1991

Tagging Seminar

■ The Sarasota County Chapter of the Florida Conservation Association urges those interested in tagging amberjack, cobia and dolphin for scientific research to attend an instructional seminar sponsored by Mote Marine Laboratory in Sarasota on March 26. The seminar will begin at 7 p.m. at the Mote Marine Aquarium on City Island. For information, call **Terry Copeland** at 355-5324.

16A PELICAN PRESS • MAR 21, 1991

SPORTS BRIEFS

COBIA, AMBERJACK AND DOLPHIN TAGGING STUDY

The third tag session will be held Tuesday, March 26, 7 p.m., at the Science Aquarium. Anglers interested in tagging should attend the training session. Tagging is a large part of the Mote Marine Laboratory study of cobia, amberjack and dolphin migration patterns.

The study is funded by the Marine Fisheries Initiative (MARFIN), and will rely heavily on the active participation of fishermen. Anglers interested in tagging should attend the training session.

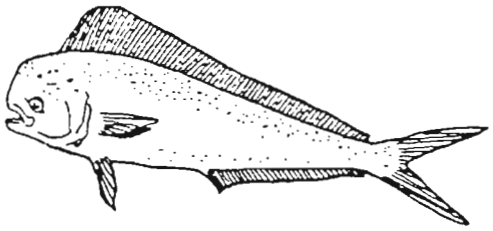
Project Managers Karen Burns and Carole Neidig ask that any anglers who catch and keep tagged cobia, amberjack and dolphin please return the tag and capture information (captain's name, capture date and location, depth, gear type, bait, and fork length.) If a tagged fish is caught and released, please report the tag number, but do not remove the tag.

Information should be forwarded to: CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, Florida, 34236. For additional information, please call Pamela Phelps or Anthony Driefuss at 388-4441.

Figure 23. Two Newspaper Articles Advertising the Third CAD Session for Tagging.

BOCA BEACON / February 22, 1991

Page 29



Mote Marine asks anglers to help in tagging program

Mote Marine biologists will be conducting an intensive study of cobia, amberjack and dolphin (the fish) migration patterns as well as analyzing age and growth data, and they want anglers to help.

The study is funded by the Marine Fisheries Initiative (MARFIN) and will rely heavily on the active participation of fishermen.

Project managers Karen Burns and Carole Neidig ask that any anglers who catch and keep tagged cobia, amberjack and dolphin to please return the tag and capture information – captain's name, capture date and location, depth, gear type, bait and fork length.

If a tagged fish is caught and released, please report the tag number, but do not remove the tag.

Information should be forwarded to: CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, Fla. 34236.

For additional information, call Pamela Phelps or Anthony Driefuss at 388-4441.

Figure 24. News Release Advertising the Cobia, Amberjack and Dolphin Tagging Program.

Times Newspapers • March 17, 1991 • 22

OUTDOORS

Here's what's happening on the eco-scene

Coastal engineers are of the opinion that it is not a question of if, but where and when we will have a new Midnight Pass.

JIM GOODWIN

Angler's Corner

By JIM GOODWIN

This week's column will feature a number of subjects, sort of a potpourri of fishing and related items. I find that my mail can bring me many short but interesting pieces, and periodically I like to clean out the file and apprise you of some of the things that are ongoing.

I am certain that you all noticed that the much abused Midnight Pass area was once again in the news. It seems that one of the endless streams of bureaucrats that have become involved in the demise of this Pass came to the conclusion that it was not necessary for the county to reopen the Pass. Department of Environmental Regulation (DER) hearing officer Joyous Parrish recommended the Pass remain closed. This decision is considered a major environmental setback by Jim Herbert, Executive Director of the Midnight Pass Society. Herbert said the Society will file exceptions to Parrish's decision. Once these exceptions have been filed it will be up to the DER and Secretary Carol Browner to make a final decision as to the future of Midnight Pass.

This entire matter may wind up in the courts, where it should be decided on its merits and not on political or other unrelated ideas. It would be well to bear in mind that coastal engineers are of the opinion that it is not a question of if we will have a new Pass, but where and when. A point that has always interested me is that when the misguided county commissioners allowed the Pass to be closed, no permits were required. Now, we are up to here in permits to reopen something that should never have been closed.

One of the more progressive organizations in our area is Mote Marine Laboratory. This fine research facility has been involved in the salvation of the snook and a long and comprehensive study of sharks. Their studies range from the minute, such as the larva of the shrimp, to the reason why such mammals as the whale beach themselves.

Quite recently I received a note from Mote concerning their desire to conduct a study on cobia, amberjack, and dolphin. They will be conducting an intensive study of gamefish migration patterns as well as analyzing age and growth data.

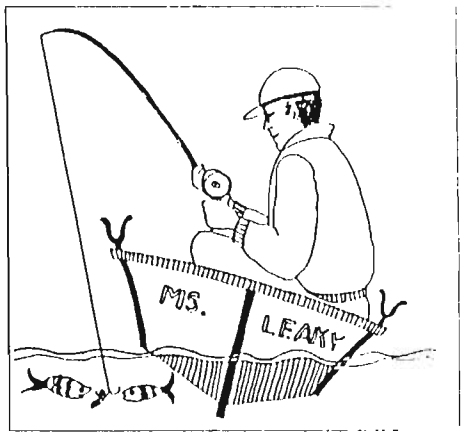
The study is founded by the Marine Fisheries Initiative (MARFIN), and will rely heavily on the active participation of sport fishermen. Project managers Karen Burns and Carole Neidig have requested that any anglers who catch and keep cobia, amberjack and dolphin should please return the tag and any capture information, such as Captain's name, capture date and location, depth, gear, type, bait, and fork length. If a tagged fish is caught and released, report the tag number but do not remove the tag.

All information relating to these tagged fish should be forwarded to: CAD Tagging Program, Mote Marine Laboratory, 1600 Thompson Parkway, Sarasota, Florida,34236. For additional information, call Pamela Phelps or Anthony Driefuss at 388-4441.

Water continues to be this year's big and growing environmental problem. Due in part to the lack of planning by past county commissioners, and also due to poor planning by these same commissioners, we are faced with a lack of water that is only equaled by the water problem in California.

Recently, the newly formed Citizens for Clean, Cheap Water started a petition drive that would force the Sarasota County Commission to discontinue the $91 million project at the T. Mabry Carlton Reserve. These folks are determined to collect 22,000 signatures of people who are against the water supply project.

A spokesman for the group said that those commissioners who ignore the petition are in imminent danger of a recall. The group spokesman went on to say that volunteers started collecting signatures from registered



Sarasota voters last weekend and would continue until the necessary numbers are reached.

None of this activity addresses the fact that we are in a bind regarding potable water. All the fighting and infighting will not supply us with one drop more of water. It is obvious that the Southwest Florida Water Management District, Swiftmud, is a troubled agency, and to expect them to alleviate the situation is to believe in the tooth fairy and the Easter bunny.

Will the rains come in sufficient quantities to solve our problem? Will any one of the wild schemes that seem to surface on a regular basis work? We had all better be careful, or a green lawn will be a thing of the past along with a great many other niceties that have been such a large part of the Florida lifestyle.

Figure 25. Newspaper Article Including Information On the CAD Tagging Program.

BACKLASH
Florida Sport Fishing Association

Volume 2 Number 2 April, 1991

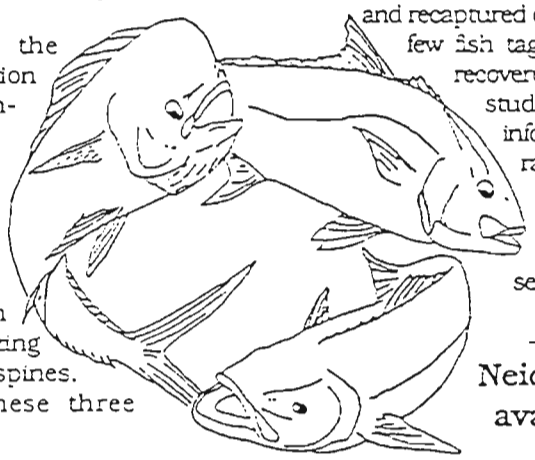
Cobia, Amberjack and Dolphin

Migration and Life History Study off the Coast of Florida

Very little is known about the migration, age and growth, reproduction and general life history of cobia, amberjack and dolphin. Mote Marine Laboratory (MML) senior fisheries biologists, Karen Burns and Carole Neidig, plan to change this with information obtained from their recently funded project. The new MML project is funded by the Marine Fisheries Initiative (MARFIN).

The objectives of this study are:

1. to determine the movement and migration patterns of cobia, amberjack and dolphin through tagging efforts conducted off the coast of Florida.



2. to obtain age and growth information by collecting and analyzing hard parts (otoliths, spines, and scales) from these three species.

3. to provide data for the development of age/length keys for each of these species and provide other stock assessment information such as: size-range of fish in the fishery, size fish first enter the fishery, age composition of fish in the fishery, sex ratio, etc.

To date 1600 cobia have been tagged using GCRL tags

Mote marine Laboratory biologists will be collaborating and exchanging data with fisheries scientist Jim Franks, head of the Cobia Research Project at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. Gulf Coast Research Laboratory (GCRL) personnel and volunteer taggers have been tagging cobia in the northern Gulf of Mexico and off southeast Florida for the last two years. To date 1,600 cobia have been tagged using GCRL tags. Of these, 72 cobia have been recaptured. Half of the recaptured cobia have been re-released. The longest long distance tag return record is still held by Joe Smiteli of the Florida Sport Fishing Association. Other long distance tag returns include 8 cobia tagged off Mississippi and recaptured off the Florida Keys and a few fish tagged off Mississippi and recovered off Texas. The tagging studies have also provided information about the growth rate of young cobia, which the GCRL has found to be 1.8 inches per month during the growing season.

Neidig and Burns are available and eager to talk

Over 175 fishermen have participated in the GCRL Cobia Research Project. Mote Marine Laboratory biologists, Karen Burns and Carole Neidig, hope they will be as successful as GCRL in finding volunteers who will assist them in tagging all three species. Burns and Neidig are available and eager to talk about their program at your general meeting. Your phone contact is Pam Phelps at (813) 388-4441. Please bear in mind that their grant does not include travel expenses. Your club will need to make a donation to the Mote Lab. Their presentation is informative and well worth the cost. Enclosed is a flyer describing their program.

Figure 26. Article Published In the Florida Sport Fishing Association Newsletter Outlining the Cobia, Amberjack and Dolphin Study.

II. LENGTH/FREQUENCY DISTRIBUTION

Data collection efforts were concentrated off the southwest coast of Florida, primarily at commercial fish houses located in Madeira Beach, St. Petersburg and Cortez, Florida and from charter boats out of Marina Jack's, Sarasota, Florida. Additional measurements were obtained from tagged fish data and from fish measured at the Florida Sport Fishing Tournament. A length/frequency form designed to NOAA/NMFS format (Figure 27) was used to record fork length in centimeters and other pertinent data. During this project, a total of 1768 length measurements (308 cobia, 1212 amberjack and 248 dolphin) were taken (Table 7). Average length per species by month appears in Table 8. Sizes of cobia, amberjack and dolphin collected during months of peak abundance and segregated by sex appear as Table 9. Length measurements of cobia, amberjack and dolphin from which hard parts were taken are presented in Table 10.

CAD PROJECT

Location _____ Date ____/____/____

Species _____ Sampler _____

Landing Information:

Captain _____ Vessel Name _____ C/R

Landing Location _____

Water Depth _____ Gear Type _____

CM	MALE	FEM	UNK	CM	MALE	FEM	UNK	CM	MALE	FEM	UNK	CM	MALE	FEM	UNK
0								78							
				40								118			
2								80							
				42								120			
4								82							
				44								122			
6								84							
				46								124			
8								86							
				48								126			
10								88							
				50								128			
12								90							
				52								130			
14								92							
				54								132			
16								94							
				56								134			
18								96							
				58								136			
20								98							
				60								138			
22								100							
				62								140			
24								102							
				64								142			
26								104							
				66								144			
28								106							
				68								146			
30								108							
				70								148			
32								110							
				72								150			
34								112							
				74								152			
36								114							
				76								154			
38								116							

NOTES:		MALE	FEM	UNK	ALL
	TOTAL				
	MEAN				
	S.E.				

Figure 27. Length/Frequency Data Sheet.

Table 7. Number of cobia (COB), amberjack (GAM) and dolphin (DOL) measured by month.

Month/Year	COB	GAM	DOL	
Oct 90	0	90	0	
Nov 90	0	7	0	
Dec 90	0	0	0	
Jan 91	10	44	0	
Feb 91	8	96	0	
Mar 91	13	97	0	
Apr 91	8	7	1	
May 91	7	0	8	
Jun 91	6	28	155	
Jul 91	4	22	41	
Aug 91	5	6	11	
Sep 91	13	141	10	
Oct 91	31	17	6	
Nov 91	9	69	0	
Dec 91	7	43	0	
Jan 92	6	49	0	
Feb 92	14	50	0	
Mar 92	41	46	2	
Apr 92	106	171	1	
May 92	9	170	4	
Jun 92	6	56	9	
Jul 92	5	3	0	
Total	308	1212	248	= 1,768

Table 8. Average length (in inches) of cobia (COB), amberjack (GAM) and dolphin (DOL) by month.

Month/Year	COB	GAM	DOL
Oct 90		24.6	
Nov 90		19.1	
Dec 90			
Jan 91	35.8	32.8	
Feb 91	46.4	27.4	
Mar 91	41.6	25.7	
Apr 91	36.0	34.2	22.5
May 91	31.9		24.0
Jun 91	33.5	37.1	22.5
Jul 91	45.8	31.0	33.9
Aug 91	31.4	21.2	24.8
Sep 91	37.9	31.0	18.2
Oct 91	31.7	23.2	27.6
Nov 91	33.6	23.2	
Dec 91	31.7	25.1	
Jan 92	36.4	27.4	
Feb 92	35.0	27.2	
Mar 92	31.3	35.7	27.6
Apr 92	33.6	32.4	30.0
May 92	32.2	27.6	21.0
Jun 92	28.1	30.2	20.4
Jul 92	26.4	25.3	

Table 9. Sizes (FL in cm) of cobia (COB), amberjack (GAM), and dolphin (DOL) segregated by sex (F = female; M = male).

		COUNT		AVERAGE		MAXIMUM		MINIMUM	
SPECIES	MONTH	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
COB	Mar	3	3	38.7	37.2	47.6	38.6	34.1	34.3
COB	Apr	15	13	41.1	41.0	47.6	46.9	33.1	32.7
COB	May	1	2	29.5	25.8	29.5	30.7	29.5	20.9
COB	Jun	0	1		39.4		39.4		39.4
DOL	Mar	1	1	26.8	28.3	26.8	28.3	26.8	28.3
DOL	Jun	51	37	21.6	27.3	48.4	46.1	7.5	13.4
DOL	Jul	20	5	35.7	39.7	49.2	51.2	15.0	26.8
DOL	Aug	4	2	28.5	30.7	32.8	32.3	24.0	29.1
DOL	Oct	1	0	47.0		46.5		46.5	
GAM	Mar	3	1	34.4	31.5	35.8	31.5	32.7	31.5
GAM	Apr	18	18	34.0	34.0	37.0	44.9	31.5	28.7
GAM	May	16	12	35.0	33.9	50.0	35.4	30.7	29.1
GAM	Jun	12	6	33.0	33.1	38.2	35.0	30.3	29.5

Table 10. Length measurements of cobia, amberjack and dolphin from which hard parts were taken.

Species	n	Min	Max	Avg	S.D.
Cobia					
Females	19	29.5	47.6	40.1	5.4
Males	19	20.9	46.9	38.7	6.6
Total	28	20.9	47.6	39.4	6.0
Amberjack					
Females	49	30.3	50.0	34.5	2.9
Males	37	28.7	44.9	33.7	2.9
Total	86	28.7	50.0	34.2	2.9
Dolphin					
Females	77	7.5	49.2	26.0	10.4
Males	45	13.4	51.2	28.9	9.3
Total	122	7.5	51.2	27.1	10.1

Summary statistics of cobia, amberjack and dolphin length/frequency data obtained during this project are presented in Table 11. Length/frequency data are enclosed on a computer disk in NMFS format and appear in Appendix IV. Length distributions of cobia, amberjack and dolphin are shown in Figures 28-30.

Table 11. Summary statistics for cobia, amberjack and dolphin measured off Florida (October 6, 1990-July 23, 1992).

	Total	East Coast	Keys	West Coast
COBIA				
Count	308	53	0	254
Min	16.0	24.0	0	16.0
Max	56.3	45.0	0	56.3
Mean	34.0	31.7	0	34.5
S.D.	8.0	4.3	0	8.5
GREATER AMBERJACK				
Count	1212	21	1	1190
Min	7.0	22.0	19.5	7.0
Max	57.1	50.0	19.5	57.1
Mean	28.7	38.6	19.5	28.6
S.D.	9.1	7.5	0	9.0
DOLPHIN				
Count	248	56	41	151
Min	7.5	7.5	13.0	13.8
Max	51.2	40.6	40.0	51.2
Mean	24.5	24.5	20.0	25.4
S.D.	9.6	9.3	5.5	10.0

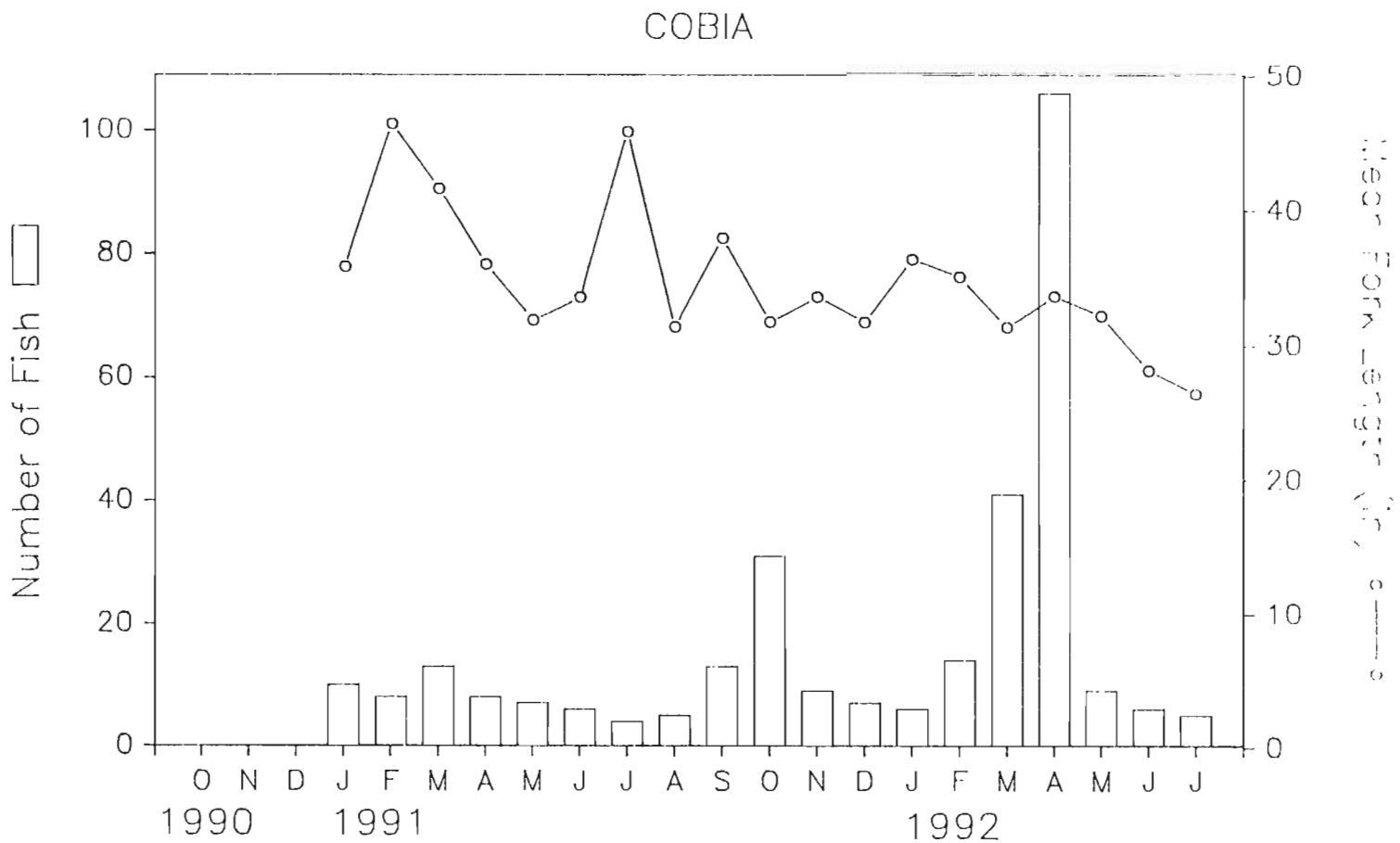


Figure 28. Mean monthly fork lengths of cobia collected off southwest Florida from January 1990 - July 1992.

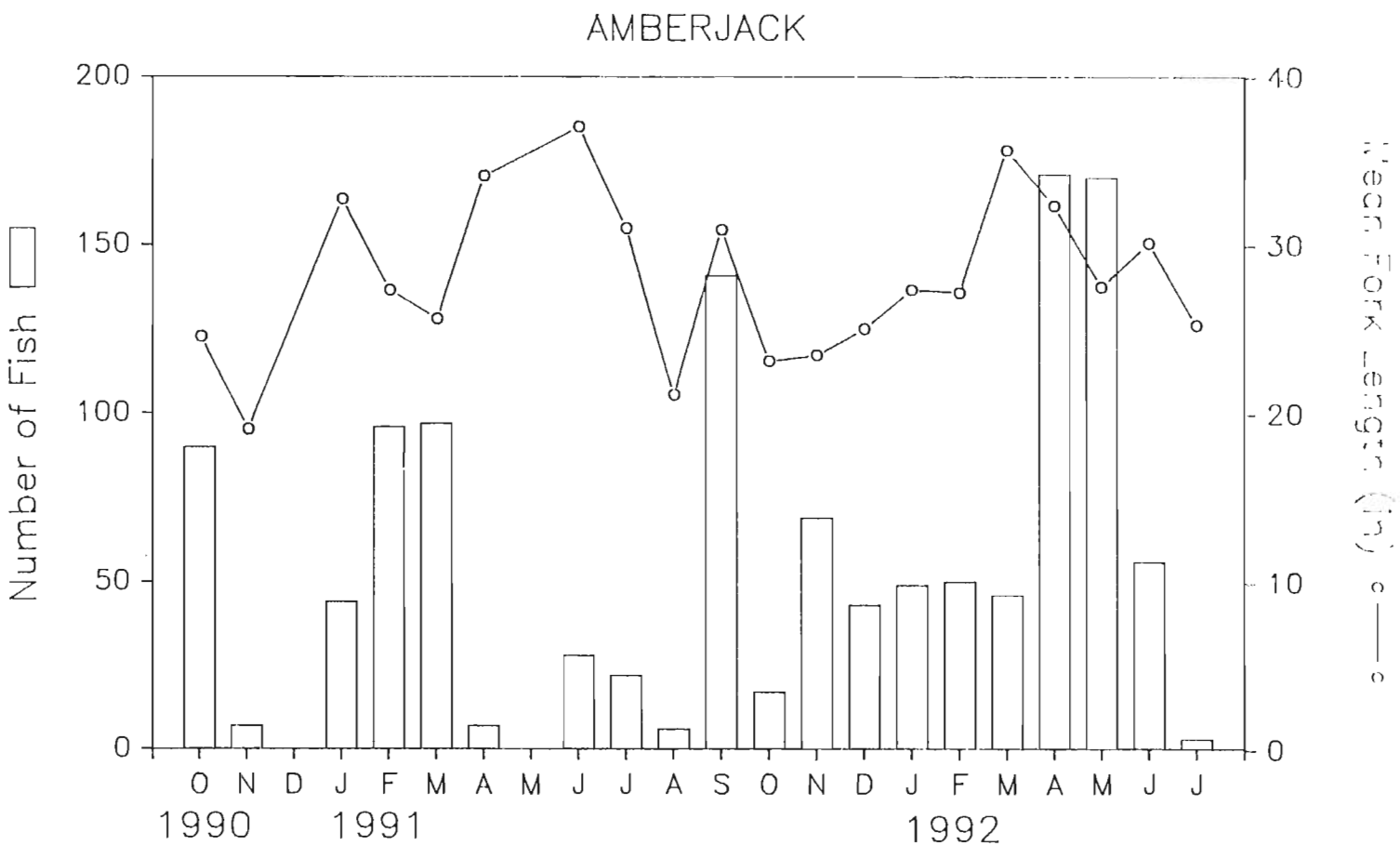


Figure 29. Mean monthly fork lengths of amberjack collected off southwest Florida from October 1990 - July 1992.

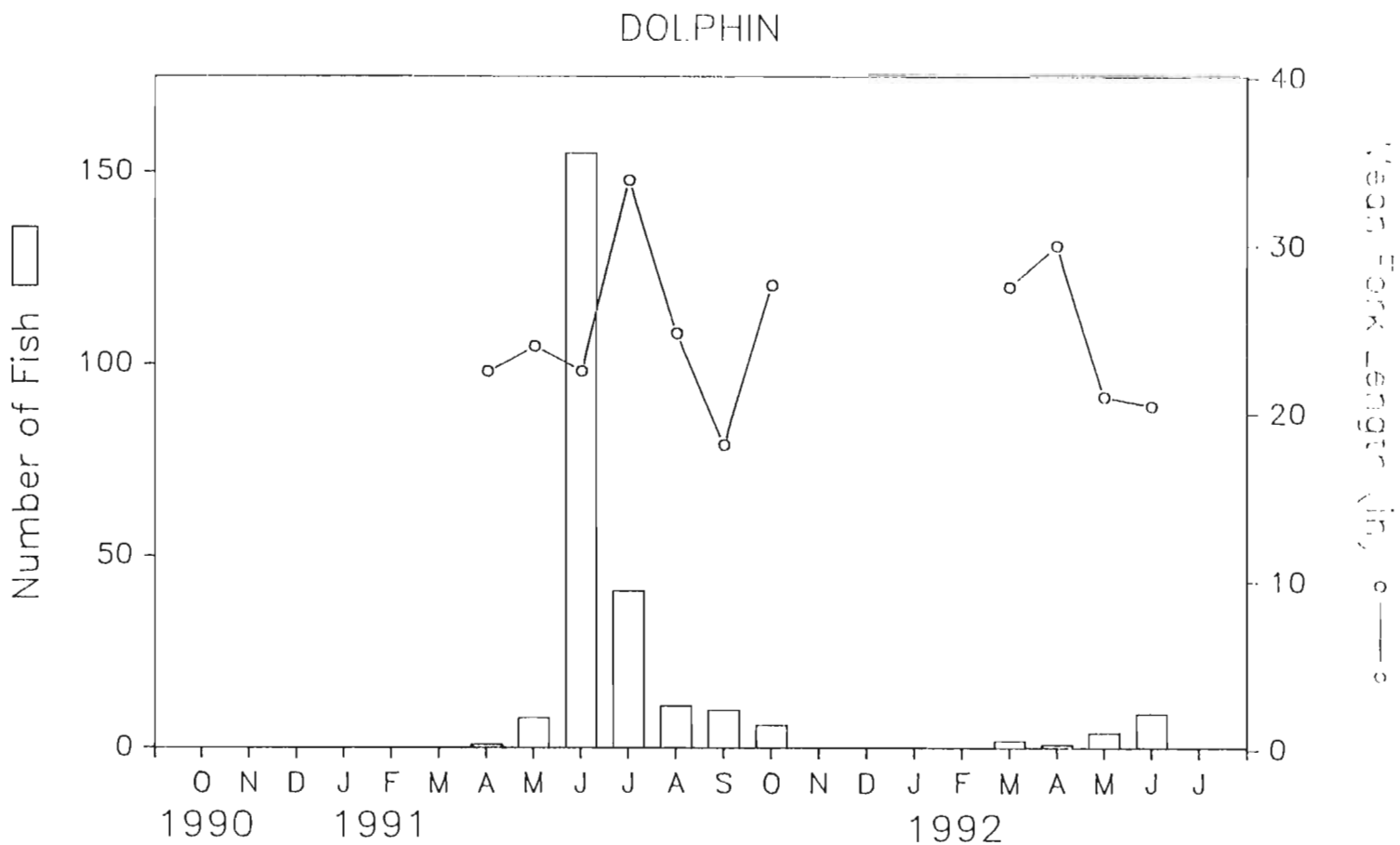


Figure 30. Mean monthly fork lengths of dolphin collected off southwest Florida from April 1990 - July 1992.

III. STOCK ASSESSMENT/AGE AND GROWTH

The collection of hard parts (otoliths, spines and scales) for age and growth analysis began during Quarter II. Hard parts, along with fork length (cm), weight (if possible) and sex (if organs were intact) were collected from fish brought into commercial fish houses in Madeira Beach, St. Petersburg and Cortez, Florida; into Sarasota, Florida by charter boat captains; and from fish caught during the annual Sport Fishing Tournament off Cocoa Beach, Florida (June 24, 1991). In addition, information on date and location of capture, water depth and gear type were obtained, if available. The hard part data sheet (Figure 31) was used during each collection.

The original proposal included funds to purchase fish for age and growth analyses so that sufficient numbers of fish throughout the entire size range would be covered. Fish of both sexes were to be collected within 10 cm intervals. The award budget did not permit the purchase of fish. Consequently, the fish used in this study only represent size ranges which fall within the legal range of the size limit for each of these species. In addition, fish houses often requested that the fishes' heads not be disfigured, therefore otoliths could not be extracted. The same situation occurred with tournament specimens. When otoliths could not be taken, spines and/or scales were collected. When possible, all three hard parts were collected so comparisons of the results from each hard part could be made.

Hard parts were processed using an Isomet saw and diamond wheel saw blades (3x.006x½mm). Cobia and amberjack spines were mounted on a glass slide with #70c Lakeside brand thermoplastic cement. The slide was heated on a hot plate to melt crystals of cement on each end of the spine. After hardening, the specimen was cut into four sections (42mm) using the transverse method.

Cobia and amberjack otoliths were embedded in 509 Crystalbond using the same method. Crystalbond was used for clarity and to prevent darkening of the otolith area. Thermoplastic cement, which is amber in color, darkened the otolith area, preventing a clear view of the rings.

Dolphin spines were mounted using the same method as for cobia and amberjack otoliths, i.e., embedded in Crystalbond. After cutting the sections, they were placed on a second slide and mounted with Flo-Texx to dry overnight.

Cobia, amberjack and dolphin spines could be viewed with no polishing. Cobia otoliths also did not need to be polished, but amberjack otoliths were polished, first with 220 grade then 600 grade wet sandpaper. The 220 grade removed the top layer of Flo-Texx, and the 600 grade produced a polished surface. The otoliths then were viewed under a compound scope (100x). Spines and scales were viewed under a dissecting scope (4.5x).

In addition, scales from amberjack and dolphin were read by placing them in water to view their rings using the image analysis program.

The Bioscan Optimus Image Analysis Development System was selected as a computer program for hard part analysis. In addition, a macro program was written to determine scale ring spacing. Scales collected from cobia, amberjack and dolphin were analyzed to aid in fine-tuning the program. In January, the sectioning and analysis of hard parts (otoliths and spines) were begun and the analysis of scales continued to be perfected. The processing and analysis continued throughout the project. The number of spines, otoliths and scales collected, processed and used from cobia, amberjack and dolphin specimens is shown in Table 12. The values are different for each category because not all hard parts collected could be read because of center degeneration/regeneration. If otolith or spine could not be collected in conjunction with scales, those scale samples were discarded. As expected, the best results came from the otoliths, then the spines. Scales were found to be the least reliable.

CMC PROJECT
OTOLITH COLLECTION

Location_____ Date____/____/____
Species_____ Sampler_____
Landing Information:
Captain_____ Vessel Name_____C/R
Landing Location_____
Water Depth_____ Gear Type_____

****

Sample Number	Hard Parts Removed: Otolith L	Otolith R	Spine/Scale SP	Spine/Scale SC	Sex M	Sex F	Sex U	Length(FL) (cm)	Weight (lb)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
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27									
28									
29									
30									

Figure 31. Otolith Collection Data Sheet.

Table 12. Number of cobia, amberjack and dolphin hard parts collected, processed and used.

Species	Size Range (cm)	Total No. Otoliths Collected	Number Processed	Number Used
COB	40-143	51	51	40
GAM	18-145	217	94	35
DOL	19-130	0	0	0

Species	Size Range (cm)	Total No. Spines Collected	Number Processed	Number Used
COB	40-143	126	126	58
GAM	18-145	190	190	42
DOL	19-130	52	52	41

Species	Size Range (cm)	Total No. Scales Collected	Number Processed	Number Used
COB	40-143	610	610	184
GAM	18-145	1530	1420	260
DOL	19-1301	1660	1660	245

Since no fish could be purchased due to budget constraints, donated fish had to be relied upon. Whenever possible, the condition of the gonads of fish used for hard parts was noted, but this depended on approval of the donor. Information on the gonadal condition of cobia and amberjack captured off the southwest coast of Florida appear as Table 13. No information on gonadal condition was available for dolphin; however, Table 14 shows the sex of dolphin collected on the east coast versus the west coast of Florida. Ages, sex and size range of cobia from the west coast of Florida appear as Table 15.

Table 13. Gonad condition of west coast cobia and amberjack obtained for hard parts.

Cobia - West Coast

Date	Length(mm)	Sex		Gonad Condition	Total Fish
		F	M	Ripe	
Apr 1992	840-1220	16		16	16
	790-1190		6	6	6

Amberjack - West Coast

Apr 1992	820-910	6		6	6
	790-1140		7	7	7
May 1992	860-1270	4		4	4
	740-890		14	14	14
Jun 1992	760-870	4		4	4
	760-890		7	7	7

Table 14. Sex and size range of dolphin from the west coast (W) vs. the east coast (E) of Florida.

WEST COAST				EAST COAST			
No. of Fish	Sex and size range (cm) M	F	U	No. of Fish	Sex and size range (cm) M	F	U
1	68			4	37-57		
3		72-75		6		25-50	
1	99			6	34-99		
4		75-123		7		58-89	
				3			67-96
				1	93		
				1			98

TOTAL WEST COAST = 9

TOTAL EAST COAST = 28

M = Male F = Female U = Unknown

Table 15. Ages, sex and size range of cobia from the west coast of Florida.

	No.	Age (years)	West Coast Sex and size range (cm)		
			M	F	U
COBIA	1	1	53		
	1	2	53		
	8	3	78-107		
	4	3		75-101	
	10	3			71-85
	4	4	87-107		
	7	4		84-118	
	11	4			85-112
	8	5	98-119		
	4	5		103-121	
	27	5			81-138
	1	6	112		
	5	6			121-138
	3	7			134-142

In an attempt to determine the season of annulus deposition, the distribution of marginal (past the last mark) widths of spine and otoliths were examined. There were too few specimens (usually less than 3) for each species in each month to develop meaningful statistics.

Dolphin and cobia scale mark counts were examined for relationship with length and age estimated from otolith and/or spine marks. No consistent relationship was found.

Model II reduced major axis regression was used to fit length-radius regressions of the form log(length) = constant + log(radius) for cobia otoliths and spines (Ricker, 1975). Table 16 lists constants, coefficients, standard errors of these parameters and r-square statistics for the regressions for various groupings of these species.

Table 16. Constants, coefficients, standard errors and r-square statistics for cobia regression.

Species	Sex	Constant	SE	Coefficient	SE	r-square
Cobia Otoliths						
	Both	3.376	0.366	0.305	0.096	.210
	M	2.185	0.538	0.627	0.143	.532
Spines	Both	2.911	0.218	0.431	0.055	.517

Length at age was back calculated and Ford-Walford regressions of the form length-at-year-n+1 = constant + coefficient * length-at-year-n were fit to the results. Table 17 lists constants, coefficients, standard errors of these parameters and estimates of maximum length where possible for various groupings of these species. Back calculations of mean fork length at annulus formation for both sexes combined, per sex and by using spines, are included in Tables 18-20.

Table 17. Constants, coefficients, standard errors and estimates of maximum length for cobia.

Species	Sex	Constant	SE	Coefficient	SE	r-square
Cobia Otoliths						
	Both	17.134	2.714	0.880	0.033	145
	M	27.723	3.816	0.790	0.051	132
Spines	Both	13.294	1.049	0.936	0.012	208

Table 18. Back calculations of mean fork length at annulus formation, sexes combined, in cobia from the southwest coast of Florida.

Spec.	Coast	Age	N	FL at capture	Age in Years 1	2	3	4	5	6
COB	W	3	3	76.83	57.49	66.18	72.97			
COB	W	4	5	90.94	64.25	73.89	85.12	90.41		
COB	W	5	13	102.75	63.81	75.09	83.68	91.03	98.21	
COB	W	6	4	129.00	84.63	92.20	103.59	112.10	118.86	126.13
COB	W	Ages combined			66.47	76.52	85.87	94.72	103.37	118.66
COB	W	Coasts and ages combined			66.47	76.52	85.87	94.72	103.37	118.66

Table 19. Back calculated mean fork length (cm) at otolith formation at capture for cobia.

Spec.	Sex	Age	N	FL at capture	Age in Years 1	2	3	4	5	6
COB	F	3	4	87.25	82.58	85.44	86.69			
COB	F	4	4	98.57	91.19	93.72	94.78	95.94		
COB	F	5	2	107.00	97.96	99.97	104.17	105.17	106.50	
COB	F Ages combined				89.10	91.62	93.42	99.16	106.50	
COB	M	1	1	53.00	48.74					
COB	M	2	1	53.00	48.04	53.00				
COB	M	3	6	89.75	52.62	72.03	85.24			
COB	M	4	2	102.50	45.25	66.03	86.80	100.89		
COB	M	5	6	110.67	64.06	75.29	85.20	93.18	103.40	
COB	M	6	1	112.00	61.84	74.42	84.53	91.61	99.44	105.84
COB	M Ages combined				55.83	71.46	85.39	94.72	102.84	105.84
COB	Sexes and ages combined				68.16	79.22	88.60	96.49	103.65	105.84

Table 20. Back calculated mean fork length (cm) at spine mark formation at capture for cobia.

Spec.	Sex	Age	N	FL at capture	Age in Years 1	2	3	4	5
COB	F	4	1	86.00	72.44	79.27	83.59	86.00	
COB	F	5	2	116.50	77.48	88.17	95.12	100.42	109.96
COB	F Ages combined				75.80	85.20	91.28	95.61	109.96
COB	Sexes and ages combined				75.80	85.20	91.28	95.61	109.96

Walford plots of the cobia back calculations from spine counts (Figure 32) and otoliths (Figure 33) demonstrate that otoliths are more accurate at showing growth rate than spines. Plots are biased by the fact that the entire size range could not be sampled and that only "legal" size fish are included.

Only male cobia growth rates (Figure 34) could be plotted separately since too many of the female cobia otoliths were damaged.

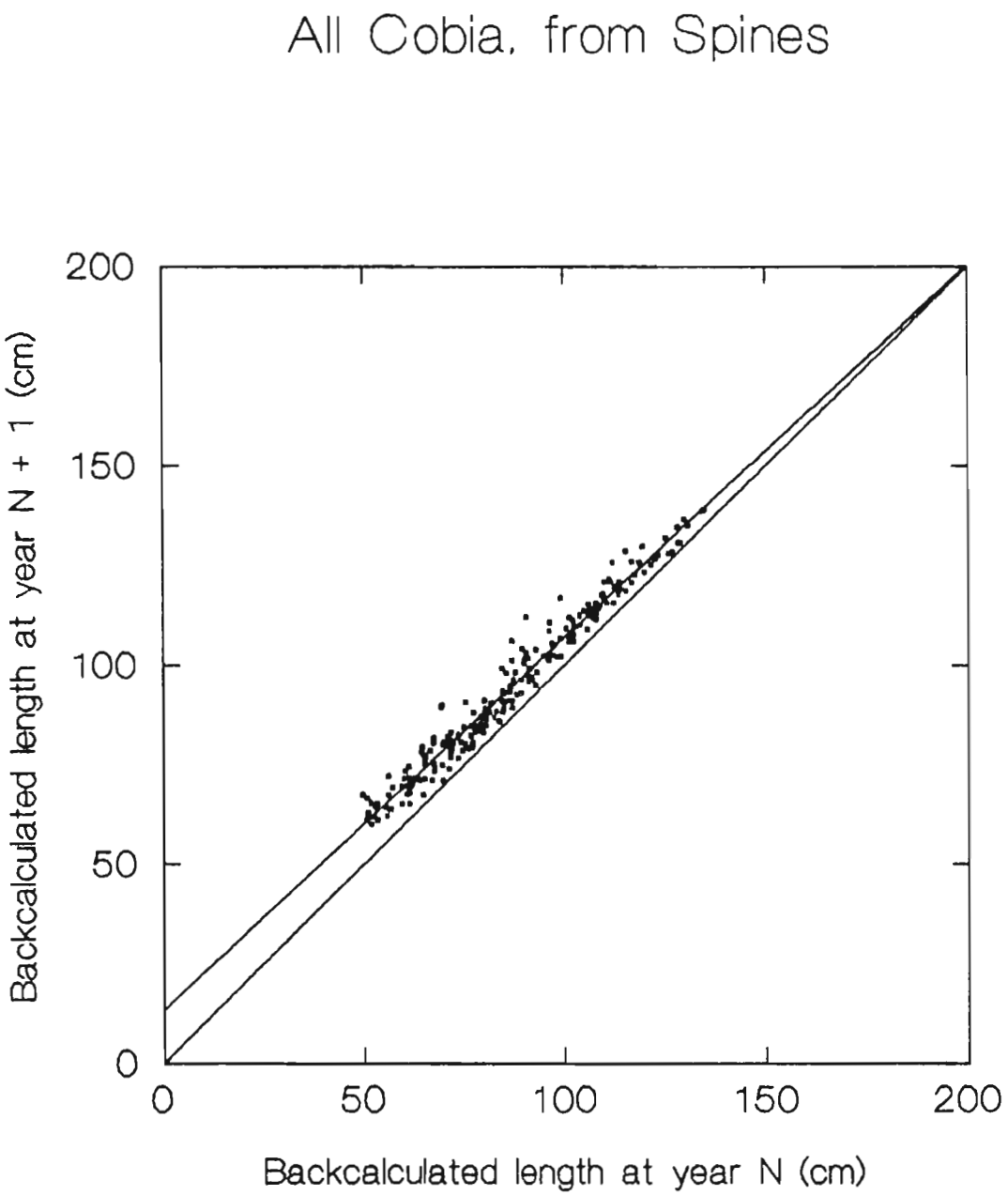

Figure 32. Walford plot of cobia back calculations from spine counts of southwest coast of Florida cobia (includes both sexes).

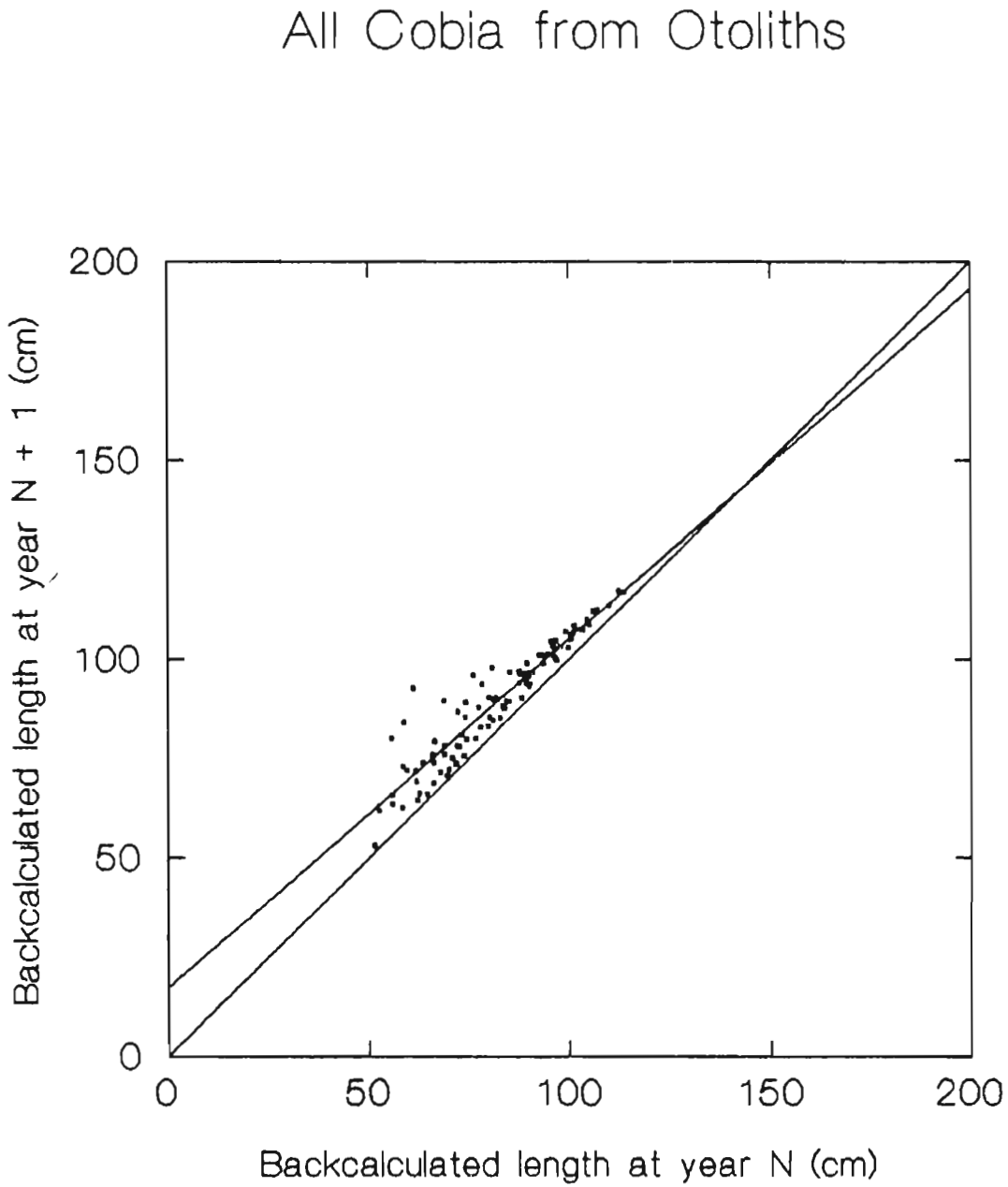

Figure 33. Walford plot of cobia back calculations from otolith counts of southwest coast of Florida cobia (includes males and females).

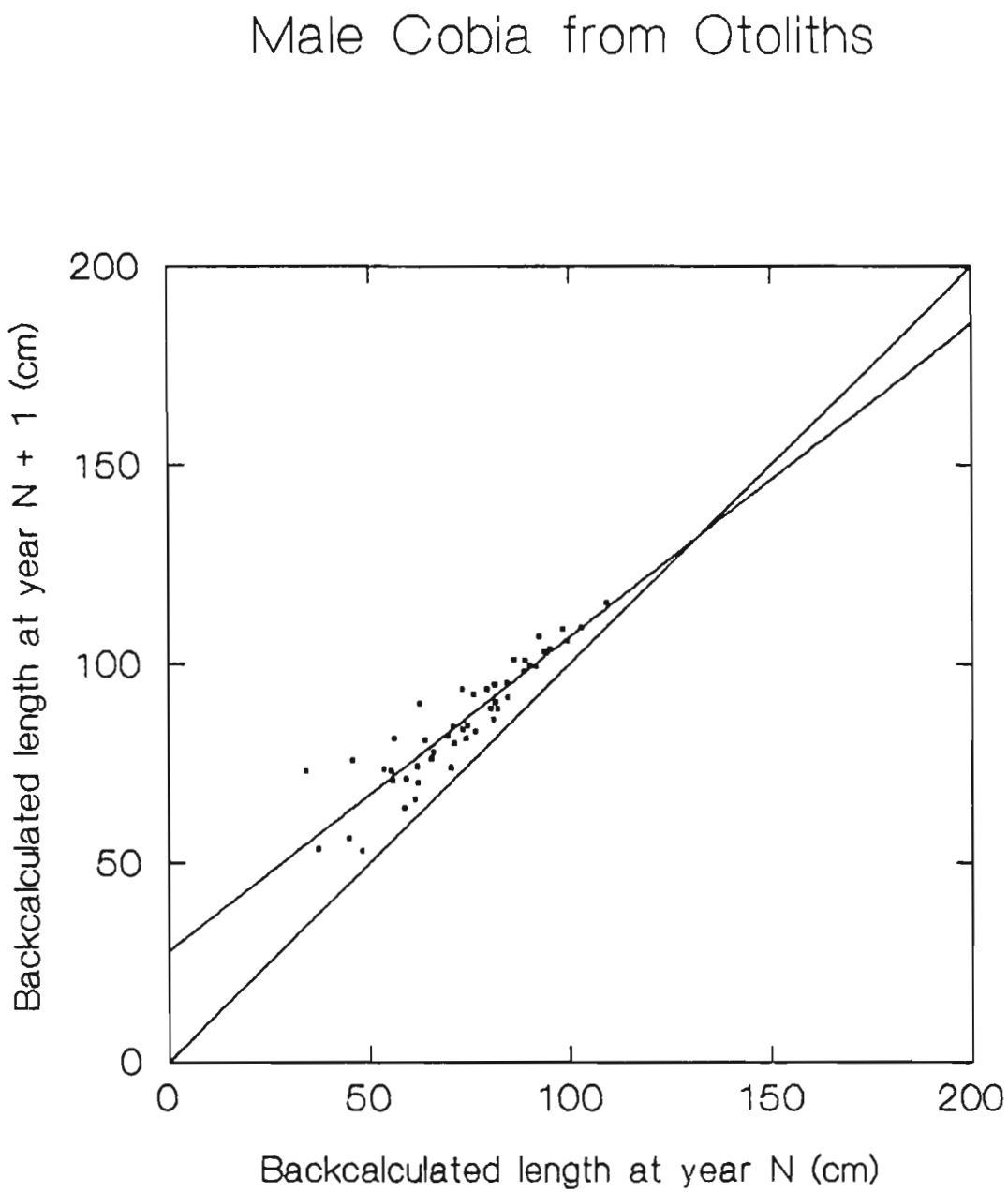

Figure 34. Walford plot of male cobia back calculations from otolith counts of Florida southwest coast cobia.

IV. RESULTS/DISCUSSION

Movement and Migration

From October 1990 through July 1992, a total of 1,023 fish were tagged (171 cobia, 785 amberjack and 67 dolphin). Return rates were nearly identical for each species: 5.8% for cobia; 5.9% for amberjack; and 6.0% for dolphin. The use of volunteers as taggers proved successful, as tagging continues to date. The return rates suggest that monetary rewards were not a necessary feature for a successful tagging study. An extensive publicity effort certainly contributed to the project. The choice of tags, Hallprint dart tags, also proved successful in their ease of application, and they are a persistent tag. Numerous returns were made greater than 100 days after tagging (Table 5) and one tag return was reported at least 900 days from the tagging date. A trend of decreasing returns with increasing days of freedom was not observed in the present data.

The cobia returns showed not only seasonal movement but also onshore/offshore distribution similar to those noted off South Carolina (Shaffer and Nakamura, 1989). The winter return showed a southern/offshore migration while the spring and summer recaptures demonstrated a northward/inshore movement.

Winter amberjack recaptures also showed a southern migration. However spring recoveries were divided between north/south movements. The summer recapture was headed north and the fall recoveries were divided with one fish headed north and the other headed south.

In the MML Study, seven hundred eighty-five amberjack were tagged. Of the forty-six recaptures, only twelve fish showed any net movement. It is assumed that the majority of fish did not migrate. This agrees with the results found by Burch (1979). The MML study was not sufficiently long ~~enough~~ to determine if there are resident populations which are visited by migratory groups or whether as suggested by Burch (1979) that amberjack may temporarily leave an area and return to the area on an annual basis.

The only recoveries of dolphin tags occurred during the month of June (Table 4). All fish were tagged in the Florida Keys and were heading north when they were recaptured. The most notable recapture being a dolphin originally tagged off Islamorada, Florida and recaptured ten days later off Cape Hatteras, North Carolina.

Length/Frequency

The database of fish lengths compiled from the tagging data was augmented with measurements collected from commercial fish houses on the west coast of Florida, and from measurements taken at the Florida Sport Fishing Tournament on the east coast of Florida. A total of 1,768 length measurements were taken (308 cobia, 1,212 amberjack and 248 dolphin). The data was examined for trends related to season, sex and location. However, several caveats must be made in interpretation of the results. Several biases exist in the data including: a fishing tournament on the east coast favored the collection of larger fish; seasonal efforts were not equal; gear types were not used equally; and a full size range of fish was not available for sex analysis. The data do provide information on lengths of the three species, however, and with cautions made, a summary of the results follow.

Cobia lengths appear to decrease with time in Figure 28 but in view of the often small number of fish measured in some months this trend is not likely valid. Mean monthly lengths ranged from 26.4 to 46.4. The number of amberjack measured per month and mean lengths also showed variation and no apparent trends (Figure 29 and Table 8). Mean lengths ranged from 19.1 to 37.1. All dolphin measurements were collected in two periods: Apr-Oct 1991; and Mar-Jun 1992. Dolphin mean lengths ranged from 18.2 to 33.9.

The sexes of the fish collected for age and growth assessment were determined and the lengths of these fish are summarized in Tables 9 and 10. Lengths were generally similar between the sexes. Female dolphins collected in June were smaller than males (21.6 versus 27.3 inches). With months combined (Table 10) the difference in mean lengths between the sexes of each species was always exceeded by the standard deviations for each sex.

Comparing the lengths of fish according to the area of collection (east coast; west coast; and keys) mean amberjack lengths were greater on the east than west coast (34.5 s.d. 8.5 versus 31.7 s.d. 4.3 inches) but the fishing tournament may have affected this result. Cobia from the west coast were greater than those from the east coast (34.5 s.d. 8.5; 31.7 s.d 4.3 inches respectively). Dolphin lengths were similar for each coast (24.5 s.d 9.3 (east); 25.4 s.d. 10.0 (west)) but dolphin from the Keys tended to be smaller (20.0 s.d. 5.5).

Stock Assessment/Age and Growth

Hard parts (268 otoliths, 368 spines and 3,800 scales) were collected for age and growth calculations. Fifty-four percent of the otoliths, 100 percent of the spines and 97 percent of the scales were processed. Of those processed, 51 percent of the otoliths, 38 percent of the spines and 18 percent of the scales could be read. No usable information came from the analysis of amberjack and dolphin spines and/or scales due to degeneration and regeneration of the centers. (A technique for otolith collection from larger dolphin was developed since completion of the present study.) Otoliths proved the best hard part for age/growth evaluation and it is recommended that otoliths be used in future work with these species. It was determined, however, that amberjack otolith rings were not annual. Sufficient time in the study was not available to calculate the intervals for ring formation. Ages, back calculations and Walford plots were generated for cobia (Tables 17-20 and Figures 32-34). Fork length at time of annulus formation was back-calculated for each sex and for both sexes combined. Length at annulus formation was in fairly close agreement in all age groups. Though, the size range was not sampled since only entire "legal" sized cobia were included. Year classes of cobia successfully aged ranged from 1-7 years. The oldest female was five years old and the oldest male was assigned an age of six years. Cobia of an unknown sex were assigned an age of seven years.

Of the 22 cobia examined for maturity, 72 percent were females and 27 percent were males. Out of 42 amberjack, 33 percent were female and 66 percent were males. Of the 37 dolphin gonads examined, 35 percent were females and 29 percent were males. The smallest ripe female cobia, amberjack and dolphin were 84, 85 and 25 cm respectively. Of the fish of each species evaluated, males were more abundant.

V. LITERATURE CITED

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APPENDIX I

TAG RELEASE RECORD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1	17-Aug-91	TAMPA	West	5	RR	COB	29.5	27	40	82	35	GOOD
10	16-Aug-91	KEY LARGO	Keys	900	RR	DOL	14.0	25	15	79	50	GOOD
1001	28-Jun-91	PANAMA CITY	West	64	RR	DOL	14.0	30	10	85	55	GOOD
1002	15-Jul-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1003	15-Jul-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1004	15-Jul-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1005	19-Jul-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1006	19-Jul-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1007	26-Aug-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1008	26-Aug-91	PANAMA CITY	West	60	RR	GAM	7.0	30	10	85	55	GOOD
1009	19-Oct-91	PANAMA CITY	West	60	RR	GAM	12.0	30	10	85	55	GOOD
1010	29-Oct-91	PANAMA CITY	West	60	RR	GAM	25.0	30	10	85	55	GOOD
1011	29-Oct-91	PANAMA CITY	West	60	RR	GAM	22.0	30	10	85	55	GOOD
1013	29-Oct-91	PANAMA CITY	West	60	RR	GAM	22.0	30	10	85	55	FAIR
1014	29-Oct-91	PANAMA CITY	West	60	RR	GAM	27.0	30	10	85	55	GOOD
1015	29-Oct-91	PANAMA CITY	West	60	RR	GAM	26.0	30	10	85	55	GOOD
1016	05-Nov-91	PANAMA CITY	West	100	RR	GAM	27.5	30	0	86	10	GOOD
1017	05-Nov-91	PANAMA CITY	West	100	RR	GAM	27.0	30	0	86	10	GOOD
1018	05-Nov-91	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	10	GOOD
1019	05-Apr-91	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	10	GOOD
1020	05-Apr-91	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	10	GOOD
1021	11-Jan-92	PANAMA CITY	West	75	RR	GAM	22.0	30	0	86	10	GOOD
1022	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1023	11-Jan-92	PANAMA CITY	West	75	RR	GAM	21.0	30	0	86	10	GOOD
1024	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1025	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1026	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1027	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1028	11-Jan-92	PANAMA CITY	West	75	RR	GAM	21.0	30	0	86	10	GOOD
1029	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1030	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1031	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1032	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1033	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1034	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1035	11-Jan-92	PANAMA CITY	West	75	RR	GAM	18.0	30	0	86	10	GOOD
1036	11-Jan-92	PANAMA CITY	West	75	RR	GAM	18.0	30	0	86	10	GOOD
1037	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1038	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1040	11-Jan-92	PANAMA CITY	West	75	RR	GAM	15.0	30	0	86	10	GOOD
1041	11-Jan-92	PANAMA CITY	West	75	RR	GAM	26.0	30	0	86	10	GOOD
1042	11-Jan-92	PANAMA CITY	West	75	RR	GAM	18.0	30	0	86	10	GOOD
1043	11-Jan-92	PANAMA CITY	West	75	RR	GAM	26.0	30	0	86	10	GOOD
1044	11-Jan-92	PANAMA CITY	West	75	RR	GAM	27.0	30	0	86	10	GOOD
1045	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1047	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1048	11-Jan-92	PANAMA CITY	West	75	RR	GAM	19.0	30	0	86	10	GOOD
1049	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
1050	11-Jan-92	PANAMA CITY	West	75	RR	GAM	20.0	30	0	86	10	GOOD
10809	15-May-92	PENSACOLA	West	100	RR	GAM	21.0	30	3	87	9	GOOD
10810	15-May-92	PENSACOLA	West	100	RR	GAM	22.0	30	3	87	9	GOOD
10811	15-May-92	PENSACOLA	West	100	RR	GAM	14.5	30	3	87	9	GOOD
10812	15-May-92	PENSACOLA	West	89	RR	GAM	16.0	30	3	87	9	GOOD
10813	15-May-92	PENSACOLA	West	89	RR	GAM	17.5	30	3	87	9	GOOD
10814	15-May-92	PENSACOLA	West	89	RR	GAM	17.0	30	3	87	9	GOOD
10822	24-May-92	PENSACOLA	West	100	RR	GAM	17.0	30	0	87	20	GOOD
10824	26-May-92	PENSACOLA	West	100	RR	GAM	26.0	30	0	87	20	GOOD
10825	26-May-92	PENSACOLA	West	100	RR	GAM	17.0	30	0	87	20	GOOD
10826	26-May-92	PENSACOLA	West	100	RR	GAM	28.5	30	0	87	20	GOOD
1115	06-Oct-90	DUNEDIN	West	90	RR	GAM	14.3	28	0	83	30	GOOD
1116	06-Oct-90	DUNEDIN	West	90	RR	GAM	21.8	28	0	83	30	GOOD
1124	06-Oct-90	DUNEDIN	West	100	RR	GAM	19.0	28	0	83	40	GOOD
1125	06-Oct-90	DUNEDIN	West	100	RR	GAM	18.3	28	0	83	40	GOOD
1126	06-Oct-90	DUNEDIN	West	100	RR	GAM	18.5	28	0	83	40	GOOD
1127G	06-Oct-90	DUNEDIN	West	100	RR	GAM	19.0	28	0	83	20	GOOD
1128	06-Oct-90	DUNEDIN	West	100	RR	GAM	16.5	28	0	83	40	GOOD
1129	06-Oct-90	DUNEDIN	West	100	RR	GAM	19.3	28	0	83	40	GOOD
1137	06-Oct-90	DUNEDIN	West	100	RR	GAM	20.0	28	0	83	40	GOOD
1143	20-Jun-91	HOLLYWOOD	East	155	RR	DOL	19.0	26	0	79	50	GOOD
1143G	06-Oct-90	DUNEDIN	West	100	RR	GAM	21.0	28	0	83	40	GOOD
1181	13-Jun-91	MARATHON	Keys	700	RR	DOL	14.0	24	30	81	30	GOOD
1183	13-Jun-91	MARATHON	Keys	900	RR	DOL	13.0	24	30	81	30	GOOD
1190	16-Nov-91	SARASOTA	West	135	RR	GAM	19.5	26	47	83	25	GOOD
1201	06-Sep-91	SARASOTA	West	120	RR	DOL	17.0	27	12	83	12	GOOD
1202	06-Sep-91	SARASOTA	West	120	RR	DOL	21.0	27	12	83	12	GOOD
1204	06-Sep-91	SARASOTA	West	120	RR	DOL	18.5	27	12	83	12	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1204G	06-Oct-90	VENICE	West	140	RR	GAM	22.0	27	17	83	30	GOOD
1205G	06-Oct-90	VENICE	West	140	RR	GAM	31.0	27	17	83	30	GOOD
1206G	06-Oct-90	VENICE	West	140	RR	GAM	20.0	27	17	83	30	GOOD
1207G	06-Oct-90	VENICE	West	140	RR	GAM	28.0	27	17	83	30	GOOD
1208	06-Sep-91	SARASOTA	West	120	RR	DOL	17.0	27	12	83	12	GOOD
1208G	06-Oct-90	VENICE	West	140	RR	GAM	29.0	27	17	83	30	GOOD
1209G	06-Oct-90	VENICE	West	140	RR	GAM	18.0	27	27	83	30	
1210	06-Sep-91	SARASOTA	West	120	RR	DOL	17.5	27	12	83	12	GOOD
1210G	06-Oct-90	VENICE	West	140	RR	GAM	24.0	27	27	83	30	
1211G	06-Oct-90	VENICE	West	140	RR	GAM	20.0	27	17	83	30	GOOD
1222	06-Jul-91	FT. PIERCE	East	240	RR	GAM	39.0	27	30	80	0	GOOD
1223	13-Jul-91	PORT CANAVERAL	East	220	RR	GAM	40.0	28	30	80	20	GOOD
1224	13-Jul-91	PORT CANAVERAL	East	220	RR	GAM	46.0	28	30	80	20	GOOD
1225	20-Jul-91	PORT CANAVERAL	East	165	RR	GAM	28.0	28	30	80	20	GOOD
1231	20-Jul-91	SOUTH PASS	West	5000	RR	DOL	48.0	28	0	90	0	GOOD
1232	21-Jul-91	SOUTH PASS	West	300	RR	GAM	22.0	28	0	90	0	GOOD
1233	20-Jul-91	SOUTH PASS	West	5000	RR	DOL	32.0	28	0	90	0	GOOD
1234	21-Jul-91	SOUTH PASS	West	300	RR	GAM	26.0	28	0	90	0	GOOD
1235	21-Jul-91	SOUTH PASS	West	300	RR	GAM	40.0	28	0	90	0	GOOD
125	07-Sep-91	ST. PETERSBURG	West	200	RR	GAM	29.3	27	50	83	54	GOOD
126	06-Jul-91	DUCK KEY	Keys	590	RR	DOL	20.0	24	25	80	45	GOOD
127	12-Jun-92	DUCK KEY	East	650	RR	DOL	19.0	24	33	80	40	GOOD
1276	16-Apr-92	DESTIN	West	15	RR	COB	26.0	30	20	86	30	GOOD
1277	16-Apr-92	NAVARRE	West	15	RR	COB	32.0	30	20	86	30	GOOD
128	12-Jun-92	DUCK KEY	East	650	RR	DOL	20.0	24	33	80	40	GOOD
129	12-Jun-92	DUCK KEY	East	650	RR	DOL	18.0	24	33	80	40	GOOD
130	12-Jun-92	DUCK KEY	East	650	RR	DOL	21.0	24	33	80	40	GOOD
1306	15-Oct-91	ST. PETERSBURG	West	80	RR	GAM	15.0	27	40	83	10	GOOD
1307	02-Mar-92	SARASOTA	West	150	ERR	GAM	27.0	27	27	83	41	GOOD
1308	02-Mar-92	SARASOTA	West	150	ERR	GAM	23.0	27	27	83	41	GOOD
1309	02-Mar-92	SARASOTA	West	150	ERR	GAM	29.0	27	27	83	41	GOOD
131	12-Jun-92	DUCK KEY	East	650	RR	DOL	17.0	24	33	80	40	GOOD
1310	02-Mar-92	SARASOTA	West	150	ERR	GAM	31.0	27	27	83	41	GOOD
1311	04-May-92	CORTEZ	West	110	RR	GAM	30.0	27	26	83	16	GOOD
1312	12-Jun-92	CORTEZ	West	112	RR	GAM	30.0	27	26	83	16	GOOD
1313	13-Jun-92	CORTEZ	West	112	RR	GAM	19.0	27	26	83	16	GOOD
132	12-Jun-92	DUCK KEY	East	650	RR	DOL	22.0	24	33	80	40	GOOD
133	12-Jun-92	DUCK KEY	East	650	RR	DOL	20.0	24	33	80	40	GOOD
1330	28-May-92	ST. PETERSBURG	West	130	RR	GAM	31.0	27	34	83	33	GOOD
134	12-Jun-92	DUCK KEY	East	650	RR	DOL	21.0	24	33	80	40	GOOD
135	12-Jun-92	DUCK KEY	Keys	650	RR	DOL	26.0	24	33	80	40	GOOD
1366	16-Nov-91	SARASOTA	West	135	RR	GAM	30.0	26	47	83	25	GOOD
1367	16-Nov-91	SARASOTA	West	135	RR	GAM	30.0	26	47	83	25	GOOD
1368	16-Nov-91	SARASOTA	West	135	RR	GAM	25.0	26	47	83	25	GOOD
1369	16-Nov-91	SARASOTA	West	135	RR	GAM	30.5	26	47	83	25	GOOD
1370	19-Nov-91	SARASOTA	West	43	RR	GAM	29.5	27	15	82	42	GOOD
1371	27-Nov-91	SARASOTA	West	45	RR	GAM	31.0	27	15	82	42	GOOD
1372R	27-Nov-91	SARASOTA	West	45	RR	GAM	30.8	27	15	82	42	GOOD
1372R	27-Nov-91	SARASOTA	West	27	RR	GAM	26.0	PINF	27	15	82	
1373	27-Nov-91	SARASOTA	West	45	RR	GAM	30.0	27	15	82	42	GOOD
1374	07-Dec-91	SARASOTA	West	103	RR	GAM	35.0	27	16	83	7	GOOD
1375	19-Nov-91	SARASOTA	West	43	RR	GAM	27.5	27	15	82	42	GOOD
1376	24-Oct-91	SARASOTA	West	27	RR	COB	37.0	27	17	82	36	GOOD
1377	28-Oct-91	SARASOTA	West	27	RR	COB	29.5	27	17	82	36	GOOD
1378	29-Oct-91	SARASOTA	West	27	RR	COB	29.0	27	17	82	36	GOOD
1379	29-Oct-91	SARASOTA	West	27	RR	COB	28.7	27	17	82	36	GOOD
1380	29-Oct-91	SARASOTA	West	27	RR	COB	33.0	27	17	82	36	GOOD
1381	20-Mar-92	PORT CANAVERAL	East	30	RR	COB	31.5	28	30	80	30	GOOD
1401	06-Oct-91	PORT CANAVERAL	East	210	RR	DOL	23.0	28	30	80	0	GOOD
1402	06-Oct-91	PORT CANAVERAL	East	210	RR	DOL	27.0	28	30	80	0	GOOD
1403	06-Oct-91	PORT CANAVERAL	East	210	RR	DOL	24.0	28	30	80	0	GOOD
1404	08-Mar-92	PORT CANAVERAL	East	35	RR	COB	25.0	28	30	80	40	GOOD
1427	23-Feb-92	ENGLEWOOD	West	105	RR	GAM	30.0	27	5	83	3	GOOD
1428	23-Feb-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
1429	23-Feb-92	VENICE	West	105	RR	GAM	33.0	27	6	83	3	GOOD
1430	08-Mar-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
1431	08-Mar-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
1432	08-Mar-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
1433	08-Mar-92	VENICE	West	105	RR	GAM	33.0	27	6	83	3	GOOD
1434	08-Mar-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
1435	08-Mar-92	VENICE	West	105	RR	GAM	33.0	27	6	83	3	GOOD
1436	08-Mar-92	VENICE	West	105	RR	GAM	26.5	27	6	83	3	GOOD
1456	08-Dec-91	VENICE	West	12	RR	COB	20.0	27	0	82	30	GOOD
1459	08-Dec-91	VENICE	West	12	RR	COB	24.0	27	0	82	30	GOOD
1461	12-Feb-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
1462	23-Feb-92	VENICE	West	105	RR	GAM	32.0	27	6	83	3	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1464	23-Feb-92	VENICE	West	105	RR	GAM	32.0	27	6	83	3	GOOD
1465	23-Feb-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
1471	01-Nov-91	SARASOTA	West	74	RR	GAM	25.5	27	40	83	5	GOOD
1472	01-Nov-91	SARASOTA	West	74	RR	GAM	31.0	27	40	83	5	GOOD
1473	27-Oct-91	SARASOTA	West	26	RR	COB	26.0	27	20	82	40	GOOD
1474	27-Oct-91	SARASOTA	West	26	RR	COB	32.5	27	20	82	40	GOOD
1475	26-Oct-91	SARASOTA	West	26	RR	COB	26.0	27	20	82	40	GOOD
1476	26-Oct-91	SARASOTA	West	26	RR	COB	25.5	27	20	82	40	GOOD
1477	26-Oct-91	SARASOTA	West	26	RR	COB	25.5	27	20	82	40	GOOD
1478	26-Oct-91	SARASOTA	West	26	RR	COB	29.0	27	20	82	40	GOOD
1479	26-Oct-91	SARASOTA	West	26	RR	COB	30.7	27	20	82	40	GOOD
1480	26-Oct-91	SARASOTA	West	26	RR	COB	31.7	27	20	82	40	GOOD
1481	16-Nov-91	SARASOTA	West	135	RR	GAM	31.0	26	47	83	25	GOOD
1482	16-Nov-91	SARASOTA	West	135	RR	GAM	32.0	26	47	83	25	GOOD
1483	16-Nov-91	SARASOTA	West	135	RR	GAM	30.5	26	47	83	25	GOOD
1484	16-Nov-91	SARASOTA	West	135	RR	GAM	34.0	26	47	83	25	GOOD
1485	16-Nov-91	SARASOTA	West	135	RR	GAM	29.5	26	47	83	25	GOOD
1486	16-Nov-91	SARASOTA	West	135	RR	GAM	32.5	26	47	83	25	GOOD
1487	16-Nov-91	SARASOTA	West	135	RR	GAM	25.0	26	47	83	25	GOOD
1488	16-Nov-91	GASPARILLA ISLAND	West	135	RR	GAM	37.0	26	47	83	25	GOOD
1524	31-Oct-91	SARASOTA	West	27	RR	COB	28.0	27	17	82	36	GOOD
1526	31-Oct-91	SARASOTA	West	27	RR	COB	26.0	27	17	82	36	GOOD
1527	27-Mar-92	SARASOTA	West	30	RR	COB	27.0	27	18	83	37	GOOD
1528	27-Mar-92	SARASOTA	West	30	RR	COB	24.0	27	18	83	37	GOOD
1529	27-Mar-92	SARASOTA	West	30	RR	COB	32.0	27	18	83	37	GOOD
1530	03-Mar-92	SARASOTA	West	31	RR	COB	29.0	27	17	82	37	GOOD
1531	21-Feb-92	SARASOTA	West	32	RR	COB	30.0	27	18	82	37	GOOD
1532	12-Dec-91	SARASOTA	West	12	RR	COB	16.0	27	17	82	37	GOOD
1533	28-Dec-91	SARASOTA	West	30	RR	COB	31.0	27	20	82	34	GOOD
1535	06-Nov-91	TAMPA	West	125	RR	GAM	26.0	28	11	84	5	GOOD
1535G	06-Oct-90	ANNA MARIA	West	155	RR	GAM	28.5	27	52	84	5	POOR
1536	06-Nov-91	TAMPA	West	125	RR	GAM	14.5	28	11	84	5	GOOD
1537	06-Nov-91	TAMPA	West	125	RR	GAM	27.5	28	11	84	5	GOOD
1538	06-Nov-91	TAMPA	West	125	RR	GAM	25.0	28	11	84	5	GOOD
1539	06-Nov-91	TAMPA	West	125	RR	GAM	26.5	28	11	84	5	GOOD
1540	06-Nov-91	TAMPA	West	125	RR	GAM	27.0	28	11	84	5	GOOD
1541	06-Nov-91	TAMPA	West	125	RR	GAM	27.0	28	11	84	5	GOOD
1542	06-Nov-91	TAMPA	West	125	RR	GAM	26.0	28	11	84	5	GOOD
1543	06-Nov-91	TAMPA	West	125	RR	GAM	27.0	28	11	84	5	GOOD
1544	06-Nov-91	TAMPA	West	125	RR	GAM	26.5	28	11	84	5	GOOD
1576	15-Nov-91	SARASOTA	West	26	RR	COB	28.0	27	15	82	47	GOOD
1577	14-Nov-91	SARASOTA	West	74	RR	GAM	30.7	27	30	82	40	GOOD
1578	16-Nov-91	SARASOTA	West	135	RR	GAM	29.7	26	47	83	25	GOOD
1580	01-Nov-91	SARASOTA	West	74	RR	GAM	12.5	27	40	83	5	GOOD
1581	01-Nov-91	SARASOTA	West	74	RR	GAM	26.5	27	40	83	5	GOOD
1582	26-Oct-91	SARASOTA	West	26	RR	COB	32.0	27	20	82	40	GOOD
1583	26-Oct-91	SARASOTA	West	26	RR	COB	32.7	27	20	82	40	GOOD
1584	26-Oct-91	SARASOTA	West	26	RR	COB	29.5	27	20	82	40	GOOD
1585	17-Dec-91	SARASOTA	West	48	RR	GAM	17.8	27	14	82	45	GOOD
1586	20-Dec-91	SARASOTA	West	48	RR	GAM	15.5	27	14	82	45	GOOD
1587	20-Dec-91	SARASOTA	West	48	RR	GAM	17.5	27	14	82	45	GOOD
1588	20-Dec-91	SARASOTA	West	48	RR	GAM	14.5	27	14	82	45	GOOD
1589	20-Dec-91	SARASOTA	West	48	RR	GAM	16.5	27	14	82	45	GOOD
1590	20-Dec-91	SARASOTA	West	48	RR	GAM	18.0	27	14	82	45	GOOD
1591	12-Dec-91	SARASOTA	West	100	RR	GAM	31.5	27	15	83	2	GOOD
1592	12-Dec-91	SARASOTA	West	100	RR	GAM	32.0	27	15	83	2	GOOD
1593	12-Dec-91	SARASOTA	West	100	RR	GAM	32.0	27	15	83	2	GOOD
1594	12-Dec-91	SARASOTA	West	100	RR	GAM	32.5	27	15	83	2	GOOD
1595	08-Jan-92	SARASOTA	West	105	RR	GAM	31.1	27	5	83	5	SWAM
1596	12-Feb-92	VENICE	West	105	RR	GAM	31.5	27	6	83	3	GOOD
1597	12-Feb-92	VENICE	West	105	RR	GAM	25.0	27	6	83	3	GOOD
1598	12-Feb-92	VENICE	West	105	RR	GAM	31.0	27	6	83	3	GOOD
1599	18-Jan-92	SARASOTA	West	74	RR	GAM	32.5	27	9	82	53	SWAM
1600	11-Jan-92	SARASOTA	West	32	RR	COB	28.0	27	16	82	38	SWAM
1618	12-Dec-91	SARASOTA	West	100	RR	GAM	30.5	27	15	83	2	GOOD
1619	12-Dec-91	SARASOTA	West	100	RR	GAM	33.0	27	25	83	2	GOOD
1620	09-Dec-91	SARASOTA	West	100	RR	GAM	16.0	27	14	82	45	GOOD
1621	08-Dec-91	SARASOTA	West	60	RR	GAM	18.5	27	12	82	48	GOOD
1622	07-Dec-91	SARASOTA	West	103	RR	GAM	30.0	27	16	83	7	GOOD
1623	07-Dec-91	SARASOTA	West	103	RR	GAM	35.0	27	16	83	7	GOOD
1624	07-Dec-91	SARASOTA	West	103	RR	GAM	33.0	27	16	83	7	GOOD
1625	07-Dec-91	SARASOTA	West	103	RR	GAM	33.0	27	16	83	7	GOOD
1626	07-Dec-91	SARASOTA	West	103	RR	GAM	31.0	27	16	83	7	GOOD
1627	07-Dec-91	SARASOTA	West	103	RR	GAM	31.0	27	16	83	7	GOOD
1628	08-Jan-92	SARASOTA	West	105	RR	GAM	21.1	27	5	83	5	GOOD
1629	08-Jan-92	SARASOTA	West	105	RR	GAM	28.0	27	5	83	5	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1630	08-Jan-92	SARASOTA	West	105	RR	GAM	40.1	27	5	83	5	GOOD
1631	22-Dec-91	SARASOTA	West	55	RR	GAM	30.0	27	14	82	45	GOOD
1632	22-Dec-91	SARASOTA	West	55	RR	GAM	31.0	27	14	82	45	GOOD
1633	21-Dec-91	SARASOTA	West	100	RR	GAM	31.0	27	15	83	2	GOOD
1634	21-Dec-91	SARASOTA	West	100	RR	GAM	33.5	27	15	83	2	GOOD
1635	21-Dec-91	SARASOTA	West	100	RR	GAM	33.5	27	15	83	2	GOOD
1636	21-Dec-91	SARASOTA	West	100	RR	GAM	33.5	27	15	83	2	GOOD
1697	07-May-92	ISLAMORADA	Keys	103	RR	DOL	22.0	24	40	80	27	GOOD
1698	07-May-92	ISLAMORADA	Keys	43	RR	DOL	19.0	24	40	80	27	GOOD
1699	07-May-92	ISLAMORADA	Keys	27	RR	DOL	21.0	24	40	80	27	GOOD
1700	07-May-92	ISLAMORADA	Keys	27	RR	DOL	22.0	24	40	80	27	GOOD
1721	30-May-92	SARASOTA	West	50	RR	GAM	24.0	27	11	82	42	GOOD
1722	20-Jun-92	VENICE	West	80	RR	GAM	28.0	27	5	82	50	GOOD
1731	10-Mar-92	SANIBEL	West	95	RR	GAM	20.0	26	35	82	30	GOOD
1732	10-Mar-92	SANIBEL	West	90	RR	GAM	19.0	26	35	82	30	GOOD
1733	12-Mar-92	SANIBEL	West	80	RR	GAM	22.0	26	35	82	25	GOOD
1743	14-Apr-92	SARASOTA	West	27	RR	COB	32.0	27	18	82	35	GOOD
1744	14-Apr-92	SARASOTA	West	27	RR	COB	24.5	27	18	82	35	GOOD
1745	14-Apr-92	SARASOTA	West	27	RR	COB	35.0	27	18	82	35	GOOD
1746	14-Apr-92	SARASOTA	West	27	RR	COB	28.0	27	18	82	35	GOOD
1747	14-Apr-92	SARASOTA	West	27	RR	COB	29.0	27	18	82	35	GOOD
1748	14-Apr-92	SARASOTA	West	27	RR	COB	26.0	27	18	82	35	GOOD
1749	14-Apr-92	SARASOTA	West	27	RR	COB	33.5	27	18	82	35	GOOD
1750	14-Apr-92	SARASOTA	West	27	RR	COB	26.5	27	18	82	35	GOOD
1751	20-Apr-92	PANAMA CITY	West	140	RR	GAM	26.0	29	30	86	0	GOOD
1752	30-Apr-92	PANAMA CITY	West	110	RR	GAM	18.0	30	5	86	5	GOOD
1753	30-Apr-92	PANAMA CITY	West	110	RR	GAM	17.0	30	5	86	5	GOOD
1754	30-Apr-92	PANAMA CITY	West	110	RR	GAM	13.0	30	5	86	5	GOOD
1755	24-May-92	PANAMA CITY	West	90	RR	GAM	18.0	30	0	86	0	GOOD
1756	24-May-92	PANAMA CITY	West	90	RR	GAM	12.0	30	0	86	0	GOOD
1757	24-May-92	PANAMA CITY	West	90	RR	GAM	28.0	30	0	86	0	GOOD
1758	24-May-92	PANAMA CITY	West	90	RR	GAM	20.0	30	0	86	0	GOOD
1759	24-May-92	PANAMA CITY	West	90	RR	GAM	28.0	30	0	86	0	POOR
1760	24-May-92	PANAMA CITY	West	90	RR	GAM	28.0	30	0	86	0	GOOD
1761	24-May-92	PANAMA CITY	West	90	RR	GAM	22.0	30	0	86	0	GOOD
1762	24-May-92	PANAMA CITY	West	90	RR	GAM	13.0	30	0	86	0	GOOD
1763	28-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	0	86	0	GOOD
1764	15-May-92	PANAMA CITY	West	90	RR	GAM	27.0	30	0	86	0	GOOD
1765	28-May-92	PANAMA CITY	West	100	RR	GAM	24.0	30	0	86	0	GOOD
1766	28-May-92	PANAMA CITY	West	100	RR	GAM	24.0	30	0	86	0	GOOD
1767	26-May-92	PANAMA CITY	West	90	RR	GAM	20.0	30	0	86	0	GOOD
1768	28-May-92	PANAMA CITY	West	100	RR	GAM	14.0	30	0	86	0	GOOD
1769	28-May-92	PANAMA CITY	West	100	RR	GAM	27.0	30	0	86	0	GOOD
1770	29-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	0	GOOD
1771	29-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	0	GOOD
1772	29-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	0	GOOD
1773	29-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	0	86	0	GOOD
1774	26-May-92	PANAMA CITY	West	90	RR	GAM	14.0	30	0	86	0	GOOD
1775	16-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	5	86	5	GOOD
1776	16-May-92	PANAMA CITY	West	100	RR	GAM	28.0	30	5	86	5	GOOD
1777	16-May-92	PANAMA CITY	West	100	RR	GAM	19.0	30	5	86	5	GOOD
1778	16-May-92	PANAMA CITY	West	90	RR	GAM	14.0	30	5	86	5	GOOD
1779	16-May-92	PANAMA CITY	West	110	RR	GAM	26.0	30	5	86	5	GOOD
1780	16-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	5	86	5	GOOD
1781	16-May-92	PANAMA CITY	West	100	RR	GAM	19.0	30	5	86	5	GOOD
1782	16-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	5	86	5	GOOD
1783	16-May-92	PANAMA CITY	West	100	RR	GAM	27.0	30	5	86	5	GOOD
1784	16-May-92	PANAMA CITY	West	100	RR	GAM	24.0	30	5	86	5	GOOD
1785	16-May-92	PANAMA CITY	West	100	RR	GAM	26.0	30	5	86	5	GOOD
1786	16-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	5	86	5	GOOD
1787	16-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	5	86	5	GOOD
1788	16-May-92	PANAMA CITY	West	100	RR	GAM	27.5	30	5	86	5	GOOD
1789	16-May-92	PANAMA CITY	West	110	RR	GAM	27.0	30	5	86	5	GOOD
1790	16-May-92	PANAMA CITY	West	110	RR	GAM	26.0	30	5	86	5	GOOD
1791	16-May-92	PANAMA CITY	West	110	RR	GAM	25.0	30	5	86	5	GOOD
1792	16-May-92	PANAMA CITY	West	110	RR	GAM	25.0	30	5	86	5	GOOD
1793	16-May-92	PANAMA CITY	West	110	RR	GAM	25.0	30	5	86	5	GOOD
1794	16-May-92	PANAMA CITY	West	110	RR	GAM	25.0	30	5	86	5	GOOD
1795	23-May-92	PANAMA CITY	West	90	RR	GAM	28.5	30	0	86	0	GOOD
1796	23-May-92	PANAMA CITY	West	90	RR	GAM	30.0	30	0	86	0	GOOD
1797	23-May-92	PANAMA CITY	West	90	RR	GAM	30.0	30	0	86	0	GOOD
1798	23-May-92	PANAMA CITY	West	90	RR	GAM	32.0	30	0	86	0	GOOD
1799	23-May-92	PANAMA CITY	West	90	RR	GAM	28.5	30	0	86	0	GOOD
1800	23-May-92	PANAMA CITY	West	90	RR	GAM	30.0	30	0	86	0	GOOD
1801	01-Feb-92	PANAMA CITY	West	70	RR	GAM	16.0	30	7	86	10	GOOD
1802	01-Feb-92	PANAMA CITY	West	70	RR	GAM	27.0	30	7	86	10	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1803	01-Feb-92	PANAMA CITY	West	70	RR	GAM	30.0	30	7	86	10	GOOD
1804	01-Feb-92	PANAMA CITY	West	70	RR	GAM	30.0	30	7	86	10	GOOD
1805	01-Feb-92	PANAMA CITY	West	70	RR	GAM	27.0	30	7	86	10	GOOD
1806	01-Feb-92	PANAMA CITY	West	70	RR	GAM	27.0	30	7	86	10	GOOD
1807	01-Feb-92	PANAMA CITY	West	70	RR	COB	28.0	30	7	86	10	GOOD
1808	01-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	7	86	10	GOOD
1809	01-Feb-92	PANAMA CITY	West	70	RR	GAM	27.0	30	7	86	10	GOOD
1810	01-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	7	86	10	GOOD
1811	01-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	7	86	10	GOOD
1812	11-Feb-92	PANAMA CITY	West	70	RR	GAM	29.0	30	0	86	10	GOOD
1813	11-Feb-92	PANAMA CITY	West	70	RR	GAM	28.0	30	0	86	10	GOOD
1814	11-Feb-92	PANAMA CITY	West	70	RR	GAM	28.0	30	0	86	10	GOOD
1815	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1816	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1817	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1819	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1820	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1821	11-Feb-92	PANAMA CITY	West	70	RR	GAM	24.0	30	0	86	10	GOOD
1822	11-Feb-92	PANAMA CITY	West	70	RR	GAM	24.0	30	0	86	10	GOOD
1823	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1824	11-Feb-92	PANAMA CITY	West	70	RR	GAM	24.0	30	0	86	10	GOOD
1825	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1826	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1827	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1828	11-Feb-92	PANAMA CITY	West	70	RR	GAM	28.0	30	0	86	10	GOOD
1829	11-Feb-92	PANAMA CITY	West	70	RR	GAM	24.0	30	0	86	10	GOOD
1830	11-Feb-92	PANAMA CITY	West	70	RR	GAM	25.0	30	0	86	10	GOOD
1831	11-Feb-92	PANAMA CITY	West	70	RR	GAM	25.0	30	0	86	10	GOOD
1832	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1833	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1834	11-Feb-92	PANAMA CITY	West	70	RR	GAM	20.0	30	0	86	10	GOOD
1835	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1836	11-Feb-92	PANAMA CITY	West	70	RR	GAM	21.0	30	0	86	10	GOOD
1837	18-Apr-92	PANAMA CITY	West	75	RR	GAM	24.0	30	5	86	5	GOOD
1838	11-Feb-92	PANAMA CITY	West	70	RR	GAM	26.0	30	0	86	10	GOOD
1839	18-Apr-92	PANAMA CITY	West	140	RR	GAM	18.0	29	30	86	0	GOOD
1840	10-May-92	PANAMA CITY	West	140	RR	GAM	16.0	29	30	86	0	GOOD
1841	10-May-92	PANAMA CITY	West	140	RR	GAM	16.0	29	30	86	0	GOOD
1842	10-May-92	PANAMA CITY	West	140	RR	GAM	16.0	29	30	86	0	GOOD
1843	11-Feb-92	PANAMA CITY	West	70	RR	GAM	27.0	30	0	86	10	GOOD
1844	04-May-92	PANAMA CITY	West	140	RR	GAM	22.0	29	30	86	0	GOOD
1846	10-May-92	PANAMA CITY	West	140	RR	GAM	16.0	29	30	86	0	GOOD
1847	10-May-92	PANAMA CITY	West	140	RR	GAM	20.0	29	30	86	0	GOOD
1848	04-May-92	PANAMA CITY	West	140	RR	GAM	16.0	29	30	86	0	GOOD
1849	04-May-92	PANAMA CITY	West	140	RR	GAM	27.5	29	30	86	0	GOOD
1851	22-Mar-92	VENICE	West	100	RR	GAM	33.0	27	17	83	0	GOOD
1852	22-Mar-92	VENICE	West	100	RR	GAM	33.0	27	17	83	0	GOOD
1861	12-Mar-92	VENICE	West	65	RR	GAM	34.0	27	2	82	43	GOOD
1862	22-Mar-92	VENICE	West	100	RR	GAM	35.0	27	17	83	0	GOOD
1872	01-May-92	VENICE	West	65	RR	GAM	15.0	27	2	82	43	GOOD
1874	01-May-92	VENICE	West	65	RR	GAM	16.0	27	2	82	43	GOOD
1875	01-May-92	VENICE	West	65	RR	GAM	24.0	27	2	82	43	GOOD
1878	01-May-92	VENICE	West	65	RR	GAM	16.0	27	2	82	43	GOOD
1879	01-May-92	VENICE	West	65	RR	GAM	18.0	27	2	82	43	GOOD
1880	01-May-92	VENICE	West	65	RR	GAM	17.5	27	2	82	43	GOOD
1921	30-Mar-92	SARASOTA	West	30	RR	COB	23.0	27	18	83	37	GOOD
1922	01-Apr-92	SARASOTA	West	30	RR	COB	34.0	27	18	83	37	GOOD
1923	01-Apr-92	SARASOTA	West	30	RR	COB	28.0	27	18	83	37	GOOD
1924	03-Apr-92	SARASOTA	West	30	RR	COB	29.5	27	18	83	37	GOOD
1925	06-Apr-92	SARASOTA	West	15	RR	GAM	15.5	27	20	82	34	GOOD
1926	13-Apr-92	SARASOTA	West	27	RR	COB	19.0	27	18	82	35	GOOD
1927	08-Apr-92	SARASOTA	West	30	RR	COB	32.0	27	17	82	37	GOOD
1928	08-Apr-92	SARASOTA	West	30	RR	COB	25.5	27	17	82	37	GOOD
1929	03-Apr-92	SARASOTA	West	30	RR	COB	23.5	27	18	83	37	GOOD
1930	03-Apr-92	SARASOTA	West	30	RR	COB	27.8	27	18	83	37	GOOD
1931	03-Apr-92	SARASOTA	West	30	RR	COB	30.0	27	18	83	37	GOOD
1932	03-Apr-92	SARASOTA	West	30	RR	COB	35.5	27	18	83	37	GOOD
1933	03-Apr-92	SARASOTA	West	30	RR	COB	29.0	27	18	83	37	GOOD
1934	03-Apr-92	SARASOTA	West	30	RR	COB	33.0	27	18	83	37	GOOD
1935	03-Apr-92	SARASOTA	West	30	RR	COB	28.5	27	18	83	37	GOOD
1936	03-Apr-92	SARASOTA	West	30	RR	COB	29.5	27	18	83	37	GOOD
1937	01-Apr-92	SARASOTA	West	30	RR	COB	24.0	27	18	83	37	GOOD
1938	30-Mar-92	SARASOTA	West	30	RR	COB	25.5	27	18	83	37	GOOD
1939	30-Mar-92	SARASOTA	West	30	RR	COB	23.5	27	18	83	37	GOOD
1940	30-Mar-92	SARASOTA	West	30	RR	COB	28.0	27	18	83	37	GOOD
1941	30-Mar-92	SARASOTA	West	30	RR	COB	28.0	27	18	83	37	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
1942	30-Mar-92	SARASOTA	West	30	RR	COB	25.0	27	18	83	37	GOOD
1943	30-Mar-92	SARASOTA	West	30	RR	COB	27.0	27	18	83	37	GOOD
1945	14-Apr-92	SARASOTA	West	27	RR	COB	35.0	27	18	82	35	GOOD
1946	14-Apr-92	SARASOTA	West	27	RR	COB	33.0	27	18	82	35	GOOD
1947	13-Apr-92	SARASOTA	West	27	RR	COB	25.0	27	18	82	35	GOOD
1948	13-Apr-92	SARASOTA	West	27	RR	COB	29.0	27	18	82	35	GOOD
1949	13-Apr-92	SARASOTA	West	27	RR	COB	21.0	27	18	82	35	GOOD
1950	13-Apr-92	SARASOTA	West	27	RR	COB	31.0	27	18	82	35	GOOD
197	06-Mar-91	BRADENTON	West	55	RR	GAM	24.0	27	25	83	0	GOOD
1978	14-Apr-92	VENICE	West	56	RR	GAM	17.0	27	0	82	38	GOOD
1979	14-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
198	26-Mar-91	BRADENTON	West	55	RR	GAM	24.0	27	25	83	0	GOOD
1980	14-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1981	14-Apr-92	VENICE	West	56	RR	GAM	15.0	27	0	82	38	GOOD
1982	14-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1983	14-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1984	14-Apr-92	VENICE	West	56	RR	GAM	15.0	27	0	82	38	GOOD
1985	14-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1986	15-Apr-92	VENICE	West	56	RR	GAM	14.0	27	0	82	38	GOOD
1987	15-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1988	15-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
1989	15-Apr-92	VENICE	West	56	RR	GAM	16.0	27	0	82	38	GOOD
199	26-Mar-91	BRADENTON	West	55	RR	GAM	24.0	27	25	83	0	GOOD
1990	16-Apr-92	VENICE	West	75	RR	GAM	36.0	27	2	82	43	GOOD
1991	16-Apr-92	VENICE	West	75	RR	GAM	35.0	27	2	82	43	POOR
1992	16-Apr-92	VENICE	West	75	RR	GAM	39.0	27	2	82	43	GOOD
1993	16-Apr-92	VENICE	West	75	RR	GAM	37.0	27	2	82	43	GOOD
1994	16-Apr-92	VENICE	West	75	RR	GAM	35.0	27	2	82	43	GOOD
1995	16-Apr-92	VENICE	West	75	RR	GAM	33.0	27	2	82	43	GOOD
1996	16-Apr-92	VENICE	West	75	RR	GAM	34.0	27	2	82	43	GOOD
1997	16-Apr-92	VENICE	West	75	RR	GAM	37.0	27	2	82	43	GOOD
1998	18-Apr-92	VENICE	West	65	RR	GAM	31.0	27	2	82	43	GOOD
1999	14-Apr-92	VENICE	West	56	RR	GAM	12.0	27	0	82	38	GOOD
200	26-Mar-91	BRADENTON	West	55	RR	GAM	24.0	27	25	83	0	GOOD
201	26-Mar-91	BRADENTON	West	55	RR	GAM	22.0	28	31	84	14	GOOD
201G	06-Oct-90	HUDSON	West	112	RR	GAM	28.3	28	23	83	50	GOOD
202	26-Mar-91	BRADENTON	West	55	RR	GAM	44.0	27	25	83	0	GOOD
203	15-Feb-91	BRADENTON	West	104	RR	GAM	22.0	27	28	83	20	GOOD
204	15-Feb-91	BRADENTON	West	104	RR	GAM	23.0	27	28	83	20	GOOD
205	15-Feb-91	BRADENTON	West	104	RR	GAM	22.0	27	28	83	20	GOOD
206	17-Jun-91	DUCK KEY	Keys	850	RR	DOL	14.0	24	30	80	44	EXCELLENT
207	17-Jun-91	DUCK KEY	Keys	875	RR	DOL	16.0	24	30	80	44	EXCELLENT
208	17-Jun-91	DUCK KEY	Keys	1025	RR	DOL	20.0	24	21	80	60	EXCELLENT
209	20-Jun-91	DUCK KEY	Keys	795	RR	DOL	18.0	24	20	80	60	FAIR
210	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	14.0	24	20	80	60	EXCELLENT
2103G	06-Oct-90	CEDAR KEY	West	100	RR	GAM	22.0	29	26	84	25	FAIR
2107	06-Oct-90	CEDAR KEY	West	121	RR	GAM	19.0	29	10	84	30	EXCELLENT
211	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	16.0	24	20	80	60	EXCELLENT
212	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	16.0	24	20	80	60	EXCELLENT
213	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	16.0	24	20	80	60	EXCELLENT
214	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	14.0	24	20	80	60	EXCELLENT
216	20-Jun-91	DUCK KEY	Keys	870	RR	DOL	20.0	24	20	80	60	EXCELLENT
217	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	20.0	24	28	80	42	GOOD
218	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	24.0	24	28	80	42	GOOD
219	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	20.0	24	28	80	42	GOOD
220	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	30.0	24	28	80	42	GOOD
221	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	24.0	24	28	80	42	GOOD
222	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	28.0	24	28	80	42	GOOD
223	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	30.0	24	28	80	42	GOOD
224	01-Jul-91	DUCK KEY	Keys	719	RR	DOL	30.0	24	28	80	42	GOOD
2288	10-Feb-91	PALM HARBOR	West	60	RR	GAM	27.0	28	10	83	14	GOOD
2289	10-Feb-91	PALM HARBOR	West	60	RR	GAM	27.0	28	10	83	14	GOOD
2298	10-Feb-91	PALM HARBOR	West	60	RR	GAM	27.0	28	10	83	14	GOOD
2458	06-Oct-90	VENICE	West	228	RR	GAM	41.3	27	3	83	15	GOOD
2460	06-Oct-90	VENICE	West	228	RR	GAM	39.5	27	5	84	11	FAIR
247	30-Jan-91	KEY WEST	Keys	588	CHL	GAM	19.5	24	52	83	15	GOOD
2474	10-Feb-91	PALM HARBOR	West	85	RR	GAM	10.0	28	15	83	28	GOOD
2480	10-Feb-91	PALM HARBOR	West	95	RR	GAM	25.0	28	15	83	35	GOOD
2482	10-Feb-91	PALM HARBOR	West	95	RR	GAM	23.0	28	15	83	35	GOOD
2484	10-Feb-91	PALM HARBOR	West	95	RR	GAM	20.0	28	15	83	35	GOOD
2488	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT
2489	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT
2490	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT
2491	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT
2492	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT
2493	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	23.0	28	15	83	40	EXCELLENT

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
2494	01-Mar-91	TARPON SPRINGS	West	110	RR	GAM	27.0	28	15	83	40	EXCELLENT
250	27-Jan-91	NAPLES	West	366	CHL	GAM	19.5	25	72	83	0	GOOD
256	30-Mar-92	SARASOTA	West	30	RR	COB	26.0	27	18	83	37	GOOD
257	30-Mar-92	SARASOTA	West	30	RR	COB	30.0	27	18	83	37	GOOD
258	27-Mar-92	SARASOTA	West	30	RR	COB	32.0	27	18	83	37	GOOD
259	16-Mar-92	SARASOTA	West	33	RR	COB	26.5	27	16	82	38	GOOD
260	16-Mar-92	SARASOTA	West	33	RR	COB	27.0	27	16	82	38	GOOD
2602	06-Oct-90	HUDSON	West	88	RR	GAM	25.5	28	31	82	5	GOOD
2603	06-Oct-90	HUDSON	West	88	RR	GAM	24.5	28	31	82	5	GOOD
2607	06-Oct-90	HUDSON	West	88	RR	GAM	25.0	28	31	82	5	GOOD
261	03-Mar-92	SARASOTA	West	31	RR	COB	26.0	27	17	82	37	GOOD
2617	06-Oct-90	HUDSON	West	88	RR	GAM	26.0	28	31	82	5	GOOD
2620	06-Oct-90	HUDSON	West	88	RR	GAM	24.1	28	31	82	5	GOOD
2626	06-Oct-90	HUDSON	West	88	RR	GAM	23.0	28	31	82	5	GOOD
2627	06-Oct-90	HUDSON	West	88	RR	GAM	25.0	28	31	82	5	GOOD
2628	06-Oct-90	HUDSON	West	88	RR	GAM	24.0	28	31	82	5	GOOD
2629	06-Oct-90	HUDSON	West	88	RR	GAM	24.0	28	31	82	5	GOOD
2630	06-Oct-90	HUDSON	West	88	RR	GAM	25.5	28	31	82	5	GOOD
2633	06-Oct-90	HUDSON	West	88	RR	GAM	24.3	28	31	82	5	GOOD
2637	06-Oct-90	HUDSON	West	88	RR	GAM	24.0	28	31	82	5	GOOD
2638	06-Oct-90	HUDSON	West	88	RR	GAM	24.8	28	31	82	5	GOOD
2641	06-Oct-90	HUDSON	West	88	RR	GAM	24.8	28	31	82	5	GOOD
2642	06-Oct-90	HUDSON	West	88	RR	GAM	24.5	28	31	82	5	GOOD
2648	06-Oct-90	HUDSON	West	88	RR	GAM	24.1	28	31	82	5	GOOD
2681	27-Jan-91	PALM HARBOR	West	105	RR	GAM	21.0	28	10	83	37	GOOD
2682	27-Jan-91	PALM HARBOR	West	105	RR	GAM	22.0	28	10	83	37	GOOD
2683	27-Jan-91	PALM HARBOR	West	105	RR	GAM	22.0	28	10	83	37	GOOD
2684	27-Jan-91	PALM HARBOR	West	105	RR	GAM	23.0	28	10	83	37	GOOD
2685	27-Jan-91	PALM HARBOR	West	105	RR	GAM	14.0	28	10	83	37	GOOD
2686	27-Jan-91	PALM HARBOR	West	105	RR	GAM	21.0	28	10	83	37	GOOD
2687	27-Jan-91	PALM HARBOR	West	105	RR	GAM	22.0	28	10	83	37	GOOD
2689	27-Jan-91	PALM HARBOR	West	105	RR	GAM	22.0	28	10	83	37	GOOD
2694	06-Feb-91	PALM HARBOR	West	105	RR	GAM	23.0	28	10	83	37	GOOD
2850	06-Oct-90	SARASOTA	West	135	RR	GAM	20.0	27	20	83	20	EXCELLENT
3001	27-May-92	SARASOTA	West	42	RR	GAM	16.0	27	17	82	42	GOOD
3002	28-May-92	SARASOTA	West	53	RR	GAM	25.0	27	12	82	42	GOOD
3003	28-May-92	SARASOTA	West	53	RR	GAM	25.0	27	12	82	42	GOOD
3004	28-May-92	SARASOTA	West	53	RR	GAM	14.5	27	12	82	42	GOOD
3005	28-May-92	SARASOTA	West	53	RR	GAM	21.0	27	12	82	42	GOOD
3006	28-May-92	SARASOTA	West	53	RR	GAM	35.0	27	12	82	42	GOOD
301	06-Oct-90	SARASOTA	West	170	RR	GAM	21.9	27	30	83	50	GOOD
302	06-Oct-90	ANNA MARIA	West	170	RR	GAM	34.5	27	52	84	5	GOOD
3027	16-Apr-92	SARASOTA	West	27	RR	COB	25.0	27	18	82	35	GOOD
3028	16-Apr-92	SARASOTA	West	27	RR	COB	26.0	27	18	82	35	GOOD
3029	17-Apr-92	SARASOTA	West	27	RR	COB	30.0	27	18	82	35	GOOD
303	06-Oct-90	SARASOTA	West	170	RR	GAM	24.8	27	30	83	50	GOOD
3030	17-Apr-92	SARASOTA	West	27	RR	COB	29.0	27	18	82	35	GOOD
3031	20-Apr-92	SARASOTA	West	27	RR	COB	24.5	27	18	82	35	GOOD
3032	20-Apr-92	SARASOTA	West	27	RR	COB	30.5	27	18	82	35	GOOD
3033	30-Apr-92	SARASOTA	West	27	RR	COB	31.0	27	18	82	35	GOOD
3034	13-Jun-92	SARASOTA	West	7	RR	COB	21.0	27	21	82	34	GOOD
3036	18-Jun-92	SANIBEL	West	15	RR	COB	19.7	26	2	81	40	GOOD
304	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.5	27	52	84	5	GOOD
305	06-Oct-90	SARASOTA	West	170	RR	GAM	20.0	27	30	83	50	GOOD
3050	08-Jul-92	PORT CHARLOTTE	West	130	LL	COB	23.6	26	45	82	10	GOOD
3051	18-Apr-92	VENICE	West	25	RR	COB	39.0	27	18	82	36	GOOD
3052	19-May-92	SARASOTA	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3053	19-May-92	SARASOTA	West	105	RR	GAM	28.0	27	6	83	3	GOOD
3054	19-May-92	SARASOTA	West	105	RR	GAM	33.0	27	6	83	3	GOOD
3055	19-May-92	SARASOTA	West	105	RR	GAM	27.1	27	6	83	3	GOOD
3056	19-May-92	SARASOTA	West	105	RR	GAM	28.5	27	6	83	3	GOOD
3057	19-May-92	SARASOTA	West	105	RR	GAM	21.0	27	6	83	3	GOOD
3058	19-May-92	SARASOTA	West	105	RR	GAM	35.5	27	6	83	3	GOOD
3059	19-May-92	SARASOTA	West	105	RR	GAM	34.0	27	6	83	3	GOOD
306	06-Oct-90	ANNA MARIA	West	155	RR	GAM	32.4	27	52	84	5	GOOD
3060	19-May-92	SARASOTA	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3061	19-May-92	SARASOTA	West	105	RR	GAM	27.7	27	6	83	3	GOOD
3062	22-May-92	SARASOTA	West	42	RR	COB	30.0	27	17	82	43	GOOD
3063	23-May-92	SARASOTA	West	42	RR	GAM	16.5	27	17	82	43	GOOD
3064	23-May-92	SARASOTA	West	105	RR	GAM	26.7	27	6	83	3	GOOD
3065	23-May-92	SARASOTA	West	105	RR	GAM	25.7	27	6	83	3	GOOD
3066	23-May-92	SARASOTA	West	105	RR	GAM	32.7	27	6	83	3	GOOD
3067	23-May-92	SARASOTA	West	105	RR	GAM	29.5	27	6	83	3	GOOD
3068	23-May-92	SARASOTA	West	105	RR	GAM	29.7	27	6	83	3	GOOD
3069	23-May-92	SARASOTA	West	105	RR	GAM	20.1	27	6	83	3	GOOD
307	06-Oct-90	ANNA MARIA	West	155	RR	GAM	34.4	27	52	84	5	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
3070	19-May-92	SARASOTA	West	105	RR	GAM	27.1	27	6	83	3	GOOD
3071	19-May-92	SARASOTA	West	105	RR	GAM	26.0	27	6	83	3	GOOD
3072	19-May-92	SARASOTA	West	105	RR	GAM	24.5	27	6	83	3	GOOD
3073	19-May-92	SARASOTA	West	105	RR	GAM	26.0	27	6	83	3	GOOD
3074	19-May-92	SARASOTA	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3075	19-May-92	SARASOTA	West	105	RR	GAM	33.0	27	6	83	3	GOOD
3076	19-May-92	SARASOTA	West	105	RR	GAM	32.5	27	6	83	3	GOOD
3077	19-May-92	SARASOTA	West	105	RR	GAM	29.5	27	6	83	3	GOOD
3078	19-May-92	SARASOTA	West	105	RR	GAM	26.0	27	6	83	3	GOOD
3079	19-May-92	SARASOTA	West	105	RR	GAM	33.5	27	6	83	3	GOOD
308	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.3	27	52	84	5	GOOD
3080	19-May-92	SARASOTA	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3081	19-May-92	SARASOTA	West	105	RR	GAM	26.5	27	6	83	3	GOOD
3082	19-May-92	SARASOTA	West	105	RR	GAM	28.0	27	6	83	3	GOOD
3083	20-Apr-92	SARASOTA	West	25	RR	COB	30.5	27	18	82	36	GOOD
3084	23-Apr-92	VENICE	West	105	RR	GAM	30.5	27	6	83	3	GOOD
3085	23-Apr-92	VENICE	West	105	RR	GAM	15.5	27	12	82	48	GOOD
3086	23-Apr-92	VENICE	West	105	RR	GAM	34.5	27	6	83	3	GOOD
3087	23-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3088	16-Apr-92	VENICE	West	26	RR	COB	28.5	27	18	82	36	GOOD
3089	17-Apr-92	VENICE	West	26	RR	COB	27.5	27	18	82	36	GOOD
309	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.1	27	52	84	5	GOOD
3090	18-Apr-92	VENICE	West	26	RR	COB	26.5	27	18	82	36	GOOD
3091	19-Apr-92	VENICE	West	26	RR	COB	31.0	27	18	82	36	GOOD
3092	24-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3093	24-Apr-92	VENICE	West	105	RR	GAM	35.5	27	6	83	3	GOOD
3094	24-Apr-92	VENICE	West	105	RR	GAM	28.5	27	6	83	3	GOOD
3095	24-Apr-92	VENICE	West	105	RR	GAM	33.5	27	6	83	3	GOOD
3096	26-Apr-92	VENICE	West	25	RR	COB	30.5	27	18	82	36	GOOD
3097	30-Apr-92	VENICE	West	60	RR	GAM	34.0	27	12	82	48	GOOD
3098	30-Apr-92	VENICE	West	60	RR	GAM	15.0	27	12	82	48	GOOD
3099	02-May-92	VENICE	West	25	RR	COB	32.0	27	18	82	36	GOOD
310	06-Oct-90	ANNA MARIA	West	155	RR	GAM	20.0	27	52	84	5	GOOD
3100	02-May-92	VENICE	West	25	RR	COB	32.0	27	18	82	36	GOOD
3101	25-Apr-92	VENICE	West	105	RR	GAM	28.0	27	6	83	3	GOOD
3102	25-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	POOR
3103	21-Apr-92	VENICE	West	65	RR	GAM	40.0	27	2	82	43	GOOD
3104	21-Apr-92	VENICE	West	65	RR	GAM	35.0	27	2	82	43	GOOD
3105	21-Apr-92	VENICE	West	65	RR	GAM	39.0	27	2	82	43	GOOD
3106	21-Apr-92	VENICE	West	65	RR	GAM	36.0	27	2	82	43	GOOD
3108	21-Apr-92	VENICE	West	65	RR	GAM	36.0	27	2	82	43	GOOD
3109	21-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
311G	06-Oct-90	ANNA MARIA	West	155	RR	GAM	35.4	27	52	84	5	GOOD
3110	21-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
3111	21-Apr-92	VENICE	West	65	RR	GAM	31.0	27	2	82	43	GOOD
3112	21-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
3113	21-Apr-92	VENICE	West	65	RR	GAM	36.0	27	2	82	43	GOOD
3114	21-Apr-92	VENICE	West	65	RR	GAM	39.0	27	2	82	43	GOOD
3115	21-Apr-92	VENICE	West	65	RR	GAM	35.0	27	2	82	43	GOOD
3116	21-Apr-92	VENICE	West	65	RR	GAM	36.0	27	2	82	43	GOOD
3117	21-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
3118	20-Apr-92	VENICE	West	65	RR	GAM	40.0	27	2	82	43	GOOD
3119	21-Apr-92	VENICE	West	65	RR	GAM	38.0	27	2	82	43	GOOD
312	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.0	27	52	84	5	GOOD
3120	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	POOR
3121	20-Apr-92	VENICE	West	65	RR	GAM	33.0	27	2	82	43	GOOD
3122	20-Apr-92	VENICE	West	65	RR	GAM	38.0	27	2	82	43	GOOD
3123	20-Apr-92	VENICE	West	65	RR	GAM	39.0	27	2	82	43	GOOD
3125	21-Apr-92	VENICE	West	65	RR	GAM	38.0	27	2	82	43	GOOD
3126	25-Apr-92	VENICE	West	105	RR	GAM	26.0	27	6	83	3	POOR
3127	25-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3128	20-Apr-92	VENICE	West	65	RR	GAM	35.0	27	2	82	43	GOOD
3129	20-Apr-92	VENICE	West	65	RR	GAM	39.0	27	2	82	43	GOOD
313	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.8	27	52	84	5	GOOD
3130	21-Apr-92	VENICE	West	65	RR	GAM	39.0	27	2	82	43	GOOD
3132	20-Apr-92	VENICE	West	65	RR	GAM	35.0	27	2	82	43	GOOD
3133	20-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
3134	20-Apr-92	VENICE	West	65	RR	GAM	38.0	27	2	82	43	POOR
3135	20-Apr-92	VENICE	West	65	RR	GAM	38.0	27	2	82	43	GOOD
3136	20-Apr-92	VENICE	West	65	RR	GAM	31.0	27	2	82	43	GOOD
3137	20-Apr-92	VENICE	West	65	RR	GAM	40.0	27	2	82	43	GOOD
3138	20-Apr-92	VENICE	West	65	RR	GAM	36.0	27	2	82	43	GOOD
3139	20-Apr-92	VENICE	West	65	RR	GAM	37.0	27	2	82	43	GOOD
314	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.0	27	52	84	5	GOOD
3140	20-Apr-92	VENICE	West	65	RR	GAM	32.0	27	2	82	43	GOOD
315	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.6	27	52	84	5	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
316	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.1	27	52	84	5	GOOD
3165	10-Feb-91	PALM HARBOR	West	155	RR	GAM	16.5	28	10	84	12	FAIR
317	06-Oct-90	ANNA MARIA	West	155	RR	GAM	30.9	27	52	84	5	GOOD
3173	30-Apr-91	PALM HARBOR	West	155	RR	GAM	15.0	28	10	84	12	FAIR
318	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.3	27	52	84	5	GOOD
319	06-Oct-90	ANNA MARIA	West	155	RR	GAM	20.3	27	52	84	5	GOOD
320	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.6	27	52	84	5	GOOD
321	06-Oct-90	ANNA MARIA	West	155	RR	GAM	36.0	27	52	84	5	GOOD
322	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.1	27	52	84	5	GOOD
3221	25-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	GOOD
3222	25-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3223	25-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3224	25-Apr-92	VENICE	West	105	RR	GAM	41.0	27	6	83	3	GOOD
3225	25-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3226	25-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3227	25-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3228	25-Apr-92	VENICE	West	105	RR	GAM	32.0	27	6	83	3	GOOD
3229	25-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
323	06-Oct-90	ANNA MARIA	West	155	RR	GAM	20.9	27	52	84	5	GOOD
3230	25-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3231	25-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3232	25-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3233	25-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	GOOD
3234	25-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	GOOD
3236	25-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3237	25-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3238	24-Apr-92	VENICE	West	105	RR	GAM	28.0	27	6	83	3	GOOD
3239	24-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
324G	06-Oct-90	ANNA MARIA	West	180	RR	GAM	43.6	27	52	84	5	GOOD
3240	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3241	24-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3242	24-Apr-92	VENICE	West	105	RR	GAM	29.0	27	6	83	3	POOR
3243	24-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3244	24-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3245	24-Apr-92	VENICE	West	105	RR	GAM	33.0	27	6	83	3	GOOD
3246	24-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3247	24-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3248	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3249	24-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3250	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3300	06-Oct-90	VENICE	West	182	RR	GAM	43.8	27	5	83	30	POOR
3326	24-Apr-92	VENICE	West	105	RR	GAM	37.0	27	6	83	3	GOOD
3327	24-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3328	24-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	POOR
3329	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3330	24-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	GOOD
3331	24-Apr-92	VENICE	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3332	24-Apr-92	VENICE	West	105	RR	COB	30.0	27	6	83	3	GOOD
3333	24-Apr-92	VENICE	West	105	RR	GAM	36.0	27	6	83	3	GOOD
3334	24-Apr-92	VENICE	West	105	RR	GAM	38.0	27	6	83	3	GOOD
3335	24-Apr-92	VENICE	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3501	23-May-92	SARASOTA	West	105	RR	GAM	32.0	27	6	83	3	GOOD
3502	23-May-92	SARASOTA	West	105	RR	GAM	33.1	27	6	83	3	GOOD
3503	23-May-92	SARASOTA	West	105	RR	GAM	35.0	27	6	83	3	GOOD
3504	23-May-92	SARASOTA	West	105	RR	GAM	32.0	27	6	83	3	GOOD
3505	23-May-92	SARASOTA	West	105	RR	GAM	27.7	27	6	83	3	GOOD
3506	23-May-92	SARASOTA	West	105	RR	GAM	30.0	27	6	83	3	GOOD
3507	23-May-92	SARASOTA	West	105	RR	GAM	24.0	27	6	83	3	GOOD
3508	24-May-92	SARASOTA	West	105	RR	GAM	29.0	27	6	83	3	GOOD
3509	24-May-92	SARASOTA	West	105	RR	GAM	35.5	27	6	83	3	GOOD
3510	24-May-92	SARASOTA	West	105	RR	GAM	25.0	27	6	83	3	GOOD
3511	24-May-92	SARASOTA	West	105	RR	GAM	34.0	27	6	83	3	GOOD
3512	24-May-92	SARASOTA	West	48	RR	GAM	15.1	27	16	82	47	GOOD
3514	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	27.0	28	15	83	40	EXCELLENT
3515	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	26.0	28	15	83	40	EXCELLENT
3516	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	28.0	28	15	83	40	EXCELLENT
3517	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	27.0	28	15	83	40	EXCELLENT
3518	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	27.0	28	15	83	40	EXCELLENT
3519	20-Jun-91	TARPON SPRINGS	West	70	RR	GAM	27.0	28	15	83	40	EXCELLENT
3520	12-Jun-91	TARPON SPRINGS	West	70	RR	GAM	28.0	28	15	83	40	EXCELLENT
3521	12-Jun-91	TARPON SPRINGS	West	70	RR	GAM	29.0	28	15	83	40	EXCELLENT
3523	24-May-92	SARASOTA	West	48	RR	GAM	15.0	27	16	82	47	GOOD
3624	30-May-92	PANAMA CITY	West	90	RR	GAM	26.0	30	0	86	0	GOOD
3625	30-May-92	PANAMA CITY	West	90	RR	GAM	24.0	30	0	86	0	GOOD
3626	30-May-92	PANAMA CITY	West	110	RR	GAM	27.0	29	55	86	0	GOOD
3627	30-May-92	PANAMA CITY	West	110	RR	GAM	24.0	29	55	86	0	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
3628	30-May-92	PANAMA CITY	West	110	RR	GAM	24.0	29	55	86	0	GOOD
3629	30-May-92	PANAMA CITY	West	90	RR	GAM	24.0	30	0	86	0	GOOD
3630	06-Jun-92	PANAMA CITY	West	90	RR	GAM	27.0	30	0	86	0	GOOD
3631	06-Jun-92	PANAMA CITY	West	90	RR	GAM	20.0	30	0	86	0	GOOD
3632	06-Jun-92	PANAMA CITY	West	90	RR	GAM	25.0	30	0	86	0	GOOD
3633	06-Jun-92	PANAMA CITY	West	90	RR	GAM	24.0	30	0	86	0	GOOD
3634	06-Jun-92	PANAMA CITY	West	90	RR	GAM	26.0	30	0	86	0	GOOD
3635	06-Jun-92	PANAMA CITY	West	90	RR	GAM	26.0	30	0	86	0	GOOD
3636	23-Jun-92	PANAMA CITY	West	85	RR	GAM	26.0	30	5	86	5	GOOD
3637	23-Jun-92	PANAMA CITY	West	85	RR	GAM	27.0	30	5	86	5	GOOD
3638	17-Jun-92	PANAMA CITY	West	120	RR	GAM	27.0	29	50	86	0	GOOD
3639	23-Jun-92	PANAMA CITY	West	85	RR	GAM	25.0	30	5	86	5	GOOD
3640	23-Jun-92	PANAMA CITY	West	85	RR	GAM	24.0	30	5	86	5	GOOD
3641	17-Jun-92	PANAMA CITY	West	120	RR	GAM	24.0	29	50	86	0	GOOD
3642	17-Jun-92	PANAMA CITY	West	125	RR	GAM	27.0	29	50	86	0	POOR
3643	23-Jun-92	PANAMA CITY	West	85	RR	GAM	24.0	30	5	86	5	GOOD
3644	23-Jun-92	PANAMA CITY	West	85	RR	GAM	27.0	30	5	86	5	GOOD
3645	23-Jun-92	PANAMA CITY	West	85	RR	GAM	26.0	30	5	86	5	GOOD
3646	23-Jun-92	PANAMA CITY	West	85	RR	GAM	24.0	30	5	86	5	GOOD
3647	23-Jun-92	PANAMA CITY	West	85	RR	GAM	27.0	30	5	86	5	GOOD
3648	23-Jun-92	PANAMA CITY	West	85	RR	GAM	25.0	30	5	86	5	GOOD
3649	23-Jun-92	PANAMA CITY	West	85	RR	GAM	26.0	30	5	86	5	GOOD
3650	30-May-92	PANAMA CITY	West	90	RR	GAM	27.0	30	0	86	0	GOOD
3676	17-Jun-92	LARGO	West	20	RR	COB	22.0	27	55	82	54	GOOD
3677	19-Jun-92	ST. PETERSBURG	West	20	RR	COB	30.0	27	55	82	54	GOOD
3678	06-Jul-92	ST. PETERSBURG	West	21	RR	COB	21.3	27	57	82	53	GOOD
3769	16-Jul-92	LARGO	West	19	RR	COB	24.0	27	57	82	54	
3796	14-Jul-92	MELBOURNE	East	170	RR	GAM	27.0	28	15	80	0	
3797	14-Jul-92	MELBOURNE	East	90	RR	COB	32.0	28	5	80	15	
3798	13-Jul-92	MELBOURNE	East	90	RR	COB	31.0	28	5	80	15	
3799	10-Jul-92	SEBASTIAN	East	164	RR	GAM	22.0	27	50	80	0	POOR
3800	10-Jul-92	MELBOURNE	East	170	RR	GAM	27.0	27	55	80	0	
3810G	20-Jun-91	CEDAR KEY	West	30	RR	COB	29.0	29	8	83	15	GOOD
3947	06-Oct-90	SARASOTA	West	247	RR	GAM	48.0	27	30	84	13	GOOD
4051G	05-Nov-91	TAMPA	West	125	RR	GAM	26.5	28	11	84	5	GOOD
4052G	05-Nov-91	TAMPA	West	125	RR	GAM	27.0	28	11	84	5	GOOD
4053G	05-Nov-91	TAMPA	West	125	RR	GAM	27.5	28	11	84	5	GOOD
4054G	05-Nov-91	TAMPA	West	125	RR	GAM	25.5	28	11	84	5	GOOD
4058G	05-Nov-91	TAMPA	West	125	RR	GAM	14.5	28	11	84	5	GOOD
4059G	05-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4060G	05-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4061G	05-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4062G	05-Nov-91	TAMPA	West	125	RR	GAM	13.0	28	11	84	5	GOOD
4063G	05-Nov-91	TAMPA	West	125	RR	GAM	13.5	28	11	84	5	GOOD
4064G	05-Nov-91	TAMPA	West	125	RR	GAM	15.0	28	11	84	5	GOOD
4065G	05-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4066G	06-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4067G	06-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4068G	06-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4069G	06-Nov-91	TAMPA	West	125	RR	GAM	15.5	28	11	84	5	GOOD
4070G	06-Nov-91	TAMPA	West	125	RR	GAM	14.0	28	11	84	5	GOOD
4071G	06-Nov-91	TAMPA	West	125	RR	GAM	13.5	28	11	84	5	GOOD
4072G	16-Nov-91	SARASOTA	West	135	RR	GAM	26.0	26	47	83	25	GOOD
4503G	12-Jan-92	CORTEZ	West	140	LL	COB	31.0	27	0	83	15	EXCELLENT
451	06-Oct-90	VENICE	West	195	RR	GAM	34.5	27	10	84	0	GOOD
452	06-Oct-90	VENICE	West	195	RR	GAM	25.8	27	10	84	0	GOOD
4520G	12-Jan-92	VENICE	West	140	LL	GAM	31.3	27	0	83	15	EXCELLENT
453	06-Oct-90	SARASOTA	West	170	RR	GAM	32.4	27	30	83	50	GOOD
454	06-Oct-90	SARASOTA	West	170	RR	GAM	20.3	27	30	83	50	GOOD
455	06-Oct-90	SARASOTA	West	170	RR	GAM	39.0	27	30	83	50	POOR
456	06-Oct-90	SARASOTA	West	170	RR	GAM	24.3	27	30	83	50	GOOD
457	06-Oct-90	SARASOTA	West	170	RR	GAM	20.0	27	30	83	50	GOOD
458	06-Oct-90	SARASOTA	West	170	RR	GAM	21.5	27	30	83	50	GOOD
459	06-Oct-90	SARASOTA	West	170	RR	GAM	28.0	27	30	83	50	DEAD
460	06-Oct-90	SARASOTA	West	170	RR	GAM	27.0	27	30	83	50	GOOD
461	06-Oct-90	SARASOTA	West	170	RR	GAM	21.5	27	30	83	50	GOOD
462	06-Oct-90	ANNA MARIA	West	170	RR	GAM	25.8	27	52	84	5	GOOD
463	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.8	27	52	84	5	POOR
464	06-Oct-90	ANNA MARIA	West	155	RR	GAM	31.5	27	52	84	5	GOOD
465	06-Oct-90	ANNA MARIA	West	155	RR	GAM	33.1	27	52	84	5	POOR
466	06-Oct-90	ANNA MARIA	West	155	RR	GAM	22.0	27	52	84	5	GOOD
467	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.0	27	52	84	5	POOR
468	06-Oct-90	ANNA MARIA	West	155	RR	GAM	18.9	27	52	84	5	GOOD
469	06-Oct-90	ANNA MARIA	West	155	RR	GAM	20.0	27	52	84	5	GOOD
470G	06-Oct-90	ANNA MARIA	West	155	RR	GAM	28.5	27	52	84	5	POOR
471	06-Oct-90	ANNA MARIA	West	155	RR	GAM	20.0	27	52	84	5	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
472	06-Oct-90	ANNA MARIA	West	155	RR	GAM	19.5	27	52	84	5	GOOD
473	06-Oct-90	ANNA MARIA	West	155	RR	GAM	21.0	27	52	84	5	GOOD
491	30-Mar-91	PORT CANAVERAL	East	40	RR	COB	37.0	28	33	80	25	GOOD
492	30-Mar-91	PORT CANAVERAL	East	40	RR	COB	45.0	28	33	80	25	EXCELLENT
493	30-Mar-91	PORT CANAVERAL	East	40	RR	COB	44.0	28	33	80	25	EXCELLENT
494	30-Mar-91	PORT CANAVERAL	East	40	RR	COB	35.0	28	33	80	25	EXCELLENT
496	06-Apr-91	PORT CANAVERAL	East	37	RR	COB	34.0	28	25	80	30	EXCELLENT
497	11-Apr-91	PORT CANAVERAL	East	15	RR	COB	26.0	28	35	80	28	EXCELLENT
498	11-Apr-91	PORT CANAVERAL	East	15	RR	COB	26.0	28	35	80	28	EXCELLENT
499	20-Apr-91	PORT CANAVERAL	East	35	RR	COB	33.0	28	30	80	25	EXCELLENT
500	07-Jul-91	PORT CANAVERAL	East	109	RR	DOL	14.0	28	40	80	20	EXCELLENT
5207G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	27.5	28	58	84	17	EXCELLENT
5208G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	25.5	28	58	84	17	EXCELLENT
5209G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	28.0	28	58	84	17	EXCELLENT
5210G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	21.5	28	58	84	17	EXCELLENT
5211G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	26.5	28	58	84	17	EXCELLENT
5212G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	27.5	28	58	84	17	EXCELLENT
5213G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	27.0	28	58	84	17	EXCELLENT
5214G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	33.0	28	58	84	17	EXCELLENT
5215G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	23.0	28	58	84	17	EXCELLENT
5216G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	25.8	28	58	84	17	EXCELLENT
5217G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	20.3	28	58	84	17	EXCELLENT
5218G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	20.0	28	58	84	17	EXCELLENT
5219G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	28.3	28	58	84	17	EXCELLENT
5220G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	32.0	28	58	84	17	EXCELLENT
5221G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	31.5	28	58	84	17	EXCELLENT
5222G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	34.0	28	58	84	17	EXCELLENT
5223G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	30.5	28	58	84	17	EXCELLENT
5224G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	29.8	28	58	84	17	EXCELLENT
5225G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	19.5	28	58	84	17	EXCELLENT
5226G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	26.5	28	58	84	17	EXCELLENT
5227G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	28.5	28	58	84	17	EXCELLENT
5230G	07-Sep-91	CRYSTAL RIVER	West	105	RR	GAM	21.5	28	58	84	17	EXCELLENT
5301G	07-Sep-91	ST. PETERSBURG	West	117	RR	GAM	14.0	27	51	83	37	GOOD
5351G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	48.0	27	48	84	11	EXCELLENT
5352G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	50.5	27	48	84	11	GOOD
5353G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	48.0	27	48	84	11	EXCELLENT
5354G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	50.5	27	48	84	11	EXCELLENT
5355G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	48.0	27	48	84	11	EXCELLENT
5356G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	43.0	27	48	84	11	EXCELLENT
5357G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	41.0	27	48	84	11	GOOD
5358G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	33.5	27	48	84	11	EXCELLENT
5359G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	48.5	27	48	84	11	EXCELLENT
5360G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	52.0	27	48	84	11	EXCELLENT
5361G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	52.0	27	48	84	11	EXCELLENT
5362G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	44.0	27	48	84	11	GOOD
5363G	07-Sep-91	ST. PETERSBURG	West	212	RR	GAM	45.5	27	48	84	11	EXCELLENT
5447G	07-Sep-91	ANNA MARIA	West	175	RR	GAM	27.0	27	34	83	53	GOOD
5448G	07-Sep-91	ANNA MARIA	West	175	RR	GAM	39.5	27	34	83	53	GOOD
5449G	07-Sep-91	ANNA MARIA	West	175	RR	GAM	28.0	27	34	83	53	GOOD
5450G	07-Sep-91	ANNA MARIA	West	175	RR	GAM	26.0	27	34	83	53	POOR
551	11-May-91	COCOA BEACH	East	65	RR	COB	31.0	28	25	80	20	EXCELLENT
552	11-May-91	COCOA BEACH	East	65	RR	COB	33.0	28	25	80	20	EXCELLENT
553	11-May-91	COCOA BEACH	East	65	RR	COB	32.0	28	25	80	20	EXCELLENT
554	11-May-91	COCOA BEACH	East	65	RR	COB	24.0	28	25	80	20	EXCELLENT
555	11-May-91	COCOA BEACH	East	65	RR	COB	28.0	28	25	80	20	EXCELLENT
5556G	08-Apr-92	SARASOTA	West	120	RR	GAM	25.0	28	30	84	20	GOOD
556	11-May-91	COCOA BEACH	East	65	RR	COB	31.0	28	25	80	20	EXCELLENT
5565G	05-Apr-92	MADEIRA BEACH	West	90	RR	GAM	16.0	27	38	83	12	GOOD
5571G	05-Apr-92	MADEIRA BEACH	West	90	RR	GAM	16.0	27	38	83	12	GOOD
5572G	05-Apr-92	MADEIRA BEACH	West	90	RR	GAM	16.0	27	38	83	12	GOOD
5701G	07-Sep-91	SARASOTA	West	150	RR	GAM	32.0	27	20	83	35	GOOD
5702G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.0	27	20	83	35	EXCELLENT
5703G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	20	83	25	POOR
5704G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	20	83	25	GOOD
5705G	07-Sep-91	SARASOTA	West	150	RR	GAM	32.0	27	20	83	35	GOOD
5707G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	20	83	25	GOOD
5708G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.5	27	20	83	35	GOOD
5709G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.0	27	20	83	35	GOOD
571	28-Jul-91	PORT CANAVERAL	East	40	RR	COB	33.0	28	30	80	25	EXCELLENT
5710G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.0	27	20	83	25	GOOD
5711G	07-Sep-91	SARASOTA	West	150	RR	GAM	38.0	27	20	83	35	GOOD
5712G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	20	83	35	POOR
5713G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.5	27	20	83	35	GOOD
5714G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	20	83	35	GOOD
5715G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.5	27	20	83	25	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records.
(G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
5715G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.5	27	20	83	35	GOOD
5716G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.5	27	20	83	35	POOR
5717G	07-Sep-91	SARASOTA	West	150	RR	GAM	27.5	27	20	83	25	GOOD
5718G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.0	27	20	83	35	GOOD
5719G	07-Sep-91	SARASOTA	West	150	RR	GAM	26.0	27	20	83	25	GOOD
572	04-Aug-91	PORT CANAVERAL	East	30	RR	COB	36.0	28	30	80	25	EXCELLENT
573	02-Sep-91	PORT CANAVERAL	East	40	RR	COB	30.0	28	30	80	28	EXCELLENT
574	01-Mar-92	PORT CANAVERAL	East	40	RR	COB	38.2	28	30	80	25	EXCELLENT
575	08-Mar-92	PORT CANAVERAL	East	40	RR	COB	35.0	28	25	80	25	EXCELLENT
576	08-Mar-92	PORT CANAVERAL	East	40	RR	COB	29.0	28	25	80	25	EXCELLENT
577	08-Mar-92	PORT CANAVERAL	East	40	RR	COB	29.0	28	25	80	25	EXCELLENT
578	08-Mar-92	PORT CANAVERAL	East	40	RR	COB	33.0	28	25	80	25	EXCELLENT
579	22-Mar-92	PORT CANAVERAL	East	40	RR	COB	33.0	28	25	80	25	EXCELLENT
580	22-Mar-92	PORT CANAVERAL	East	40	RR	COB	33.0	28	25	80	25	EXCELLENT
581	22-Mar-92	PORT CANAVERAL	East	40	RR	COB	29.0	28	25	80	25	EXCELLENT
583	01-Apr-92	PORT CANAVERAL	East	35	RR	COB	38.0	28	25	80	30	GOOD
591	01-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	25	80	25	GOOD
592	31-Mar-92	PORT CANAVERAL	East	30	RR	COB	28.0	28	25	80	25	GOOD
593	31-Mar-92	PORT CANAVERAL	East	30	RR	COB	28.0	28	25	80	25	GOOD
594	31-Mar-92	PORT CANAVERAL	East	30	RR	COB	33.0	28	25	80	25	GOOD
595	31-Mar-92	PORT CANAVERAL	East	30	RR	COB	27.0	28	25	80	25	GOOD
596	31-Mar-92	PORT CANAVERAL	East	30	RR	COB	27.0	28	25	80	25	GOOD
597	01-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	25	80	25	GOOD
598	01-Apr-92	PORT CANAVERAL	East	30	RR	COB	31.0	28	25	80	25	GOOD
599	01-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	25	80	25	GOOD
6	16-Aug-91	KEY LARGO	Keys	900	RR	DOL	18.0	25	15	79	50	GOOD
600	01-Apr-92	PORT CANAVERAL	East	30	RR	COB	28.0	28	25	80	25	GOOD
601	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	33.0	28	30	80	30	GOOD
602	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	28.0	28	30	80	30	GOOD
603	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	30	80	30	GOOD
604	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	30	80	30	GOOD
605	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	31.0	28	30	80	30	GOOD
606	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	30.0	28	30	80	30	GOOD
607	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	31.0	28	30	80	30	GOOD
608	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	31.0	28	30	80	30	GOOD
609	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	31.0	28	30	80	30	GOOD
610	04-Apr-92	PORT CANAVERAL	East	30	RR	COB	28.0	28	30	80	30	GOOD
6254G	07-Sep-91	SARASOTA	West	95	RR	GAM	16.0	27	20	83	35	GOOD
631	06-Apr-91	TORTUGAS	West	1330	RR	DOL	22.5	24	17	82	51	POOR
632	18-Oct-91	BILOXI	West	222	RR	GAM	24.0	29	15	88	24	GOOD
633	19-Oct-91	BILOXI	West	222	RR	GAM	17.0	29	15	88	24	GOOD
634	19-Oct-91	BILOXI	West	257	RR	GAM	28.3	29	15	88	24	POOR
635	21-Oct-91	BILOXI	West	230	RR	DOL	19.3	29	14	88	19	GOOD
636	02-Apr-92	TORTUGAS	West	68	RR	GAM	18.0	24	36	83	4	GOOD
66	16-Nov-91	PANAMA CITY	West	80	RR	GAM	26.0	30	5	86	10	GOOD
67	16-Nov-91	PANAMA CITY	West	80	RR	GAM	15.0	30	5	86	10	GOOD
6751G	07-Sep-91	SARASOTA	West	150	RR	GAM	19.1	27	25	83	35	EXCELLENT
6752G	07-Sep-91	SARASOTA	West	150	RR	GAM	27.5	27	25	83	35	EXCELLENT
6753G	07-Sep-91	SARASOTA	West	150	RR	GAM	34.5	27	25	83	35	EXCELLENT
6754G	07-Sep-91	SARASOTA	West	150	RR	GAM	30.5	27	25	83	35	EXCELLENT
6755G	07-Sep-91	SARASOTA	West	150	RR	GAM	27.5	27	25	83	35	EXCELLENT
6756G	07-Sep-91	SARASOTA	West	150	RR	GAM	30.0	27	25	83	35	EXCELLENT
6757G	07-Sep-91	SARASOTA	West	150	RR	GAM	30.0	27	25	83	35	EXCELLENT
6758G	07-Sep-91	SARASOTA	West	150	RR	GAM	27.0	27	25	83	35	EXCELLENT
6759G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.5	27	25	83	35	EXCELLENT
676	25-Jun-91	SARASOTA	West	50	RR	GAM	12.0	27	20	82	30	GOOD
6760	07-Sep-91	SARASOTA	West	150	RR	GAM	33.0	27	25	83	35	EXCELLENT
6761G	07-Sep-91	SARASOTA	West	150	RR	GAM	27.5	27	25	83	35	EXCELLENT
6762G	07-Sep-91	SARASOTA	West	150	RR	GAM	35.0	27	25	83	35	EXCELLENT
6763G	07-Sep-91	SARASOTA	West	150	RR	GAM	30.0	27	25	83	35	EXCELLENT
6764G	07-Sep-91	SARASOTA	West	150	RR	GAM	30.5	27	25	83	35	EXCELLENT
6765G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.7	27	25	83	35	EXCELLENT
6766G	07-Sep-91	SARASOTA	West	150	RR	GAM	26.7	27	10	83	5	EXCELLENT
6767G	07-Sep-91	SARASOTA	West	150	RR	GAM	26.0	27	10	83	5	EXCELLENT
6768G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.0	27	10	83	5	EXCELLENT
677	25-Jun-91	SARASOTA	West	26	RR	COB	23.0	27	15	82	35	GOOD
6770G	07-Sep-91	SARASOTA	West	150	RR	GAM	28.7	26	50	83	30	EXCELLENT
6771G	07-Sep-91	SARASOTA	West	150	RR	GAM	29.0	26	50	83	30	POOR
6772G	07-Sep-91	SARASOTA	West	150	RR	GAM	31.7	26	50	83	30	POOR
678	31-Aug-91	SARASOTA	West	50	RR	COB	28.0	27	20	82	30	GOOD
679	19-Sep-91	SARASOTA	West	50	RR	GAM	13.0	27	20	82	30	GOOD
68	16-Nov-91	PANAMA CITY	West	80	RR	GAM	26.0	30	5	86	10	GOOD
680	23-Sep-91	SARASOTA	West	12	RR	COB	20.0	28	17	82	51	GOOD
681	23-Sep-91	SARASOTA	West	12	RR	COB	24.0	28	17	82	51	GOOD
682	10-Oct-91	SARASOTA	West	12	RR	COB	29.0	28	17	82	51	GOOD
683	15-Oct-91	SARASOTA	West	26	RR	COB	30.0	27	20	82	30	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
684	15-Oct-91	SARASOTA	West	26	RR	COB	30.0	27	20	82	30	GOOD
685	15-Oct-91	SARASOTA	West	26	RR	COB	30.0	27	20	82	30	GOOD
686	20-Oct-91	SARASOTA	West	27	RR	COB	26.0	27	15	82	30	GOOD
687	20-Oct-91	SARASOTA	West	27	RR	COB	30.0	27	15	82	30	GOOD
688	20-Oct-91	SARASOTA	West	27	RR	COB	27.0	27	15	82	30	GOOD
689	20-Oct-91	SARASOTA	West	27	RR	COB	27.0	27	15	82	30	GOOD
69	16-Nov-91	PANAMA CITY	West	80	RR	GAM	26.0	30	10	86	10	GOOD
690	20-Oct-91	SARASOTA	West	27	RR	COB	34.0	27	15	82	30	GOOD
7	16-Aug-91	KEY LARGO	Keys	900	RR	DOL	20.0	25	15	79	50	GOOD
70	16-Nov-91	PANAMA CITY	West	80	RR	GAM	20.0	30	10	86	10	GOOD
71	16-Nov-91	PANAMA CITY	West	80	RR	GAM	24.0	30	10	86	10	GOOD
72	16-Nov-91	PANAMA CITY	West	80	RR	GAM	14.0	30	5	86	10	GOOD
73	16-Nov-91	PANAMA CITY	West	80	RR	GAM	16.0	30	10	86	10	GOOD
74	16-Nov-91	PANAMA CITY	West	80	RR	GAM	16.0	30	5	86	10	GOOD
75	16-Nov-91	PANAMA CITY	West	80	RR	GAM	16.0	30	10	86	10	GOOD
76	19-Jun-91	ISLAMORADA	Keys	750	RR	DOL	20.0	24	34	80	21	GOOD
77	19-Jun-91	ISLAMORADA	Keys	750	RR	DOL	21.0	24	34	80	21	GOOD
78	19-Jun-91	ISLAMORADA	Keys	750	RR	DOL	20.0	24	34	80	21	EXCELLENT
79	19-Jun-91	ISLAMORADA	Keys	750	RR	DOL	40.0	24	37	80	22	EXCELLENT
8	16-Aug-91	KEY LARGO	Keys	900	RR	DOL	24.0	25	15	79	50	GOOD
80	19-Jun-91	ISLAMORADA	Keys	750	RR	DOL	21.0	24	33			GOOD
807	05-Nov-90	PALM HARBOR	West	100	RR	GAM	16.0	28	10	83	45	GOOD
81	17-Jun-91	ISLAMORADA	Keys	750	RR	DOL	22.0	24	36	80	24	EXCELLENT
813	05-Nov-90	PALM HARBOR	West	100	RR	GAM	20.0	28	10	83	45	GOOD
814	05-Nov-90	PALM HARBOR	West	100	RR	GAM	22.0	28	10	83	45	GOOD
818	05-Nov-90	PALM HARBOR	West	100	RR	GAM	18.0	28	10	83	45	GOOD
82	16-Jun-91	ISLAMORADA	Keys	750	RR	DOL	22.0	24	36	80	25	EXCELLENT
83	16-Jun-91	ISLAMORADA	Keys	750	RR	DOL	23.0	24	35	80	26	GOOD
8398G	07-Sep-91	VENICE	West	210	RR	GAM	36.5	27	12	82	31	EXCELLENT
84	16-Jun-91	ISLAMORADA	Keys	750	RR	DOL	23.0	24	35	80	26	GOOD
8475G	07-Sep-91	BAYPORT	West	130	RR	GAM	46.0	28	34	84	25	POOR
8476G	07-Sep-91	BAYPORT	West	130	RR	GAM	38.0	28	34	84	25	POOR
8478G	07-Sep-91	HUDSON	West	130	RR	GAM	35.0	28	21	84	23	POOR
8479G	07-Sep-91	BAYPORT	West	130	RR	GAM	37.0	28	34	84	25	GOOD
8480G	07-Sep-91	BAYPORT	West	130	RR	GAM	34.0	28	34	84	25	GOOD
8481G	07-Sep-91	BAYPORT	West	130	RR	GAM	35.0	28	34	84	25	GOOD
8482G	07-Sep-91	BAYPORT	West	130	RR	GAM	35.0	28	34	84	25	GOOD
8483G	07-Sep-91	BAYPORT	West	130	RR	GAM	40.0	28	34	84	25	GOOD
8484G	07-Sep-91	BAYPORT	West	130	RR	GAM	35.0	28	34	84	25	GOOD
8485G	07-Sep-91	BAYPORT	West	130	RR	GAM	30.0	28	34	84	25	GOOD
8486G	07-Sep-91	BAYPORT	West	130	RR	GAM	35.0	28	34	84	25	GOOD
8487G	07-Sep-91	BAYPORT	West	130	RR	GAM	37.0	28	34	84	25	GOOD
8488G	07-Sep-91	BAYPORT	West	130	RR	GAM	42.0	28	34	84	25	GOOD
8489G	07-Sep-91	BAYPORT	West	130	RR	GAM	27.0	28	34	84	25	GOOD
8490G	07-Sep-91	BAYPORT	West	130	RR	GAM	43.0	28	34	84	25	GOOD
8491G	07-Sep-91	BAYPORT	West	130	RR	GAM	35.0	28	34	84	25	GOOD
8492G	07-Sep-91	BAYPORT	West	130	RR	GAM	34.0	28	34	84	25	GOOD
8493G	07-Sep-91	BAYPORT	West	130	RR	GAM	31.0	28	34	84	25	GOOD
8494G	07-Sep-91	BAYPORT	West	130	RR	GAM	32.0	28	34	84	25	GOOD
8495G	07-Sep-91	BAYPORT	West	130	RR	GAM	34.0	28	34	84	25	DEAD
8496G	07-Sep-91	BAYPORT	West	130	RR	GAM	32.0	28	34	84	25	GOOD
8497G	07-Sep-91	BAYPORT	West	130	RR	GAM	34.0	28	34	84	25	GOOD
8498G	07-Sep-91	BAYPORT	West	130	RR	GAM	38.0	28	34	84	25	GOOD
8499G	07-Sep-91	BAYPORT	West	130	RR	GAM	32.0	28	34	84	25	POOR
85	15-Jun-91	ISLAMORADA	Keys	750	RR	DOL	24.0	24	40	80	27	EXCELLENT
8500G	07-Sep-91	BAYPORT	West	130	RR	GAM	40.0	28	34	84	25	GOOD
8509G	07-Sep-91	ANCLOTE	West	85	RR	GAM	16.3	28	12	83	30	GOOD
8511G	07-Sep-91	PASS-A-GRILLE	West	84	RR	GAM	18.3	28	12	83	30	GOOD
8587G	07-Sep-91	NEW PORT RICHEY	West	71	RR	GAM	20.0	28	25	83	28	POOR
8590G	07-Sep-91	NEW PORT RICHEY	West	71	RR	GAM	28.5	28	25	83	28	
8593G	07-Sep-91	NEW PORT RICHEY	West	72	RR	GAM	16.0	28	25	83	28	DEAD
8596G	07-Sep-91	NEW PORT RICHEY	West	52	RR	GAM	16.0	28	25	83	28	POOR
8801G	28-Dec-91	SARASOTA	West	135	RR	GAM	21.0	28	35	84	30	GOOD
8802G	28-Dec-91	SARASOTA	West	135	RR	COB	31.0	28	35	84	30	GOOD
8803	28-Dec-91	SARASOTA	West	135	RR	GAM	22.0	28	35	84	30	GOOD
8804G	28-Dec-91	SARASOTA	West	135	RR	GAM	26.0	28	35	84	30	GOOD
8805G	28-Dec-91	SARASOTA	West	135	RR	GAM	26.0	28	35	84	30	GOOD
8806G	28-Dec-91	SARASOTA	West	135	RR	GAM	22.0	28	35	84	30	GOOD
8807G	28-Dec-91	SARASOTA	West	135	RR	GAM	23.0	28	35	84	30	GOOD
8808G	28-Dec-91	SARASOTA	West	135	RR	GAM	23.0	28	35	84	30	GOOD
8809G	28-Dec-91	SARASOTA	West	135	RR	GAM	22.0	28	35	84	30	GOOD
8810G	28-Dec-91	SARASOTA	West	135	RR	GAM	24.0	28	35	84	30	GOOD
8811G	28-Dec-91	SARASOTA	West	135	RR	GAM	16.0	28	35	84	30	GOOD
8813G	28-Dec-91	SARASOTA	West	135	RR	GAM	25.0	28	35	84	30	GOOD
8825G	28-Dec-91	SARASOTA	West	135	RR	GAM	22.0	28	35	84	30	GOOD
9	16-Aug-91	KEY LARGO	Keys	900	RR	DOL	21.0	25	15	79	50	GOOD

Appendix 1. Cobia (COB), amberjack (GAM) and dolphin (DOL) tag release records. (G indicates grouper tags; R and RR indicate recapture and live release).

Tag No.	Date	Subarea	Coast	Depth (ft)	Gear	Species	Length (in)	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Condition
906	01-Jun-92	SARASOTA	West	40	RR	GAM	21.0	27	17	82	43	GOOD
908	22-Apr-92	SARASOTA	West	30	RR	COB	34.0	27	18	82	36	EXCELLENT
911	05-Aug-91	VENICE	West	140	RR	GAM	27.0	26	45	83	10	GOOD
912	05-Aug-91	VENICE	West	140	RR	GAM	27.0	26	45	83	10	GOOD
9124G	07-Sep-91	ST. PETERSBURG	West	200	RR	GAM	28.5	27	50	83	54	POOR
9125G	07-Sep-91	ST. PETERSBURG	West	200	RR	GAM	29.1	27	51	83	54	GOOD
9126G	07-Sep-91	ST. PETERSBURG	West	200	RR	GAM	29.8	27	50	83	54	GOOD
9127G	07-Sep-91	ST. PETERSBURG	West	200	RR	GAM	28.8	27	50	83	54	GOOD
913	05-Aug-91	VENICE	West	140	RR	GAM	30.0	26	45	83	10	GOOD
914	05-Aug-91	VENICE	West	140	RR	GAM	29.0	26	45	83	10	GOOD
939	13-Oct-91	MELBOURNE	East	125	RR	DOL	26.0	27	45	80	15	GOOD
946	29-Jun-91	PORT CANAVERAL	East	160	RR	DOL	12.0					POOR
9512G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	20.0	28	30	84	25	GOOD
9517G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	24.0	28	30	84	25	GOOD
9518G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	28.0	28	30	84	25	GOOD
9519G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	26.0	28	30	84	25	GOOD
9520G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	28.0	28	30	84	25	GOOD
9521G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	20.0	28	30	84	25	GOOD
9524G	18-Oct-91	ST. PETERSBURG	West	130	RR	GAM	30.0	28	30	84	25	GOOD
955	04-Apr-92	SEBASTION	East	125	RR	DOL	30.0	28	0	80	10	GOOD
9570G	15-Feb-92	BAYPORT	West	70	RR	GAM	12.0	28	30	83	25	GOOD
9573G	14-Dec-91	ST. PETERSBURG	West	70	RR	GAM	18.0	27	55	83	40	
9587G	20-Dec-91	ST. PETERSBURG	West	85	RR	GAM	13.0	28	10	83	30	
9588G	20-Dec-91	ST. PETERSBURG	West	85	RR	GAM	15.0	28	10	83	30	
9589G	20-Dec-91	TARPON SPRINGS	West	85	RR	GAM	15.0	28	10	83	30	
9673G	21-Mar-92	TARPON SPRINGS	West	115	RR	GAM	26.0	28	13	84	4	GOOD
9674G	21-Mar-92	TARPON SPRINGS	West	115	RR	GAM	24.0	28	13	84	4	GOOD
9734G	15-Jan-92	MADEIRA BEACH	West	110	RR	GAM	21.0	28	30	84	25	GOOD
9743G	30-Nov-91	SARASOTA	West	100	RR	GAM	22.5	28	20	84	10	GOOD
9744G	30-Nov-91	SARASOTA	West	100	RR	GAM	26.5	28	20	84	10	GOOD
9745G	30-Nov-91	SARASOTA	West	100	RR	GAM	22.5	28	20	84	10	GOOD
9764G	30-Nov-91	SARASOTA	West	27	RR	COB	29.0	27	18	82	35	GOOD
9766G	30-Nov-91	SARASOTA	West	27	RR	COB	25.5	27	18	82	35	GOOD
9768G	30-Nov-91	SARASOTA	West	27	RR	COB	30.0	27	18	82	35	GOOD
9771G	30-Nov-91	SARASOTA	West	27	RR	COB	23.0	27	18	82	35	GOOD

APPENDIX II

TAG RETURNS

Appendix 2. Tag returns for greater amberjack (GAM), cobia (COB) and dolphin (DOL). (G indicates grouper tags; R or RR denotes 2nd and 3rd recapture and live release.

Tag No.	Species	Tagging Date	Tagging Area	Subarea	Recapture Date	Recapture Area	Subarea	Distance (miles)	Days of Freedom
1010	GAM	29-Oct-91	FL	PANAMA CITY	09-Mar-92	FL	PANAMA CITY	0	132
1014	GAM	29-Oct-91	FL	PANAMA CITY	27-Feb-92	FL	PANAMA CITY	0	121
1024	GAM	11-Jan-92	FL	PANAMA CITY	29-Feb-92	FL	PANAMA CITY	0	49
1032	GAM	11-Jan-92	FL	PANAMA CITY	28-Feb-92	FL	PANAMA CITY	0	48
10826G	GAM	26-May-92	FL	PENSACOLA	30-May-92	FL	PENSACOLA	0	4
1127G	GAM	06-Oct-90	FL	DUNEDIN	06-Apr-91	FL	NEW PORT RICHEY	17	182
1207G	GAM	06-Oct-90	FL	VENICE	18-Apr-91	FL	ST. PETERSBURG	50	194
134	DOL	12-Jun-92	FL	DUCK KEY	28-Jun-92	FL	MIAMI	70	16
135	DOL	12-Jun-92	FL	DUCK KEY	13-Jun-92	FL	MIAMI	70	1
1372R	GAM	27-Nov-91	FL	SARASOTA	01-Apr-92	FL	SARASOTA	3	126
1372RR	GAM	27-Nov-91	FL	SARASOTA	06-May-92	FL	SARASOTA	65	161
1373	GAM	27-Nov-91	FL	SARASOTA	30-Nov-91	FL	SARASOTA	0	3
1427	GAM	23-Feb-92	FL	ENGLEWOOD	01-Mar-92	FL	ENGLEWOOD	0	7
1474	COB	27-Oct-91	FL	SARASOTA	15-Feb-92	FL	KEY WEST	200	111
1488	GAM	16-Nov-91	FL	GASPARILLA ISLA	20-Jun-92	FL	NAPLES	40	217
1577	GAM	14-Nov-91	FL	SARASOTA	30-Dec-91	FL	SARASOTA	30	46
1632	GAM	22-Dec-91	FL	SARASOTA	18-May-92				148
1733	GAM	12-Mar-92	FL	SANIBEL	25-Apr-92	FL	FORT MYERS	0	44
1752	GAM	30-Apr-92	FL	PANAMA CITY	18-May-92	FL	PANAMA CITY	0	18
1769	GAM	28-May-92	FL	PANAMA CITY	13-Jun-92	FL	PANAMA CITY	0	16
1773	GAM	29-May-92	FL	PANAMA CITY	11-Jun-92	FL	PANAMA CITY	0	13
1779	GAM	16-May-92	FL	PANAMA CITY	16-Jun-92	FL	PANAMA CITY	0	31
1795	GAM	23-May-92	FL	PANAMA CITY	20-Jun-92	FL	PANAMA CITY	10	28
1799	GAM	23-May-92	FL	PANAMA CITY	22-Jul-92	FL	PANAMA CITY	0	60
1803	GAM	01-Feb-92	FL	PANAMA CITY	28-Mar-92	FL	PANAMA CITY	0	56
1804	GAM	01-Feb-92	FL	PANAMA CITY	03-Jul-92	FL	PANAMA CITY	0	153
1808	GAM	01-Feb-92	FL	PANAMA CITY	25-May-92	FL	PANAMA CITY	0	114
1809	GAM	01-Feb-92	FL	PANAMA CITY	29-Mar-92	FL	PANAMA CITY	0	57
1810	GAM	01-Feb-92	FL	PANAMA CITY	29-Mar-92	FL	PANAMA CITY	0	57
1833	GAM	11-Feb-92	FL	PANAMA CITY	02-Jul-92	FL	PANAMA CITY	0	142
1922	COB	01-Apr-92	FL	SARASOTA	03-Jun-92	FL	ST. PETERSBURG	50	63
1946	COB	14-Apr-92	FL	SARASOTA	20-May-92	FL	SARASOTA	0	36
197	GAM	06-Mar-91	FL	BRADENTON	21-Aug-91	FL	ST. PETERSBURG	45	168
1990	GAM	16-Apr-92	FL	VENICE	14-May-92	FL	KEY WEST	201	28
200	GAM	26-Mar-91	FL	BRADENTON	05-Apr-91	FL	BRADENTON	0	10
261	COB	03-Mar-92	FL	SARASOTA	10-May-92	FL	ANNA MARIE ISLAN	12	68
3077	GAM	19-May-92	FL	SARASOTA	09-Jun-92	FL	SARASOTA	0	21
3083	COB	20-Apr-92	FL	SARASOTA	11-Jul-92	FL	ST. PETERSBURG	30	82
3102	GAM	25-Apr-92	FL	VENICE	02-May-92	FL	VENICE	0	7
311G	GAM	06-Oct-90	FL	ANNA MARIA	15-Jun-91	TX	GALVESTON	850	252
3128	GAM	20-Apr-92	FL	VENICE	16-May-92	FL	VENICE	0	26
3230	GAM	25-Apr-92	FL	VENICE	30-May-92	FL	SARASOTA	0	35
3233	GAM	25-Apr-92	FL	VENICE	15-Jun-92	FL	SARASOTA	0	51
324G	GAM	06-Oct-90	FL	ANNA MARIA	15-Jan-91	FL	SARASOTA	40	101
3243	GAM	24-Apr-92	FL	VENICE	19-May-92	FL	VENICE	0	25
3244	GAM	24-Apr-92	FL	VENICE	19-May-92	FL	VENICE	0	25
3332	COB	24-Apr-92	FL	VENICE	15-May-92	FL	SARASOTA	30	21
3335	GAM	24-Apr-92	FL	VENICE	10-May-92	FL	VENICE	0	16
3624	GAM	30-May-92	FL	PANAMA CITY	06-Jun-92	FL	PANAMA CITY	0	7
3650	GAM	30-May-92	FL	PANAMA CITY	10-Jun-92	FL	PANAMA CITY	0	11
3677	COB	19-Jun-92	FL	ST. PETERSBURG	03-Jul-92	FL	ST. PETERSBURG	5	14
5702G	GAM	07-Sep-91	FL	SARASOTA	13-Oct-91	FL	ANNA MARIA	18	36
572	COB	04-Aug-91	FL	PORT CANAVERAL	20-Sep-91	FL	PORT CANAVERAL	4	47
583	COB	01-Apr-92	FL	PORT CANAVEREL	19-May-92	FL	PANAMA CITY	913	48
66	GAM	16-Nov-91	FL	PANAMA CITY	03-Mar-92	FL	PANAMA CITY	0	108
6763G	GAM	07-Sep-91	FL	SARASOTA	28-Feb-92	FL	SANIBEL ISL	55	164
687	COB	20-Oct-91	FL	SARASOTA	26-May-92	FL	TAMPA BAY	37	219
79	DOL	19-Jun-91	FL	ISLAMORADA	29-Jun-91	NC	CAPE HATTERAS	800	10
84	DOL	16-Jun-91	FL	ISLAMORADA	20-Jun-91	FL	KEY BISCAYNE	80	4
9518G	GAM	18-Oct-91	FL	ST PETERSBURG	21-Jan-92	FL	TAMPA	0	95

APPENDIX III

CAD UPDATE

CAD PROGRESS REPORT

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TAGGERS' UPDATE

The Cobia, Amberjack and Dolphin Migration and Life History Study is now in it's thirteenth month. This newsletter was put together to update fishermen on the progress of the Cobia, Amberjack and Dolphin Project. As of January 31, 1992 -

* * 115 fishermen have been assigned CAD tag packets.
* * More than 1,478 CAD tags have been distributed in these packets.
* * Twelve tags have been returned from recaptured fish.

Tag Returns

Congratulations to Capt. Rob Roberts, top Florida west coast tagger, Capt. Pete Lutz, top Florida Keys tagger and Capt. Joe Smitelli, top Florida east coast tagger. We hope you enjoy the engraved wooden plaques designed especially for the CAD program by Pete Costello of Woodfins. Capt. Rob Roberts also has the distinction of tagging the most fish. He tagged 63 fish in three months! Capt. Pete Lutz tagged the fish that traveled the longest distance in the shortest amount of time. The dolphin tagged off Islamorada, Florida Keys which was captured off Cape Hatteras, North Carolina after only ten days!

Cobia (COB), amberjack (GAM) and dolphin (DOL) tag returns (Sept. 20, 1991-Jan. 31, 1992).

Tag	#SP	Release Area	Release Date	Capture Date	Days of Freedom	Distance (miles)	Capture Area
FLORIDA WEST COAST							
311	GAM	Anna Maria	10-06-90	06-15-91	252	850	Galveston, TX
1127	GAM	Dunedin	10-06-90	03-31-91	176	17	New Pt. Richey
1207	GAM	Venice	10-06-90	04-18-91	194	50	Madeira Bch, FL
200	GAM	Bradenton	03-26-91	04-05-91	10	0	Bradenton, FL
324	GAM	Anna Maria	10-06-90	01-15-91	101	40	Sarasota, FL
197	GAM	Bradenton	03-06-91	08-21-91	168	45	St. Petersburg, FL
1373	GAM	Sarasota	11-27-91	11-30-91	3	5	Sarasota, FL
1577	GAM	Sarasota	11-16-91	12-30-91	44	30	Venice, FL
57C2	GAM	Bradenton	09-07-91	10-13-91	36	10	St. Petersburg, FL
FLORIDA EAST COAST							
572	GAM	P. Canaveral	08-04-91	09-20-91	47	4	Port Canaveral, FL
FLORIDA KEYS							
84	dol	Islamorada	06-16-91	06-20-91	4	80	Key Biscayne, FL
79	DOL	Islamorada	06-19-91	06-29-91	10	800	Cape Hatteras, NC

Of the twelve tags returned, nine were recovered from amberjack, two from dolphins and one from a cobia. Five tag returns were significant either by days of freedom (168-252) or by distance traveled (45-850 miles). The significant returns included an amberjack which traveled 850 miles from Florida to Texas during its 252 days of freedom, a second amberjack which traveled 50 miles from Venice to Madeira Beach in 194 days, a third amberjack which traveled 45 miles from Bradenton to St. Petersburg in 168 days, a dolphin which traveled 80 miles from Islamorada to Key Biscayne in four ays, and another dolphin which traveled from the Florida Keys to North Carolina (800 miles) in ten days.

Synopsis of significant tag returns based upon days of freedom and/or distance traveled.

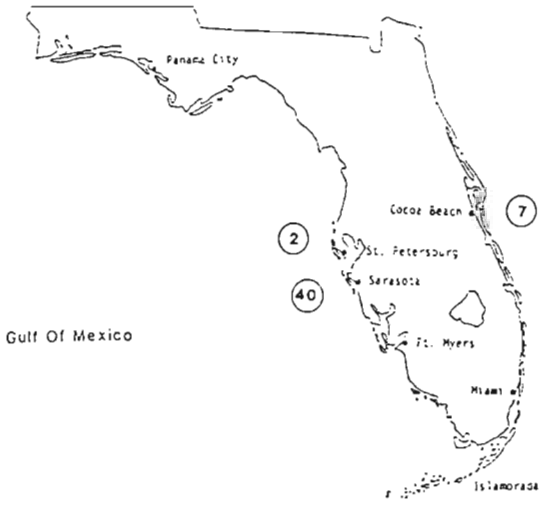
Tag #	Species	Days of Freedom	Distance Traveled (mi.)
311	GAM	252	850
1207	GAM	194	50
84	DOL	4	80
197	GAM	168	45
79	DOL	10	800

People who tagged fish that were returned:

		Released	Tagger	Captured by	Captured
311	GAM	Anna Maria	Sumner	T. Davis	Galveston, TX
1127	GAM	Dunedin	B. Kenyon	M. McDermott	25 mi off New Pt. Richey
1207	GAM	Venice	Warren	J. Lightfoot	Madeira Beach
200	GAM	Bradenton	D. Wallace	A. Weinstein	off Anna Maria
324	GAM	Anna Maria	D. Moore	T. Buhle	55 mi off Sarasota
197	GAM	Bradenton	D. Wallace	T. Nichols	70 mi off St. Pete
84	DOL	Islamorada	P. Lutz	J. Yeager	Key Biscayne
1373	GAM	Sarasota	.. Roberts	I. Jazbec	Cuda Hole off Sarasota
5702	GAM	Bradenton	D. Leonardo	D. Mendez	off St Petersburg, FL
79	DOL	Islamorada	P. Lutz	S. Marshall	Cape Hatteras, NC
572	COB	P.Canaveral	S. Klimek	D. Brown	3 mi off P. Canaveral

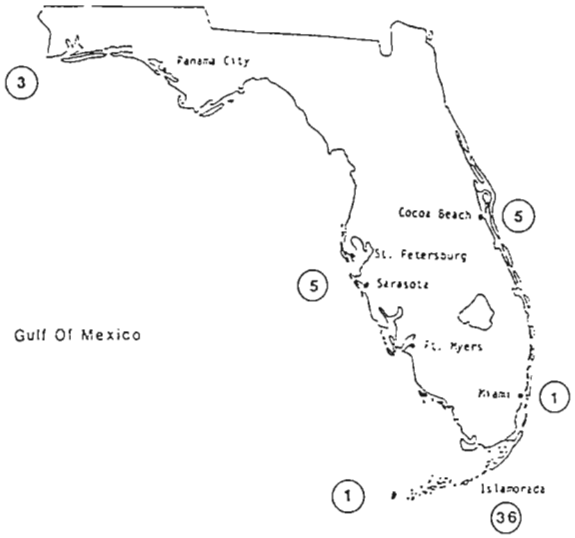
Many thanks to the Florida Sportfishing Association for their generous donation to the CAD project. It enabled us to purchase additional tags and tag applicators.

Number of Cobia Tagged
off the Coast of Florida

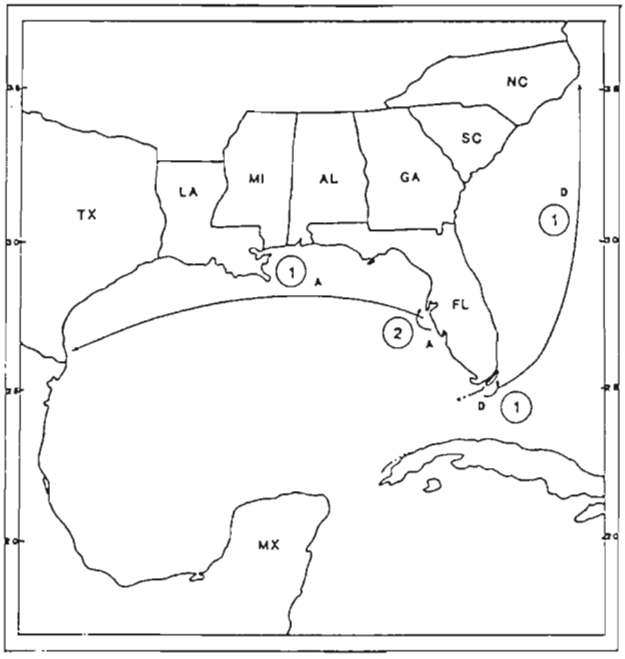


Number of Amberjack Tagged
off the Coast of Florida

Number of Dolphin Tagged
off the Coast of Florida



Significant Long Distance
Tag Returns



A = Amberjack D = Dolphin

We would like to extend our sincere thanks to the following who have promptly returned tagging information.

FLORIDA

George Banks, Merritt Island
Ed Bayer, Duck Key
Jack Beal, Bradenton
Gary Beaver, Hollywood
Steve Burnett, Lakeland
Bob Carrigan, Orlando
Herman B. Conley Jr., St. Petersburg
James Correll, Panama City
Roger DeBruler, Jr., Englewood
Paul Dufault, Sarasota
Frank Fontanetta, Winter Park
Gary D. Hood, Lakeland
Fred Johnson, Cortez
Tom Larkin, Bradenton
Pete Lutz, Sarasota
Ralph Marsh, Sarasota
Bill Mathews, Orlando
Gary Phillips, Brooker
Andrew Proctor, Lakeland
Tom Satorie, Cocoa Beach
Rob Roberts, Sarasota
Bob Zales II, Panama City
Tom Nichols, Tampa
Richard Hayes, Winter Park
Ed Frankovitch, Port Charlotte
Joe Smitelli, Cocoa
Jerry Swain, Satellite Beach
Larry Sweeney, Lakeland
Jeff Wagner, Venice
Jonnie Walker, Sarasota
Don Wallace, Bradenton
W.R. Ward, Lakeland
Allen Weinstein, Bradenton
Scott Wheeler, Lakeland
Joe Yeager, Miami
Chuck Zyla, Cocoa

ALABAMA

Bob Sharp, Mobile
Stan Sharp, Mobile
John Zukley, Mobile

APPENDIX IV

LENGTH/FREQUENCY DATA

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
ANNA MARIA	FL 06-Oct-90	RR	GAM	18.1	155	2
ANNA MARIA	FL 06-Oct-90	RR	GAM	18.3	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	18.6	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	18.8	155	2
ANNA MARIA	FL 06-Oct-90	RR	GAM	18.9	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	19.0	155	3
ANNA MARIA	FL 06-Oct-90	RR	GAM	19.1	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	19.3	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	19.5	155	2
ANNA MARIA	FL 06-Oct-90	RR	GAM	19.6	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	20.0	155	3
ANNA MARIA	FL 06-Oct-90	RR	GAM	20.3	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	20.9	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	21.0	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	22.0	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	28.5	155	2
ANNA MARIA	FL 06-Oct-90	RR	GAM	30.9	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	31.5	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	32.4	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	33.1	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	34.4	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	35.4	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	36.0	155	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	25.8	170	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	34.5	170	1
ANNA MARIA	FL 06-Oct-90	RR	GAM	43.6	180	1
CEDAR KEY	FL 06-Oct-90	RR	GAM	22.0	100	1
CEDAR KEY	FL 06-Oct-90	RR	GAM	19.0	121	1
DUNEDIN	FL 06-Oct-90	RR	GAM	14.3	90	1
DUNEDIN	FL 06-Oct-90	RR	GAM	21.8	90	1
DUNEDIN	FL 06-Oct-90	RR	GAM	16.5	100	1
DUNEDIN	FL 06-Oct-90	RR	GAM	18.3	100	1
DUNEDIN	FL 06-Oct-90	RR	GAM	18.5	100	1
DUNEDIN	FL 06-Oct-90	RR	GAM	19.0	100	2
DUNEDIN	FL 06-Oct-90	RR	GAM	19.3	100	1
DUNEDIN	FL 06-Oct-90	RR	GAM	20.0	100	1
DUNEDIN	FL 06-Oct-90	RR	GAM	21.0	100	1
HUDSON	FL 06-Oct-90	RR	GAM	23.0	88	1
HUDSON	FL 06-Oct-90	RR	GAM	24.0	88	3
HUDSON	FL 06-Oct-90	RR	GAM	24.1	88	2
HUDSON	FL 06-Oct-90	RR	GAM	24.3	88	1
HUDSON	FL 06-Oct-90	RR	GAM	24.5	88	2
HUDSON	FL 06-Oct-90	RR	GAM	24.8	88	2
HUDSON	FL 06-Oct-90	RR	GAM	25.0	88	2
HUDSON	FL 06-Oct-90	RR	GAM	25.5	88	2
HUDSON	FL 06-Oct-90	RR	GAM	26.0	88	1
HUDSON	FL 06-Oct-90	RR	GAM	28.3	112	1
SARASOTA	FL 06-Oct-90	RR	GAM	20.0	135	1
SARASOTA	FL 06-Oct-90	RR	GAM	20.0	170	2
SARASOTA	FL 06-Oct-90	RR	GAM	20.3	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	21.5	170	2
SARASOTA	FL 06-Oct-90	RR	GAM	21.9	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	24.3	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	24.8	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	27.0	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	28.0	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	32.4	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	39.0	170	1
SARASOTA	FL 06-Oct-90	RR	GAM	48.0	247	1
VENICE	FL 06-Oct-90	RR	GAM	18.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	20.0	140	2
VENICE	FL 06-Oct-90	RR	GAM	22.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	24.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	28.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	29.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	31.0	140	1
VENICE	FL 06-Oct-90	RR	GAM	43.8	182	1
VENICE	FL 06-Oct-90	RR	GAM	25.8	195	1
VENICE	FL 06-Oct-90	RR	GAM	34.5	195	1
VENICE	FL 06-Oct-90	RR	GAM	39.5	228	1
VENICE	FL 06-Oct-90	RR	GAM	41.3	228	1
PALM HARBOR	FL 05-Nov-90	RR	GAM	16.0	100	1
PALM HARBOR	FL 05-Nov-90	RR	GAM	18.0	100	1
PALM HARBOR	FL 05-Nov-90	RR	GAM	20.0	100	1
PALM HARBOR	FL 05-Nov-90	RR	GAM	22.0	100	1
ST. PETERSBURG	FL 05-Nov-90	RR	GAM	16.0	102	1
ST. PETERSBURG	FL 05-Nov-90	RR	GAM	20.0	102	1
ST. PETERSBURG	FL 05-Nov-90	RR	GAM	22.0	102	1
CORTEZ	FL 21-Jan-91	CHL	GAM	37.4	600	1
CORTEZ	FL 21-Jan-91	LL	GAM	38.2	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	39.4	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	40.9	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	41.5	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	43.1	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	43.9	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	44.1	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	44.7	360	1
CORTEZ	FL 21-Jan-91	LL	GAM	47.6	360	1
CORTEZ	FL 25-Jan-91	CHL	COB	29.5	N/A	1
CORTEZ	FL 25-Jan-91	CHL	COB	32.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	COB	34.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	COB	36.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	COB	40.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	GAM	39.0	N/A	2
CORTEZ	FL 25-Jan-91	CHL	GAM	40.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	GAM	40.9	N/A	1
CORTEZ	FL 25-Jan-91	CHL	GAM	42.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	GAM	42.9	N/A	4
CORTEZ	FL 25-Jan-91	CHL	GAM	46.0	N/A	1
CORTEZ	FL 25-Jan-91	CHL	GAM	47.0	N/A	2
NAPLES	FL 27-Jan-91	CHL	GAM	19.5	366	1
PALM HARBOR	FL 27-Jan-91	RR	GAM	14.0	105	1
PALM HARBOR	FL 27-Jan-91	RR	GAM	21.0	105	2
PALM HARBOR	FL 27-Jan-91	RR	GAM	22.0	105	4
PALM HARBOR	FL 27-Jan-91	RR	GAM	23.0	105	1
ST. PETERSBURG	FL 27-Jan-91	RR	GAM	14.0	105	1
ST. PETERSBURG	FL 27-Jan-91	RR	GAM	21.0	105	2
ST. PETERSBURG	FL 27-Jan-91	RR	GAM	22.0	105	4
ST. PETERSBURG	FL 27-Jan-91	RR	GAM	23.0	105	2
CORTEZ	FL 29-Jan-91	CHL	COB	36.8	N/A	1
CORTEZ	FL 29-Jan-91	ERR	GAM	36.6	N/A	1
CORTEZ	FL 29-Jan-91	ERR	GAM	37.2	N/A	1
CORTEZ	FL 29-Jan-91	ERR	GAM	39.0	N/A	1
KEY WEST	FL 30-Jan-91	CHL	GAM	19.5	588	1
CORTEZ	FL 31-Jan-91	CHL	COB	34.6	N/A	1
CORTEZ	FL 31-Jan-91	CHL	COB	35.2	N/A	1
CORTEZ	FL 31-Jan-91	CHL	COB	37.0	N/A	1
CORTEZ	FL 31-Jan-91	CHL	COB	42.9	N/A	1
PALM HARBOR	FL 06-Feb-91	RR	GAM	23.0	105	1
ST. PETERSBURG	FL 08-Feb-91	RR	COB	56.3	240	1
PALM HARBOR	FL 10-Feb-91	RR	GAM	27.0	60	3
PALM HARBOR	FL 10-Feb-91	RR	GAM	10.0	85	1
PALM HARBOR	FL 10-Feb-91	RR	GAM	20.0	95	1
PALM HARBOR	FL 10-Feb-91	RR	GAM	23.0	95	1
PALM HARBOR	FL 10-Feb-91	RR	GAM	25.0	95	1
PALM HARBOR	FL 10-Feb-91	RR	GAM	16.5	155	1
ST. PETERSBURG	FL 10-Feb-91	RR	GAM	10.0	60	1
ST. PETERSBURG	FL 10-Feb-91	RR	GAM	23.0	60	1
ST. PETERSBURG	FL 10-Feb-91	RR	GAM	25.0	60	1
ST. PETERSBURG	FL 10-Feb-91	RR	GAM	27.0	60	1
ST. PETERSBURG	FL 10-Feb-91	RR	GAM	20.0	96	1
ST. PETERSBURG	FL 11-Feb-91	RR	COB	40.2	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	COB	42.9	240	2
ST. PETERSBURG	FL 11-Feb-91	RR	COB	43.3	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	COB	46.9	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	COB	49.2	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	COB	49.7	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	38.6	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	40.6	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	40.9	240	4
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	41.3	240	2
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	41.7	240	4
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	42.5	240	2
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	42.9	240	2
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	43.7	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	44.5	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	45.3	240	1
ST. PETERSBURG	FL 11-Feb-91	RR	GAM	45.7	240	1
BRADENTON	FL 15-Feb-91	RR	GAM	22.0	104	2
BRADENTON	FL 15-Feb-91	RR	GAM	23.0	104	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
CORTEZ	FL 20-Feb-91	LL	GAM	18.9	N/A	1
CORTEZ	FL 20-Feb-91	LL	GAM	19.7	N/A	2
SARASOTA	FL 22-Feb-91	RR	GAM	22.0	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	22.6	84	1
SARASOTA	FL 22-Feb-91	RR	GAM	22.8	84	1
SARASOTA	FL 22-Feb-91	RR	GAM	23.0	84	1
SARASOTA	FL 22-Feb-91	RR	GAM	23.2	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	23.6	84	1
SARASOTA	FL 22-Feb-91	RR	GAM	23.8	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	24.2	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	24.4	84	3
SARASOTA	FL 22-Feb-91	RR	GAM	24.6	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	24.8	84	1
SARASOTA	FL 22-Feb-91	RR	GAM	25.2	84	5
SARASOTA	FL 22-Feb-91	RR	GAM	25.6	84	2
SARASOTA	FL 22-Feb-91	RR	GAM	26.4	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	22.8	84	4
SARASOTA	FL 25-Feb-91	RR	GAM	23.0	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	23.2	84	2
SARASOTA	FL 25-Feb-91	RR	GAM	23.6	84	2
SARASOTA	FL 25-Feb-91	RR	GAM	23.8	84	2
SARASOTA	FL 25-Feb-91	RR	GAM	24.0	84	6
SARASOTA	FL 25-Feb-91	RR	GAM	24.2	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	24.4	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	24.6	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	24.8	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	25.2	84	4
SARASOTA	FL 25-Feb-91	RR	GAM	25.6	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	26.0	84	2
SARASOTA	FL 25-Feb-91	RR	GAM	26.4	84	1
SARASOTA	FL 25-Feb-91	RR	GAM	27.2	84	1
CORTEZ	FL 01-Mar-91	ERR	COB	49.6	N/A	1
TARPON SPRINGS	FL 01-Mar-91	RR	GAM	23.0	110	6
TARPON SPRINGS	FL 01-Mar-91	RR	GAM	27.0	110	1
CORTEZ	FL 04-Mar-91	LL	COB	38.0	N/A	1
SARASOTA	FL 04-Mar-91	RR	GAM	22.8	84	1
SARASOTA	FL 04-Mar-91	RR	GAM	24.0	84	3
SARASOTA	FL 04-Mar-91	RR	GAM	24.4	84	6
SARASOTA	FL 04-Mar-91	RR	GAM	24.8	84	5
SARASOTA	FL 04-Mar-91	RR	GAM	25.2	84	3
SARASOTA	FL 04-Mar-91	RR	GAM	25.6	84	1
SARASOTA	FL 04-Mar-91	RR	GAM	26.4	84	1
SARASOTA	FL 04-Mar-91	RR	GAM	27.2	84	1
BRADENTON	FL 06-Mar-91	RR	GAM	24.0	55	1
SARASOTA	FL 07-Mar-91	RR	GAM	22.8	N/A	1
SARASOTA	FL 07-Mar-91	RR	GAM	24.0	N/A	2
SARASOTA	FL 07-Mar-91	RR	GAM	24.2	N/A	1
SARASOTA	FL 07-Mar-91	RR	GAM	24.8	N/A	1
SARASOTA	FL 07-Mar-91	RR	GAM	25.2	N/A	1
CORTEZ	FL 11-Mar-91	LL	COB	55.9	N/A	1
CORTEZ	FL 17-Mar-91	LL	COB	47.0	168	1
CORTEZ	FL 18-Mar-91	LL	COB	49.6	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	14.0	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	23.2	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	24.0	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	24.4	144	4
SARASOTA	FL 19-Mar-91	RR	GAM	24.8	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	25.2	144	7
SARASOTA	FL 19-Mar-91	RR	GAM	25.6	144	6
SARASOTA	FL 19-Mar-91	RR	GAM	26.0	144	13
SARASOTA	FL 19-Mar-91	RR	GAM	26.4	144	8
SARASOTA	FL 19-Mar-91	RR	GAM	26.8	144	3
SARASOTA	FL 19-Mar-91	RR	GAM	27.2	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	27.6	144	2
SARASOTA	FL 19-Mar-91	RR	GAM	28.3	144	3
SARASOTA	FL 19-Mar-91	RR	GAM	28.7	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	30.3	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	30.7	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	31.5	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	31.9	144	1
SARASOTA	FL 19-Mar-91	RR	GAM	36.6	144	1
VENICE	FL 25-Mar-91	RR	COB	40.0	12	1
BRADENTON	FL 26-Mar-91	RR	GAM	22.0	55	1
BRADENTON	FL 26-Mar-91	RR	GAM	24.0	55	3
BRADENTON	FL 26-Mar-91	RR	GAM	44.0	55	1
CORTEZ	FL 26-Mar-91	LL	COB	31.0	162	1
CORTEZ	FL 26-Mar-91	LL	COB	34.1	162	1
CORTEZ	FL 26-Mar-91	LL	COB	34.5	162	1
PORT CANAVERAL	FL 30-Mar-91	RR	COB	35.0	40	1
PORT CANAVERAL	FL 30-Mar-91	RR	COB	37.0	40	1
PORT CANAVERAL	FL 30-Mar-91	RR	COB	44.0	40	1
PORT CANAVERAL	FL 30-Mar-91	RR	COB	45.0	40	1
PANAMA CITY	FL 05-Apr-91	RR	GAM	26.0	100	2
PORT CANAVERAL	FL 06-Apr-91	RR	COB	34.0	37	1
TORTUGAS	FL 06-Apr-91	RR	DOL	22.5	1330	1
PORT CANAVERAL	FL 11-Apr-91	RR	COB	26.0	15	2
VENICE	FL 14-Apr-91	RR	COB	39.0	12	1
CORTEZ	FL 15-Apr-91	LL	COB	36.6	N/A	1
CORTEZ	FL 15-Apr-91	LL	COB	45.5	N/A	1
PORT CANAVERAL	FL 20-Apr-91	RR	COB	33.0	35	1
CORTEZ	FL 22-Apr-91	LL	COB	47.6	N/A	1
CORTEZ	FL 22-Apr-91	LL	GAM	48.8	N/A	1
CORTEZ	FL 22-Apr-91	LL	GAM	51.2	N/A	1
CORTEZ	FL 22-Apr-91	LL	GAM	57.1	N/A	1
PALM HARBOR	FL 30-Apr-91	RR	GAM	15.0	155	1
SARASOTA	FL 30-Apr-91	LL	GAM	15.0	156	1
CORTEZ	FL 07-May-91	LL	COB	44.1	N/A	1
CORTEZ	FL 07-May-91	LL	DOL	29.5	N/A	1
COCOA BEACH	FL 11-May-91	RR	COB	24.0	65	1
COCOA BEACH	FL 11-May-91	RR	COB	28.0	65	1
COCOA BEACH	FL 11-May-91	RR	COB	31.0	65	2
COCOA BEACH	FL 11-May-91	RR	COB	32.0	65	1
COCOA BEACH	FL 11-May-91	RR	COB	33.0	65	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	17.3	138	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	18.1	138	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	18.5	138	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	19.3	138	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	19.7	138	1
ST. PETERSBURG	FL 14-May-91	RR	DOL	20.9	138	1
CORTEZ	FL 23-May-91		DOL	48.8	N/A	1
CORTEZ	FL 04-Jun-91	LL	GAM	50.0	144	1
CORTEZ	FL 06-Jun-91	CHL	GAM	39.8	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		20.1	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		20.5	390	4
CORTEZ	FL 06-Jun-91	RRERRDOL		20.9	390	2
CORTEZ	FL 06-Jun-91	RRERRDOL		21.3	390	4
CORTEZ	FL 06-Jun-91	RRERRDOL		21.7	390	2
CORTEZ	FL 06-Jun-91	RRERRDOL		22.0	390	8
CORTEZ	FL 06-Jun-91	RRERRDOL		22.4	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		22.8	390	2
CORTEZ	FL 06-Jun-91	RRERRDOL		23.2	390	2
CORTEZ	FL 06-Jun-91	RRERRDOL		23.6	390	2
CORTEZ	FL 06-Jun-91	RRERRDOL		24.0	390	4
CORTEZ	FL 06-Jun-91	RRERRDOL		24.4	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		24.8	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		25.2	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		25.6	390	1
CORTEZ	FL 06-Jun-91	RRERRDOL		37.0	390	1
CORTEZ	FL 11-Jun-91	LL	GAM	39.8	N/A	1
CORTEZ	FL 12-Jun-91	LL	COB	36.6	138	1
CORTEZ	FL 12-Jun-91	LL	DOL	21.3	138	1
CORTEZ	FL 12-Jun-91	LL	GAM	43.7	138	1
TARPON SPRINGS	FL 12-Jun-91	RR	GAM	28.0	70	1
TARPON SPRINGS	FL 12-Jun-91	RR	GAM	29.0	70	1
MARATHON	FL 13-Jun-91	RR	DOL	14.0	700	1
MARATHON	FL 13-Jun-91	RR	DOL	13.0	900	1
ISLAMORADA	FL 15-Jun-91	RR	DOL	24.0	750	1
ISLAMORADA	FL 16-Jun-91	RR	DOL	22.0	750	1
ISLAMORADA	FL 16-Jun-91	RR	DOL	23.0	750	2
DUCK KEY	FL 17-Jun-91	RR	DOL	14.0	850	1
DUCK KEY	FL 17-Jun-91	RR	DOL	16.0	875	1
DUCK KEY	FL 17-Jun-91	RR	DOL	20.0	1025	1
ISLAMORADA	FL 17-Jun-91	RR	DOL	22.0	750	1
CORTEZ	FL 19-Jun-91	LL	DOL	18.1	300	1
CORTEZ	FL 19-Jun-91	LL	DOL	20.9	300	1
CORTEZ	FL 19-Jun-91	LL	DOL	21.7	300	1
CORTEZ	FL 19-Jun-91	LL	DOL	48.4	300	1
ISLAMORADA	FL 19-Jun-91	RR	DOL	20.0	750	2
ISLAMORADA	FL 19-Jun-91	RR	DOL	21.0	750	2
ISLAMORADA	FL 19-Jun-91	RR	DOL	40.0	750	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
CEDAR KEY	FL 20-Jun-91	RR	COB	29.0	30	1
DUCK KEY	FL 20-Jun-91	RR	DOL	18.0	795	1
DUCK KEY	FL 20-Jun-91	RR	DOL	14.0	870	1
DUCK KEY	FL 20-Jun-91	RR	DOL	16.0	870	2
DUCK KEY	FL 20-Jun-91	RR	DOL	20.0	870	1
DUCK KEY	FL 20-Jun-91		DOL	16.0	870	1
DUCK KEY	FL 20-Jun-91		DOL	14.0	870	1
HOLLYWOOD	FL 20-Jun-91	RR	DOL	19.0	N/A	1
TARPON SPRINGS	FL 20-Jun-91	RR	GAM	26.0	70	1
TARPON SPRINGS	FL 20-Jun-91	RR	GAM	27.0	70	4
TARPON SPRINGS	FL 20-Jun-91	RR	GAM	28.0	70	1
CORTEZ	FL 24-Jun-91	LL	DOL	42.5	144	1
CORTEZ	FL 24-Jun-91	LL	DOL	13.8	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	14.6	N/A	4
CORTEZ	FL 24-Jun-91	LL	DOL	15.0	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	15.4	N/A	3
CORTEZ	FL 24-Jun-91	LL	DOL	15.7	N/A	4
CORTEZ	FL 24-Jun-91	LL	DOL	16.1	N/A	3
CORTEZ	FL 24-Jun-91	LL	DOL	16.5	N/A	3
CORTEZ	FL 24-Jun-91	LL	DOL	17.7	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	18.5	N/A	2
CORTEZ	FL 24-Jun-91	LL	DOL	18.9	N/A	2
CORTEZ	FL 24-Jun-91	LL	DOL	19.7	N/A	4
CORTEZ	FL 24-Jun-91	LL	DOL	20.1	N/A	2
CORTEZ	FL 24-Jun-91	LL	DOL	20.5	N/A	2
CORTEZ	FL 24-Jun-91	LL	DOL	20.9	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	21.3	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	22.0	N/A	3
CORTEZ	FL 24-Jun-91	LL	DOL	22.4	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	23.2	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	30.7	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	40.6	N/A	1
CORTEZ	FL 24-Jun-91	LL	DOL	46.1	N/A	1
SARASOTA	FL 25-Jun-91	RR	COB	23.0	26	1
SARASOTA	FL 25-Jun-91	RR	GAM	12.0	50	1
CORTEZ	FL 27-Jun-91	UNK	GAM	53.1	N/A	1
ST. PETERSBURG	FL 27-Jun-91	CHL	DOL	24.4	300	1
ST. PETERSBURG	FL 27-Jun-91	CHL	DOL	25.2	300	1
ST. PETERSBURG	FL 27-Jun-91	CHL	DOL	26.0	300	1
ST. PETERSBURG	FL 27-Jun-91	CHL	DOL	27.2	300	1
ST. PETERSBURG	FL 27-Jun-91	CHL	DOL	42.9	300	1
PANAMA CITY	FL 28-Jun-91	RR	DOL	14.0	64	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	38.6	96	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	13.4	102	1
COCOA BEACH	FL 29-Jun-91	RR	COB	36.6	105	1
COCOA BEACH	FL 29-Jun-91	RR	COB	37.4	105	1
COCOA BEACH	FL 29-Jun-91	RR	COB	38.6	105	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	22.8	108	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	24.8	108	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	26.2	108	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	28.3	108	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	35.0	108	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	40.6	108	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	42.1	108	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	42.9	108	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	50.0	108	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	37.2	120	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	42.1	120	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	36.2	126	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	39.0	132	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	7.5	150	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	16.9	150	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	33.9	150	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	36.6	150	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	14.6	162	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	39.0	162	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	39.8	162	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	30.7	165	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	32.7	168	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	46.1	168	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	29.9	180	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	34.6	180	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	42.1	180	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	9.6	198	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	14.4	198	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	32.3	198	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	38.6	198	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	43.3	222	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	44.9	222	1
COCOA BEACH	FL 29-Jun-91	RR	GAM	42.9	228	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	37.8	252	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	40.6	252	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	40.2	258	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	37.4	402	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	16.3	426	2
COCOA BEACH	FL 29-Jun-91	RR	DOL	16.9	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	17.1	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	17.7	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	18.1	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	19.5	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	21.3	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	22.2	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	25.2	426	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	17.7	648	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	25.2	648	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	28.3	648	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	25.2	672	1
COCOA BEACH	FL 29-Jun-91	RR	DOL	28.3	672	1
PORT CANAVERAL	FL 29-Jun-91	RR	DOL	12.0	160	1
DUCK KEY	FL 01-Jul-91	RR	DOL	20.0	719	2
DUCK KEY	FL 01-Jul-91	RR	DOL	24.0	719	2
DUCK KEY	FL 01-Jul-91	RR	DOL	28.0	719	1
DUCK KEY	FL 01-Jul-91	RR	DOL	30.0	719	3
DUCK KEY	FL 06-Jul-91	RR	DOL	20.0	590	1
FT. PIERCE	FL 06-Jul-91	RR	GAM	39.0	240	1
PORT CANAVERAL	FL 07-Jul-91	RR	DOL	14.0	109	1
PORT CANAVERAL	FL 13-Jul-91	RR	GAM	40.0	220	1
PORT CANAVERAL	FL 13-Jul-91	RR	GAM	46.0	220	1
CORTEZ	FL 15-Jul-91	CHL	DOL	15.7	120	1
CORTEZ	FL 15-Jul-91	CHL	DOL	16.1	120	1
CORTEZ	FL 15-Jul-91	ERR	DOL	15.0	120	1
PANAMA CITY	FL 15-Jul-91	RR	GAM	7.0	60	3
CORTEZ	FL 17-Jul-91	LL	GAM	49.2	150	1
ST. PETERSBURG	FL 18-Jul-91	LL	DOL	40.2	600	1
CORTEZ	FL 19-Jul-91	LL	DOL	40.2	N/A	1
CORTEZ	FL 19-Jul-91	LL	DOL	40.6	N/A	2
CORTEZ	FL 19-Jul-91	LL	DOL	40.9	N/A	1
CORTEZ	FL 19-Jul-91	LL	DOL	41.7	N/A	2
CORTEZ	FL 19-Jul-91	LL	DOL	42.9	N/A	1
CORTEZ	FL 19-Jul-91	LL	DOL	44.1	N/A	2
CORTEZ	FL 19-Jul-91	LL	DOL	49.2	N/A	1
PANAMA CITY	FL 19-Jul-91	RR	GAM	7.0	60	2
PORT CANAVERAL	FL 20-Jul-91	RR	GAM	28.0	165	1
SOUTH PASS	LA 20-Jul-91	RR	DOL	32.0	5000	1
SOUTH PASS	LA 20-Jul-91	RR	DOL	48.0	5000	1
SOUTH PASS	LA 21-Jul-91	RR	GAM	22.0	300	1
SOUTH PASS	LA 21-Jul-91	RR	GAM	26.0	300	1
SOUTH PASS	LA 21-Jul-91	RR	GAM	40.0	300	1
CORTEZ	FL 22-Jul-91	LL	GAM	52.2	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	26.8	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	28.3	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	28.7	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	29.5	N/A	2
CORTEZ	FL 23-Jul-91	LL	DOL	32.3	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	39.0	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	39.4	N/A	1
CORTEZ	FL 23-Jul-91	LL	DOL	51.2	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	35.4	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	36.2	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	37.8	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	38.6	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	39.0	N/A	1
CORTEZ	FL 23-Jul-91	LL	GAM	39.4	N/A	2
CORTEZ	FL 23-Jul-91	LL	GAM	39.8	N/A	1
PORT CANAVERAL	FL 28-Jul-91	RR	COB	33.0	40	1
ST. PETERSBURG	FL 29-Jul-91	LL	DOL	40.6	N/A	1
ST. PETERSBURG	FL 29-Jul-91	LL	DOL	41.3	N/A	2
ST. PETERSBURG	FL 29-Jul-91	LL	DOL	41.7	N/A	1
ST. PETERSBURG	FL 29-Jul-91	LL	DOL	42.9	N/A	1
ST. PETERSBURG	FL 29-Jul-91	LL	DOL	43.7	N/A	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
CORTEZ	FL 30-Jul-91	LL	COB	47.6	150	1
CORTEZ	FL 30-Jul-91	LL	COB	48.4	150	1
CORTEZ	FL 30-Jul-91	LL	COB	54.3	150	1
ST. PETERSBURG	FL 01-Aug-91	LL	DOL	24.0	900	1
ST. PETERSBURG	FL 01-Aug-91	LL	DOL	24.8	900	1
ST. PETERSBURG	FL 01-Aug-91	LL	DOL	27.6	900	1
ST. PETERSBURG	FL 01-Aug-91	LL	DOL	29.1	900	1
ST. PETERSBURG	FL 01-Aug-91	LL	DOL	32.3	900	1
PORT CANAVERAL	FL 04-Aug-91	RR	COB	36.0	30	1
VENICE	FL 05-Aug-91	RR	GAM	27.0	140	2
VENICE	FL 05-Aug-91	RR	GAM	29.0	140	1
VENICE	FL 05-Aug-91	RR	GAM	30.0	140	1
KEY LARGO	FL 16-Aug-91	RR	DOL	14.0	900	1
KEY LARGO	FL 16-Aug-91	RR	DOL	18.0	900	1
KEY LARGO	FL 16-Aug-91	RR	DOL	20.0	900	1
KEY LARGO	FL 16-Aug-91	RR	DOL	21.0	900	1
KEY LARGO	FL 16-Aug-91	RR	DOL	24.0	900	1
TAMPA	FL 17-Aug-91	RR	COB	29.5	5	1
CORTEZ	FL 20-Aug-91	LL	COB	35.4	240	1
CORTEZ	FL 26-Aug-91	LL	DOL	37.8	240	1
PANAMA CITY	FL 26-Aug-91	RR	GAM	7.0	60	2
SARASOTA	FL 31-Aug-91	RR	COB	28.0	48	1
SARASOTA	FL 31-Aug-91	RR	COB	28.0	50	1
PORT CANAVERAL	FL 02-Sep-91	RR	COB	30.0	40	1
SARASOTA	FL 06-Sep-91	RR	DOL	16.9	120	2
SARASOTA	FL 06-Sep-91	RR	DOL	17.0	120	2
SARASOTA	FL 06-Sep-91	RR	DOL	17.3	120	1
SARASOTA	FL 06-Sep-91	RR	DOL	17.5	120	1
SARASOTA	FL 06-Sep-91	RR	DOL	18.5	120	2
SARASOTA	FL 06-Sep-91	RR	DOL	20.9	120	1
SARASOTA	FL 06-Sep-91	RR	DOL	21.0	120	1
ANCLOTE	FL 07-Sep-91	RR	GAM	16.3	85	1
ANNA MARIA	FL 07-Sep-91	RR	GAM	26.0	175	1
ANNA MARIA	FL 07-Sep-91	RR	GAM	27.0	175	1
ANNA MARIA	FL 07-Sep-91	RR	GAM	28.0	175	1
ANNA MARIA	FL 07-Sep-91	RR	GAM	39.5	175	1
BAYPORT	FL 07-Sep-91	RR	GAM	27.0	130	1
BAYPORT	FL 07-Sep-91	RR	GAM	30.0	130	1
BAYPORT	FL 07-Sep-91	RR	GAM	31.0	130	1
BAYPORT	FL 07-Sep-91	RR	GAM	32.0	130	3
BAYPORT	FL 07-Sep-91	RR	GAM	34.0	130	4
BAYPORT	FL 07-Sep-91	RR	GAM	35.0	130	5
BAYPORT	FL 07-Sep-91	RR	GAM	37.0	130	2
BAYPORT	FL 07-Sep-91	RR	GAM	38.0	130	2
BAYPORT	FL 07-Sep-91	RR	GAM	40.0	130	2
BAYPORT	FL 07-Sep-91	RR	GAM	42.0	130	1
BAYPORT	FL 07-Sep-91	RR	GAM	43.0	130	1
BAYPORT	FL 07-Sep-91	RR	GAM	46.0	130	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	19.5	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	20.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	20.3	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	21.5	105	2
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	23.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	25.5	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	25.8	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	26.5	105	2
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	27.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	27.5	105	2
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	28.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	28.3	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	28.5	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	29.8	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	30.5	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	31.5	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	32.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	33.0	105	1
CRYSTAL RIVER	FL 07-Sep-91	RR	GAM	34.0	105	1
HUDSON	FL 07-Sep-91	RR	GAM	35.0	130	1
NEW PORT RICHEY	FL 07-Sep-91	RR	GAM	16.0	52	1
NEW PORT RICHEY	FL 07-Sep-91	RR	GAM	20.0	71	1
NEW PORT RICHEY	FL 07-Sep-91	RR	GAM	28.5	71	1
NEW PORT RICHEY	FL 07-Sep-91	RR	GAM	16.0	72	1
PASS-A-GRILLE	FL 07-Sep-91	RR	GAM	18.3	84	1
SARASOTA	FL 07-Sep-91	RR	GAM	16.0	95	1
SARASOTA	FL 07-Sep-91	RR	GAM	19.1	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	19.3	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	26.0	150	3
SARASOTA	FL 07-Sep-91	RR	GAM	26.7	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	26.8	150	2
SARASOTA	FL 07-Sep-91	RR	GAM	27.0	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	27.5	150	4
SARASOTA	FL 07-Sep-91	RR	GAM	27.6	150	3
SARASOTA	FL 07-Sep-91	RR	GAM	28.0	150	7
SARASOTA	FL 07-Sep-91	RR	GAM	28.7	150	4
SARASOTA	FL 07-Sep-91	RR	GAM	29.0	150	4
SARASOTA	FL 07-Sep-91	RR	GAM	29.1	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	29.5	150	3
SARASOTA	FL 07-Sep-91	RR	GAM	29.9	150	3
SARASOTA	FL 07-Sep-91	RR	GAM	30.0	150	3
SARASOTA	FL 07-Sep-91	RR	GAM	30.3	150	2
SARASOTA	FL 07-Sep-91	RR	GAM	30.5	150	2
SARASOTA	FL 07-Sep-91	RR	GAM	31.0	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	31.5	150	5
SARASOTA	FL 07-Sep-91	RR	GAM	31.7	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	32.0	150	2
SARASOTA	FL 07-Sep-91	RR	GAM	33.0	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	33.1	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	34.5	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	34.6	150	1
SARASOTA	FL 07-Sep-91	RR	GAM	35.0	150	2
SARASOTA	FL 07-Sep-91	RR	GAM	38.0	150	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	14.0	117	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	28.5	200	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	28.8	200	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	29.1	200	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	29.3	200	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	29.8	200	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	33.5	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	41.0	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	43.0	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	44.0	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	45.5	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	48.0	212	3
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	48.5	212	1
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	50.5	212	2
ST. PETERSBURG	FL 07-Sep-91	RR	GAM	52.0	212	2
VENICE	FL 07-Sep-91	RR	GAM	36.5	210	1
CORTEZ	FL 10-Sep-91	LL	COB	48.0	150	1
CORTEZ	FL 19-Sep-91	LL	COB	35.4	192	1
CORTEZ	FL 19-Sep-91	LL	COB	40.2	192	1
CORTEZ	FL 19-Sep-91	LL	COB	48.8	192	1
SARASOTA	FL 19-Sep-91	RR	GAM	33.1	48	1
SARASOTA	FL 19-Sep-91	RR	GAM	13.0	50	1
SARASOTA	FL 23-Sep-91	RR	COB	20.0	12	1
SARASOTA	FL 23-Sep-91	RR	COB	24.0	12	1
ST. PETERSBURG	FL 23-Sep-91	LL	COB	42.1	180	1
CORTEZ	FL 24-Sep-91	LL	COB	35.8	N/A	1
CORTEZ	FL 24-Sep-91	LL	COB	46.9	N/A	1
ST. PETERSBURG	FL 26-Sep-91	LL	COB	34.3	138	1
ST. PETERSBURG	FL 26-Sep-91	LL	COB	42.9	138	1
ST. PETERSBURG	FL 26-Sep-91	LL	COB	44.5	138	1
PORT CANAVERAL	FL 06-Oct-91	RR	DOL	23.0	210	1
PORT CANAVERAL	FL 06-Oct-91	RR	DOL	24.0	210	1
PORT CANAVERAL	FL 06-Oct-91	RR	DOL	27.0	210	1
CORTEZ	FL 07-Oct-91	LL	COB	52.8	120	1
CORTEZ	FL 07-Oct-91	LL	COB	54.7	120	1
SARASOTA	FL 10-Oct-91	RR	COB	29.0	12	1
MELBOURNE	FL 13-Oct-91	RR	DOL	26.0	125	1
SARASOTA	FL 15-Oct-91	RR	COB	30.0	26	3
ST. PETERSBURG	FL 15-Oct-91	RR	GAM	15.0	80	1
BILOXI	MS 18-Oct-91	RR	GAM	24.0	222	1
ST. PETERSBURG	FL 18-Oct-91	RR	GAM	20.0	130	2
ST. PETERSBURG	FL 18-Oct-91	RR	GAM	24.0	130	1
ST. PETERSBURG	FL 18-Oct-91	RR	GAM	26.0	130	1
ST. PETERSBURG	FL 18-Oct-91	RR	GAM	28.0	130	2
ST. PETERSBURG	FL 18-Oct-91	RR	GAM	30.0	130	1
BILOXI	MS 19-Oct-91	RR	GAM	17.0	222	1
BILOXI	MS 19-Oct-91	RR	GAM	28.3	257	1
PANAMA CITY	FL 19-Oct-91	RR	GAM	12.0	60	1
SARASOTA	FL 20-Oct-91	RR	COB	26.0	27	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel, LL = longline; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
SARASOTA	FL 20-Oct-91	RR	COB	27.0	27	2
SARASOTA	FL 20-Oct-91	RR	COB	30.0	27	1
SARASOTA	FL 20-Oct-91	RR	COB	34.0	27	1
BILOXI	MS 21-Oct-91	RR	DOL	19.3	230	1
SARASOTA	FL 24-Oct-91	RR	COB	37.0	27	1
SARASOTA	FL 26-Oct-91	RR	COB	25.5	26	2
SARASOTA	FL 26-Oct-91	RR	COB	26.0	26	1
SARASOTA	FL 26-Oct-91	RR	COB	29.0	26	1
SARASOTA	FL 26-Oct-91	RR	COB	29.5	26	1
SARASOTA	FL 26-Oct-91	RR	COB	30.7	26	1
SARASOTA	FL 26-Oct-91	RR	COB	31.7	26	1
SARASOTA	FL 26-Oct-91	RR	COB	32.0	26	1
SARASOTA	FL 26-Oct-91	RR	COB	32.7	26	1
SARASOTA	FL 27-Oct-91	RR	COB	26.0	26	1
SARASOTA	FL 27-Oct-91	RR	COB	32.5	26	1
CORTEZ	FL 28-Oct-91	LL	COB	43.3	132	1
SARASOTA	FL 28-Oct-91	RR	COB	29.5	27	1
CORTEZ	FL 29-Oct-91	LL	COB	38.0	240	1
CORTEZ	FL 29-Oct-91	LL	DOL	46.5	240	1
PANAMA CITY	FL 29-Oct-91	RR	GAM	22.0	60	2
PANAMA CITY	FL 29-Oct-91	RR	GAM	25.0	60	1
PANAMA CITY	FL 29-Oct-91	RR	GAM	26.0	60	1
PANAMA CITY	FL 29-Oct-91	RR	GAM	27.0	60	1
SARASOTA	FL 29-Oct-91	RR	COB	28.7	27	1
SARASOTA	FL 29-Oct-91	RR	COB	29.0	27	1
SARASOTA	FL 29-Oct-91	RR	COB	33.0	27	1
SARASOTA	FL 31-Oct-91	RR	COB	26.0	27	1
SARASOTA	FL 31-Oct-91	RR	COB	28.0	27	1
SARASOTA	FL 01-Nov-91	RR	GAM	12.5	74	1
SARASOTA	FL 01-Nov-91	RR	GAM	25.5	74	1
SARASOTA	FL 01-Nov-91	RR	GAM	26.5	74	1
SARASOTA	FL 01-Nov-91	RR	GAM	31.0	74	1
ST. PETERSBURG	FL 04-Nov-91	RR	COB	40.9	138	1
ST. PETERSBURG	FL 04-Nov-91	RR	COB	42.1	138	1
ST. PETERSBURG	FL 04-Nov-91	RR	COB	49.6	138	1
PANAMA CITY	FL 05-Nov-91	RR	GAM	26.0	100	1
PANAMA CITY	FL 05-Nov-91	RR	GAM	27.0	100	1
PANAMA CITY	FL 05-Nov-91	RR	GAM	27.5	100	1
TAMPA	FL 05-Nov-91	RR	GAM	13.0	125	1
TAMPA	FL 05-Nov-91	RR	GAM	13.5	125	1
TAMPA	FL 05-Nov-91	RR	GAM	14.0	125	4
TAMPA	FL 05-Nov-91	RR	GAM	14.5	125	1
TAMPA	FL 05-Nov-91	RR	GAM	15.0	125	1
TAMPA	FL 05-Nov-91	RR	GAM	25.5	125	1
TAMPA	FL 05-Nov-91	RR	GAM	26.5	125	1
TAMPA	FL 05-Nov-91	RR	GAM	27.0	125	1
TAMPA	FL 05-Nov-91	RR	GAM	27.5	125	1
TAMPA	FL 06-Nov-91	RR	GAM	13.5	125	1
TAMPA	FL 06-Nov-91	RR	GAM	14.0	125	4
TAMPA	FL 06-Nov-91	RR	GAM	14.5	125	1
TAMPA	FL 06-Nov-91	RR	GAM	15.5	125	1
TAMPA	FL 06-Nov-91	RR	GAM	25.0	125	1
TAMPA	FL 06-Nov-91	RR	GAM	26.0	125	2
TAMPA	FL 06-Nov-91	RR	GAM	26.5	125	2
TAMPA	FL 06-Nov-91	RR	GAM	27.0	125	3
TAMPA	FL 06-Nov-91	RR	GAM	27.5	125	1
CORTEZ	FL 08-Nov-91	LL	COB	34.1	N/A	1
SARASOTA	FL 14-Nov-91	RR	GAM	30.7	74	1
SARASOTA	FL 15-Nov-91	RR	COB	28.0	26	1
GASPARILLA ISLAN	FL 16-Nov-91	RR	GAM	37.0	135	1
PANAMA CITY	FL 16-Nov-91	RR	GAM	14.0	80	1
PANAMA CITY	FL 16-Nov-91	RR	GAM	15.0	80	1
PANAMA CITY	FL 16-Nov-91	RR	GAM	16.0	80	3
PANAMA CITY	FL 16-Nov-91	RR	GAM	20.0	80	1
PANAMA CITY	FL 16-Nov-91	RR	GAM	24.0	80	1
PANAMA CITY	FL 16-Nov-91	RR	GAM	26.0	80	3
SARASOTA	FL 16-Nov-91	RR	GAM	19.5	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	25.0	135	2
SARASOTA	FL 16-Nov-91	RR	GAM	26.0	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	29.5	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	29.7	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	30.0	135	2
SARASOTA	FL 16-Nov-91	RR	GAM	30.5	135	2
SARASOTA	FL 16-Nov-91	RR	GAM	31.0	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	32.0	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	32.5	135	1
SARASOTA	FL 16-Nov-91	RR	GAM	34.0	135	1
SARASOTA	FL 19-Nov-91	RR	GAM	27.5	43	1
SARASOTA	FL 19-Nov-91	RR	GAM	29.5	43	1
SARASOTA	FL 27-Nov-91		GAM		N/A	1
SARASOTA	FL 27-Nov-91	RR	GAM	30.0	45	1
SARASOTA	FL 27-Nov-91	RR	GAM	30.8	45	1
SARASOTA	FL 27-Nov-91	RR	GAM	31.0	45	1
SARASOTA	FL 30-Nov-91	RR	COB	23.0	27	1
SARASOTA	FL 30-Nov-91	RR	COB	25.5	27	1
SARASOTA	FL 30-Nov-91	RR	COB	29.0	27	1
SARASOTA	FL 30-Nov-91	RR	COB	30.0	27	1
SARASOTA	FL 30-Nov-91	RR	GAM	22.5	100	2
SARASOTA	FL 30-Nov-91	RR	GAM	26.5	100	1
SARASOTA	FL 07-Dec-91	RR	GAM	30.0	103	1
SARASOTA	FL 07-Dec-91	RR	GAM	31.0	103	2
SARASOTA	FL 07-Dec-91	RR	GAM	33.0	103	2
SARASOTA	FL 07-Dec-91	RR	GAM	35.0	103	2
SARASOTA	FL 08-Dec-91	RR	GAM	18.5	60	1
VENICE	FL 08-Dec-91	RR	COB	20.0	12	1
VENICE	FL 08-Dec-91	RR	COB	24.0	12	1
SARASOTA	FL 09-Dec-91	RR	GAM	16.0	100	1
SARASOTA	FL 12-Dec-91	RR	COB	16.0	12	1
SARASOTA	FL 12-Dec-91	RR	GAM	30.5	100	1
SARASOTA	FL 12-Dec-91	RR	GAM	31.5	100	1
SARASOTA	FL 12-Dec-91	RR	GAM	32.0	100	2
SARASOTA	FL 12-Dec-91	RR	GAM	32.5	100	1
SARASOTA	FL 12-Dec-91	RR	GAM	33.0	100	1
ST. PETERSBURG	FL 14-Dec-91	RR	GAM	18.0	70	1
ST. PETERSBURG	FL 16-Dec-91	LL	COB	45.7	240	1
ST. PETERSBURG	FL 16-Dec-91	RR	COB	54.3	198	1
SARASOTA	FL 17-Dec-91	RR	GAM	17.8	48	1
SARASOTA	FL 20-Dec-91	RR	GAM	14.5	48	1
SARASOTA	FL 20-Dec-91	RR	GAM	15.5	48	1
SARASOTA	FL 20-Dec-91	RR	GAM	16.5	48	1
SARASOTA	FL 20-Dec-91	RR	GAM	17.5	48	1
SARASOTA	FL 20-Dec-91	RR	GAM	18.0	48	1
ST. PETERSBURG	FL 20-Dec-91	RR	GAM	13.0	85	1
ST. PETERSBURG	FL 20-Dec-91	RR	GAM	15.0	85	1
TARPON SPRINGS	FL 20-Dec-91	RR	GAM	15.0	85	1
SARASOTA	FL 21-Dec-91	RR	GAM	31.0	100	1
SARASOTA	FL 21-Dec-91	RR	GAM	33.5	100	3
SARASOTA	FL 22-Dec-91	RR	GAM	30.0	55	1
SARASOTA	FL 22-Dec-91	RR	GAM	31.0	55	1
SARASOTA	FL 28-Dec-91	RR	COB	31.0	30	1
SARASOTA	FL 28-Dec-91	RR	COB	31.0	135	1
SARASOTA	FL 28-Dec-91	RR	GAM	16.0	135	1
SARASOTA	FL 28-Dec-91	RR	GAM	21.0	135	1
SARASOTA	FL 28-Dec-91	RR	GAM	22.0	135	4
SARASOTA	FL 28-Dec-91	RR	GAM	23.0	135	2
SARASOTA	FL 28-Dec-91	RR	GAM	24.0	135	1
SARASOTA	FL 28-Dec-91	RR	GAM	25.0	135	1
SARASOTA	FL 28-Dec-91	RR	GAM	26.0	135	2
SARASOTA	FL 08-Jan-92	RR	GAM	21.1	105	1
SARASOTA	FL 08-Jan-92	RR	GAM	28.0	105	1
SARASOTA	FL 08-Jan-92	RR	GAM	31.1	105	1
SARASOTA	FL 08-Jan-92	RR	GAM	40.1	105	1
PANAMA CITY	FL 11-Jan-92	RR	GAM	15.0	75	1
PANAMA CITY	FL 11-Jan-92	RR	GAM	18.0	75	3
PANAMA CITY	FL 11-Jan-92	RR	GAM	19.0	75	9
PANAMA CITY	FL 11-Jan-92	RR	GAM	20.0	75	9
PANAMA CITY	FL 11-Jan-92	RR	GAM	21.0	75	2
PANAMA CITY	FL 11-Jan-92	RR	GAM	22.0	75	1
PANAMA CITY	FL 11-Jan-92	RR	GAM	26.0	75	2
PANAMA CITY	FL 11-Jan-92	RR	GAM	27.0	75	1
SARASOTA	FL 11-Jan-92	RR	COB	28.0	32	1
CORTEZ	FL 12-Jan-92	LL	COB	31.0	140	1
	12-Jan-92	LL	GAM	31.3	140	1
MADEIRA BEACH	FL 13-Jan-92	LL	COB	46.5	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	36.2	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	37.8	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	39.0	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	39.4	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	39.8	240	1
MADEIRA BEACH	FL 13-Jan-92	LL	GAM	40.6	240	2

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = bandreel line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
MADEIRA BEACH FL	13-Jan-92	LL	GAM	41.3	240	2
MADEIRA BEACH FL	13-Jan-92	LL	GAM	41.7	240	1
MADEIRA BEACH FL	13-Jan-92	LL	GAM	43.7	240	2
CORTEZ FL	14-Jan-92	LL	COB	35.0	N/A	1
CORTEZ FL	14-Jan-92	LL	GAM	44.9	N/A	1
CORTEZ FL	15-Jan-92	LL	GAM	45.3	N/A	1
MADEIRA BEACH FL	15-Jan-92	RR	GAM	21.0	110	1
SARASOTA FL	18-Jan-92	RR	GAM	32.5	74	1
CORTEZ FL	31-Jan-92	LL	COB	39.4	140	1
	31-Jan-92	LL	COB	38.2	140	1
PANAMA CITY FL	01-Feb-92	RR	COB	28.0	70	1
PANAMA CITY FL	01-Feb-92	RR	GAM	16.0	70	1
PANAMA CITY FL	01-Feb-92	RR	GAM	26.0	70	3
PANAMA CITY FL	01-Feb-92	RR	GAM	27.0	70	4
PANAMA CITY FL	01-Feb-92	RR	GAM	30.0	70	2
PANAMA CITY FL	11-Feb-92	RR	GAM	20.0	70	6
PANAMA CITY FL	11-Feb-92	RR	GAM	21.0	70	1
PANAMA CITY FL	11-Feb-92	RR	GAM	24.0	70	4
PANAMA CITY FL	11-Feb-92	RR	GAM	25.0	70	2
PANAMA CITY FL	11-Feb-92	RR	GAM	26.0	70	8
PANAMA CITY FL	11-Feb-92	RR	GAM	27.0	70	1
PANAMA CITY FL	11-Feb-92	RR	GAM	28.0	70	3
PANAMA CITY FL	11-Feb-92	RR	GAM	29.0	70	1
VENICE FL	12-Feb-92	RR	GAM	25.0	105	1
VENICE FL	12-Feb-92	RR	GAM	31.0	105	1
VENICE FL	12-Feb-92	RR	GAM	31.5	105	1
VENICE FL	12-Feb-92	RR	GAM	35.0	105	1
BAYPORT FL	15-Feb-92	RR	GAM	12.0	70	1
CORTEZ FL	18-Feb-92	NET	COB	28.3	N/A	1
CORTEZ FL	18-Feb-92	NET	COB	35.0	N/A	1
CORTEZ FL	18-Feb-92	NET	COB	37.0	N/A	1
CORTEZ FL	18-Feb-92	NET	COB	37.4	N/A	1
CORTEZ FL	18-Feb-92	NET	COB	38.6	N/A	1
CORTEZ FL	21-Feb-92	NET	COB	33.5	N/A	1
CORTEZ FL	21-Feb-92	NET	COB	34.6	N/A	2
CORTEZ FL	21-Feb-92	NET	COB	35.8	N/A	1
SARASOTA FL	21-Feb-92	RR	COB	30.0	32	1
ENGLEWOOD FL	23-Feb-92	RR	GAM	30.0	105	1
VENICE FL	23-Feb-92	RR	GAM	32.0	105	2
VENICE FL	23-Feb-92	RR	GAM	33.0	105	1
VENICE FL	23-Feb-92	RR	GAM	34.0	105	1
VENICE FL	23-Feb-92	RR	GAM	36.0	105	1
CORTEZ FL	25-Feb-92	NET	COB	35.0	N/A	1
CORTEZ FL	25-Feb-92	NET	COB	36.6	N/A	1
CORTEZ FL	25-Feb-92	NET	COB	46.1	N/A	1
CORTEZ FL	28-Feb-92	LL	GAM	39.4	N/A	1
MADEIRA BEACH FL	28-Feb-92	LL	GAM	43.3	N/A	1
MADEIRA BEACH FL	28-Feb-92	LL	GAM	50.8	N/A	1
PORT CANAVERAL FL	01-Mar-92	RR	COB	38.2	40	1
SARASOTA FL	02-Mar-92	ERR	GAM	23.0	150	1
SARASOTA FL	02-Mar-92	ERR	GAM	27.0	150	1
SARASOTA FL	02-Mar-92	ERR	GAM	29.0	150	1
SARASOTA FL	02-Mar-92	ERR	GAM	31.0	150	1
SARASOTA FL	03-Mar-92	RR	COB	26.0	31	1
SARASOTA FL	03-Mar-92	RR	COB	29.0	31	1
PORT CANAVERAL FL	08-Mar-92	RR	COB	25.0	35	1
PORT CANAVERAL FL	08-Mar-92	RR	COB	29.0	40	2
PORT CANAVERAL FL	08-Mar-92	RR	COB	33.0	40	1
PORT CANAVERAL FL	08-Mar-92	RR	COB	35.0	40	1
VENICE FL	08-Mar-92	RR	GAM	26.5	105	1
VENICE FL	08-Mar-92	RR	GAM	33.0	105	2
VENICE FL	08-Mar-92	RR	GAM	34.0	105	4
CORTEZ FL	09-Mar-92	LL	COB	37.4	156	1
SANIBEL FL	10-Mar-92	RR	GAM	19.0	90	1
SANIBEL FL	10-Mar-92	RR	GAM	20.0	95	1
SANIBEL FL	12-Mar-92	RR	GAM	22.0	80	1
VENICE FL	12-Mar-92	RR	GAM	34.0	65	1
MADEIRA BEACH FL	13-Mar-92	LL	DOL	26.8	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	DOL	28.3	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	37.4	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	41.7	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	42.5	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	42.9	N/A	2
MADEIRA BEACH FL	13-Mar-92	LL	GAM	43.7	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	44.1	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	45.3	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	45.7	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	46.1	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	48.4	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	49.2	N/A	1
MADEIRA BEACH FL	13-Mar-92	LL	GAM	51.6	N/A	2
MADEIRA BEACH FL	13-Mar-92	LL	GAM	53.1	N/A	1
SARASOTA FL	16-Mar-92	RR	COB	26.5	33	1
SARASOTA FL	16-Mar-92	RR	COB	27.0	33	1
PORT CANAVERAL FL	20-Mar-92	RR	COB	31.5	30	1
TARPON SPRINGS FL	21-Mar-92	RR	GAM	24.0	115	1
TARPON SPRINGS FL	21-Mar-92	RR	GAM	26.0	115	1
PORT CANAVERAL FL	22-Mar-92	RR	COB	29.0	40	1
PORT CANAVERAL FL	22-Mar-92	RR	COB	33.0	40	2
VENICE FL	22-Mar-92	RR	GAM	33.0	100	2
VENICE FL	22-Mar-92	RR	GAM	35.0	100	1
CORTEZ FL	23-Mar-92	LL	COB	47.0	240	1
CORTEZ FL	23-Mar-92	LL	COB	54.3	240	1
CORTEZ FL	23-Mar-92	LL	GAM	39.4	240	1
SARASOTA FL	26-Mar-92	RR	COB	38.6	N/A	1
SARASOTA FL	26-Mar-92	RR	GAM	32.7	N/A	2
SARASOTA FL	26-Mar-92	RR	GAM	35.8	N/A	1
CORTEZ FL	27-Mar-92	NET	COB	33.5	N/A	1
CORTEZ FL	27-Mar-92	NET	COB	35.4	N/A	1
SARASOTA FL	27-Mar-92	RR	COB	24.0	30	1
SARASOTA FL	27-Mar-92	RR	COB	27.0	30	1
SARASOTA FL	27-Mar-92	RR	COB	32.0	30	2
VENICE FL	27-Mar-92	RR	COB	38.6	N/A	1
VENICE FL	27-Mar-92	RR	COB	47.6	N/A	1
VENICE FL	27-Mar-92	RR	COB	34.3	N/A	1
VENICE FL	27-Mar-92	RR	GAM	31.5	N/A	2
VENICE FL	27-Mar-92	RR	GAM	31.9	N/A	1
VENICE FL	27-Mar-92	RR	GAM	32.7	N/A	1
VENICE FL	27-Mar-92	RR	GAM	33.9	N/A	1
VENICE FL	27-Mar-92	RR	GAM	34.3	N/A	1
VENICE FL	27-Mar-92	RR	GAM	34.6	N/A	1
SARASOTA FL	30-Mar-92	RR	COB	23.0	30	1
SARASOTA FL	30-Mar-92	RR	COB	23.5	30	1
SARASOTA FL	30-Mar-92	RR	COB	25.0	30	1
SARASOTA FL	30-Mar-92	RR	COB	25.5	30	1
SARASOTA FL	30-Mar-92	RR	COB	26.0	30	1
SARASOTA FL	30-Mar-92	RR	COB	27.0	30	1
SARASOTA FL	30-Mar-92	RR	COB	28.0	30	2
SARASOTA FL	30-Mar-92	RR	COB	30.0	30	1
PORT CANAVERAL FL	31-Mar-92	RR	COB	27.0	30	2
PORT CANAVERAL FL	31-Mar-92	RR	COB	28.0	30	2
PORT CANAVERAL FL	31-Mar-92	RR	COB	33.0	30	1
PORT CANAVERAL FL	01-Apr-92	RR	COB	28.0	30	1
PORT CANAVERAL FL	01-Apr-92	RR	COB	30.0	30	3
PORT CANAVERAL FL	01-Apr-92	RR	COB	31.0	30	1
PORT CANAVERAL FL	01-Apr-92	RR	COB	38.0	35	1
SARASOTA FL	01-Apr-92	RR	COB	24.0	30	1
SARASOTA FL	01-Apr-92	RR	COB	28.0	30	1
SARASOTA FL	01-Apr-92	RR	COB	34.0	30	1
SARASOTA FL	01-Apr-92	RR	COB	39.8	N/A	2
SARASOTA FL	01-Apr-92	RR	COB	43.7	N/A	1
SARASOTA FL	01-Apr-92	RR	COB	44.1	N/A	3
SARASOTA FL	01-Apr-92	RR	COB	45.7	N/A	1
SARASOTA FL	01-Apr-92	RR	COB	46.5	N/A	1
SARASOTA FL	01-Apr-92	RR	COB	46.9	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	28.7	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	31.5	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	31.9	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	32.3	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	32.7	N/A	4
SARASOTA FL	01-Apr-92	RR	GAM	33.1	N/A	3
SARASOTA FL	01-Apr-92	RR	GAM	33.5	N/A	2
SARASOTA FL	01-Apr-92	RR	GAM	33.9	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	34.3	N/A	2
SARASOTA FL	01-Apr-92	RR	GAM	34.6	N/A	1
SARASOTA FL	01-Apr-92	RR	GAM	44.9	N/A	1
TORTUGAS FL	02-Apr-92	RR	GAM	18.0	68	1
CORTEZ FL	03-Apr-92	LL	GAM	38.2	N/A	1
CORTEZ FL	03-Apr-92	LL	GAM	41.3	N/A	1
CORTEZ FL	03-Apr-92	LL	GAM	49.2	N/A	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area		Date	Gear	Sp.	Length (in)	Depth (ft)	Count
CORTEZ	FL	03-Apr-92	NET	COB	28.7	N/A	1
SARASOTA	FL	03-Apr-92	RR	COB	23.5	30	1
SARASOTA	FL	03-Apr-92	RR	COB	27.8	30	1
SARASOTA	FL	03-Apr-92	RR	COB	28.5	30	1
SARASOTA	FL	03-Apr-92	RR	COB	29.0	30	1
SARASOTA	FL	03-Apr-92	RR	COB	29.5	30	2
SARASOTA	FL	03-Apr-92	RR	COB	30.0	30	1
SARASOTA	FL	03-Apr-92	RR	COB	33.0	30	1
SARASOTA	FL	03-Apr-92	RR	COB	35.5	30	1
PORT CANAVERAL	FL	04-Apr-92	RR	COB	28.0	30	2
PORT CANAVERAL	FL	04-Apr-92	RR	COB	30.0	30	3
PORT CANAVERAL	FL	04-Apr-92	RR	COB	31.0	30	4
PORT CANAVERAL	FL	04-Apr-92	RR	COB	33.0	30	1
SEBASTION	FL	04-Apr-92	RR	DOL	30.0	125	1
MADEIRA BEACH	FL	05-Apr-92	RR	GAM	16.0	90	3
MADEIRA BEACH	FL	06-Apr-92	LL	COB	34.6	168	1
MADEIRA BEACH	FL	06-Apr-92	LL	COB	40.6	168	1
MADEIRA BEACH	FL	06-Apr-92	LL	COB	47.6	168	1
MADEIRA BEACH	FL	06-Apr-92	LL	COB	52.8	168	1
SARASOTA	FL	06-Apr-92	RR	GAM	15.5	15	1
SARASOTA	FL	08-Apr-92	RR	COB	25.5	30	1
SARASOTA	FL	08-Apr-92	RR	COB	32.0	30	1
SARASOTA	FL	08-Apr-92	RR	GAM	25.0	120	1
SARASOTA	FL	10-Apr-92	RR	COB	33.1	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	33.5	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	37.4	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	38.6	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	39.8	N/A	2
SARASOTA	FL	10-Apr-92	RR	COB	43.3	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	44.1	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	46.1	N/A	1
SARASOTA	FL	10-Apr-92	RR	COB	34.6	N/A	1
SARASOTA	FL	10-Apr-92	RR	GAM	31.1	N/A	1
SARASOTA	FL	10-Apr-92	RR	GAM	31.5	N/A	2
SARASOTA	FL	10-Apr-92	RR	GAM	56.3	N/A	1
SARASOTA	FL	13-Apr-92	RR	COB	19.0	27	1
SARASOTA	FL	13-Apr-92	RR	COB	21.0	27	1
SARASOTA	FL	13-Apr-92	RR	COB	25.0	27	1
SARASOTA	FL	13-Apr-92	RR	COB	29.0	27	1
SARASOTA	FL	13-Apr-92	RR	COB	31.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	24.5	27	1
SARASOTA	FL	14-Apr-92	RR	COB	26.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	26.5	27	1
SARASOTA	FL	14-Apr-92	RR	COB	28.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	29.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	32.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	33.0	27	1
SARASOTA	FL	14-Apr-92	RR	COB	33.5	27	1
SARASOTA	FL	14-Apr-92	RR	COB	35.0	27	2
VENICE	FL	14-Apr-92	RR	GAM	12.0	56	1
VENICE	FL	14-Apr-92	RR	GAM	15.0	56	2
VENICE	FL	14-Apr-92	RR	GAM	16.0	56	5
VENICE	FL	14-Apr-92	RR	GAM	17.0	56	1
CORTEZ	FL	15-Apr-92	LL	COB	38.2	N/A	1
CORTEZ	FL	15-Apr-92	LL	COB	47.6	N/A	1
SARASOTA BAY	FL	15-Apr-92	NET	COB	28.0	N/A	2
SARASOTA BAY	FL	15-Apr-92	NET	COB	29.1	N/A	2
SARASOTA BAY	FL	15-Apr-92	NET	COB	30.7	N/A	1
VENICE	FL	15-Apr-92	RR	GAM	14.0	56	1
VENICE	FL	15-Apr-92	RR	GAM	16.0	56	3
DESTIN	FL	16-Apr-92	RR	COB	26.0	15	1
NAVARRE	FL	16-Apr-92	RR	COB	32.0	15	1
SARASOTA	FL	16-Apr-92	RR	COB	25.0	27	1
SARASOTA	FL	16-Apr-92	RR	COB	26.0	27	1
SARASOTA	FL	16-Apr-92	RR	COB	32.7	N/A	1
SARASOTA	FL	16-Apr-92	RR	COB	33.9	N/A	1
SARASOTA	FL	16-Apr-92	RR	COB	36.6	N/A	1
SARASOTA	FL	16-Apr-92	RR	GAM	31.5	N/A	2
SARASOTA	FL	16-Apr-92	RR	GAM	32.3	N/A	1
SARASOTA	FL	16-Apr-92	RR	GAM	32.7	N/A	1
SARASOTA	FL	16-Apr-92	RR	GAM	33.1	N/A	1
SARASOTA	FL	16-Apr-92	RR	GAM	33.5	N/A	2
SARASOTA	FL	16-Apr-92	RR	GAM	33.9	N/A	1
SARASOTA	FL	16-Apr-92	RR	GAM	34.3	N/A	5
SARASOTA	FL	16-Apr-92	RR	GAM	34.6	N/A	1
VENICE	FL	16-Apr-92	RR	COB	28.5	26	1
VENICE	FL	16-Apr-92	RR	GAM	33.0	75	1
VENICE	FL	16-Apr-92	RR	GAM	34.0	75	1
VENICE	FL	16-Apr-92	RR	GAM	35.0	75	2
VENICE	FL	16-Apr-92	RR	GAM	36.0	75	1
VENICE	FL	16-Apr-92	RR	GAM	37.0	75	2
VENICE	FL	16-Apr-92	RR	GAM	39.0	75	1
SARASOTA	FL	17-Apr-92	RR	COB	29.0	27	1
SARASOTA	FL	17-Apr-92	RR	COB	30.0	27	1
SARASOTA	FL	17-Apr-92	RR	COB	42.1	N/A	1
SARASOTA	FL	17-Apr-92	RR	COB	39.0	N/A	1
SARASOTA	FL	17-Apr-92	RR	GAM	32.3	N/A	1
SARASOTA	FL	17-Apr-92	RR	GAM	34.6	N/A	1
SARASOTA	FL	17-Apr-92	RR	GAM	35.0	N/A	1
SARASOTA	FL	17-Apr-92	RR	GAM	40.2	N/A	1
VENICE	FL	17-Apr-92	RR	COB	27.5	26	1
VENICE	FL	17-Apr-92	RR	COB	36.6	N/A	1
VENICE	FL	17-Apr-92	RR	COB	46.5	N/A	1
PANAMA CITY	FL	18-Apr-92	RR	GAM	24.0	75	1
PANAMA CITY	FL	18-Apr-92	RR	GAM	18.0	140	1
VENICE	FL	18-Apr-92	RR	COB	39.0	25	1
VENICE	FL	18-Apr-92	RR	COB	26.5	26	1
VENICE	FL	18-Apr-92	RR	GAM	31.0	65	1
VENICE	FL	19-Apr-92	RR	COB	31.0	26	1
PANAMA CITY	FL	20-Apr-92	RR	GAM	26.0	140	1
SARASOTA	FL	20-Apr-92	RR	COB	30.5	25	1
SARASOTA	FL	20-Apr-92	RR	COB	24.5	27	1
SARASOTA	FL	20-Apr-92	RR	COB	30.5	27	1
VENICE	FL	20-Apr-92	RR	GAM	31.0	65	1
VENICE	FL	20-Apr-92	RR	GAM	32.0	65	1
VENICE	FL	20-Apr-92	RR	GAM	33.0	65	1
VENICE	FL	20-Apr-92	RR	GAM	35.0	65	2
VENICE	FL	20-Apr-92	RR	GAM	36.0	65	1
VENICE	FL	20-Apr-92	RR	GAM	37.0	65	2
VENICE	FL	20-Apr-92	RR	GAM	38.0	65	3
VENICE	FL	20-Apr-92	RR	GAM	39.0	65	2
VENICE	FL	20-Apr-92	RR	GAM	40.0	65	2
SARASOTA	FL	21-Apr-92	RR	COB	44.1	N/A	1
VENICE	FL	21-Apr-92	RR	GAM	31.0	65	1
VENICE	FL	21-Apr-92	RR	GAM	35.0	65	2
VENICE	FL	21-Apr-92	RR	GAM	36.0	65	4
VENICE	FL	21-Apr-92	RR	GAM	37.0	65	4
VENICE	FL	21-Apr-92	RR	GAM	38.0	65	2
VENICE	FL	21-Apr-92	RR	GAM	39.0	65	3
VENICE	FL	21-Apr-92	RR	GAM	40.0	65	1
CORTEZ	FL	22-Apr-92	LL	COB	47.6	156	1
SARASOTA	FL	22-Apr-92	RR	COB	34.0	30	1
SARASOTA	FL	23-Apr-92	RR	COB	40.6	N/A	1
SARASOTA	FL	23-Apr-92	RR	COB	45.7	N/A	1
SARASOTA	FL	23-Apr-92	RR	GAM	35.0	N/A	1
SARASOTA	FL	23-Apr-92	RR	GAM	35.8	N/A	2
SARASOTA	FL	23-Apr-92	RR	GAM	36.6	N/A	1
SARASOTA	FL	23-Apr-92	RR	GAM	37.0	N/A	1
VENICE	FL	23-Apr-92	RR	GAM	15.5	105	1
VENICE	FL	23-Apr-92	RR	GAM	30.5	105	1
VENICE	FL	23-Apr-92	RR	GAM	34.5	105	1
VENICE	FL	23-Apr-92	RR	GAM	36.0	105	1
VENICE	FL	24-Apr-92	RR	COB	30.0	105	1
VENICE	FL	24-Apr-92	RR	GAM	28.0	105	1
VENICE	FL	24-Apr-92	RR	GAM	28.5	105	1
VENICE	FL	24-Apr-92	RR	GAM	29.0	105	1
VENICE	FL	24-Apr-92	RR	GAM	33.0	105	1
VENICE	FL	24-Apr-92	RR	GAM	33.5	105	1
VENICE	FL	24-Apr-92	RR	GAM	34.0	105	5
VENICE	FL	24-Apr-92	RR	GAM	35.0	105	6
VENICE	FL	24-Apr-92	RR	GAM	35.5	105	1
VENICE	FL	24-Apr-92	RR	GAM	36.0	105	5
VENICE	FL	24-Apr-92	RR	GAM	37.0	105	2
VENICE	FL	24-Apr-92	RR	GAM	38.0	105	3
VENICE	FL	24-Apr-92	RR	COB	39.4	N/A	1
VENICE	FL	24-Apr-92	RR	GAM	34.3	N/A	1
VENICE	FL	24-Apr-92	RR	GAM	35.0	N/A	2
VENICE	FL	24-Apr-92	RR	GAM	36.2	N/A	1
VENICE	FL	25-Apr-92	RR	GAM	26.0	105	1
VENICE	FL	25-Apr-92	RR	GAM	28.0	105	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
VENICE	FL 25-Apr-92	RR	GAM	32.0	105	1
VENICE	FL 25-Apr-92	RR	GAM	34.0	105	1
VENICE	FL 25-Apr-92	RR	GAM	35.0	105	4
VENICE	FL 25-Apr-92	RR	GAM	36.0	105	3
VENICE	FL 25-Apr-92	RR	GAM	37.0	105	4
VENICE	FL 25-Apr-92	RR	GAM	38.0	105	4
VENICE	FL 25-Apr-92	RR	GAM	41.0	105	1
VENICE	FL 26-Apr-92	RR	COB	30.5	25	1
PANAMA CITY	FL 30-Apr-92	RR	GAM	13.0	110	1
PANAMA CITY	FL 30-Apr-92	RR	GAM	17.0	110	1
PANAMA CITY	FL 30-Apr-92	RR	GAM	18.0	110	1
SARASOTA	FL 30-Apr-92	RR	COB	31.0	27	1
VENICE	FL 30-Apr-92	RR	GAM	15.0	60	1
VENICE	FL 30-Apr-92	RR	GAM	34.0	60	1
SARASOTA	FL 01-May-92	RR	COB	20.9	N/A	1
SARASOTA	FL 01-May-92	RR	COB	38.6	N/A	1
VENICE	FL 01-May-92	RR	GAM	15.0	65	1
VENICE	FL 01-May-92	RR	GAM	16.0	65	2
VENICE	FL 01-May-92	RR	GAM	17.5	65	1
VENICE	FL 01-May-92	RR	GAM	18.0	65	1
VENICE	FL 01-May-92	RR	GAM	24.0	65	1
VENICE	FL 02-May-92	RR	COB	32.0	25	2
CORTEZ	FL 04-May-92	RR	GAM	30.0	110	1
PANAMA CITY	FL 04-May-92	RR	GAM	16.0	140	1
PANAMA CITY	FL 04-May-92	RR	GAM	22.0	140	1
PANAMA CITY	FL 04-May-92	RR	GAM	27.5	140	1
SARASOTA	FL 04-May-92	RR	GAM	35.0	N/A	2
SARASOTA	FL 04-May-92	RR	GAM	35.8	N/A	1
SARASOTA	FL 04-May-92	RR	GAM	36.2	N/A	1
CORTEZ	FL 05-May-92	LL	GAM	50.0	N/A	1
SARASOTA	FL 05-May-92	RR	GAM	31.9	N/A	1
SARASOTA	FL 05-May-92	RR	GAM	32.3	N/A	1
SARASOTA	FL 05-May-92	RR	GAM	33.1	N/A	2
SARASOTA	FL 05-May-92	RR	GAM	33.5	N/A	2
SARASOTA	FL 05-May-92	RR	GAM	34.3	N/A	2
SARASOTA	FL 05-May-92	RR	GAM	35.0	N/A	4
SARASOTA	FL 05-May-92	RR	GAM	35.4	N/A	3
ISLAMORADA	FL 07-May-92	RR	DOL	19.0	N/A	1
ISLAMORADA	FL 07-May-92	RR	DOL	22.0	N/A	2
ISLAMORADA	FL 07-May-92	RR	DOL	21.0	N/A	1
SARASOTA BAY	FL 07-May-92	NET	COB	29.5	N/A	1
SARASOTA BAY	FL 07-May-92	NET	COB	30.7	N/A	1
PANAMA CITY	FL 10-May-92	RR	GAM	16.0	140	4
PANAMA CITY	FL 10-May-92	RR	GAM	20.0	140	1
SARASOTA	FL 11-May-92	RR	GAM	29.1	N/A	1
SARASOTA	FL 11-May-92	RR	GAM	34.3	N/A	1
SARASOTA	FL 11-May-92	RR	GAM	34.6	N/A	1
SARASOTA	FL 11-May-92	RR	GAM	35.0	N/A	2
SARASOTA	FL 11-May-92	RR	GAM	35.4	N/A	1
SARASOTA	FL 11-May-92	RR	GAM	35.8	N/A	1
MADEIRA BEACH	FL 14-May-92	LL	GAM	35.8	420	1
MADEIRA BEACH	FL 14-May-92	LL	GAM	42.1	420	1
MADEIRA BEACH	FL 14-May-92	LL	GAM	45.3	420	1
CORTEZ	FL 15-May-92	LL	COB	31.9	210	1
CORTEZ	FL 15-May-92	LL	COB	44.1	210	1
CORTEZ	FL 15-May-92	LL	GAM	40.9	210	2
CORTEZ	FL 15-May-92	LL	GAM	50.0	210	1
PANAMA CITY	FL 15-May-92	RR	GAM	27.0	90	1
PENSACOLA	FL 15-May-92	RR	GAM	16.0	89	1
PENSACOLA	FL 15-May-92	RR	GAM	17.0	89	1
PENSACOLA	FL 15-May-92	RR	GAM	17.5	89	1
PENSACOLA	FL 15-May-92	RR	GAM	14.5	100	1
PENSACOLA	FL 15-May-92	RR	GAM	21.0	100	1
PENSACOLA	FL 15-May-92	RR	GAM	22.0	100	1
SARASOTA	FL 15-May-92	RR	GAM	30.7	N/A	1
SARASOTA	FL 15-May-92	RR	GAM	33.5	N/A	1
SARASOTA	FL 15-May-92	RR	GAM	34.3	N/A	1
SARASOTA	FL 15-May-92	RR	GAM	35.0	N/A	1
SARASOTA	FL 15-May-92	RR	GAM	35.4	N/A	2
SARASOTA	FL 15-May-92	RR	GAM	35.8	N/A	2
PANAMA CITY	FL 16-May-92	RR	GAM	14.0	90	1
PANAMA CITY	FL 16-May-92	RR	GAM	19.0	100	2
PANAMA CITY	FL 16-May-92	RR	GAM	24.0	100	1
PANAMA CITY	FL 16-May-92	RR	GAM	26.0	100	2
PANAMA CITY	FL 16-May-92	RR	GAM	27.0	100	1
PANAMA CITY	FL 16-May-92	RR	GAM	27.5	100	5
PANAMA CITY	FL 16-May-92	RR	GAM	28.0	100	1
PANAMA CITY	FL 16-May-92	RR	GAM	25.0	110	4
PANAMA CITY	FL 16-May-92	RR	GAM	26.0	110	2
PANAMA CITY	FL 16-May-92	RR	GAM	27.0	110	1
SARASOTA	FL 19-May-92	RR	GAM	21.0	105	1
SARASOTA	FL 19-May-92	RR	GAM	24.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	26.0	105	3
SARASOTA	FL 19-May-92	RR	GAM	26.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	27.1	105	2
SARASOTA	FL 19-May-92	RR	GAM	27.7	105	1
SARASOTA	FL 19-May-92	RR	GAM	28.0	105	2
SARASOTA	FL 19-May-92	RR	GAM	28.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	29.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	32.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	33.0	105	2
SARASOTA	FL 19-May-92	RR	GAM	33.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	34.0	105	3
SARASOTA	FL 19-May-92	RR	GAM	35.0	105	1
SARASOTA	FL 19-May-92	RR	GAM	35.5	105	1
SARASOTA	FL 19-May-92	RR	GAM	37.0	105	1
SARASOTA	FL 22-May-92	RR	COB	30.0	42	1
PANAMA CITY	FL 23-May-92	RR	GAM	28.5	90	2
PANAMA CITY	FL 23-May-92	RR	GAM	30.0	90	3
PANAMA CITY	FL 23-May-92	RR	GAM	32.0	90	1
SARASOTA	FL 23-May-92	RR	GAM	16.5	42	1
SARASOTA	FL 23-May-92	RR	GAM	20.1	105	1
SARASOTA	FL 23-May-92	RR	GAM	24.0	105	1
SARASOTA	FL 23-May-92	RR	GAM	25.7	105	1
SARASOTA	FL 23-May-92	RR	GAM	26.7	105	1
SARASOTA	FL 23-May-92	RR	GAM	27.7	105	1
SARASOTA	FL 23-May-92	RR	GAM	29.5	105	1
SARASOTA	FL 23-May-92	RR	GAM	29.7	105	1
SARASOTA	FL 23-May-92	RR	GAM	30.0	105	1
SARASOTA	FL 23-May-92	RR	GAM	32.0	105	2
SARASOTA	FL 23-May-92	RR	GAM	32.7	105	1
SARASOTA	FL 23-May-92	RR	GAM	33.1	105	1
SARASOTA	FL 23-May-92	RR	GAM	35.0	105	1
PANAMA CITY	FL 24-May-92	RR	GAM	12.0	90	1
PANAMA CITY	FL 24-May-92	RR	GAM	13.0	90	1
PANAMA CITY	FL 24-May-92	RR	GAM	18.0	90	1
PANAMA CITY	FL 24-May-92	RR	GAM	20.0	90	1
PANAMA CITY	FL 24-May-92	RR	GAM	22.0	90	1
PANAMA CITY	FL 24-May-92	RR	GAM	28.0	90	3
PENSACOLA	FL 24-May-92	RR	GAM	17.0	100	1
SARASOTA	FL 24-May-92	RR	GAM	15.0	48	1
SARASOTA	FL 24-May-92	RR	GAM	15.1	48	1
SARASOTA	FL 24-May-92	RR	GAM	25.0	105	1
SARASOTA	FL 24-May-92	RR	GAM	29.0	105	1
SARASOTA	FL 24-May-92	RR	GAM	34.0	105	1
SARASOTA	FL 24-May-92	RR	GAM	35.5	105	1
PANAMA CITY	FL 26-May-92	RR	GAM	14.0	90	1
PANAMA CITY	FL 26-May-92	RR	GAM	20.0	90	1
PENSACOLA	FL 26-May-92	RR	GAM	17.0	100	1
PENSACOLA	FL 26-May-92	RR	GAM	26.0	100	1
PENSACOLA	FL 26-May-92	RR	GAM	28.5	100	1
SARASOTA	FL 27-May-92	RR	GAM	16.0	42	1
PANAMA CITY	FL 28-May-92	RR	GAM	14.0	100	1
PANAMA CITY	FL 28-May-92	RR	GAM	24.0	100	2
PANAMA CITY	FL 28-May-92	RR	GAM	27.0	100	1
PANAMA CITY	FL 28-May-92	RR	GAM	27.5	100	1
SARASOTA	FL 28-May-92	RR	GAM	14.5	53	1
SARASOTA	FL 28-May-92	RR	GAM	21.0	53	1
SARASOTA	FL 28-May-92	RR	GAM	25.0	53	2
SARASOTA	FL 28-May-92	RR	GAM	35.0	53	1
ST. PETERSBURG	FL 28-May-92	RR	GAM	31.0	130	1
PANAMA CITY	FL 29-May-92	RR	GAM	26.0	100	4
PANAMA CITY	FL 30-May-92	RR	GAM	24.0	90	2
PANAMA CITY	FL 30-May-92	RR	GAM	26.0	90	1
PANAMA CITY	FL 30-May-92	RR	GAM	27.0	90	1
PANAMA CITY	FL 30-May-92	RR	GAM	24.0	110	2
PANAMA CITY	FL 30-May-92	RR	GAM	27.0	110	1
SARASOTA	FL 30-May-92	RR	GAM	24.0	50	1
SARASOTA	FL 01-Jun-92	RR	GAM	21.0	40	1
SARASOTA	FL 02-Jun-92	RR	COB	39.4	N/A	1

Appendix 4. Cobia (COB), amberjack (GAM) and dolphin (DOL) length data. (RR = rod and reel; LL = long line; CHL = commercial hook and line).

Area	Date	Gear	Sp.	Length (in)	Depth (ft)	Count
SARASOTA FL	02-Jun-92	RR	GAM	29.5	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	30.3	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	31.5	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	31.9	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	34.3	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	34.6	N/A	1
SARASOTA FL	02-Jun-92	RR	GAM	38.2	N/A	1
PANAMA CITY FL	06-Jun-92	RR	GAM	20.0	90	1
PANAMA CITY FL	06-Jun-92	RR	GAM	24.0	90	1
PANAMA CITY FL	06-Jun-92	RR	GAM	25.0	90	1
PANAMA CITY FL	06-Jun-92	RR	GAM	26.0	90	2
PANAMA CITY FL	06-Jun-92	RR	GAM	27.0	90	1
SARASOTA FL	09-Jun-92	RR	GAM	30.3	N/A	1
SARASOTA FL	09-Jun-92	RR	GAM	31.9	N/A	1
SARASOTA FL	09-Jun-92	RR	GAM	32.2	N/A	1
SARASOTA FL	09-Jun-92	RR	GAM	33.5	N/A	1
SARASOTA FL	09-Jun-92	RR	GAM	33.9	N/A	2
SARASOTA FL	09-Jun-92	RR	GAM	34.3	N/A	3
SARASOTA FL	09-Jun-92	RR	GAM	35.0	N/A	3
SARASOTA FL	09-Jun-92	RR	GAM	35.8	N/A	1
SARASOTA FL	09-Jun-92	RR	GAM	36.2	N/A	2
SARASOTA FL	09-Jun-92	RR	GAM	36.6	N/A	2
CORTEZ FL	12-Jun-92	RR	GAM	30.0	112	1
DUCK KEY FL	12-Jun-92	RR	DOL	17.0	650	1
DUCK KEY FL	12-Jun-92	RR	DOL	18.0	650	1
DUCK KEY FL	12-Jun-92	RR	DOL	19.0	650	1
DUCK KEY FL	12-Jun-92	RR	DOL	20.0	650	2
DUCK KEY FL	12-Jun-92	RR	DOL	21.0	650	
DUCK KEY FL	12-Jun-92	RR	DOL	22.0	650	
DUCK KEY FL	12-Jun-92	RR	DOL	[illegible]	650	1
MADEIRA BEACH FL	12-Jun-92	LL	COB	36.6	N/A	1
CORTEZ FL	13-Jun-92	RR	GAM	19.0	112	1
SARASOTA FL	13-Jun-92	RR	COB	21.0	7	1
LARGO FL	17-Jun-92	RR	COB	22.0	20	1
PANAMA CITY FL	17-Jun-92	RR	GAM	24.0	120	1
PANAMA CITY FL	17-Jun-92	RR	GAM	27.0	120	1
PANAMA CITY FL	17-Jun-92	RR	GAM	27.0	125	1
SANIBEL FL	18-Jun-92	RR	COB	19.7	15	1
ST. PETERSBURG FL	19-Jun-92	RR	COB	30.0	20	1
VENICE FL	20-Jun-92	RR	GAM	28.0	80	1
PANAMA CITY FL	23-Jun-92	RR	GAM	24.0	85	3
PANAMA CITY FL	23-Jun-92	RR	GAM	25.0	85	2
PANAMA CITY FL	23-Jun-92	RR	GAM	26.0	85	3
PANAMA CITY FL	23-Jun-92	RR	GAM	27.0	85	3
MADEIRA BEACH FL	25-Jun-92	LL	GAM	31.1	N/A	1
MADEIRA BEACH FL	25-Jun-92	LL	GAM	32.3	N/A	1
MADEIRA BEACH FL	25-Jun-92	LL	GAM	33.9	N/A	3
MADEIRA BEACH FL	25-Jun-92	LL	GAM	34.6	N/A	1
MADEIRA BEACH FL	25-Jun-92	LL	GAM	35.0	N/A	2
ST. PETERSBURG FL	06-Jul-92	RR	COB	21.3	21	1
PORT CHARLOTTE FL	08-Jul-92	LL	COB	23.6	N/A	1
MELBOURNE FL	10-Jul-92	RR	GAM	27.0	170	1
SEBASTIAN FL	10-Jul-92	RR	GAM	22.0	164	1
MELBOURNE FL	13-Jul-92	RR	COB	31.0	90	1
MELBOURNE FL	14-Jul-92	RR	COB	32.0	90	1
MELBOURNE FL	14-Jul-92	RR	GAM	27.0	170	1
LARGO FL	16-Jul-92	RR	COB	24.0	19	1