A Final Report

Population Dynamics and Index Habitat Characterization for Kemp's Ridley Sea Turtles in Nearshore Waters of the Northwestern Gulf of Mexico

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ABSTRACT

Sea turtle utilization of nearshore Gulf habitats adjacent to Sabine, Calcasieu, Caminada and Barataria Passes was monitored March through October 1995. Capture operations (1182 hrs of entanglement netting) deployed near passes and beachfront habitats yielded 53 turtles represented by 49 Kemp's ridleys (*Lepidochelys kempii* - 92.5%) and 4 loggerheads (*Caretta caretta* - 7.5%). Sabine Pass, in producing 68% of these captures, exhibited the peak CPUE (0.7 turtle/km-hr) while the Barataria-Caminada Pass area was virtually devoid of turtles (0.06 turtle/km-hr). Deeper, jettied habitats consistently yielded highest capture rates. The Kemp's ridley assemblage consisted of post-pelagic through adult stages ranging from 21.8 to 64.6 cm SCL, with juveniles <40 cm the dominant size class. Loggerheads were 50.7 to 63.4 cm SCL subadults. Ridleys displayed an overall 1.3 male to 1 female sex ratio. The present study marked the first time since the 1992 inception of monitoring at these study areas that headstarted ridleys were not taken. No turtles previously tagged in the MARFIN study areas were recaptured in 1995. However, two mature female ridleys initially tagged on the Rancho Nuevo, Mexico nesting beach were recaptured. Dispersal of forage species induced by the worst hypoxia/anoxia event on record and decline in blue crab stocks lessened the attractiveness of nearshore Gulf habitats to sea turtles in 1995. Tidal pass and shallow beachfront habitats remain primary zones of occupation for sea turtles whose interaction with commercial fishing activities must be reduced through strategic management planning.

EXECUTIVE SUMMARY

Mass stranding of an estimated 100 Kemp's ridleys (*Lepidochelys kempii*) near Grand Isle, Louisiana during 1993 and record beachings of sea turtles along the Texas and Louisiana coasts in 1994 provide recent evidence that TED technology alone will not eliminate catastrophic mortality events within endangered turtle stocks. Lack of information on spatial/temporal distribution, size composition, and migratory/foraging behavior of sea turtles utilizing nearshore Gulf habitats has prevented resource agencies from implementing technically defendable management plans which protect endangered species as well as guarantee the viability of commercial fishing interests. Survival of protected sea turtles as well as resolution of perceived conflicts between these species and the fishing industry mandate that research efforts determine: 1) where sea turtles spend their time when not nesting; 2) threats to them at sea; and 3) how these threats can be removed without compromising the economic viability of the Gulf shrimp fleet. Research summarized herein addressed information needs prerequisite to understanding: 1) life history aspects of endangered sea turtle species in the nearshore northwestern Gulf; 2) the potential for interaction between these species and various elements of the Gulf commercial fishing industry; and 3) affect of this interaction on the viability of sea turtle stocks and economic welfare of the fishing industry.

Population dynamics of sea turtle stocks utilizing nearshore habitats adjacent to passes (Sabine, Calcasieu, Barataria and Caminada) of the upper Texas and Louisiana coasts were assessed during March through October 1995. Sea turtle capture was accomplished with 91.5-m long entanglement nets of different depth and mesh size specifications. All turtles were measured, weighed and visually examined to describe physical condition, note evidence of natural and man-induced trauma, and determine whether they were wild or headstarted cohorts. Blood samples were drawn from all turtles for use in sex determination while a limited number were examined laparoscopically to verify sex. Habitats utilized by sea turtles were characterized via hydrographic/meteorologic monitoring and trawl surveys.

A total of 1181.8 netting hours was expended across the three study sites. Over 46% of this effort was achieved at Sabine Pass (546.3 hrs); however, inclement weather, rough seas and a permit-related prohibition (resulting from incidental capture of bottlenose dolphin) compromised netting effort at all study areas, especially Barataria and Caminada Passes (370.7 hrs).

The 53 turtles captured in 1995 were comprised of 49 Kemp's ridleys (92.5%) and 4 loggerheads (*Caretta caretta*, 7.5%). Sabine Pass yielded 36 captures (67.9% of total catch), with all but 3 of these Kemp's ridleys (91.7%). This species also accounted for all 15 turtles netted at Calcasieu Pass. Capture efforts at Barataria and Caminada Passes produced only two turtles - a ridley and loggerhead. Sea turtle occurrence was greatest during May through August when monthly CPUE's ranged from 0.5 to 1.7 turtles/km-hr. Jetty habitats consistently ranked ahead of beachfront counterparts in terms of capture efficiency. Sabine Pass led study areas in overall capture rate (0.7 turtle/km-hr) while that at Calcasieu Pass was a close second (0.6 turtle/km-hr). Utilization of nearshore habitats, especially those at Barataria and Caminada Passes, by sea turtles and their prey species (blue crabs, *Callinectes sapidus*) was probably influenced by hypoxic/anoxic conditions, reportedly the worst on record.

The 1995 Kemp's ridley population was composed of post-pelagic through sexually-mature adults ranging from 21.8 to 64.6 cm SCL. Juveniles <40 cm SCL were the dominant life history stage taken. Sabine Pass ridleys exhibited the widest size range while those at Calcasieu Pass were noticeably larger (mean SCL = 45.3 cm). Deeper jetty sites rendered turtles of larger size and wider size range. Loggerheads were subadults ranging from 50.7 to 63.4 cm SCL. Overall, ridleys displayed a 1.3 Male: 1 Female sex ratio. Ridley gender varied with study area: Sabine Pass - 1.67 Male: 1 Female; Calcasieu Pass - 1 Male: 3 Females. Laparoscopic analysis validated the use of serum testosterone as an indicator of sex in Kemp's ridleys. Fourteen turtles were equipped with tracking telemetry, including 7 ridleys wearing radio- and sonic-tags used to study their inshore occurrence. The other seven turtles were tagged by NMFS personnel who characterized local (radio-/sonic-tags) and extended movements (satellite-tags). No turtles previously tagged by TAMU were recaptured in 1995. However, three ridleys bearing tags applied outside the MARFIN study areas were captured - two of these sexually-mature females

initially tagged at the Rancho Nuevo, Mexico nesting beach.

The 1995 MARFIN study yielded mixed results on sea turtle occurrence in the northwestern Gulf of Mexico. Sea turtle occurrence in the Grand Isle area which produced over 100 Kemp's ridley strandings in late May-early June 1993 was virtually non-existent. Capture success at Sabine and Calcasieu Passes was higher than that at Barataria-Caminada Passes but much reduced from levels recorded by TAMU in previous years. Dispersal of forage species induced by the worst hypoxic/anoxic conditions on record and/or declining blue crab stocks may have lessened the attractiveness of nearshore habitats to sea turtles in 1995. This apparent dispersal and better TED compliance within the shrimp fishery negated a repeat of catastrophic stranding events seen along the northwest Gulf in 1994. Nevertheless, tidal passes and shallow beachfront habitat remain a prime zone of occupation for sea turtles, especially the Kemp's ridley, during months of peak shrimping pressure. Management plans should develop strategies to reduce the interaction of these nearshore stocks with commercial fishing activities.

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PURPOSE

Identification of Problem

The Kemp's ridley (*Lepidochelys kempii*) is a critically endangered sea turtle whose nesting population has been reduced to about 1% of its 1947 abundance at its only nesting beach, Rancho Nuevo, Mexico. Ridley nests declined at about 14 per year from 1978 through the early 1990's, with the number of nesting females ebbing to as low as 350. This loss of reproductive potential plus recent estimates of 500 to 5000 conspecifics killed annually in shrimp trawls render Kemp's ridleys the twelfth most endangered animal species in the world (Weber 1990) and a candidate for extinction (Magnuson *et al.* 1990). The Texas and southwestern Louisiana coasts are the annual recipients of 200 to 500 stranded sea turtle carcasses and, as such, the Gulf leader in documented Kemp's ridley deaths (Ms. Donna Shaver, Sea Turtle Stranding and Salvage Network, personal communication). These strandings are most frequently attributed to incidental capture and subsequent drowning in shrimp trawls (NMFS and USFWS 1992).

Marine resource managers and fishing industry representatives are continually frustrated in their attempts to develop methods for eliminating inadvertent capture and destruction of protected sea turtle species in commercial shrimp fishing operations. The mass stranding of an estimated 100 Kemp's ridleys near Grand Isle, Louisiana during mid-May and early June 1993 and record beachings of sea turtles along the Texas and Louisiana coasts in 1994 provide recent evidence that TED technology alone will not eliminate catastrophic mortality events within these stocks. Other conservation strategies such as the Texas Closure, even when combined with relatively high TED compliance within the shrimping fleet, have failed to reduce the annual number of sea turtles stranding along the upper Texas coast in recent years (Dickie Revera, NMFS Sea Turtle Stranding and Salvage Network, personal communication). Lack of information on spatial/temporal distribution, size composition, and migratory/foraging behavior of sea turtles utilizing nearshore Gulf habitats prevents resource agency personnel from implementing technically defendable management plans which protect endangered species as well as guarantee the viability of commercial fishing interests.

Sea turtles spend more than 99% of their lifespan at sea, with only brief but very critical ties to land. Consequently, survival of threatened and endangered sea turtles as well as resolution of perceived conflicts between these species and the fishing industry mandate that research efforts determine: 1) where sea turtles spend their time when not nesting; 2) threats to them at sea; and 3) how these threats can be removed without compromising the economic viability of the Gulf shrimp fleet. Mandates such as these are the subject of Sea Turtle Recovery Plans authored by resource management agencies including NMFS and USFWS. One of these, the Kemp's Ridley Recovery Plan (NMFS and USFWS 1992), mandates ecological and behavioral research conducted at sea in order to understand ridley migration, survivorship and population dynamics. A 1989 workshop on sea turtles of the Gulf of Mexico recommended this research be conducted at "index habitats" - predictable areas that support ridleys in relatively high abundance and that possess critical life stages of this species. Furthermore, index habitats must be identified for ridleys (and other sea turtle species as well) so that baseline parameters (abundance, size, sex, physiology) can be characterized, ecological relationships (trophic dependencies/habitat preferences) are defined, and information on daily and seasonal behavior is generated for Gulf resource managers and decision makers affiliated with NMFS, USFWS, Texas Parks and Wildlife Department (TPWD), Louisiana Wild Life and Fisheries Department and other state agencies along the Gulf. This information will result in better sea turtle resource management, particularly as it relates to eliminating mortality from incidental catch in commercial fishing operations, minimizing other threats, and maximizing recruitment back into the wild population.

Research summarized herein addressed information needs prerequisite to understanding: 1) life history aspects of endangered sea turtle species in the nearshore northwestern Gulf; 2) the potential for interaction between these species and various elements of the Gulf commercial fishing industry; and 3) affect of this interaction on the viability of sea turtle stocks and economic welfare of the fishing industry. Only when critical at-sea data are available on these protected species can meaningful management plans be developed to define and resolve the conflict between sea turtles and the fishing industry. Current management plans are often developed on land-based data

generated at the nesting beach and from stranded sea turtle carcasses which wash ashore. These data shed very little light on population dynamics of sea turtles at sea and, when used in formulating management strategy, often precipitate skepticism and distrust on the part of the fishing industry being regulated. Consequently, the cooperative spirit needed between resource agencies and the fishing industry in identifying workable solutions to conflicts fails to materialize while turtle stocks continue to decline and the industry is regulated to the brink of economic collapse.

Project Goals and Objectives

A sea turtle capture and characterization study conducted in nearshore habitats adjacent to passes (Sabine, Calcasieu, Barataria and Caminada) of the upper Texas and Louisiana coasts during March through October 1995 targeted the following goals and objectives:

1) define Kemp's ridley's and other sea turtles' utilization of nearshore habitats along the northern Gulf of Mexico and assess the importance of this area as an "index habitat" for understanding population dynamics, migration and survivorship of these protected species and their interaction with Gulf fishing industries.
2) generate natural history data on population abundance, size class composition, spatial and temporal occurrence, habitat preference, growth rate, and migratory behavior of nearshore sea turtle stocks.
3) use the aforementioned natural history data to assess how ecological and/or behavioral aspects of sea turtle stocks may precipitate interaction with fishing activities.
4) define sex ratio, fecundity and maturation, and reproductive condition of nearshore ridley stocks.
5) assess the contribution of head start efforts to enlarging Kemp's ridley stocks in the wild.

APPROACH

Description of Work

Study areas: Sea turtle capture and habitat characterization activities were conducted in jetty and

beachfront habitats immediately adjacent to Sabine Pass, Calcasieu Pass and Barataria-Caminada Passes from March through October 1995 (Fig. 1). A description of these study areas follows.

Sabine Pass: Sabine Pass extends from Sabine Lake gulfward 9.66 km to form the southernmost border between Texas and Louisiana (Fig. 2). Granite-mound jetties, 5.6 km long and 503-m apart, protect the channelized pass on its east (East Jetty) and west sides (West Jetty). Habitat features occurring between the East and West Jetties include: 1) a soft mud/clay/sand bottom shelf extending from the jetties to a depth of 2 to 5 m; and 2) the tidally-scoured, dredged channel proper with a minimum depth of 12 m. Gentle sloping beaches with a hard sand bottom and scattered patches of soft mud and clay occur immediately outside the jetties to a depth of 8 m.

Four entanglement netting sites were established in the Sabine Pass study area (Fig. 2). Two stations (#'s 1 and 4) were located immediately adjacent to the outside of the West (1) and East Jetties (4) and approximately 1200 to 1500 m from shore. Water depth at both jetty stations ranged between 1.5 and 3.0 m while tidal currents were undetectable to strong. Stations 1 and 4 were approximately 500 and 300 m north of boat cuts in the West and East Jetties, respectively. Two beachfront stations (#'s 3 and 5) were within 1.0 km of each jetty and between 300 to 800 m from shore. Depth at beachfront stations ranged from 0.6 to 2.0 m while currents rarely exhibited greater than a slight tidal flow. No netting effort was expended in Sabine Pass proper due to strong tidal currents compromising capture efficiency.

Calcasieu Pass: Calcasieu Pass, located immediately south of Cameron, Louisiana, is the only deep-draft channel east of Sabine Pass and west of the Mississippi River. The Pass is approximately 9.6-km long and has a maximum depth of 13 m (Fig. 3). Granite rubble jetties, 1.8 km long and 315 m apart, border the east (East Jetty) and west (West Jetty) sides of Calcasieu Pass at its entrance to the Gulf. Gentle-sloping beaches with a hard-sand bottom and scattered patches of soft mud and clay occur immediately outside each jetty. Within the jetties the bottom is composed of soft mud, clay and sand while water depths vary from 2 m at the granite rubble to 13 m in the channel proper.

Four entanglement netting stations (2 jetty and 2 beachfront) were located within the

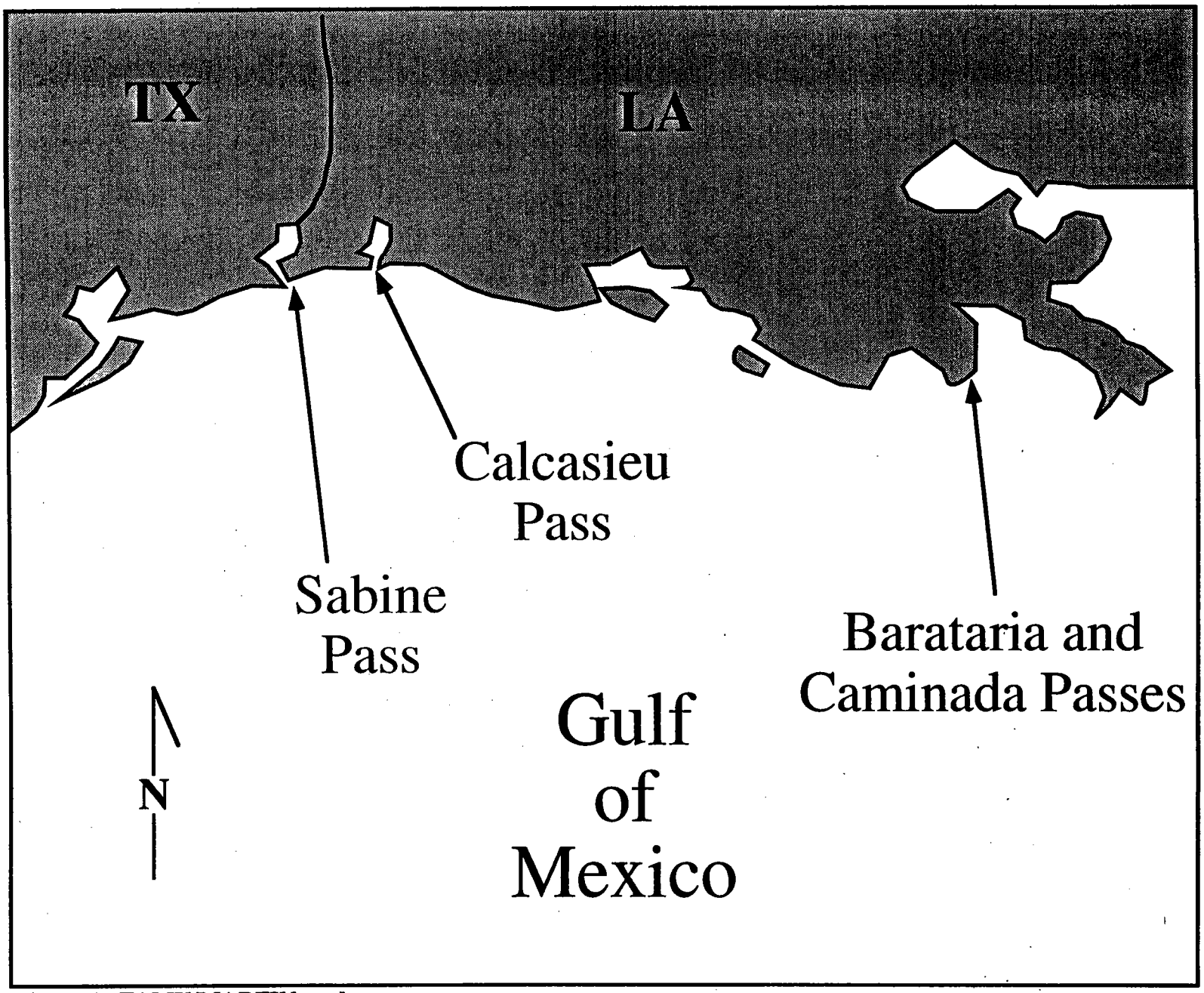

Figure 1. TAMU/MARFIN study area.

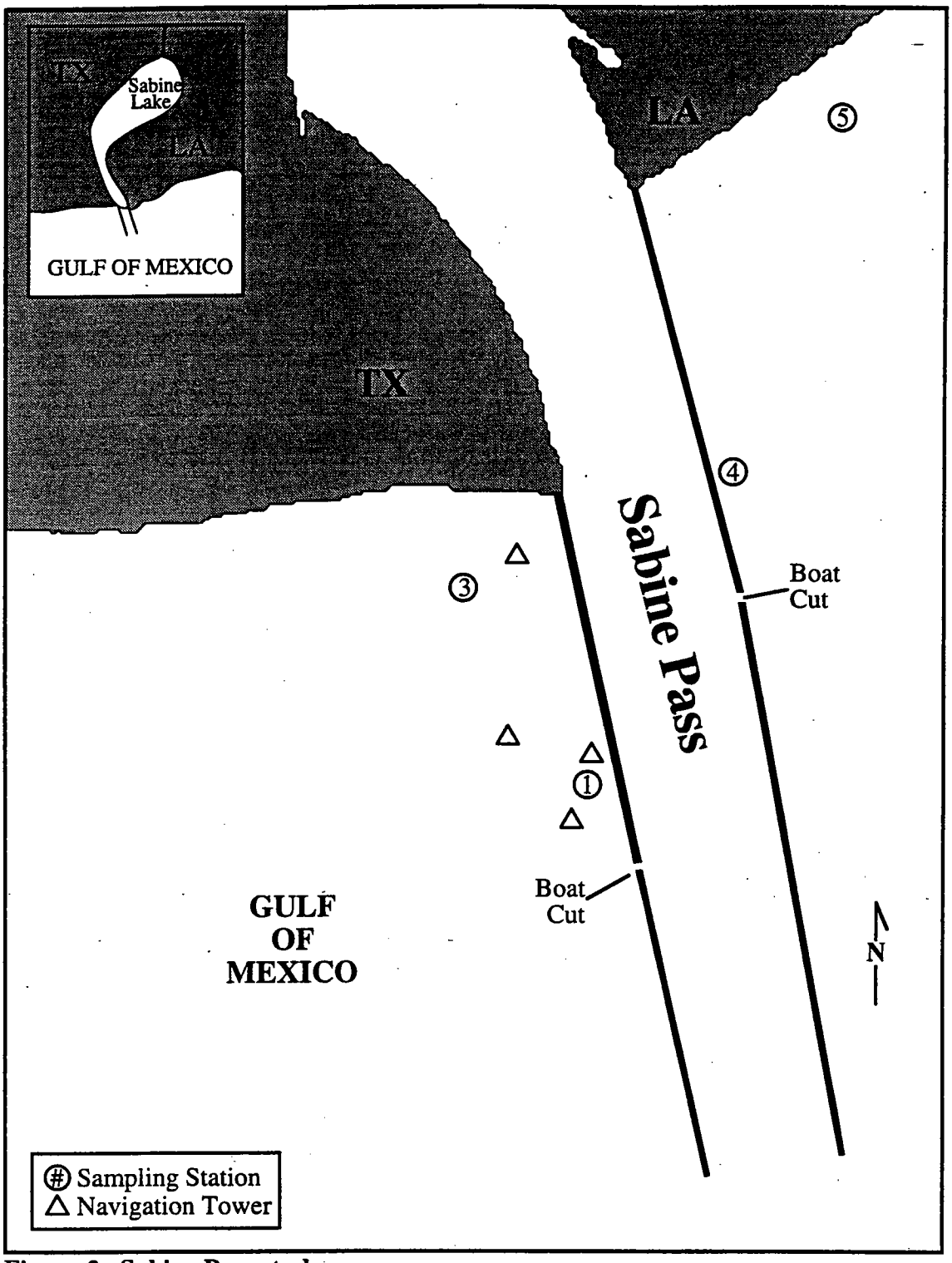

Figure 2. Sabine Pass study area.

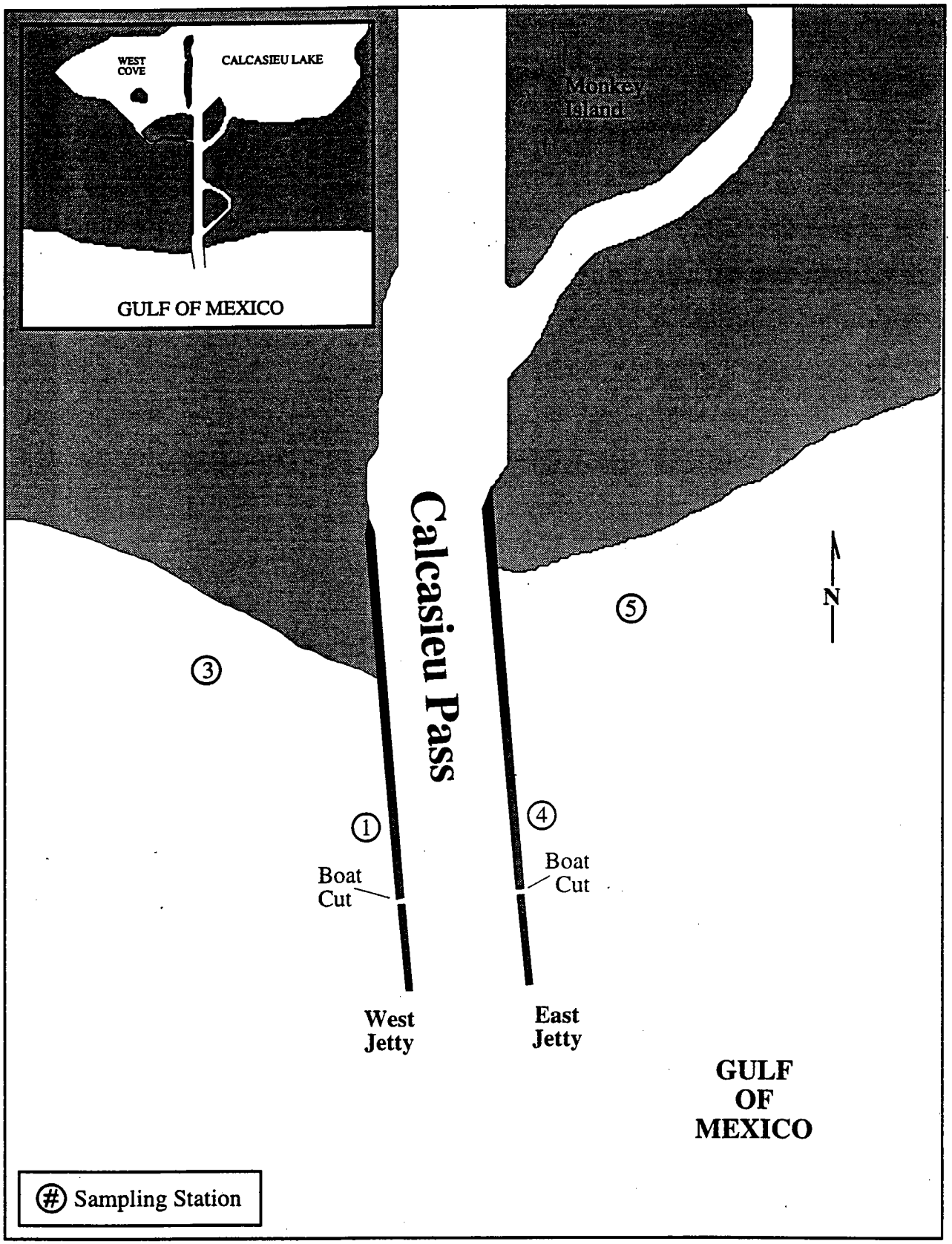

Figure 3. Calcasieu Pass study area.

Calcasieu Pass study area (Fig. 3). Two stations (#'s 1 and 4) were located immediately adjacent to the outside of the West (1) and East Jetties (4), approximately 100 m north of small boat cuts in each jetty. Both jetty stations were approximately 800 m from the beachfront, and each exhibited a maximum depth of 2.5 m and slight to strong currents. Two beachfront stations (#'s 3 and 5) were located 50 to 200 m off the beach and within 800 m of each jetty. With depths of 1 to 2 m, these stations exhibited undetectable to occasionally moderate currents.

Barataria and Caminada Passes: Beachfront habitats were the target of monitoring efforts at the easternmost study site - Grand Isle, Louisiana - a 11.2-km long barrier island bordered by Barataria and Caminada Passes (Fig. 4). Barataria Pass extends gulfward from Barataria Bay to separate Grand Isle and its eastern counterpart, Grand Terre. Depths in this 550-m wide natural pass range from 3.9 to 31.5 m while its tidal currents averaged 1.4 kts. Barataria Pass is bordered by shallow (0.6 to 1.5 m deep), hard-sand bars extending 1.6 km offshore. Caminada Pass runs between Grand Isle and its western neighbor, Elmer's Island, to connect Caminada Bay with the Gulf. This natural channel is smaller than its eastern cohort (200 m wide and 2-5 m deep) but similar in tidal flow (average: 1.5 kts). Caminada Pass, unlike Barataria Pass, is seldom used as a shipping lane because its entrance frequently shifts after storms. Beachfront conditions and shallow, packed-sand bottom comprised the habitat found gulfward of Grand Isle between these passes.

Four entanglement netting stations were deployed across beachfront habitat adjacent to the three aforementioned islands and their neighboring passes (Fig. 4). Station 1, 3.8 km west of Barataria Pass, was located immediately north of a granite-block breakwater protecting the Grand Isle beachfront. This site had an average depth of 2.3 m over a hard-sand bottom and slight to occasionally strong tidal flow. Station 2 was positioned adjacent to the Grand Terre beachfront approximately 2.8 km east of Barataria Pass. Except for stronger tidal action, conditions at this station were similar to those at Station 1. Stations 3 and 4 were 800 m west and 1.5 km east of Caminada Pass, respectively. The former was positioned on a hard-sand bottom along the Elmer's Island beachfront where depth ranged from 1-3 m and tidal currents were generally undetectable to

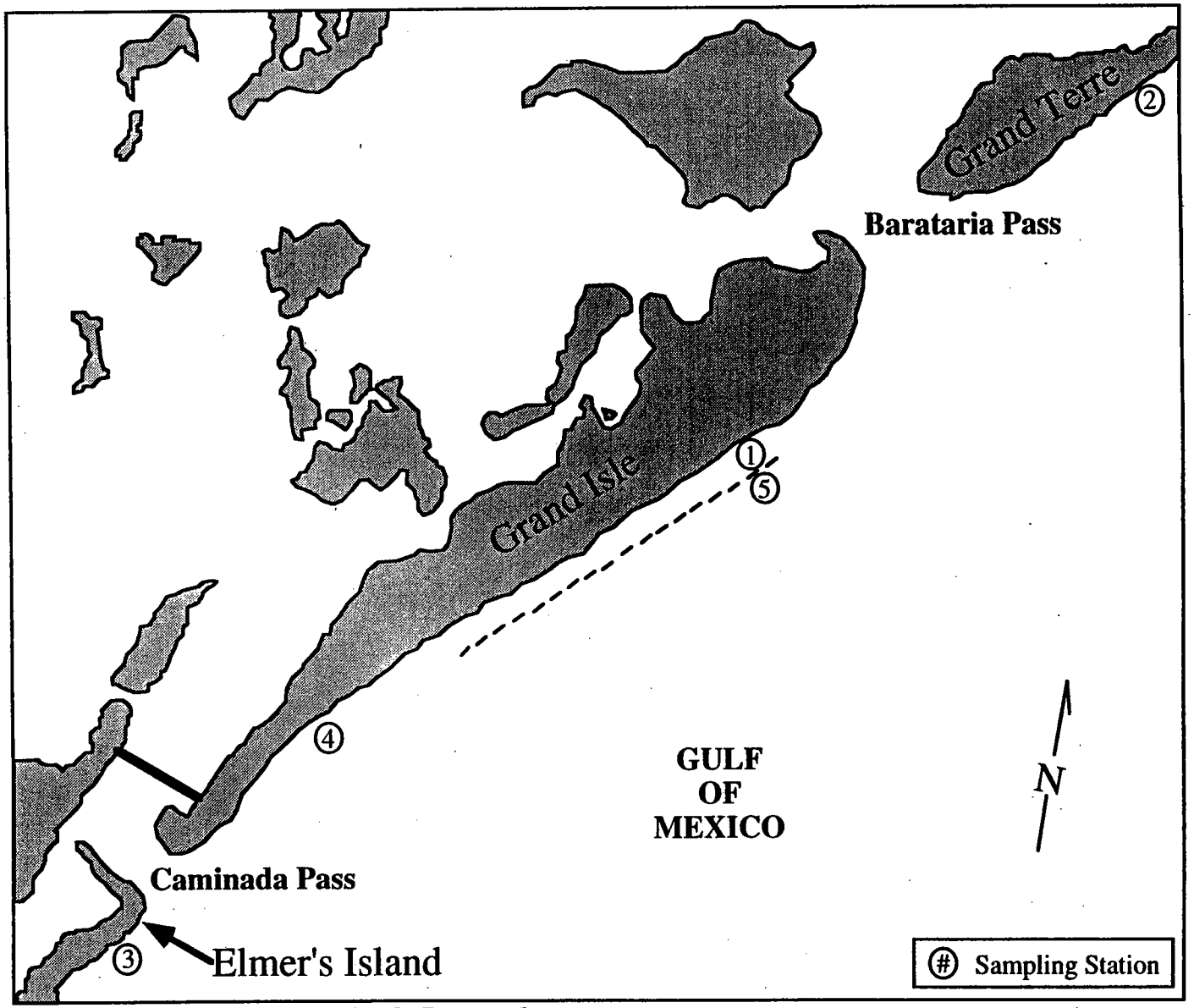

Figure 4. Barataria and Caminada Pass study area.

slight. Station 4 was approximately 50 m off Grand Isle's westernmost beachfront in 3 m of water with little flow.

Sea Turtle Capture and Related Activities

Entanglement Netting: Sea turtle capture was accomplished with 91.5-m long entanglement nets of different depth and mesh size specifications. These nets were 3.7 m deep with 12.7 cm bar mesh of #9 twisted nylon and 4.9 m deep with 25.4 cm bar mesh of #9 twisted nylon. Water depth and current dictated which net was used at each monitoring station. Monitoring stations were sampled during the day with two stationary entanglement nets (of similar specifications) set adjacent to one another and perpendicular to jetty or beachfront habitats for 6 to 12 hrs. Duration of net sets was largely dependent on weather and sea conditions.

Turtle Work-Up: Entangled turtles were immediately removed from nets and processed in one of two ways. Most turtles captured at Sabine Pass and Grand Isle were transported to the Sabine Pass Coast Guard Station and Lyle St. Amant Laboratory on Grand Terre, respectively, where they were held for a minimum of 24 hours. Lack of holding facilities at Calcasieu Pass necessitated that turtles captured at this site be processed in the field. All turtles were visually examined to describe physical condition, note evidence of natural (i.e., shark predation) and man-induced trauma (propeller wounds, appendage mutilation, visible fish hooks, etc.), and determine whether captured Kemp's ridleys and loggerheads were wild or headstarted cohorts. Year class was determined for headstarted turtles from the type and location of the carapace scute bearing a living tag. Turtles were then measured, weighed, electronically scanned for ingested fish hooks, photographed and tagged. Straight carapace length and width were measured with forester's calipers while over-the-curve carapace length and width data were taken to the nearest 0.1 cm with a soft vinyl measuring tape. Weight was determined to the nearest 0.1 kg on a Tri-Coastal Industries, Inc. electronic hanging scale. Turtles were photographed with a 35-mm camera for documentation purposes and placed in fiberglass holding tanks partially filled with ambient sea water.

Tagging Protocol: All turtles captured and initially held by TAMU were released to NMFS

personnel who then decided whether or not to equip these turtles with tracking gear (see Renaud *et al.* 1994 for a description of said gear). Immediately prior to their transfer to NMFS for tracking and/or subsequent release into the Gulf, all turtles were tagged by TAMU with an inconel tag (provided by NMFS/Miami) on the trailing edge of each front flipper and a PIT tag (provided by NMFS/Galveston) inserted subcutaneously into the dorsal side of the right front flipper. All tagged turtles then were released at their original capture site. Flipper and PIT tag data were submitted to NMFS (Miami) on reporting forms entitled "NMFS/SEFC Marine Turtle Tagging Data (rehabilitated, netted or other release)" and "NMFS/SEFC Marine Turtle Tagged/Recapture Data".

Blood Sampling/Sex Determination: Blood samples used for sex determination were drawn immediately after turtles were removed from entanglement nets or (if this initial attempt failed) opportunistically during the holding period. Extraction methods developed by Owens and Ruiz (1980) were used in obtaining blood samples. Most blood samples were immediately centrifuged within 1 hr of collection to separate plasma from blood cells. Frozen blood cell samples were delivered to Dr. David Owens (Professor of Biology, Texas A&M University, College Station) who used serum testosterone concentration as an indicator of sex. Owens deployed a radioimmunoassay technique described by Wibbels (1988) to determine serum testosterone concentration.

Laparoscopy was utilized as a means of sexing a limited number of live Kemp's ridleys captured at Sabine Pass. This *in situ* technique consisted of an endoscopic view of the gonads for sexing purposes. Sex determined through laparoscopy was compared with serum testosterone concentration obtained by radioimmunoassay to validate blood-related sexing criteria for Kemp's ridleys.

Habitat Characterization

Sea turtle capture location data were used to identify 12 sites (Sabine Pass - 4; Calcasieu Pass - 4; and Barataria-Caminada Passes - 4) where habitat attributes were characterized by TAMU. Habitat characterization efforts consisted of: 1) hydrographic monitoring; and 2) trawl

surveys. A description of these characterization techniques follows.

Hydrographic Monitoring: Surface and bottom measurements were taken at each netting site thrice daily (early morning, noon and late afternoon) to characterize water temperature, salinity and conductivity. Water temperature (to the nearest 0.1 C), salinity (to the nearest 0.1 ppt) and conductivity (to the nearest 0.1 mS/cm) were measured with Hydrolab H-20 Water Quality Multiprobes. Visibility was recorded to the nearest 0.1 m using a Secchi disc. Meteorological conditions (i.e., cloud cover, wind speed/direction, and sea state) also were characterized concurrent with hydrological measurements.

Trawl Surveys: Three replicate tows of a 6.1 m otter trawl having 1.9 cm bar mesh netting throughout and a 0.6 cm bar mesh cod end were conducted to determine food item availability within each study area. Trawls were towed for 5 minutes, with resulting samples preserved in 10% buffered formalin and returned to the lab. Each sample was sorted, identified to the lowest possible taxon, measured (fish and commercially-important shrimp and crabs only), counted and recorded.

Project Management

Dr. André M. Landry, Jr., Professor of Marine Biology at Texas A&M University at Galveston, served as Principal Investigator and was responsible for all planning, conduct and monitoring of the project's experimental design. He supervised a 10-person field crew charged with the capture and processing of sea turtles as well as analysis of data generated by these activities. Landry also coordinated the involvement of other university researchers providing expertise and equipment for blood-related analyses of sex and reproductive condition. He collaborated with NMFS Galveston Laboratory personnel providing expertise, involvement and/or data on tagging/tracking studies.

David Costa, Landry's Senior Research Associate, supervised all netting operations and the on-site fieldwork of 1 Research Associate, 1 Technician I and 7 students (2 Ph.D., 3 M.S., 1 D.V.M. and 1 undergraduate). Dr. David Owens, Professor of Biology at Texas A&M

University, conducted laparoscopic examinations and supervised blood analyses to determine fecundity, maturation state, sex ratio and reproductive condition. NMFS-Galveston Laboratory personnel supervised radio-, sonic- and satellite-tagging and tracking experiments.

FINDINGS

Sabine Pass

Sea Turtle Capture Effort: Sabine Pass, the only area monitored monthly from March through October, received a majority (46.2%) of the study-wide capture effort. Approximately 546 entanglement net-hours were achieved during eight monitoring surveys of Sabine Pass habitats (Table 1). **Note: A netting hour was defined as each hour one 91.5-m long entanglement net was fished at a monitoring station.** Netting effort at Sabine Pass in 1995 was impacted by: 1) unfavorable weather conditions in late spring-early summer; and 2) netting restrictions imposed by NMFS' Office of Protected Resources following incidental capture of marine mammals. Cumulative capture effort was comprised of 368.5 net-hours near the West and East Jetties (stations 1 and 4, respectively) and 177.83 net-hours at adjacent beachfront habitats (stations 3 and 5). Netting stations 1 (West Jetty - 349.83 hr) and 3 (beachfront - 155.6 hr) received 92.5% of the combined effort across habitats. Inability to net Louisiana-based stations 4 and/or 5 during 7 of 8 monitoring months (due to rough, unprotected waters east of Sabine Pass and/or permit restrictions limiting netting to waters <1.3 m after August) reduced overall capture effort.

Monthly capture effort ranged from 14.75 net-hours during September to 184.7 net-hours in August (Table 1). Although the latter statistic doubled that of the next closest month (July - 92 hr), capture effort was most consistent (>52 hr) April through August. Weather- and permit-related restrictions limited monthly effort to <36 hr during March and September-October.

Sea Turtle Population Dynamics: Thirty-six sea turtles (Table 2 and Appendix Table 1), comprised of 33 Kemp's ridleys and 3 loggerheads, were captured at Sabine Pass in 1995. This assemblage accounted for 67.9% of all captures (53) taken across the three study areas. The

Table 1. Monthly entanglement netting effort (hours:minutes) at Sabine Pass habitats during March-October 1995. * denotes weather-related prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Total**
March	*	*	18:55	*	18:55
April	*	*	71:00	*	71:00
May	54:02	*	22:31	*	76:33
June	30:56	*	21:57	*	52:53
July	44:40	11:18	13:52	22:12	92:02
August	184:42	*	*	*	184:42
September	*	7:22	7:23	*	14:45
October	35:30	*	*	*	35:30
Total	349:50	18:40	155:38	22:12	546:20

Table 2. Sea turtle captures at all monitoring sites during March-October 1995.

Species	Sabine Pass	Calcasieu Pass	Bar/Cam Passes	Total
Kemp's ridley	33 [a]	15 [b]	1	49
Loggerhead	3	0	1	4
Total Captures	36	15	2	53
# Tagged (TAMU)				
Radio/Sonic	7	0	0	7
# Tagged (NMFS)				
Radio/Sonic	2	0	1	3
Satellite	2	2	0	4

a - includes capture of two ridleys previously tagged by other research programs
b - includes capture of one ridley previously tagged by another research program

critically endangered Kemp's ridley contributed nearly 92% of all captures at Sabine Pass, and, as a result, is the principal focus of the following population characterization.

Sea turtle capture at Sabine Pass varied with month, netting effort and habitat (Tables 3 and 4 and Fig. 5). Captures were taken during 5 of 8 monitoring months. May and July, the only months yielding at least 10 sea turtles apiece, collectively produced 61.1% (22 combined captures) of the total catch at Sabine Pass (Table 3 and Fig. 6). These same months exhibited peak sea turtle catch-per-unit effort (CPUE) values (1.72/km-hr in May and 1.19/km-hr in July) which virtually doubled that of the next closest month (June - 0.62/km-hr; Tables 5 and 6 and Fig. 6).

Jetty habitat, especially that at West Jetty station 1 (29 sea turtles), produced over 83% of the turtle captures at Sabine Pass (Tables 3 and 4). All captures at station 1 were taken prior to August due primarily to a netting prohibition at this deeper site. Captures (6) at beachfront habitats were limited to station 3. Adverse surf conditions reduced captures on the east side of Sabine Pass to only one turtle (station 4 in July).

Catch-per-unit of effort statistics were calculated for Sabine Pass habitats to characterize sea turtle abundance trends in light of capture effort (Tables 5 and 6 and Figs. 6 and 7). However, this assessment was severely compromised by weather- and permit-related netting prohibitions. Results of this assessment indicated that deeper jetty stations 1 and 4 yielded the highest overall CPUE recorded among Sabine Pass monitoring stations (0.91 and 0.59 turtle/km-hr, respectively). Conversely, lowest overall CPUE (0.0 turtle/km-hr) was recorded at beachfront station 5, which was netted only in July. Beachfront station 3, netted during 6 of 8 months, yielded a catch rate of 0.42 turtle/km-hr. Netting effort across stations and months was too spotty to discern a true pattern of habitat preference among sea turtles in the Sabine Pass area during 1995 (Tables 5 and 6). Nevertheless, each habitat did produce at least one noteworthy monthly CPUE value in 1995 (Table 5) - station 1 (2.23 and 1.71 turtles/km-hr in May and July, respectively) and beachfront station 3 (1.58/km-hr in July).

Comparison of sea turtle abundance trends and blue crab availability at Sabine Pass revealed a mild correlation between capture and prey statistics (Table 7 and Fig. 8). Overall, sea

Table 3. Monthly number of sea turtles netted at Sabine Pass habitats during March-October 1995. * denotes weather-related prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Total**
March	*	*	0	*	0
April	*	*	2	*	2
May	11	*	1	*	12
June	2	*	1	*	3
July	7	1	2	0	10
August	9	*	*	*	9
September	*	0	0	*	0
October	0	*	*	*	0
Total	29	1	6	0	36

Table 4. Monthly number of Kemp's ridleys netted at Sabine Pass habitats during March-October 1995. * denotes weather-related prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Total**
March	*	*	0	*	0
April	*	*	2	*	2
May	10	*	1	*	11
June	2	*	1	*	3
July	6	1	2	0	9
August	8	*	*	*	8
September	*	0	0	*	0
October	0	*	*	*	0
Total	26	1	6	0	33

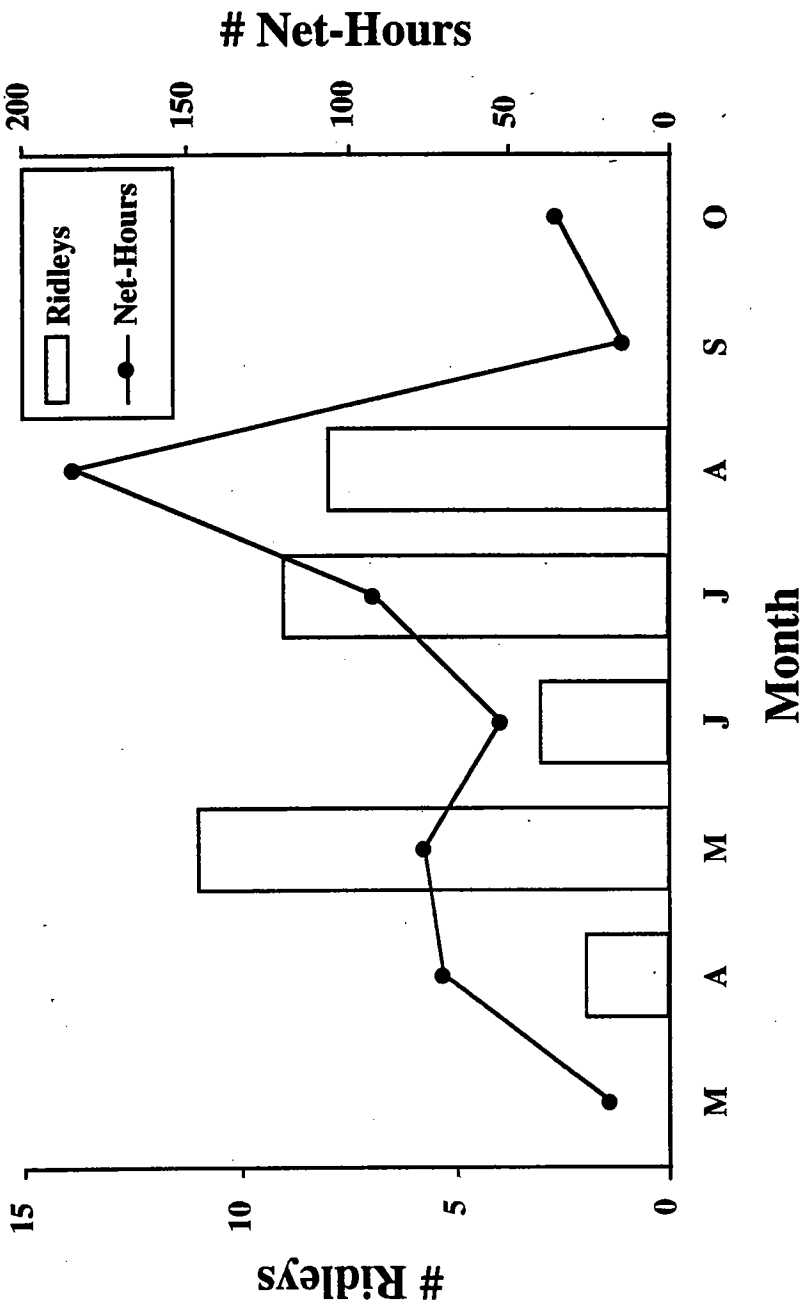

Figure 5. Monthly number of Kemp's ridley sea turtles captured by entanglement netting operations at Sabine Pass during 1995.

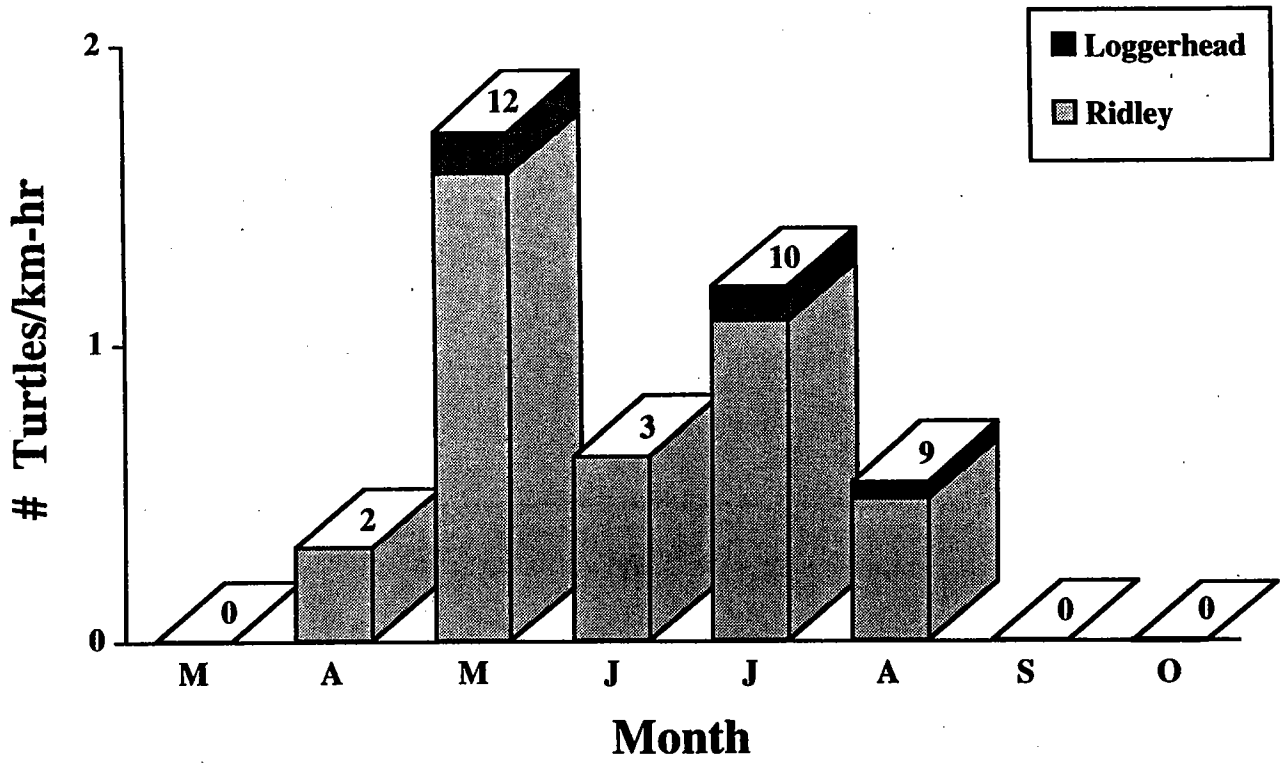

Figure 6. **Monthly catch-per-unit of effort (# turtles/km-hr) for Kemp's ridley and loggerhead sea turtles at Sabine Pass during 1995. Number on top of histogram bars denotes abundance.**

Table 5. Monthly sea turtle CPUE (# turtles/km-hr) at Sabine Pass habitats during March-October 1995. * denotes weather-related prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Overall**
March	*	*	0.00	*	0.00
April	*	*	0.31	*	0.31
May	2.23	*	0.49	*	1.72
June	0.71	*	0.50	*	0.62
July	1.71	0.97	1.58	0.00	1.19
August	0.53	*	*	*	0.53
September	*	0.00	0.00	*	0.00
October	0.00	*	*	*	0.00
Overall	0.91	0.59	0.42	0.00	0.72

Table 6. Monthly Kemp's ridley CPUE (# ridleys/km-hr) at Sabine Pass habitats during March-October 1995. * denotes weather-related prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Overall**
March	*	*	0.00	*	0.00
April	*	*	0.31	*	0.31
May	2.02	*	0.49	*	1.57
June	0.71	*	0.50	*	0.62
July	1.47	0.97	1.58	0.00	1.07
August	0.47	*	*	*	0.47
September	*	0.00	0.00	*	0.00
October	0.00	*	*	*	0.00
Overall	0.81	0.59	0.42	0.00	0.66

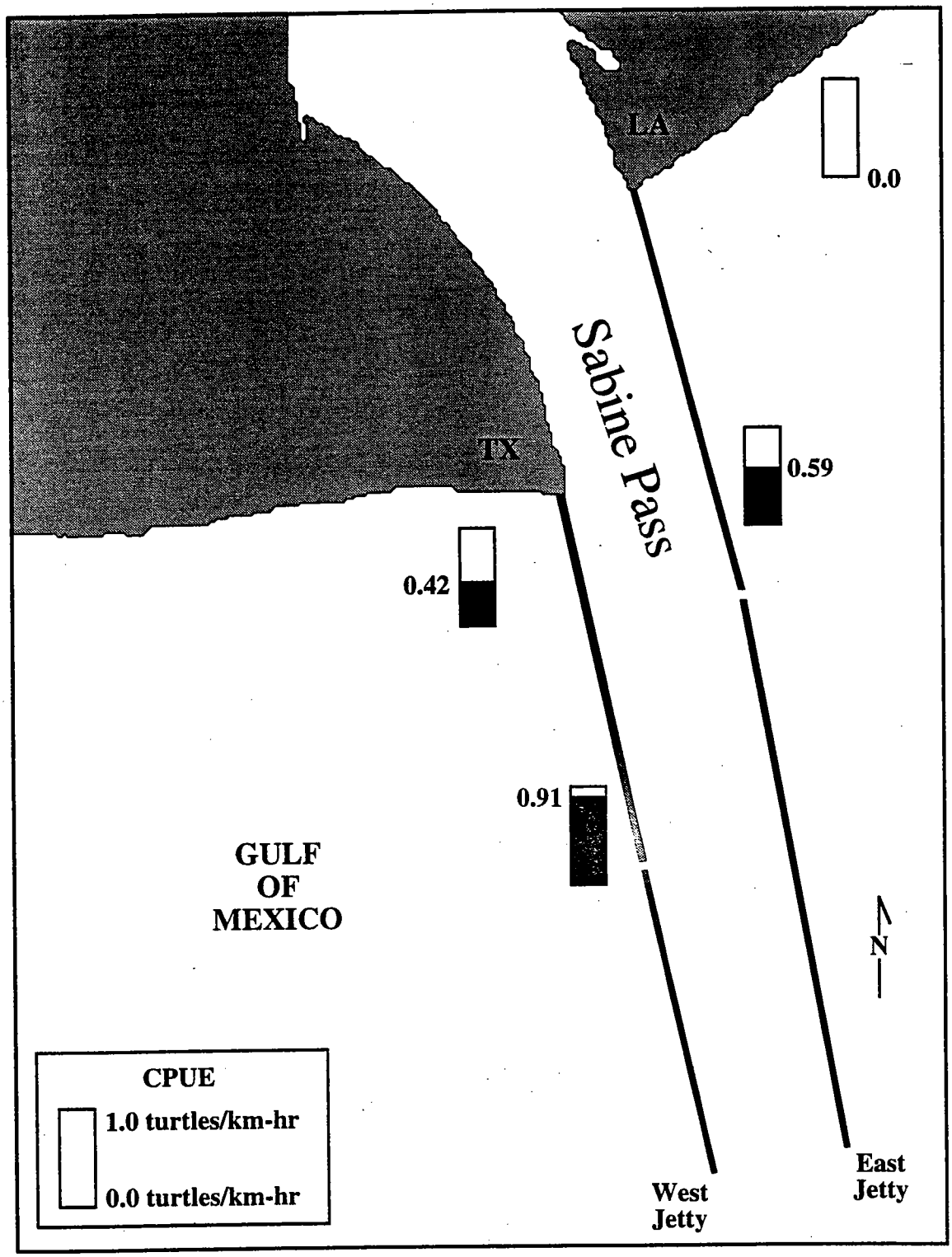

Figure 7. Overall sea turtle catch-per-unit of effort (# turtles/km-hr) for jetty and beachfront habitats at Sabine Pass during 1995.

Table 7. Monthly abundance and CPUE for sea turtles and blue crabs at Sabine Pass habitats during March-October 1995.

	Jetty				Beachfront			
Month	# Turtles	Turtle CPUE	# Crabs	Crab CPUE	# Turtles	Turtle CPUE	# Crabs	Crab CPUE
March	0	0.0	0	0.0	0	0.0	0	0.0
April	0	0.0	0	0.0	2	0.3	18	0.7
May	11	2.2	72	2.7	1	0.5	29	1.1
June	2	0.7	33	1.2	1	0.5	1	0.1
July	8	1.6	9	0.3	2	0.6	12	0.4
August	9	0.5	5	0.2	0	0.0	2	0.1
September	0	0.0	0	0.0	0	0.0	0	0.0
October	0	0.0	6	0.2	0	0.0	19	0.7

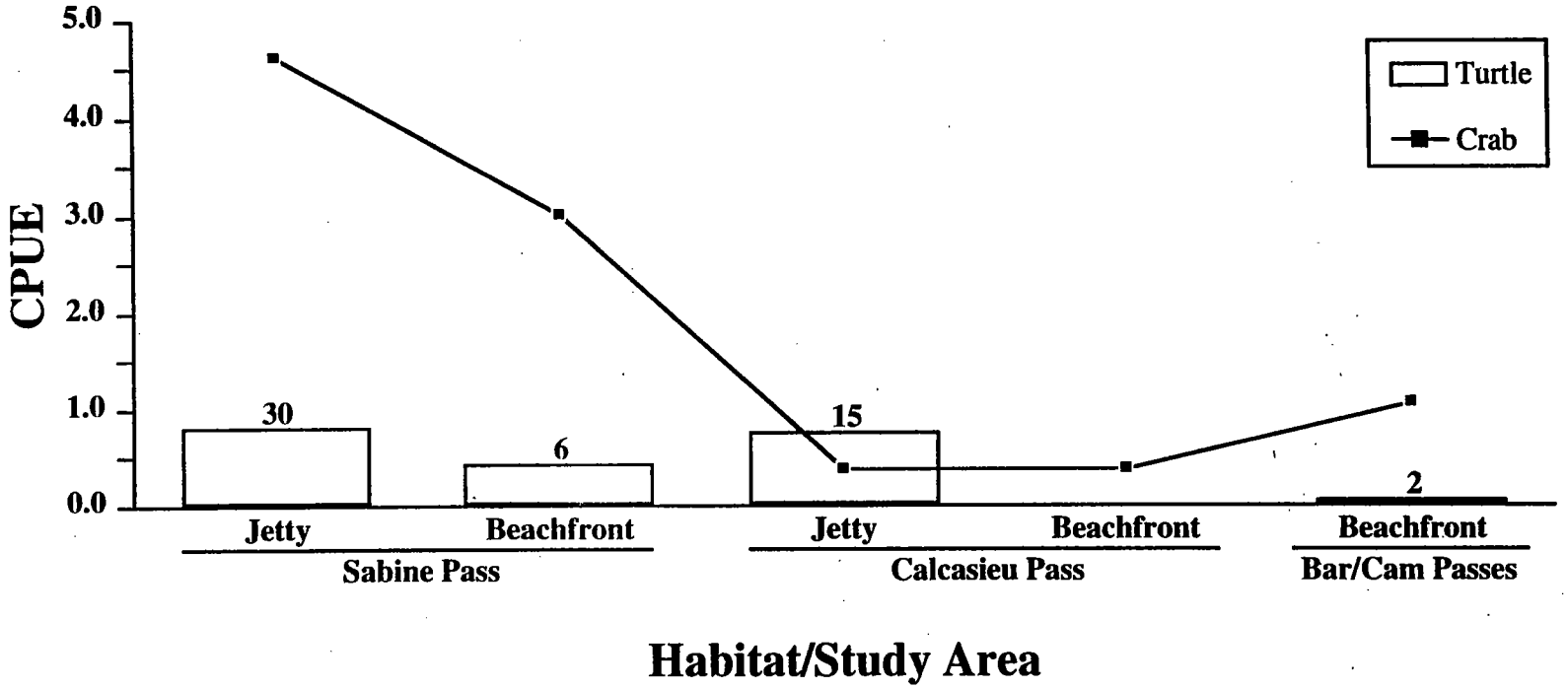

Figure 8. Sea turtle catch-per-unit of effort (# turtles/km-hr) as a function of crab catch-per-unit of effort (# crabs/trawl tow) at all study areas/habitats during 1995. Numbers on top of histogram bars denote turtle abundance.

turtle and blue crab CPUE levels were highest at jetty habitats (Fig 8). Peak sea turtle CPUE did coincide with months yielding highest blue crab catch rates (Table 7). However, reduced abundances of turtles and crabs at jetty and beachfront habitats throughout the summer resulted in variable CPUE statistics and masking of trends observed between these organisms during previous monitoring years (Landry *et al.* 1994 and 1995).

The Kemp's ridley population at Sabine Pass in 1995 was largely comprised of younger cohorts (Fig. 9). This captured lot ranged in straight carapace length (SCL) from 21.8 to 64.0 cm (Table 8 and Appendix Table 1), with juveniles <40 cm SCL comprising 73% of the entire catch and dominating all monthly assemblages (Fig. 9). Conspecifics >40 cm SCL were captured during May-August (Fig. 10) but in low abundances (≤3 ridleys/month). A consistent presence of younger ridleys caused all monthly mean carapace length statistics to hover around 37 cm SCL, even in July and August when individuals >60 cm SCL were netted (Fig. 11).

Comparison of ridley length frequency statistics at beachfront and jetty habitats (Figs. 12 and 13) produced two size-habitat trends: 1) deeper jetty stations (particularly #1) yielded turtles across the entire size range noted for Sabine Pass habitats; and 2) the number of ridleys taken at shallow beachfront station 3 diminished with increased carapace length. Consequently, juvenile ridleys dominated both jetty and beachfront habitats while older conspecifics >40 cm SCL were taken only at jetty stations (Fig. 12). This disparity resulted in the overall range and average carapace length of ridleys captured at jetty habitats being noticeably greater than that for their beachfront cohorts (Fig. 13).

The 1995 Kemp's ridley assemblage at Sabine Pass was composed of only wild constituents (Appendix Table 1). Furthermore, 1995 marked the first time since inception of TAMU monitoring at Sabine Pass (1992) that headstarted ridleys were not captured at this site. **Reminder: Headstarted ridleys refer to those cohorts raised in captivity at the NMFS Galveston Laboratory for 1 year before being released into the wild. This experimental program was terminated in 1993.**

<u>Other Turtle Captures</u>: Loggerheads were the only other species captured at Sabine Pass in

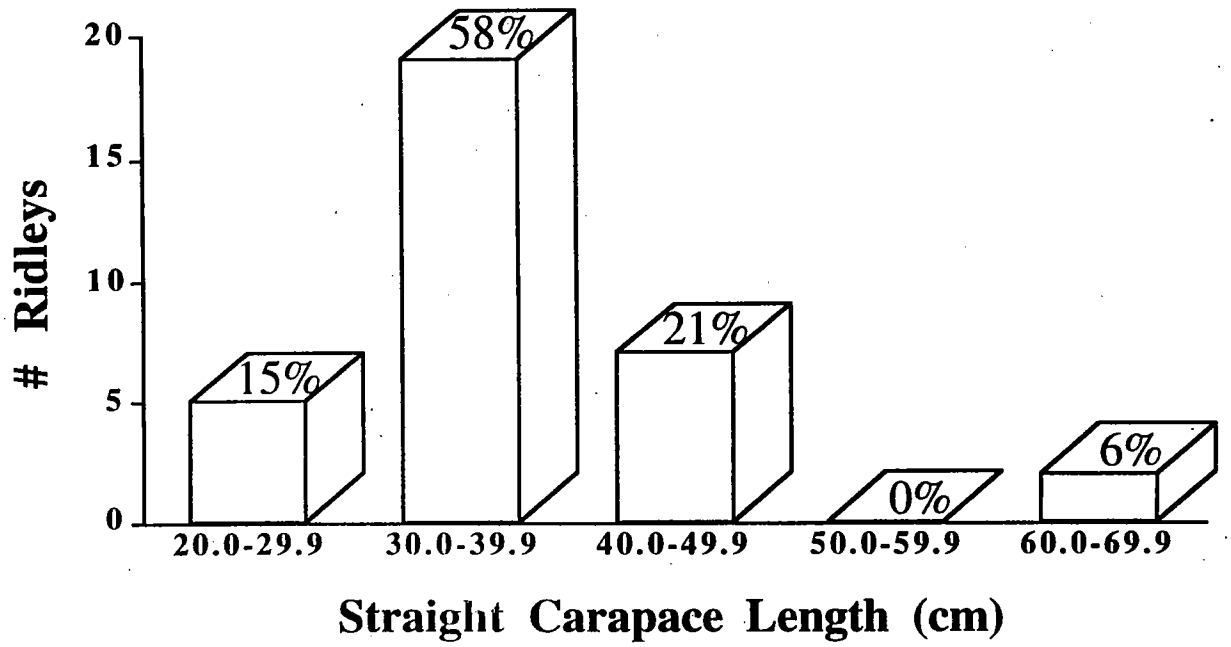

Figure 9 . **Straight carapace length (cm) frequency for Kemp's ridleys netted at Sabine Pass during 1995. Number on top of histogram bars denotes the percent contribution of each carapace length category to the total catch.**

Table 8. Straight carapace lengths (cm) for sea turtles captured at monitoring sites in 1995.

Study Area	n	Minimum	Maximum	Average	Standard Dev.
Sabine Pass					
Kemp's ridley SCL (cm)	33	21.8	64.0	37.49	8.75
Loggerhead SCL (cm)	3	50.7	63.4	58.77	5.72
Calcasieu Pass					
Kemp's ridley SCL (cm)	15	27.6	64.6	45.33	9.64
Barataria/Caminada Passes					
Kemp's ridley SCL (cm)	1	51.9	51.9	51.90	0.00
Loggerhead SCL (cm)	1	54.7	54.7	54.70	0.00

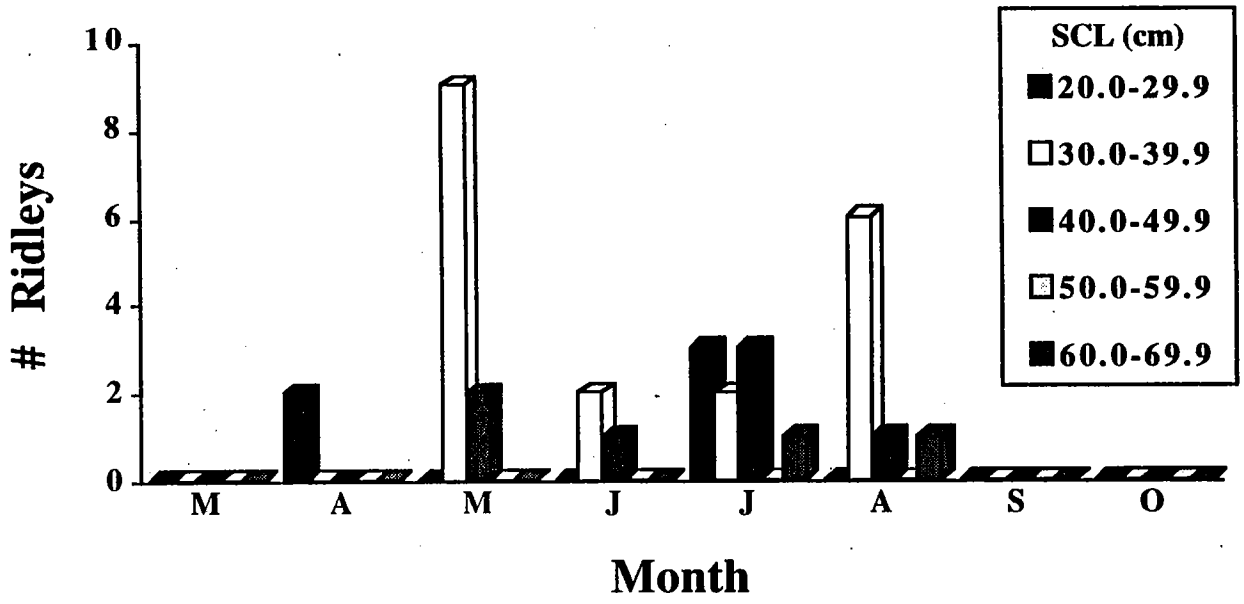

Figure 10. **Monthly straight carapace length (cm) frequency for Kemp's ridleys netted at Sabine Pass during 1995.**

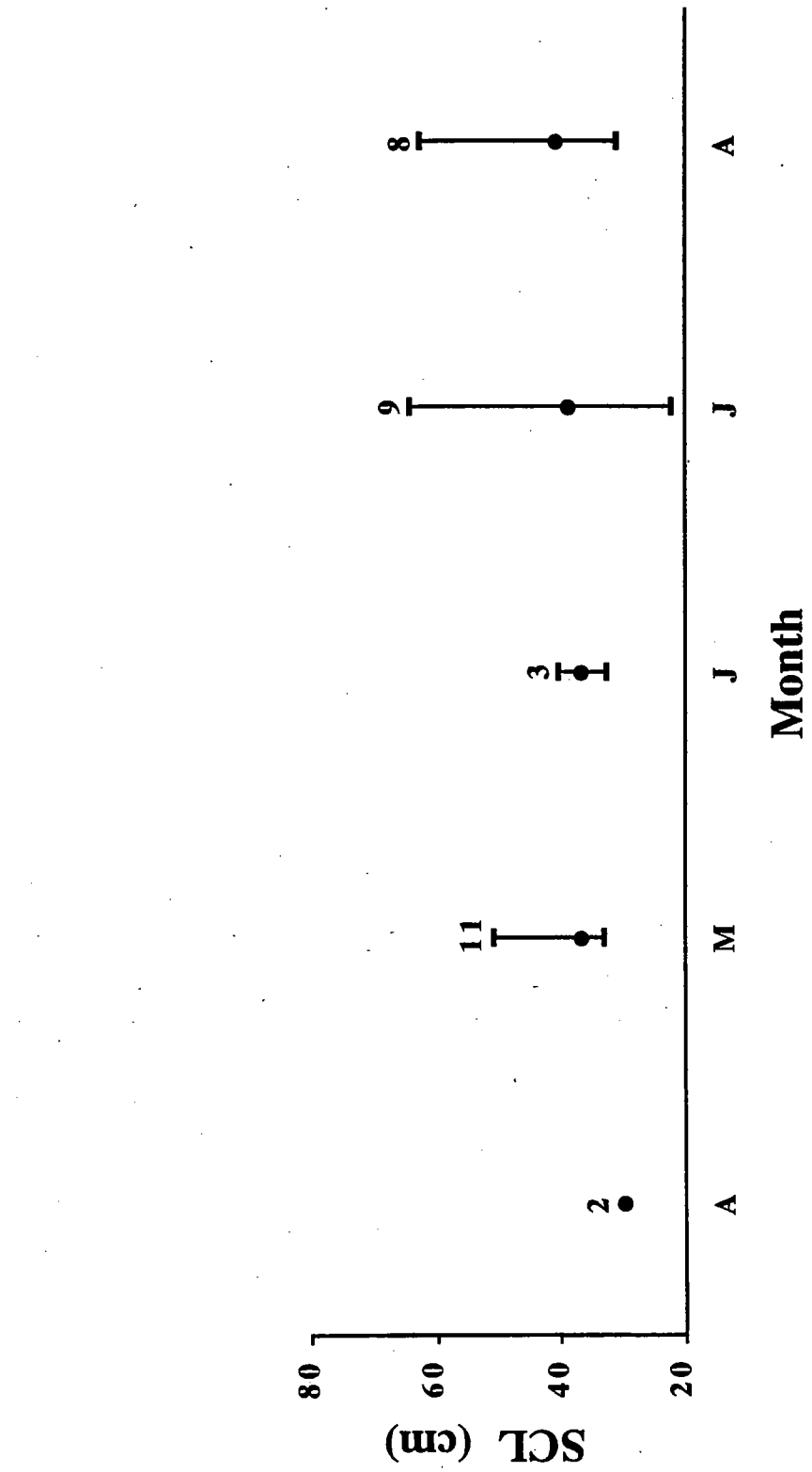

Figure 11. Monthly range and mean straight carapace length (cm) for Kemp's ridleys netted at Sabine Pass during 1995. Number on top of range bars denotes abundance.

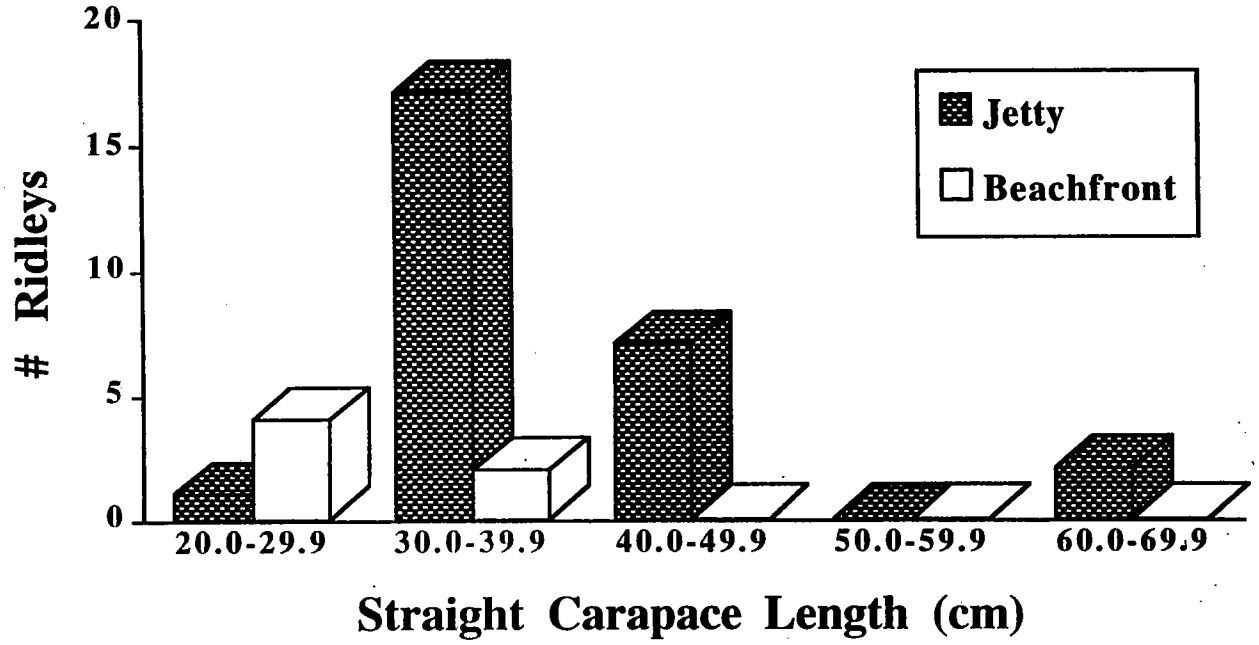

Figure 12. **Straight carapace length (cm) frequency for Kemp's ridleys netted at Sabine Pass habitats during 1995.**

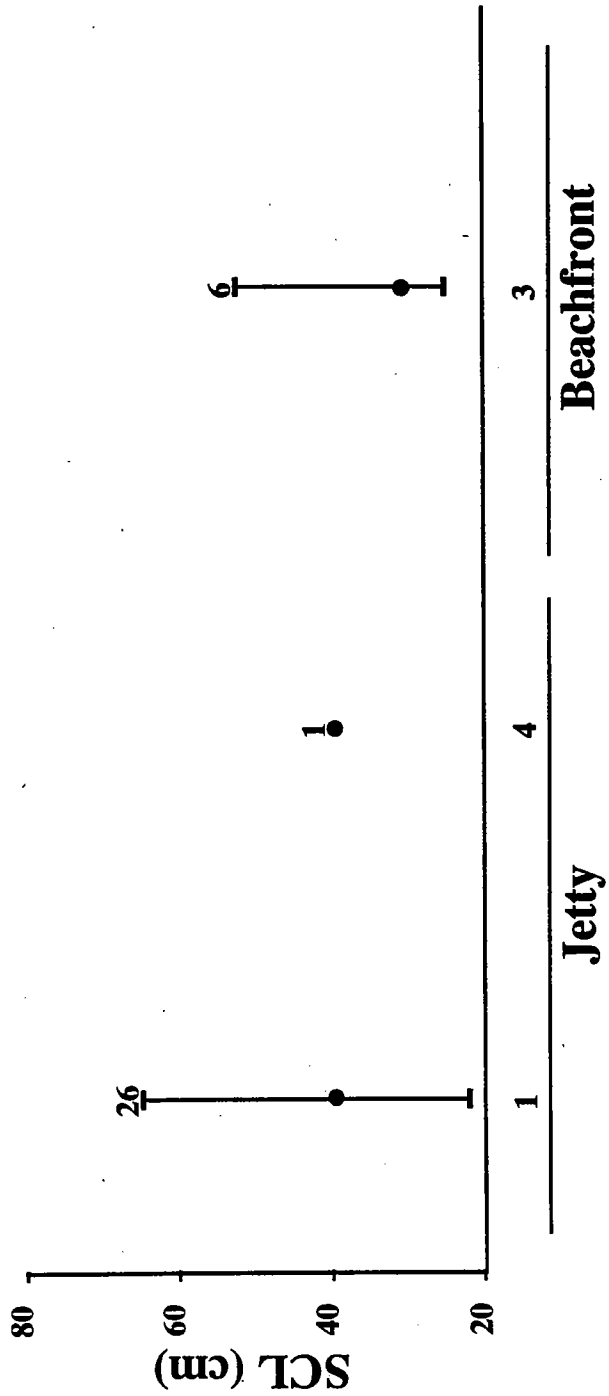

Figure 13. Range and mean straight carapace length (cm) for Kemp's ridleys netted at Sabine Pass habitats during 1995. Number on top of range bars denotes abundance.

1995. These three individuals represented 8.3% of the turtles captured at this site (Table 2 and Appendix Table 1). As in 1993 and 1994, loggerheads, reputedly the Gulf's most abundant sea turtle species, were netted only at West Jetty station 1 and exhibited a restricted size range (50.7 to 63.4 cm SCL - Table 8 and Appendix Table 1). The largest loggerhead had been badly injured in a shark attack prior to its capture at Sabine Pass. Severe wounds to its front and hind right flippers necessitated immediate transfer of this turtle to NMFS' Sea Turtle Stranding and Salvage Network facility in Galveston for treatment and rehabilitation. Its right front flipper was subsequently amputated while the hind flipper required suturing. The turtle was eventually released into the Gulf off Galveston's South Jetty on 5 October 1995.

The 1995 netting season was the first since 1992 that green turtles were not taken at Sabine Pass.

Tag and Recapture: All 36 sea turtles captured at Sabine Pass were equipped with inconel flipper tags and PIT tags prior to release (Appendix Table 1). One exception was the rehabilitated loggerhead which, when released off Galveston, received only a flipper tag.

Four Kemp's ridleys were transferred to NMFS personnel conducting tracking studies on behavior and movement (Table 2 and Appendix Table 1). Two younger ridleys, 32.5 and 35.4 cm SCL, were equipped with radio- and sonic-transmitters by NMFS and released at their original capture site on 18 June and 7 July 1995, respectively. Satellite transmitters were attached to two larger ridleys - 49.3 and 64.0 cm SCL - released on 9 and 17 July 1995. Detailed results of the NMFS tracking study are available from Dr. Maurice Renaud at the NMFS Galveston Laboratory.

Seven other Kemp's ridleys, ranging from 34.9 to 40.2 cm SCL, were equipped with radio- and sonic-telemetry by TAMU researchers to characterize their use of inshore waters (Table 2 and Appendix Table 1). These releases occurred in Sabine Lake and Gulf waters adjacent to Sabine Pass between 19 May and 19 August 1995. Results of this tracking study will constitute a Master of Science thesis by Ms. Katharine VanDenburg.

No recaptures of turtles tagged previously at Sabine Pass were achieved in 1995. However, two Kemp's ridleys tagged at other locations by research entities were "recaptured" at

Sabine Pass in 1995 (Appendix Table 2). The first of these, a 64.0 cm SCL individual netted on 13 July, displayed a metal tag (attached to the left front flipper) with the inscription "AA401 Informar Pesca-Crip-Manzanillo-Colima, MX.". This ridley was initially tagged 12 May 1994 on the Rancho Nuevo, Mexico nesting beach where it laid a clutch of 82 eggs. It renested at Rancho Nuevo again on 27 June 1994 and 16 May 1995 prior to its capture at Sabine Pass. This ridley's interval of freedom between initial tagging and capture at Sabine Pass was 428 days. A second flipper tag and PIT tag were attached to this ridley by TAMU personnel. NMFS biologists then equipped this turtle with a satellite tag prior to its release.

A second tagged Kemp's ridley, exhibiting a metal tag on its right front flipper and a PIT tag, was "recaptured" at Sabine Pass on 13 August 1995 (Appendix Table 2). Originally caught on a recreational fisherman's hook-and-line at an unknown location, this 30.8 cm SCL ridley was transferred to NMFS' STSSN personnel on 8 August 1994 and eventually released at High Island, Texas on 5 October 1994. This ridley's recapture in a TAMU entanglement net occurred 312 days after its release, during which time it experienced a 2.4 cm and 0.44 kg increase in size.

Sex Ratio: Testosterone-based sex determinations made on 34 of 36 turtles captured at Sabine Pass in 1995 included 32 Kemp's ridleys and 2 loggerheads (Table 9 and Fig. 14). Ridley gender was partitioned between 12 females and 20 males. The resulting sex ratio (0.6F:1M) contrasted sharply with that (2.1F:1M) reported for Sabine Pass ridleys in 1994 (Landry *et al.* 1995). Laparoscopic examination of a smaller sample of 1995 ridleys (12) yielded a similar ratio (0.7F:1M). The two loggerheads were of opposite sex (Table 9 and Fig. 14).

Males were a dominant constituent of all ridley catches except those in April (only one turtle was netted) and July (Table 10 and Appendix Table 3). Females were captured April-May and July-August. The male assemblage exhibited (Fig. 15) a noticeably smaller size range (25.1-45.7 cm) and mean SCL (35.3 cm) than its female counterpart (21.8-64.0 cm, 41.8 cm, respectively).

Prey Availability: Trawl tows at Sabine Pass yielded 61 taxa of demersal invertebrates and fishes in 1995 (Table 11). Fishes comprised 46 taxa or 75.4% of the demersal assemblage. Jetty and beachfront habitats produced relatively abundant and similar trawl CPUE (608.9 and 672.7

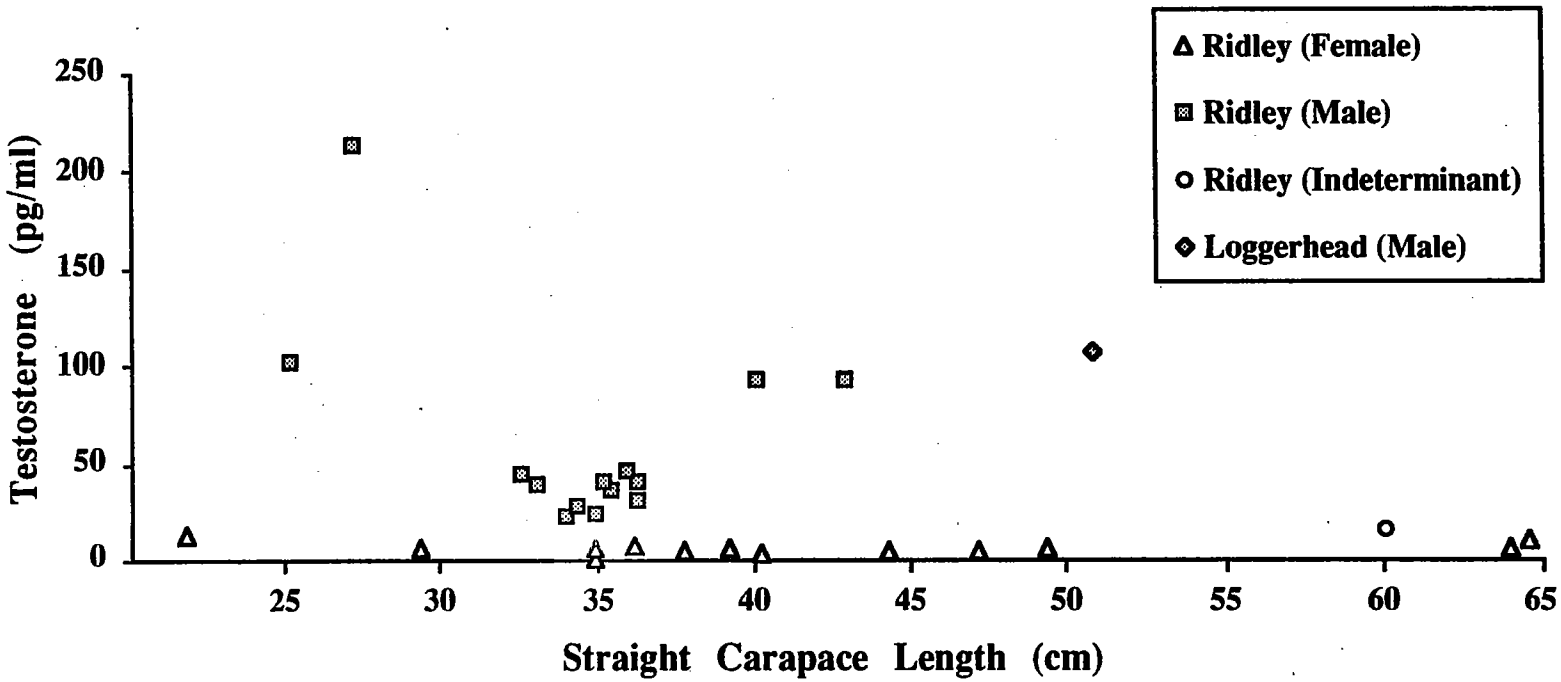

Figure 14. Serum testosterone concentration (pg/ml) and sex of Kemp's ridley and loggerhead sea turtles captured at all monitoring sites in 1995.

Table 9. Sex of sea turtles captured at all monitoring sites in 1995.

	Laparoscopy	Radioimmunoassay		
	Sabine Pass	Sabine Pass	Calcasieu Pass	Bar/Cam Passes
Kemp's ridley				
Male	7	20*	1	0
Female	5	12	3	1
Indeterminant	n/a	0	1	0
Unknown	n/a	1	10	0
Loggerhead				
Male	0	1	0	0
Female	0	1	0	0
Unknown	n/a	1	0	1
Total	12	36	15	2

* One male sexed by laparoscopy only.

Table 10. Monthly gender abundance for sea turtles captured at all monitoring sites in 1995.

			Kemp's ridley				Loggerhead		
Study Area	Month	Captures	Female	Male	Indeterminant	Unknown	Female	Male	Unknown
Sabine Pass	April	2	1	0	0	1	0	0	0
Sabine Pass	May	12	4	7	0	0	0	1	0
Sabine Pass	June	3	0	3	0	0	0	0	0
Sabine Pass	July	10	5	4	0	0	0	0	1
Sabine Pass	August	9	2	6	0	0	1	0	0
Calcasieu Pass	July	5	3	1	1	0	0	0	0
Calcasieu Pass	August	10	0	0	0	10	0	0	0
Bar/Cam Passes	June	1	0	0	0	0	0	0	1
Bar/Cam Passes	July	1	1	0	0	0	0	0	0
	Total	53	16	21	1	11	1	1	2

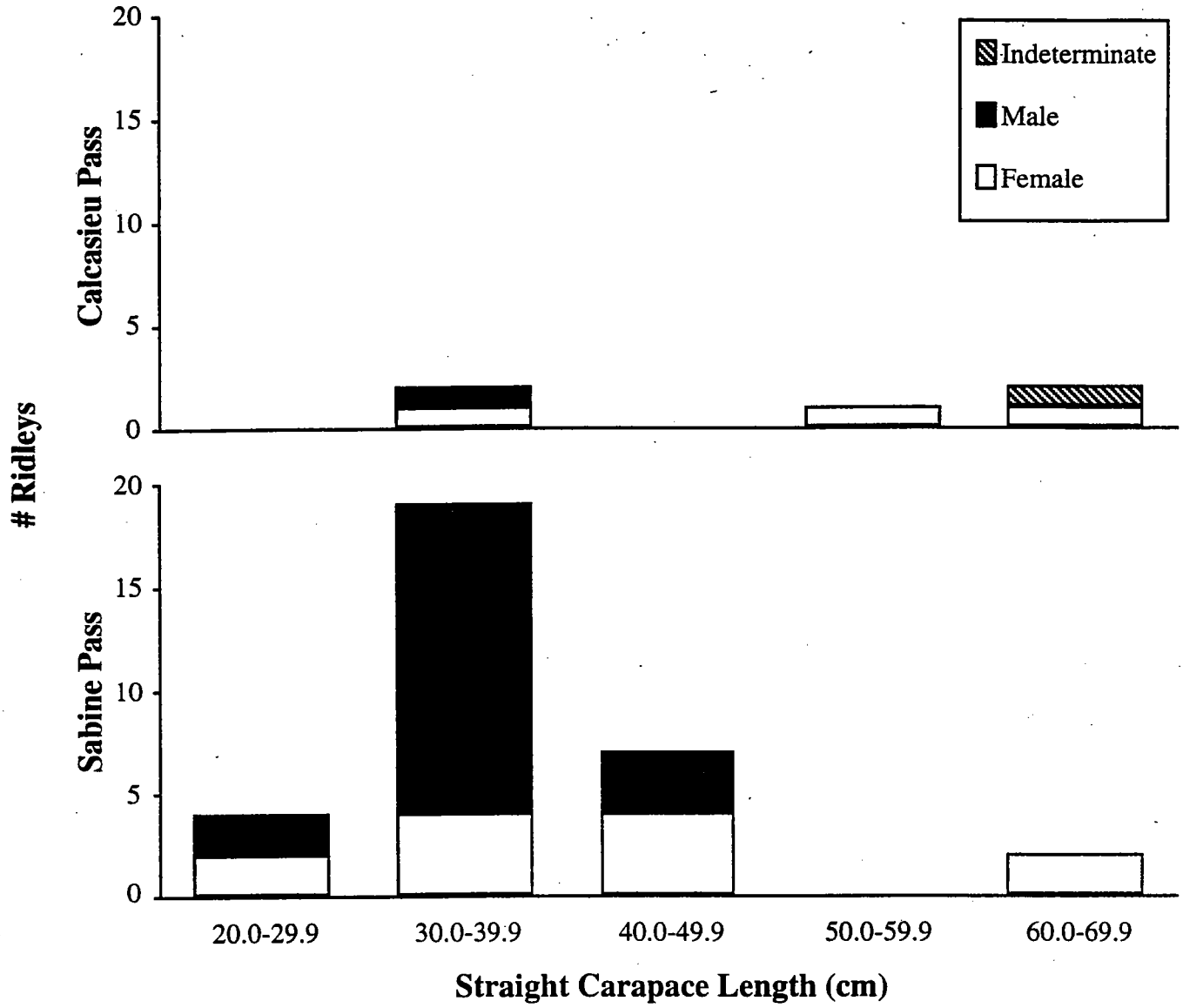

Figure 15. Predicted sex for different size classes of Kemp's ridleys netted at Sabine Pass during 1995.

Table 11. Demersal taxa collected in trawls at Sabine Pass during 1995.

Scientific Name	Common Name
Order Actiniaria	unidentified sea anemone
Bunodasoma cavernata	warty sea anemone
Beroë sp.	comb jelly
Necarius sp.	sharp knobed nassa
Loliguncula brevis	bay squid
Squilla empusa	mantis shrimp
Order Isopoda	sea louse
Penaeus sp.	unidentified larval shrimp
Penaeus aztecus	brown shrimp
Penaeus setiferus	white shrimp
Xiphopenaeus kroyeri	seabob
Superfamily Paguroidea	unidentified hermit crab
Clibanarius vittatus	striped hermit crab
Callinectes sapidus	blue crab
Callinectes similis	lesser blue crab
Brevoortia patronus	gulf menhaden
Dorosoma cepedianum	gizzard shad
Dorosoma petenense	threadfin shad
Harengula jaguana	scaled sardine
Anchoa hepsetus	striped anchovy
Anchoa mitchilli	bay anchovy
Arius felis	hardhead catfish
Arius felis eggs	hardhead catfish eggs
Bagre marinus	gafftopsail catfish
Synodus sp.	unidentified lizardfish
Porichthys plectrodon	Atlantic midshipman
Hippocampus erectus	lined seahorse
Syngnathus louisianae	chain pipefish
Prionotus tribulus	bighead searobin
Family Carangidae	unidentified jack
Caranx hippos	crevalle jack
Chloroscombrus chrysurus	Atlantic bumper
Oligoplites saurus	leatherjack
Selene vomer	lookdown
Trachinotus carolinus	Florida pompano
Archosargus probatocephalus	sheepshead
Bairdiella chrysoura	silver perch
Cynoscion arenarius	sand seatrout
Larimus fasciatus	banded drum
Leiostomus xanthurus	spot
Menticirrhus americanus	southern kingfish
Menticirrhus littoralis	gulf kingfish
Micropogonias undulatus	Atlantic croaker
Pogonias cromis	black drum
Stellifer lanceolatus	star drum

Table 11. Continued.

Scientific Name	Common Name
Chaetodipterus faber	Atlantic spadefish
Mugil cephalus	striped mullet
Sphyraena guachancho	guachanche
Polydactylus octonemus	Atlantic threadfin
Astroscopus y-graecum	southern stargazer
Trichiurus lepturus	Atlantic cutlassfish
Scomberomorus cavalla	king mackerel
Scomberomorus maculatus	Spanish mackerel
Peprilus alepidotus	harvestfish
Citharichthys spilopterus	bay whiff
Etropus crossostus	fringed flounder
Paralichthys lethostigma	southern flounder
Achirus lineatus	lined sole
Symphurus plagiusa	blackcheek tonguefish
Trinectes maculatus	hogchoker
Sphoeroides parvus	least puffer
Balistes capriscus	gray triggerfish

organisms/tow, respectively - Tables 12 and 13). These catches were dominated (≥5% of total catch) by postlarval penaeid shrimp (*Penaeus* sp), white shrimp (*Penaeus setiferus*), seabobs (*Xiphopenaeus kroyeri*), bay anchovy (*Anchoa mitchilli*), Atlantic bumper (*Chloroscombrus chrysurus*), sand seatrout (*Cynoscion arenarius*) and Atlantic croaker (*Micropogonias undulatus*). Blue crabs did not rank among the dominant taxa at either habitat.

Entanglement-Net Bycatch: Eleven species representing 768 crabs and fish were incidentally caught in entanglement nets at Sabine Pass during 1995 (Table 14). Monthly yield of these non-targeted species varied with netting effort and species. Abundance was highest during months (June-August) with greatest soak times and/or presence of the cownose ray (*Rhinoptera bonasus*). Bycatch density declined considerably with onset of cooler water temperatures in September and October. Cownose rays comprised over 57% of the incidental take, with largest catches in June and August. Blue crabs, the second-most abundant taxa (22%) and a prime forage species for Kemp's ridleys, exhibited fairly equable monthly catch rates from April through July and were virtually absent thereafter.

Hydrographic/Meteorologic Conditions: Water temperature across Sabine Pass habitats displayed seasonal patterns typical of temperate environments by ranging from 22 C in April and October to just above 30 C in August and September (Table 14). Thermal conditions gradually warmed from May through August and cooled precipitously after September. Salinity levels varied with month. Lowest average monthly salinity (11.6 ppt) was recorded in May while peak values (>27 ppt) occurred during August. Except for May's minima, salinity gradually increased through August and declined to slightly lower (~23 ppt), stable levels thereafter. Dissolved oxygen content was not monitored by the TAMU research team. However, scientists (principally Dr. Nancy Rabalias, Louisiana Universities Marine Consortium - LUMCON) characterizing dynamics of "dead zones" annually occurring in the northern Gulf reported 1995 the worst year on record for depressed dissolved oxygen content known as hypoxia (≤2 mg/l) and anoxia (0 mg/l). Sabine Pass environs were located on the westernmost extent of this hypoxic/anoxic zone in 1995 (Fig. 16). Individual hydrographic and meteorologic measurements recorded at Sabine Pass in 1995 are

Table 12. Dominant (≥5% of total catch) taxa in trawl tows at Sabine Pass jetty sites (1,4) during 1995.

Taxon	Total Catch	CPUE (n=27 tows)	%
Penaeus sp.	5046	186.9	30.69
Penaeus setiferus	4923	182.3	29.95
Anchoa mitchilli	2268	84.0	13.80
Chloroscombrus chrysurus	1059	39.2	6.44
All other taxa	(3144)	(116.4)	(19.12)
	16440	608.89	100.00

Table 13. Dominant (≥5% of total catch) taxa in trawl tows at Sabine Pass beachfront sites (3,5) during 1995.

Taxon	Total Catch	CPUE (n=27 tows)	%
Penaeus sp.	2724	100.9	15.00
Penaeus setiferus	1820	67.4	10.02
Xiphopenaeus kroyeri	2166	80.2	11.93
Anchoa mitchilli	5751	213.0	31.67
Cynoscion arenarius	1323	49.0	7.28
Micropogonias undulatus	1149	42.6	6.33
All other taxa	(3229)	(119.6)	(17.78)
	18162	672.67	100.00

Table 14. Monthly entanglement netting soak time (hours:minutes), bycatch (# individuals), and hydrographic measurements at Sabine Pass during April-October 1995.

	Month							
	April	**May**	**June**	**July**	**August**	**September**	**October**	**Total**
Soak time	71:00	76:33	52:53	92:02	184:42	14:45	35:30	546:20
Bycatch								
Callinectes sapidus	46	33	33	56	3	2	0	173
Carcharhinus leucas	0	3	0	4	0	0	0	7
Dasyatis americana	2	1	16	17	12	3	0	51
Dasyatis centroura	0	1	0	0	11	0	5	19
Dasyatis sabina	0	1	0	2	2	2	0	5
Rhinoptera bonasus	0	11	198	8	215	0	0	432
Brevoortia patronus	13	6	11	9	9	0	12	60
Arius felis	4	2	6	1	2	0	0	15
Caranx hippos	0	0	0	1	0	0	0	1
Cynoscion nebulosus	0	0	0	2	1	0	0	3
Sciaenops ocellatus	1	0	0	0	0	1	0	2
Total	66	58	264	100	255	8	17	768
Hydrographics								**Overall**
Average Temperature (C)	22.11	26.04	27.60	28.25	30.56	30.21	22.31	26.72
Average Salinity (ppt)	16.30	11.60	17.20	20.68	27.46	23.07	23.90	20.03
Average Conductivity (mS/cm)	26.75	24.24	28.04	32.59	38.11	36.50	31.11	31.04

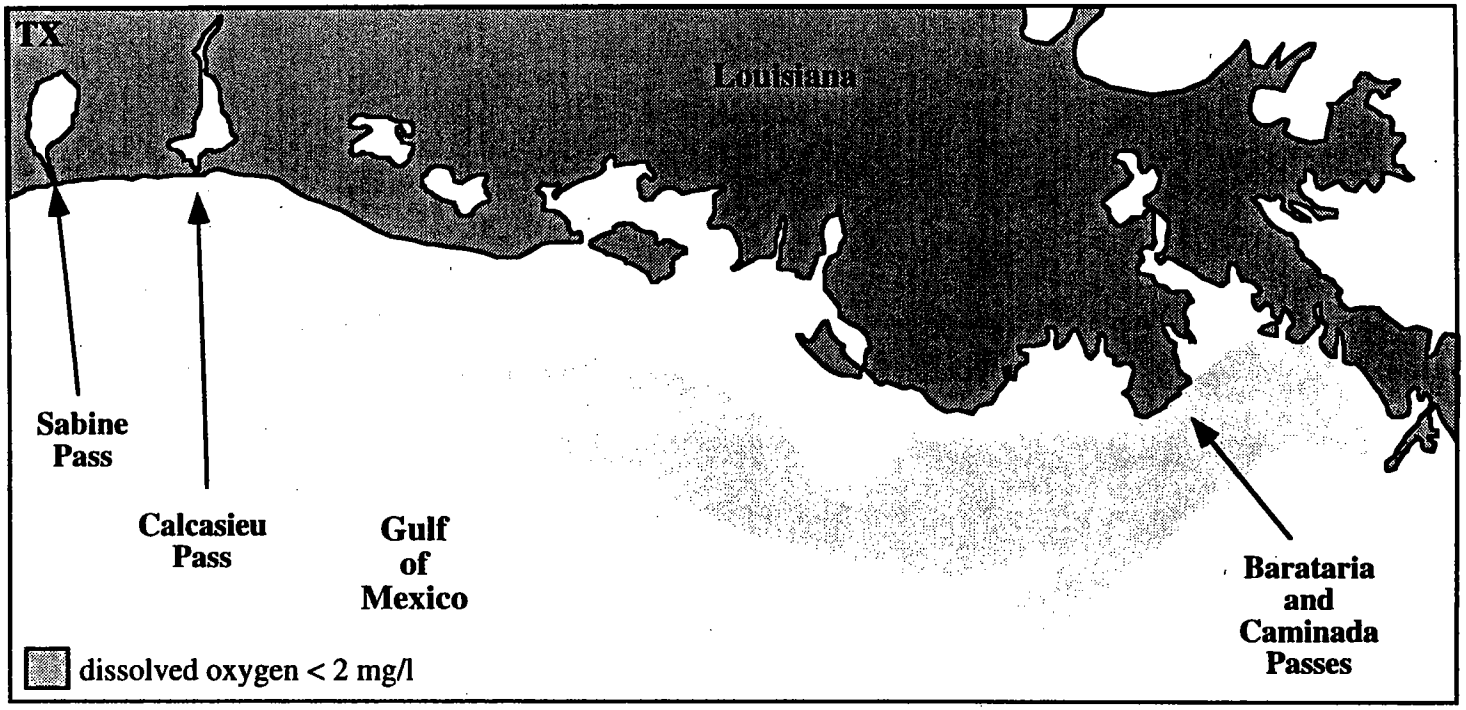

Figure 16. Hypoxic/anoxic zone in the Gulf of Mexico 1995.

presented in Appendix Tables 6 and 7, respectively.

Calcasieu Pass

Sea Turtle Capture Effort: Except September's permit-related netting suspension (due to incidental capture of a bottlenose dolphin), sea turtle occurrence at Calcasieu Pass was monitored monthly from June through October. The 265 netting hours expended at Calcasieu Pass represented 22.4% of the capture effort accomplished across all study areas (Table 15). Over 73% of this netting effort was achieved during July (110 hr) and August (84 hr). Inclement weather in June and implementation of netting restrictions at deeper stations after August limited other months' netting effort to <54 hours each (Table 15).

Sea Turtle Population Dynamics: The 15 sea turtles captured at Calcasieu Pass in 1995 were all Kemp's ridleys (Tables 2 and 16 and Appendix Table 1). These captures were limited to July (5) and August (10), months of peak netting effort (Table 16 and Fig. 17). All but one of these ridleys was taken at West Jetty station 1 (Table 16 and Appendix Table 1).

Overall catch-per-unit of effort across all Calcasieu Pass monitoring stations and months was 0.62 turtle/km-hr (Table 17), a rate slightly below that (overall CPUE = 0.72 turtle/km-hr) recorded at Sabine Pass (Table 5). Highest overall monthly CPUE (1.3 turtles/km-hr) occurred in August (Table 17 and Fig. 18), while jetty station 1 yielded the maximum catch rate (1.0 turtle/km-hr) among netting sites (Fig. 19).

Calcasieu Pass ridleys ranged from 27.6 to 64.6 cm SCL and averaged 45.3 cm SCL (Table 7 and Appendix Table 1). Juveniles within the 40.0-49.9 cm range comprised 40% of the capture lot while larger individuals composed 26% (Fig. 20). As in previous monitoring years, Calcasieu Pass turtles were larger than their Sabine Pass conspecifics (average SCL = 37.5 cm). These larger individuals were most numerous in July (Figs. 20-22). Jetty station 1 yielded the entire size range of captured ridleys (Figs. 23 and 24)

Tag and Recapture: All 15 Kemp's ridleys netted at Calcasieu Pass were flipper tagged while lack of a scanner limited PIT tag attachment to only one of these turtles (Appendix Table 1). Two larger ridleys, 53.8 and 64.6 cm SCL, were equipped with satellite transmitters and tracked by

Table 15. Monthly entanglement netting effort (hours:minutes) at Calcasieu Pass habitats during June-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Total**
June	*	7:00	9:30	*	16:30
July	33:20	57:50	*	19:15	110:25
August	84:12	*	*	*	84:12
September	P	P	P	P	P
October	36:00	*	17:40	*	53:40
Total	153:32	64:50	27:10	19:15	264:47

Table 16. Monthly number of Kemp's ridleys netted at Calcasieu Pass habitats during June-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Total**
June	*	0	0	*	0
July	4	1	*	0	5
August	10	*	*	*	10
September	P	P	P	P	P
October	0	*	0	*	0
Total	14	1	0	0	15

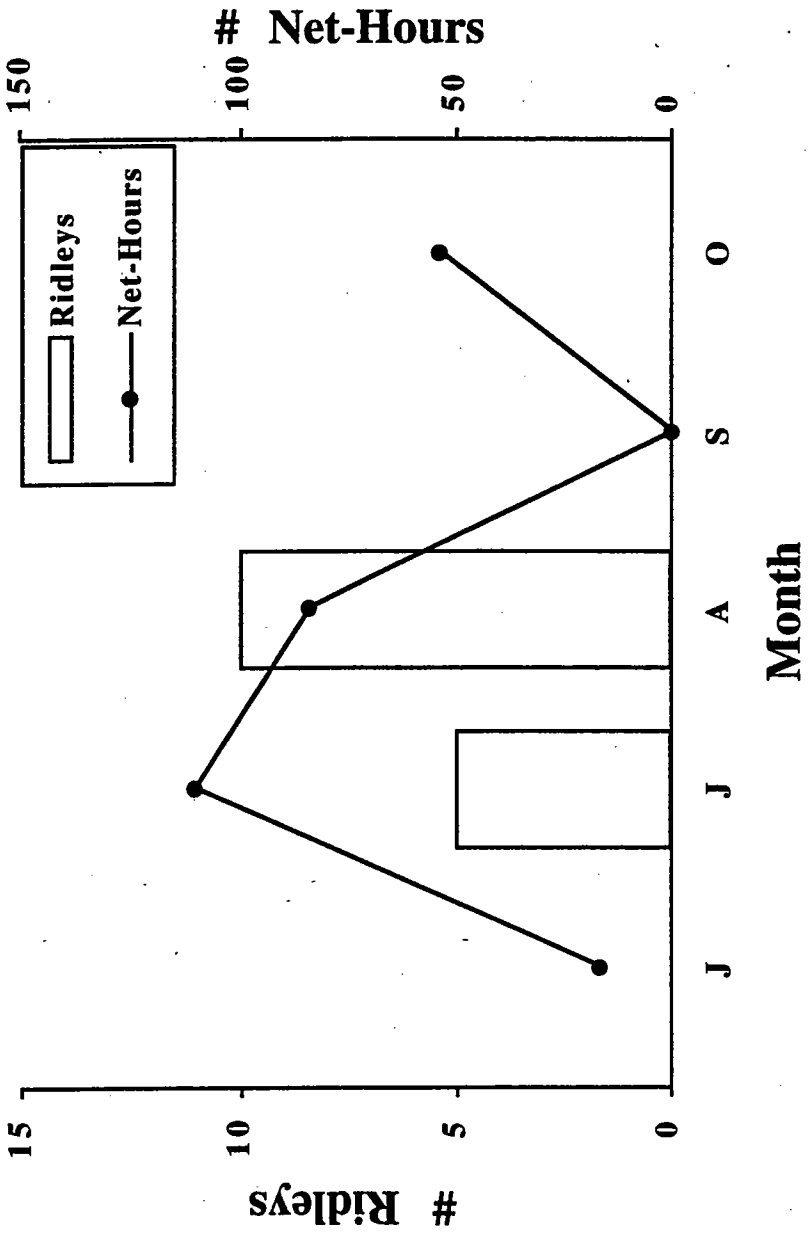

Figure 17. Monthly number of Kemp's ridley sea turtles captured by entanglement netting operations at Calcasieu Pass during 1995.

Table 17. Monthly Kemp's ridley CPUE (# ridleys/km-hr) at Calcasieu Pass during June-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Habitat/Station				
	Jetty		Beachfront		
Month	**1**	**4**	**3**	**5**	**Overall**
June	*	0.00	0.00	*	0.00
July	1.31	0.19	*	0.00	0.50
August	1.30	*	*	*	1.30
September	P	P	P	P	P
October	0.00	*	0.00	*	0.00
Overall	1.00	0.17	0.00	0.00	0.62

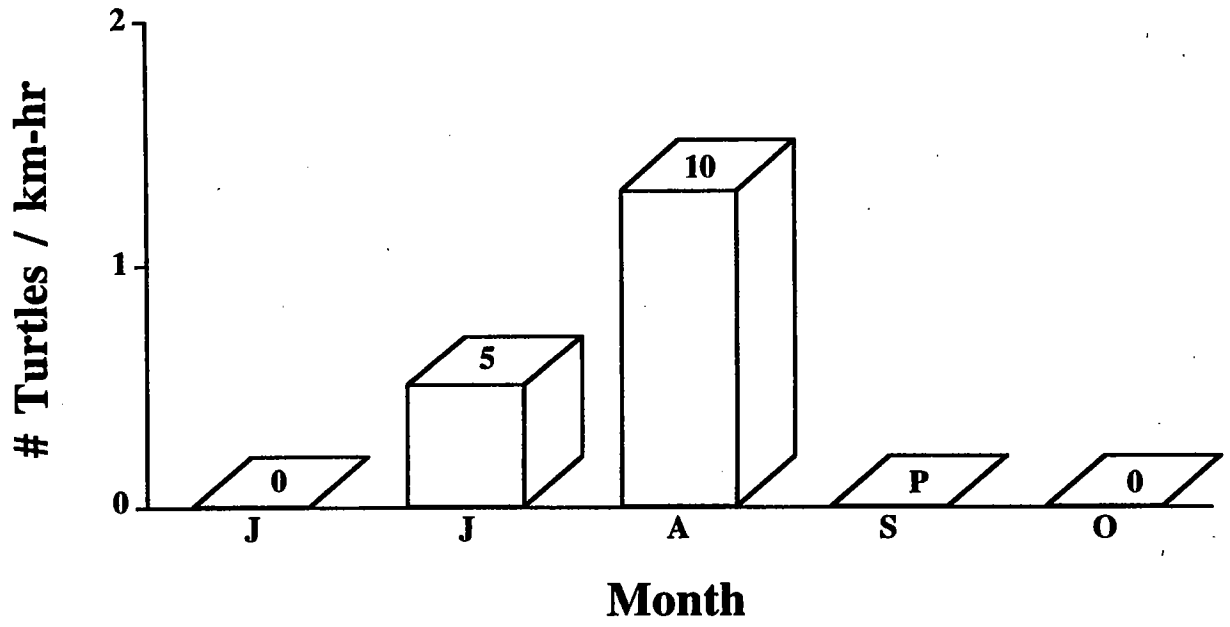

Figure 18. **Monthly sea turtle catch-per-unit of effort (# turtles/km-hr) at Calcasieu Pass during 1995. Number on top of histogram bars denotes Kemp's ridley abundance. P denotes permit-related prohibition of netting.**

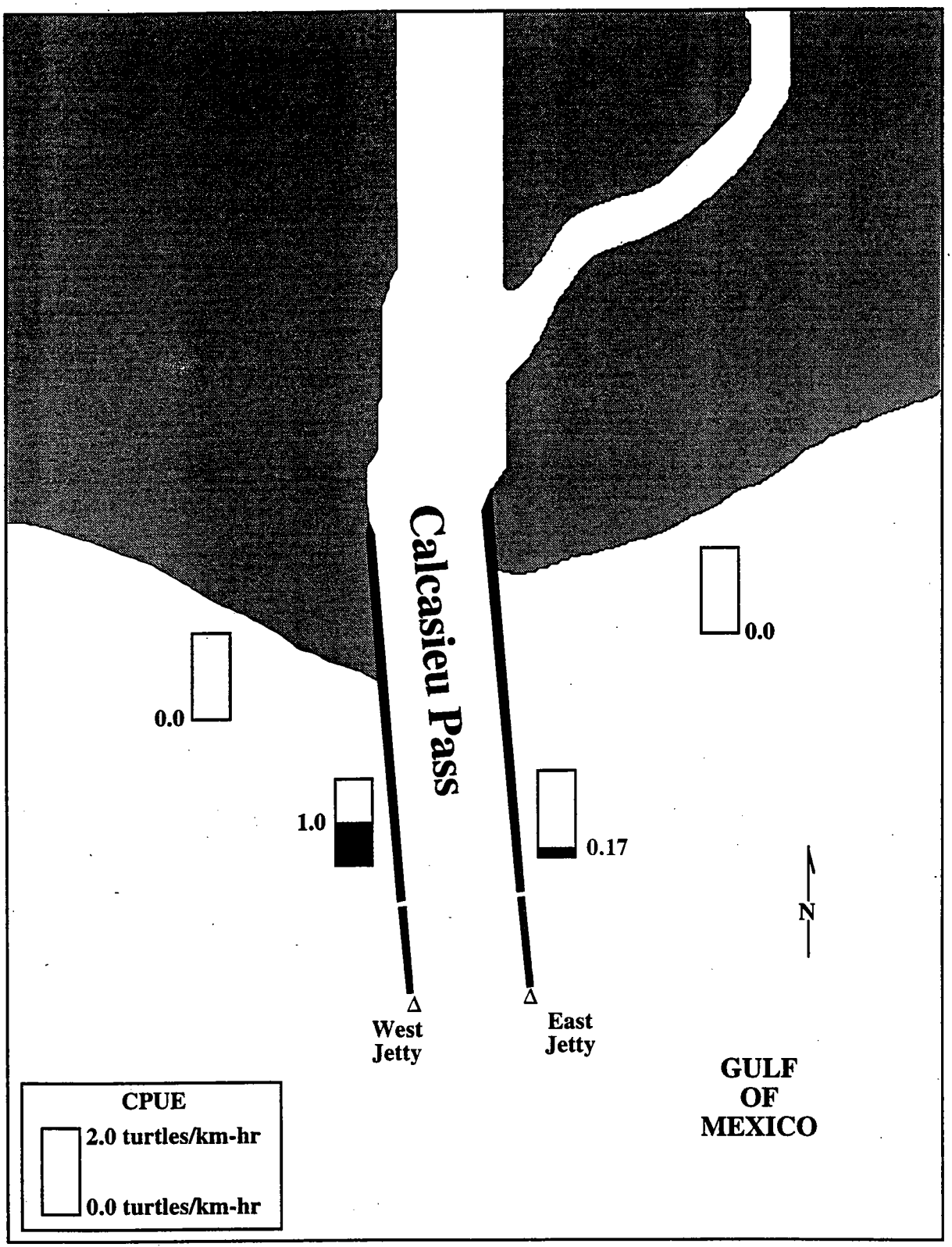

Figure 19. Overall sea turtle catch-per-unit of effort (# turtles/km-hr) for jetty and beachfront habitats at Calcasieu Pass during 1995.

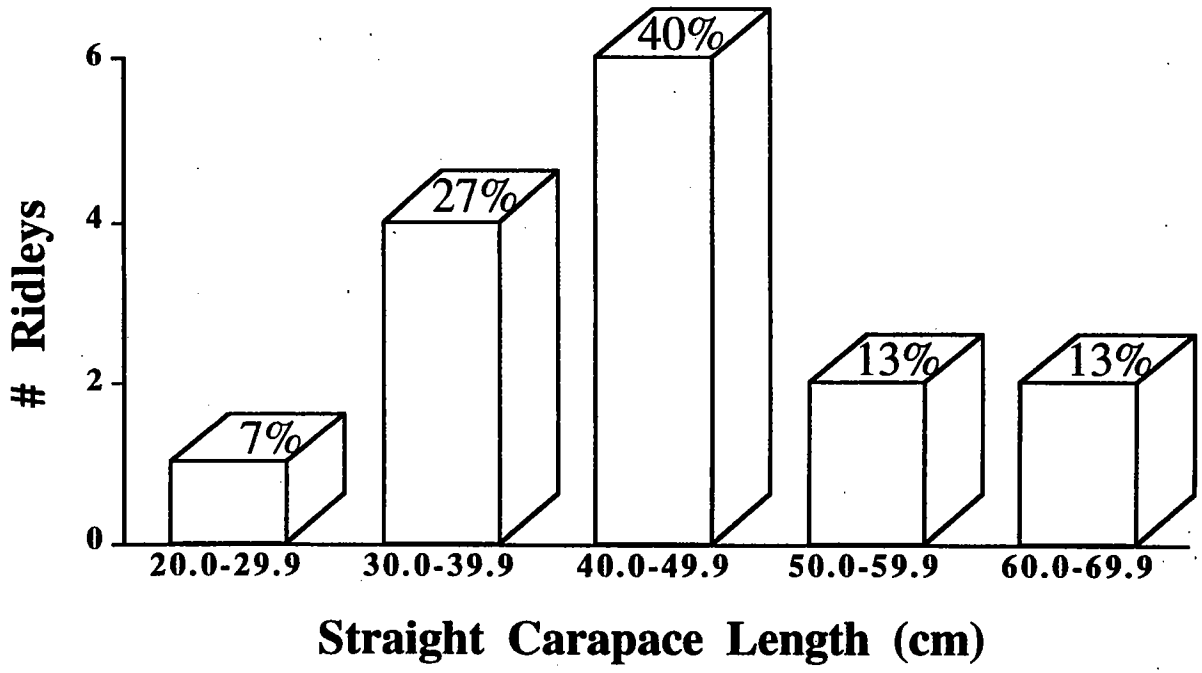

Figure 20. **Straight carapace length (cm) frequency for Kemp's ridleys netted at Calcasieu Pass during 1995. Number on top of histogram bars denotes the percent contribution of each carapace length category to the total catch.**

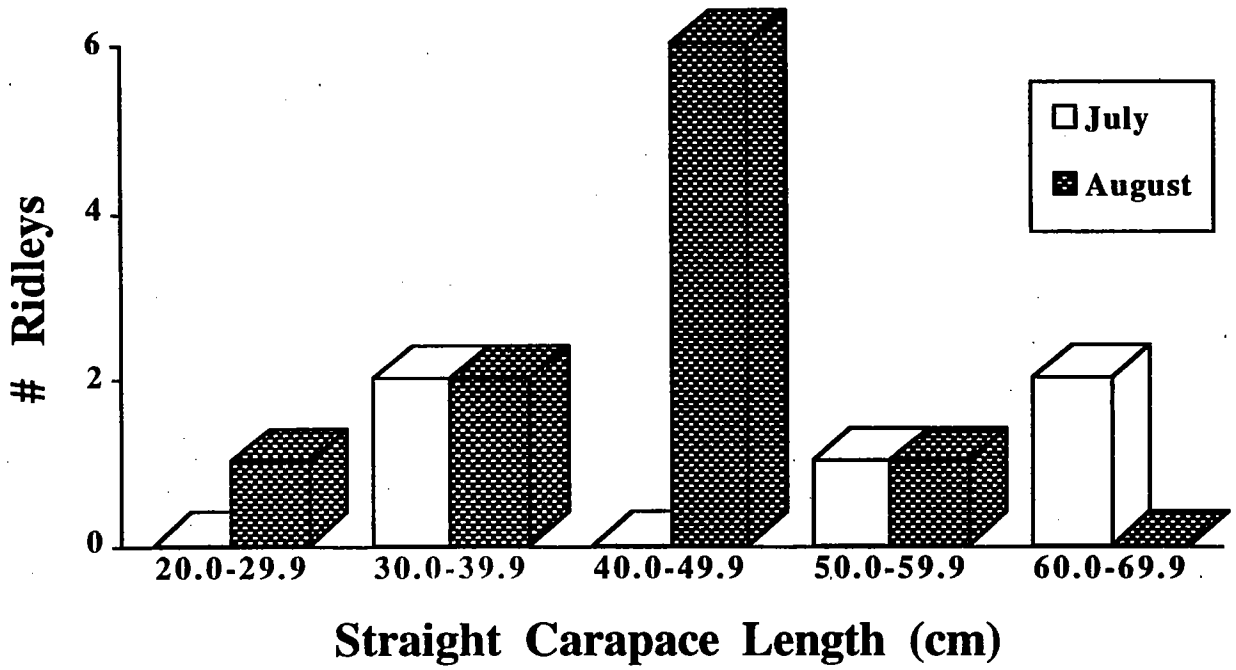

Figure 21. **Monthly straight carapace length (cm) frequency for Kemp's ridleys netted at Calcasieu Pass during 1995.**

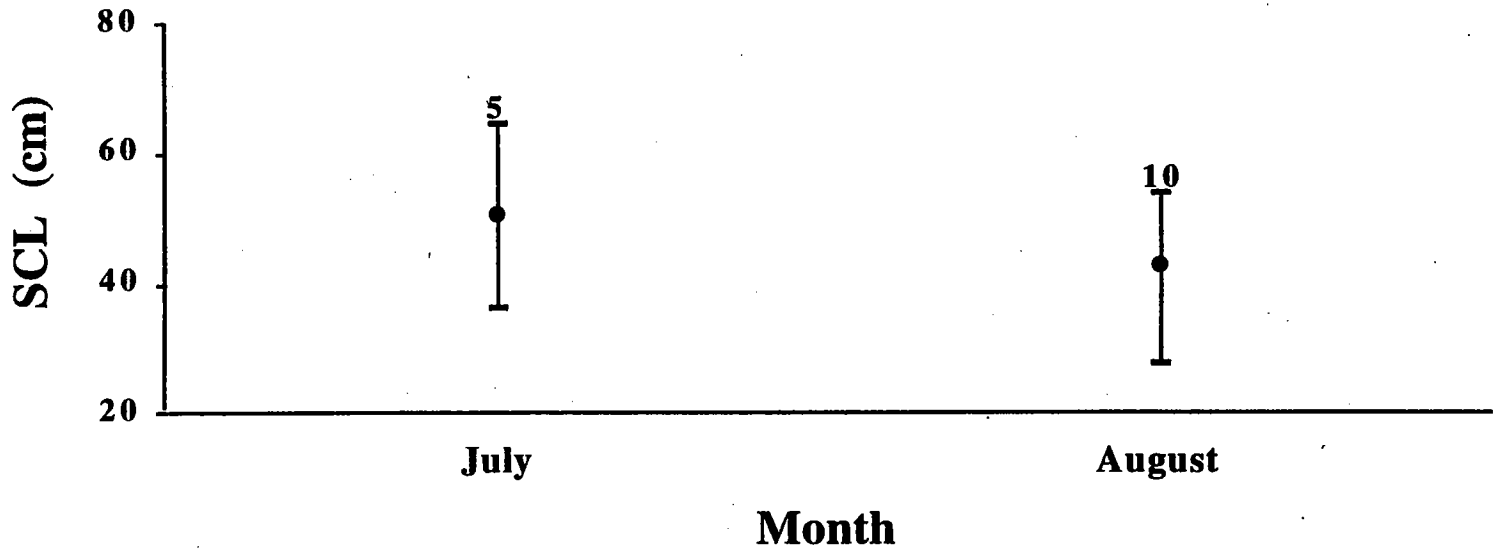

Figure 22. **Monthly range and mean straight carapace length (cm) for Kemp's ridleys netted at Calcasieu Pass during 1995. Number on top of range bars denotes abundance.**

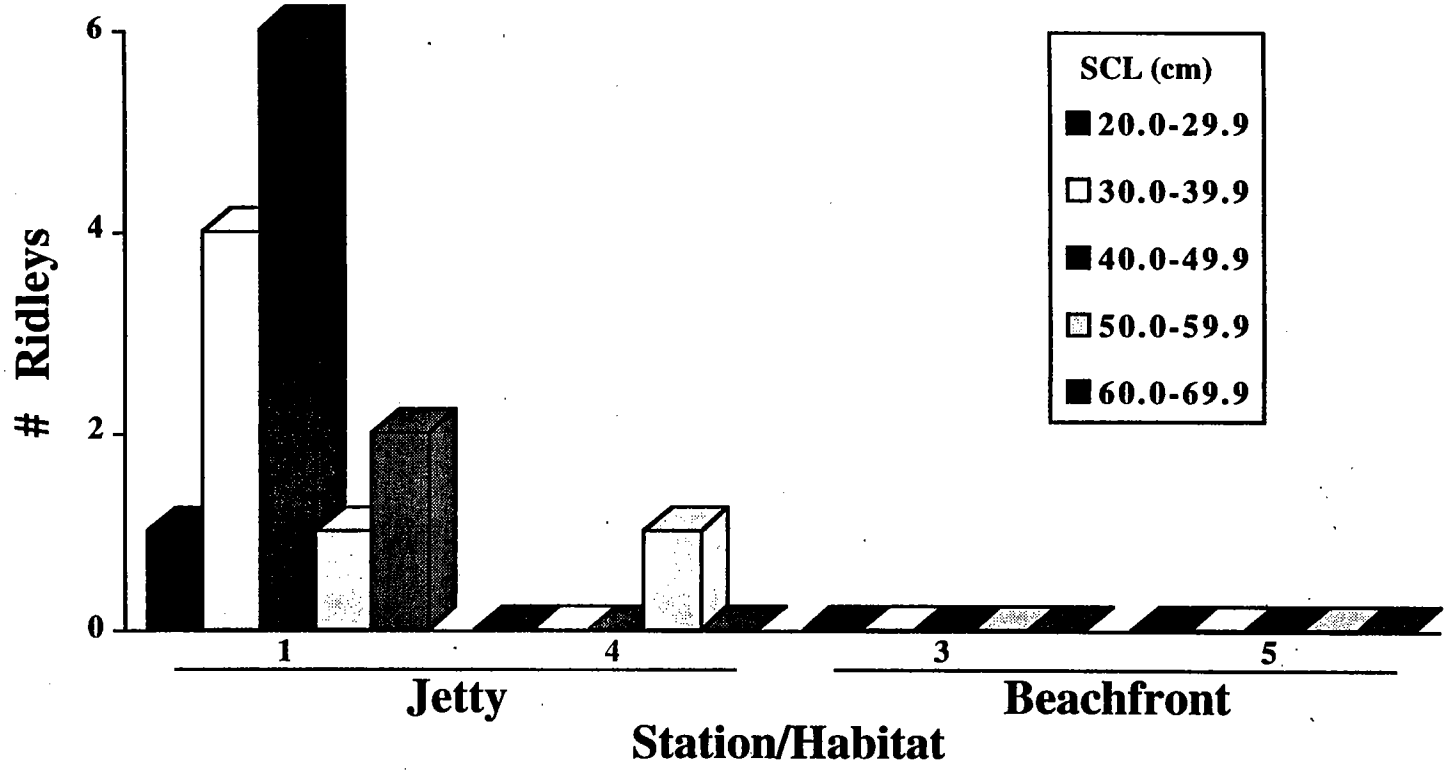

Figure 23. **Straight carapace length (cm) frequency for Kemp's ridleys netted at Calcasieu Pass habitats during 1995.**

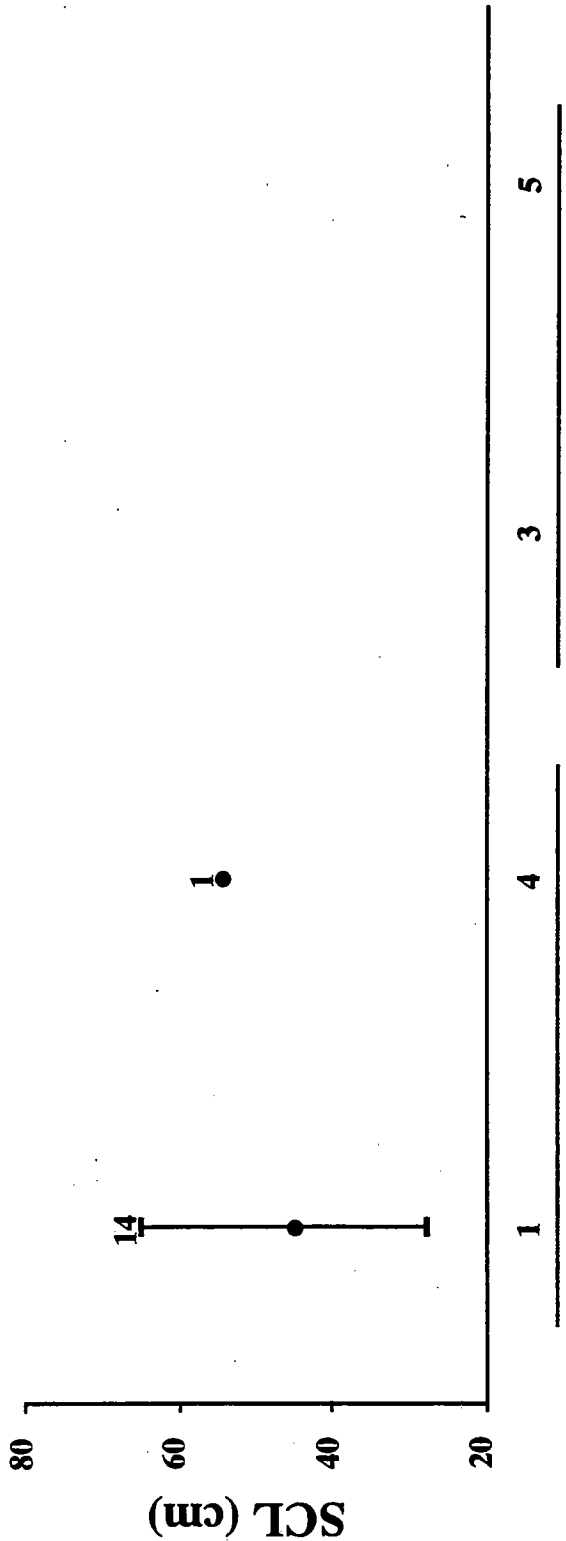

Figure 24. Range and mean straight carapace length (cm) for Kemp's ridleys netted at Calcasieu Pass habitats during 1995. Number on top of range bars denotes abundance.

NMFS personnel (Table 2 and Appendix Table 1). The largest of these ridleys was a "recapture" originally flipper-tagged 12 May 1994 on the Rancho Nuevo nesting beach by Mexican biologists associated with the Instituto Nacional De La Pesca (Appendix Table 2). This ridley was at liberty 414 days prior to its "recapture" off Calcasieu Pass on 1 July 1995.

Sex Ratio: Analysis of blood samples (Tables 9 and 10 and Appendix Table 3) taken from 5 Kemp's ridleys netted at Calcasieu Pass in July yielded 3 females (37.7, 54.1 and 64.6 cm SCL), 1 male (36.2 cm SCL) and an indeterminant (60.0 cm SCL). As mentioned previously, the largest ridley taken at Calcasieu Pass in 1995 was a sexually-mature female who had nested at Rancho Nuevo, Mexico in 1994.

Prey Availability: The 14833 demersal organisms captured in trawl tows at Calcasieu Pass represented 9 invertebrate and 30 fish taxa (Tables 18-21 and Appendix Tables 8 and 9). These totals were noticeably less than those from Sabine Pass because of reduced trawling effort. However, like those at Sabine Pass, fish species accounted for over 90% of the total catch in terms of abundance. Beachfront habitat rendered much larger catch rates (499.2 organisms/tow) than its jetty counterpart (324.9 organisms/tow). Sizable demersal yields during July and April (520.7 to 607.8 organisms/tow) fell sharply by October (107.7 organisms/tow). The Atlantic bumper (*Chloroscombrus chrysurus*) accounted for 81.7% of the total catch. Bay anchovy were the only other species contributing at least 5%. Blue crabs, the ridley's favorite food, were virtually absent from Calcasieu Pass tows during the monitoring period.

Entanglement-Net Bycatch: Incidental catch at Calcasieu Pass amounted to 8 species comprising 148 organisms (Table 22). Blue crabs, the only invertebrate taken in entanglement nets, accounted for over 70% of this bycatch. Each constituent fish species made up <10%. July, in exhibiting peak monthly netting effort, also yielded nearly 77% of the incidental harvest.

Hydrographic/Meteorologic Conditions: Hydrographic monitoring at Calcasieu Pass did not begin until June. Water temperature exhibited normal summer/fall trends - peaking at 31.4 C in August and declining to <24 C by October (Table 22). Salinity averaged 30.0 ppt across the four monitoring months and never fell to the reduced levels recorded at Sabine Pass. Like that at Sabine

Table 18. Monthly abundance and CPUE of sea turtles and blue crabs at Calcasieu Pass habitats during June-October 1995.

Month	Jetty				Beachfront			
	# Turtles	Turtle CPUE	# Crabs	Crab CPUE	# Turtles	Turtle CPUE	# Crabs	Crab CPUE
June	0	0.0	0	0.0	0	0	0	0.0
July	5	0.6	0	0.0	0	0	4	0.2
August	10	1.3	0	0.0	0	0	1	0.1
September	0	0.0	0	0.0	0	0	0	0.0
October	0	0.0	2	0.1	0	0	2	0.1

Table 19. Demersal taxa collected in trawls at Calcasieu Pass during 1995.

Scientific Name	Common Name
Bunodasoma cavernata	warty sea anemone
Loliguncula brevis	bay squid
Squilla empusa	mantis shrimp
Order Isopoda	sea louse
Penaeus aztecus	brown shrimp
Penaeus setiferus	white shrimp
Xiphopenaeus kroyeri	seabob
Arenaeus cribrarius	speckled swimming crab
Callinectes sapidus	blue crab
Brevoortia patronus	gulf menhaden
Dorosoma petenense	threadfin shad
Harengula jaguana	scaled sardine
Anchoa hepsetus	striped anchovy
Anchoa mitchilli	bay anchovy
Arius felis	hardhead catfish
Bagre marinus	gafftopsail catfish
Prionotus tribulus	bighead searobin
Centropristis philadelphica	rock sea bass
Caranx hippos	crevalle jack
Chloroscombrus chrysurus	Atlantic bumper
Oligoplites saurus	leatherjack
Selene setapinnis	Atlantic moonfish
Selene vomer	lookdown
Trachinotus carolinus	Florida pompano
Bairdiella chrysoura	silver perch
Cynoscion arenarius	sand seatrout
Larimus fasciatus	banded drum
Leiostomus xanthurus	spot
Menticirrhus americanus	southern kingfish
Micropogonias undulatus	Atlantic croaker
Stellifer lanceolatus	star drum
Chaetodipterus faber	Atlantic spadefish
Polydactylus octonemus	Atlantic threadfin
Trichiurus lepturus	Atlantic cutlassfish
Scomberomorus maculatus	Spanish mackerel
Peprilus alepidotus	harvestfish
Citharichthys spilopterus	bay whiff
Paralichthys lethostigma	southern flounder
Symphurus plagiusa	blackcheek tonguefish

Table 20. Dominant (≥5% of total catch) taxa in trawl tows at Calcasieu Pass jetty sites (1,4) during 1995.

Taxon	Total Catch	CPUE (n=18 tows)	%
Anchoa mitchilli	488	27.1	8.34
Chloroscombrus chrysurus	4354	241.9	74.45
All other taxa	(1006)	(55.9)	(17.20)
	5848	324.9	100.00

Table 21. Dominant (≥5% of total catch) taxa in trawl tows at Calcasieu Pass beachfront sites (3,5) during 1995.

Taxon	Total Catch	CPUE (n=18 tows)	%
Arius felis	565	31.4	6.29
Chloroscombrus chrysurus	7766	431.4	86.43
All other taxa	(654)	(36.3)	(7.28)
	8985	499.2	100.00

Table 22. Monthly entanglement netting soak time (hours:minutes), bycatch (# individuals), and hydrographic measurements at Calcasieu Pass during June-October 1995. Footnotes denote permit-related (P) prohibition of netting.

	Month					
	June	**July**	**August**	**September**	**October**	**Total**
Soak time	16:30	110:25	84:12	P	53:40	264:47
Bycatch						
Callinectes sapidus	10	76	5	P	13	104
Carcharhinus leucas	0	4	0	P	0	4
Dasyatis americana	0	4	0	P	0	4
Dasyatis centroura	0	2	1	P	0	3
Rhinoptera bonasus	0	6	4	P	0	10
Brevoortia patronus	0	3	9	P	0	12
Arius felis	0	1	4	P	0	5
Sciaenops ocellatus	1	3	2	P	0	6
Total	11	99	25	P	13	148
Hydrographics						**Overall**
Average Temperature (C)	30.40	30.47	31.43	P	23.68	28.99
Average Salinity (ppt)	28.15	34.02	28.80	P	29.05	30.00
Average Conductivity (mS/cm)	47.01	56.63	48.94	P	43.45	49.00

Pass, dissolved oxygen content was probably compromised by the hypoxia/anoxia events plaguing the northcentral Gulf in 1995. Although no measurements were taken, low DO isopleths developed by LUMCON scientists (Fig. 16) included nearshore waters adjacent to Calcasieu Pass. Detailed hydrographic and meteorologic measurements are given in Appendix Tables 10 and 11, respectively.

Barataria and Caminada Passes

Sea Turtle Capture Effort: The 370.67 netting hours achieved at Barataria and Caminada Passes represented 31.4% of the cumulative capture effort across study areas (Table 23). Grand Isle was the study area most impacted by adverse netting conditions. The netting team spent April's 10-day netting allotment confined to the St. Amant Laboratory on Grand Terre because of inclement weather. Strong tidal currents also compromised netting effort at many sites, especially stations 4 and 5. A permit-related prohibition negated netting in September.

Capture effort for months in which netting was conducted ranged from 32.5 hrs in October to 109.8 hrs in June (Table 23). Monthly effort was consistently >67 hrs during May through August.

Station 1, the Grand Isle beachfront site west of Barataria Pass, received over 43% (161 hrs) of the total capture effort (Table 23). Beachfront habitat at Grand Terre (east of Barataria Pass) and Elmer's Island each received approximately 90 netting hours to collectively account for another 49%. These three sites were the only locales where netting was achieved across three or more months.

Sea Turtle Population Dynamics: Two sea turtles - a Kemp's ridley and loggerhead - were netted in the Barataria/Caminada Pass study area (Tables 2, 24-27; Appendix Table 1; Figs. 25-27). The ridley was a 51.9 cm SCL female capture at Elmer's Island in July (Table 8 and Appendix 3). A 54.7 cm SCL loggerhead (no sex determined) was netted at Grand Isle station 1 a month earlier (Appendix Table 3).

Tag and Recapture: Both turtles captured in the Grand Isle area were flipper tagged. The loggerhead also received a PIT tag and was equipped with radio- and sonic-telemetry by NMFS

Table 23. Monthly entanglement netting effort (hours:minutes) at Barataria and Caminada Pass beachfront stations during April-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Beachfront Station					
Month	**1**	**2**	**3**	**4**	**5**	**Total**
April	*	*	*	*	*	*
May	53:05	20:00	*	*	*	73:05
June	80:46	29:04	*	*	*	109:50
July	9:30	25:46	32:35	*	*	67:51
August	*	16:10	39:00	18:55	13:20	87:25
September	P	P	P	P	P	P
October	17:40	*	17:50	*	*	32:30
Total	161:01	91:00	89:25	18:55	13:20	370:41

Table 24. Monthly number of sea turtles netted at Barataria and Caminada Pass beachfront stations during April-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Beachfront Station					
Month	**1**	**2**	**3**	**4**	**5**	**Total**
April	*	*	*	*	*	*
May	0	0	*	*	*	0
June	1	0	*	*	*	1
July	0	0	1	*	*	1
August	*	0	0	0	0	0
September	P	P	P	P	P	P
October	0	*	0	*	*	0
Total	1	0	1	0	0	2

Table 25. Monthly number of Kemp's ridleys netted at Barataria and Caminada Pass beachfront stations during April-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Beachfront Station					
Month	**1**	**2**	**3**	**4**	**5**	**Total**
April	*	*	*	*	*	*
May	0	0	*	*	*	0
June	0	0	*	*	*	0
July	0	0	1	*	*	1
August	*	0	0	0	0	0
September	P	P	P	P	P	P
October	0	*	0	*	*	0
Total	0	0	1	0	0	1

Table 26. Monthly sea turtle CPUE (# turtles/km-hr) at Barataria and Caminada Pass beachfront stations during April-October 1995. Footnote denote weather-related (*) and permit-related (P) prohibition of netting.

	Beachfront Station					
Month	**1**	**2**	**3**	**4**	**5**	**Overall**
April	*	*	*	*	*	*
May	0.00	0.00	*	*	*	0.00
June	0.14	0.00	*	*	*	0.10
July	0.00	0.00	0.34	*	*	0.16
August	*	0.00	0.00	0.00	0.00	0.00
September	P	P	P	P	P	P
October	0.00	*	0.00	*	*	0.00
Overall	0.07	0.00	0.12	0.00	0.00	0.06

Table 27. Monthly Kemp's ridley CPUE (# ridleys/km-hr) at Barataria and Caminada Pass beachfront stations during April-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Beachfront Station					
Month	**1**	**2**	**3**	**4**	**5**	**Overall**
April	*	*	*	*	*	*
May	0.00	0.00	*	*	*	0.00
June	0.00	0.00	*	*	*	0.00
July	0.00	0.00	0.34	*	*	0.16
August	*	0.00	0.00	0.00	0.00	0.00
September	P	P	P	P	P	P
October	0.00	*	0.00	*	*	0.00
Overall	0.07	0.00	0.12	0.00	0.00	0.03

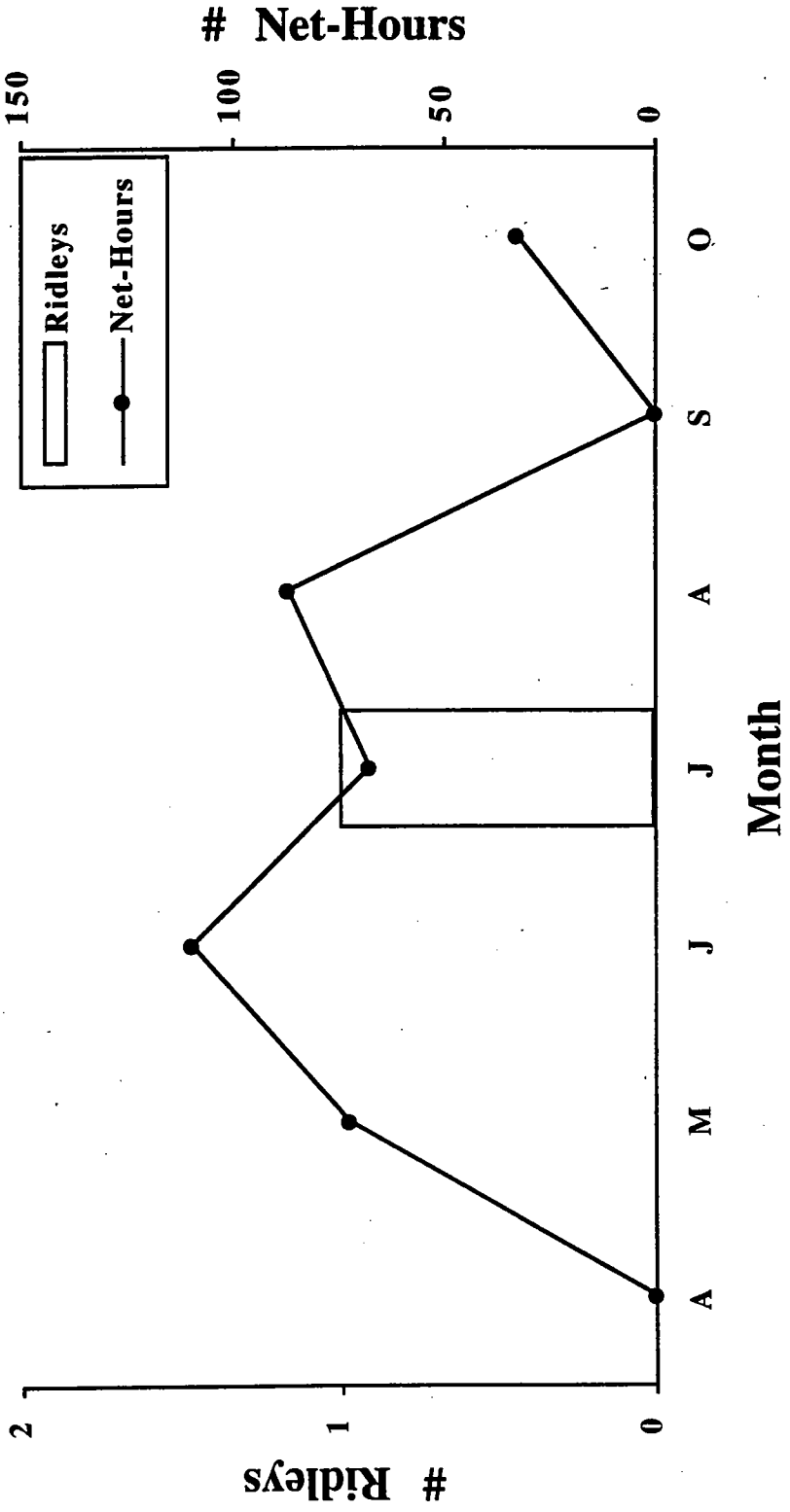

Figure 25. Monthly number of Kemp's ridley sea turtles captured by entanglement netting operations at Barataria and Caminada Passes during 1995.

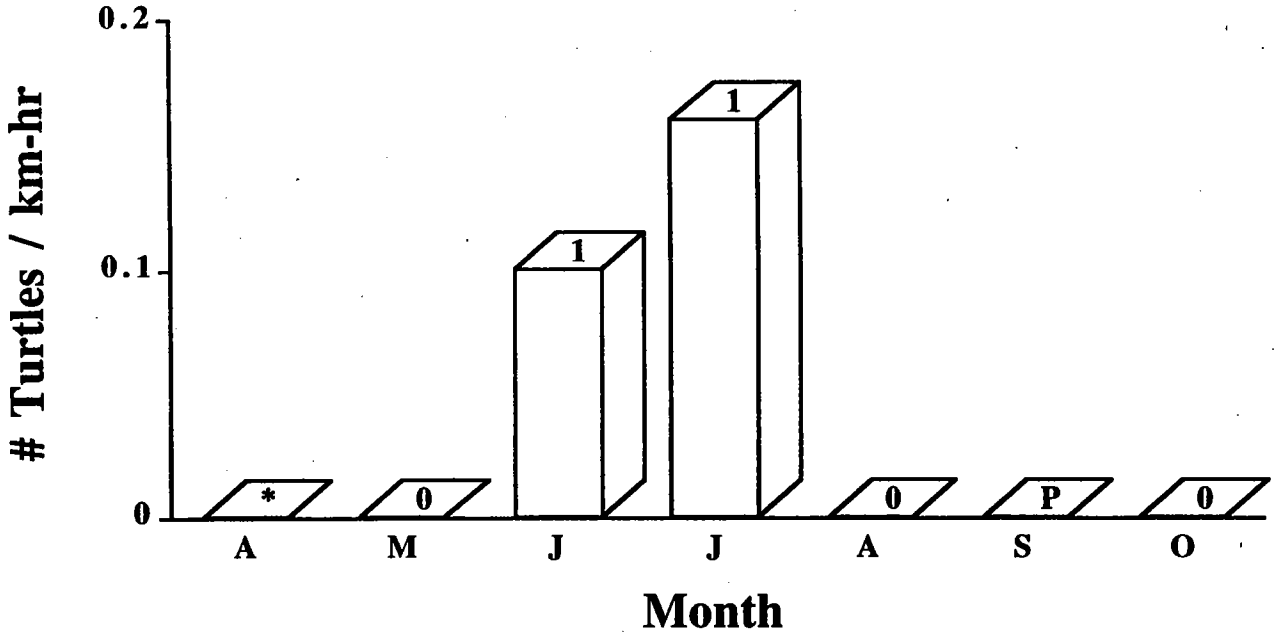

Figure 26. **Monthly sea turtle catch-per-unit of effort (# turtles/km-hr) at Barataria and Caminada Passes during 1995. Number on top of histogram bars denotes sea turtle abundance. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.**

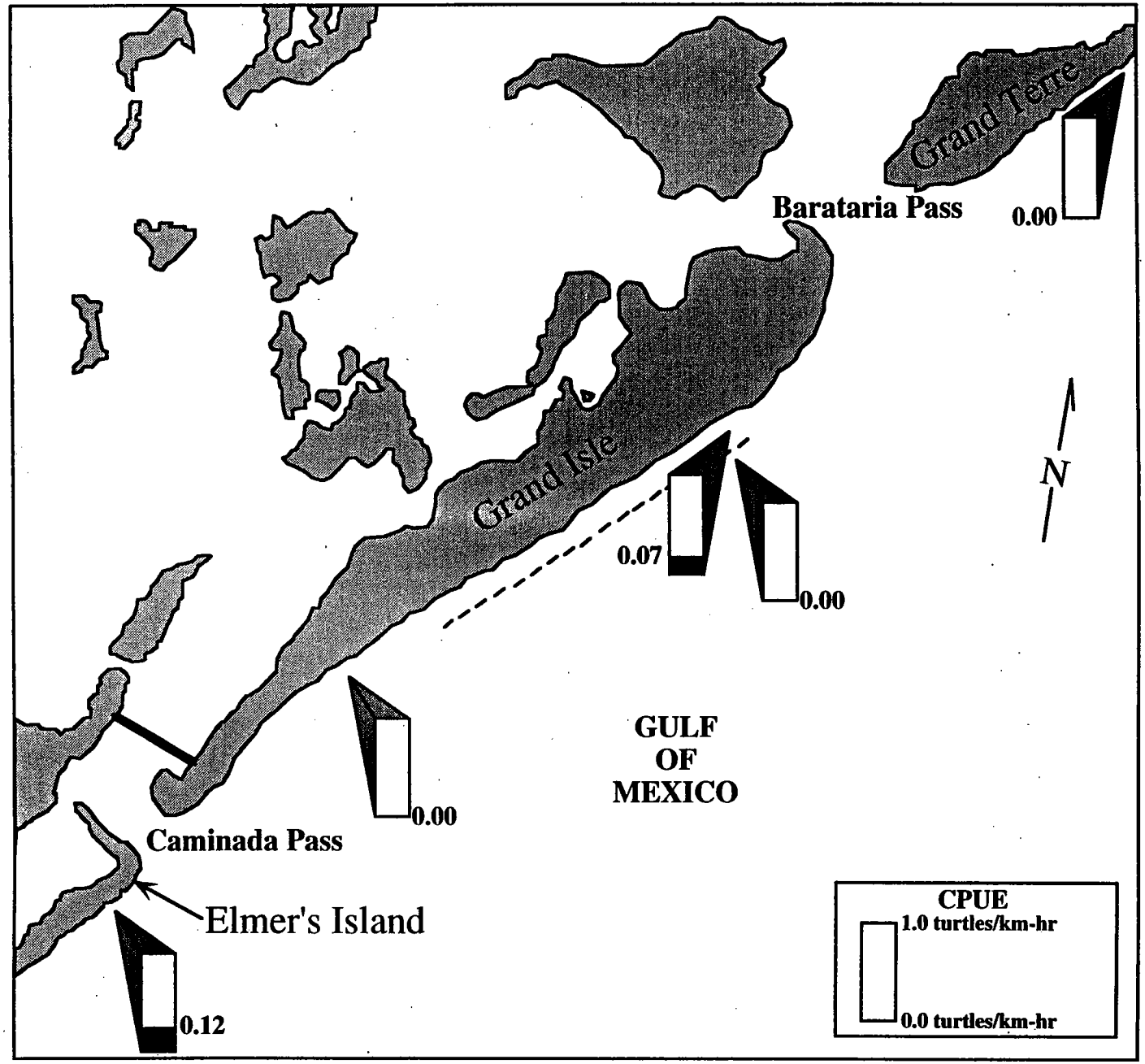

Figure 27. **Overall sea turtle catch-per-unit of effort (# turtles/km-hr) for beachfront stations at Barataria and Caminada Passes during 1995.**

Galveston Laboratory personnel who monitored its movements. No additional tags were applied to the Kemp's ridley. Neither of these turtles was a recaptured animal.

Prey Availability: Beachfront trawl tows adjacent to Barataria and Caminada Passes produced 50 demersal taxa and 8305 individuals (Tables 28 and 29 and Appendix Table 12). This assemblage was partitioned into 13 invertebrate and 37 fish taxa (Table 28), with the latter accounting for over 60% of the total catch. Prey availability exhibited extreme fluctuations across monitoring months such that catch rates >370 organisms/tow during May diminished to 2.1 organisms/tow by August. These depressed levels coincided with onset of hypoxic/anoxic conditions that supposedly were well developed off the Barataria-Caminada Pass study area in 1995. A sharp increase in trawl harvest (424 organisms/tow) was concurrent with onset of cooler water temperatures and, presumably, higher dissolved oxygen content in October. Four species - bay anchovy (39.8%), Atlantic bumper (27.0%), brown shrimp (*Penaeus aztecus* -9.4%), and warty sea anemone (*Bunodasoma cavernata* - 5.9%) - comprised over 82% of the trawl catch.

Entanglement-Net Bycatch: Eleven species representing 476 organisms were incidentally caught in entanglement nets (Table 30). These 11 species were identical to those in Sabine Pass nets (Table 14). Bycatch abundance in Barataria-Caminada Pass net-sets was approximately one-half that the westernmost study area, largely due to effort differences. Like that at Sabine Pass, cownose rays dominated (50.4%) bycatch totals in the Barataria-Caminada Pass area.

Hydrographic/Meteorologic Conditions: Water temperature (Table 30) rose gradually from May (27.4 C) through August (31.7 C) and fell noticeably by October (24.3 C). Reduced salinities (16-19 ppt) characterized May and June while those in subsequent months averaged between 27.5 and 31.2 ppt. As mentioned previously, dissolved oxygen content was not monitored during the study. Nevertheless, models of 1995's hypoxia/anoxia zone in the northcentral Gulf place the Barataria-Caminada Pass study area in the midst of depressed-DO waters (Fig. 16).

Table 28. Demersal taxa collected in trawls at Barataria and Caminada Passes during 1995.

Scientific Name	Common Name
Order Actiniaria	unidentified sea anemone
Bunodasoma cavernata	warty sea anemone
Loliguncula brevis	bay sqiud
Order Isopoda	sea louse
Penaeus sp.	unidentified larval shrimp
Penaeus aztecus	brown shrimp
Penaeus setiferus	white shrimp
Superfamily Paguroidea	hermit crab
Clibanarius vittatus	striped hermit crab
Libinia dubia	spider crab
Callinectes sapidus	blue crab
Callinectes similis	lesser blue crab
Menippe adina	stone crab
Myrophis punctatus	speckled worm eel
Brevoortia patronus	gulf menhaden
Dorosoma petenense	threadfin shad
Harengula jaguana	scaled sardine
Anchoa hepsetus	striped anchovy
Anchoa mitchilli	bay anchovy
Arius felis	hardhead catfish
Bagre marinus	gafftopsail catfish
Prionotus tribulus	bighead searobin
Rachycentron canadum	cobia
Family Carangidae	unidentified jack
Chloroscombrus chrysurus	Atlantic bumper
Elagatis bipinnulata	rainbow runner
Selene setapinnis	Atlantic moonfish
Selene vomer	lookdown
Trachinotus carolinus	Florida pompano
Trachinotus falcatus	permit
Lutjanus griseus	gray snapper
Eucinostomus argenteus	spotfin mojarra
Archosargus probatocephalus	sheepshead
Lagodon rhomboides	pinfish
Bairdiella chrysoura	silver perch
Cynoscion arenarius	sand seatrout
Larimus fasciatus	banded drum
Leiostomus xanthurus	spot
Menticirrhus americanus	southern kingfish
Micropogonias undulatus	Atlantic croaker
Stellifer lanceolatus	star drum
Chaetodipterus faber	Atlantic spadefish
Astroscopus y-graecum	southern stargazer
Gobionellus oceanicus	highfin goby
Trichiurus lepturus	Atlantic cutlassfish

Table 28. Continued.

Scientific Name	Common Name
Scomberomorus cavalla	king mackerel
Scomberomorus maculatus	Spanish mackerel
Peprilus alepidotus	harvestfish
Symphurus plagiusa	blackcheek tonguefish
Sphoeroides parvus	least puffer

Table 29. Dominant (≥5% of total catch) taxa in trawl tows at Barataria and Caminada Pass beachfront sites (1-5) during 1995.

Taxon	Total Catch	CPUE (n=48 tows)	%
Bunodasoma cavernata	487	10.2	5.86
Penaeus aztecus	780	16.3	9.39
Anchoa mitchilli	3305	68.9	39.80
Chloroscombrus chrysurus	2242	46.7	27.00
All other taxa	(1491)	(31.1)	(17.95)
	8305	173.0	100.00

Table 30. Monthly entanglement netting soak time (hours:minutes), bycatch (# individuals), and hydrographic measurements at Barataria and Caminada Passes during April-October 1995. Footnotes denote weather-related (*) and permit-related (P) prohibition of netting.

	Month							
	April	**May**	**June**	**July**	**August**	**September**	**October**	**Total**
Soak time	*	73:05	109:50	67:51	87:25	P	32:30	370:41
Bycatch								
Callinectes sapidus	*	5	9	10	1	P	1	26
Carcharhinus leucas	*	4	33	0	11	P	6	54
Dasyatis americana	*	3	21	0	1	P	0	25
Dasyatis centroura	*	1	20	0	2	P	0	23
Dasyatis sabina	*	2	2	0	0	P	0	4
Rhinoptera bonasus	*	12	129	73	0	P	26	240
Brevoortia patronus	*	23	20	0	0	P	21	64
Arius felis	*	1	0	6	1	P	0	8
Caranx hippos	*	2	5	0	1	P	7	15
Cynoscion nebulosus	*	2	0	1	0	P	0	3
Sciaenops ocellatus	*	4	0	0	7	P	3	14
Total	*	59	239	90	24	P	64	476
Hydrographics								**Overall**
Average Temperature (C)	*	27.44	29.05	29.76	31.73	P	24.26	28.44
Average Salinity (ppt)	*	16.03	18.96	31.11	27.48	P	31.18	24.95
Average Conductivity (mS/cm)	*	26.24	31.95	51.34	47.35	P	46.94	40.76

EVALUATION

Sabine Pass

Natural history aspects of sea turtle populations in nearshore waters of Sabine Pass have been investigated by TAMU since 1992. The present study echoes many findings (Landry *et al.* 1993; Landry *et al.* 1994; Landry *et al.* 1995) of these previous monitoring efforts. All studies agree that Sabine Pass is: 1) a Kemp's ridley index habitat; 2) a nursery habitat providing developmental prerequisites to post-pelagic through juvenile life history stages; 3) utilized by this species' entire size range of constituents during late spring through late summer or early fall; 4) not a preferred habitat for other sea turtles common to the northern Gulf including loggerheads and greens; and 5) an area where sea turtles may interact with the shrimp fishery. The 1995 investigation of Sabine Pass validated this area's role as critical sea turtle habitat, especially that required by younger, developing life history stages. Sabine Pass joins other coastal areas of the northeast Gulf (Ogren 1989; Rudloe *et al.* 1989; Rudloe and Rudloe 1994) and northwest Atlantic (Morreale *et al.* 1989; Morreale *et al.* 1992; and Morreale and Standora 1992a,b,c) in providing Kemp's ridleys foraging opportunities prerequisite to development and survival.

The 1995 MARFIN study was conducted at a time when sea turtle utilization of Sabine Pass habitats was not as strong as that reported previously. Relative abundance and CPUE for the 1995 assemblage were noticeably reduced from those in 1993 and 1994 (Landry *et al.* 1994; Landry *et al.* 1995). This downturn in utilization of nearshore waters may have been an artifact of: 1) TAMU's inability to adequately monitor sea turtle communities during months or at stations yielding peak historical occurrence; 2) reduction in prey availability within these waters; and 3) a northern Gulf-wide decline or dispersal of coastal inhabitants such as the Kemp's ridley. Weather- and permit-related interruptions of netting efforts definitely compromised assessment of population strength and seasonal occurrence. Inability to net jetty sites during all or portions of April, August and September compromised population characterization activities across stations and months with historically high turtle yields. Weather was a major deterrent to netting in spring and early-summer while permit restrictions prevented monitoring at jetty stations in latter months. Nevertheless, the

1995 netting effort was sufficient to conclude that sea turtle occupation of Sabine Pass environs had waned.

The ability of nearshore habitats to congregate sizable sea turtle assemblages did not materialize in 1995. Apparent reductions in preferred prey species such as the blue crab lessened the attractiveness of Sabine Pass to foraging turtles. This combined with declines in shrimping pressure (and associated discard of bycatch) off the Sabine Pass further beachfront diminished the area's lure of sea turtles. A weak year class of blue crabs (Mr. Charles Moss, Sea Grant Marine County Agent, personal communication) and reduction in bycatch discard may have dispersed ridleys to other foraging areas. Westward expansion of the worst hypoxic/anoxic event recorded in the northcentral Gulf also may have influenced spatial distribution of demersal organisms that ridleys normally pursue as food. Consequently, essential ingredients (particularly food) for retaining a robust sea turtle assemblage may not have been available at Sabine Pass in 1995.

The possibility for area-wide reductions in Kemp's ridley stocks also exits. Record ridley strandings along Louisiana and Texas beaches in 1994 took its toll on this stock. However, these losses should have been offset by record clutch production at the Rancho Nuevo nesting beach in 1994 and 1995. Increased TED compliance within the shrimp fishery, despite industry transgressions, also should have lessened mortality within the stock. Uncertainty as to whether 1995 trends represent a cyclic phenomenon or a real reduction in stock size mandates that addition long-term information be gathered on population dynamics and effects of natural perturbations (i.e., hypoxia/anoxia and El Niño events) on these dynamics.

Sea turtle captures at Sabine Pass during 1995 did provide other noteworthy information on community dynamics. One significant finding was the increased appearance of older, sexually mature ridleys. Adults exceeding 60 cm SCL have been a rare commodity in previous ridley assemblages at Sabine Pass. These captures may indicate increased survival among older conspecifics or simply result from incidental contact with free-ranging adults in search of food. Another intriguing finding is the 1.7M:1F sex ratio exhibited by Sabine Pass ridleys. Until 1995, headstarted ridleys (whose sex was predominantly female) caught at Sabine Pass skewed the

population sex ratio toward females. Absence of these captive-reared conspecifics from the captured lot may reveal a more realistic gender assessment. However, the current male dominance may not bode well for this species' survival. Lastly, absence of headstarted turtles from Sabine Pass catches raises questions about their long-term survival. These captive-reared ridleys comprised over 14% of the captures at Sabine Pass in 1992 and 1993 (Landry *et al.* 1993; Landry *et al.* 1994). Headstart contributions declined to approximately 11% of the population at Sabine Pass in 1994 (Landry *et al.* 1995). These declines should be expected, especially since the captive-rearing program was terminated in 1993. While it may be argued that headstarted ridleys are a "marker" whose abundance trends reflect those of the population as a whole, questions remain as to whether survival of these constituents is comparable to that of their wild counterparts. Additional monitoring may solve these questions and, possibly, explain the population "down sizing" observed in 1995.

The 1995 monitoring effort once again proved that Sabine Pass is not utilized by other species considered common to other Gulf locales. Loggerheads, the Gulf's most abundant sea turtle species, were token constituents of the Sabine Pass assemblage. Although this species commonly strands along beaches of the northern Gulf, its active pursuits are predominantly limited to deeper, offshore waters beyond those at Sabine Pass. Green turtles failed to be taken in entanglement net-sets at Sabine Pass in 1995. Two greens captured in pound net-sets in Matagorda Bay (Dr. Jim Carpenter, NMFS Galveston Laboratory, personal communication) provide evidence that this species does stray from its preferred subtropical environs along the lower Texas coast. However, estuarine conditions (i.e., fluctuating temperature and salinity) probably repel greens from the Sabine Pass area.

Calcasieu Pass

Monitoring efforts at Calcasieu Pass were not included in the original research proposed to the MARFIN program. However, lack of sea turtle capture success at the Barataria-Caminada study area and difficulties in netting constituent habitats precipitated a subsequent sharing of mandated effort with Calcasieu Pass, a study area previously monitored by the TAMU research

team (Landry *et al.* 1994 and Landry *et al.* 1995). This partitioning of effort proved fruitful because it strengthened the sea turtle data base developed at Calcasieu Pass in 1993 and 1994 and enabled the evaluation of Barataria-Caminada Pass environs as prime turtle habitat. Unfortunately, monitoring at Calcasieu Pass was essentially limited to July-September because of weather- and permit-related prohibitions. The resulting effort was less than half that accomplished at Calcasieu Pass during June-November 1994.

Calcasieu Pass was utilized by a sea turtle assemblage similar in several aspects to that observed at Sabine Pass in 1995. The latter area's sea turtle occupants were all wild Kemp's ridleys captured at jetty sites in summer months. Although these attributes provide strong ties between each community, Calcasieu Pass exhibited population trends which differed from those at Sabine Pass. First, sea turtle CPUE at Calcasieu Pass remained relatively stable between 1994 (0.7) and 1995 (0.6) while that at Sabine Pass declined by nearly 50%. Second, 66% of Calcasieu Pass' ridley assemblage was comprised of cohorts ≥40 cm SCL while conspecifics <40 cm made up 73% of the Sabine Pass constituency. Lastly, ridley sex ratio at Calcasieu Pass (1M:3F) was the opposite of that from Sabine Pass (1.7M:1F). The fact that Calcasieu Pass trends were based on a captured lot whose sample size was approximately one-half that at Sabine Pass may account for these disparities. Although the significance of these differences is unclear, the fact that Calcasieu Pass has yielded a fairly stable assemblage of larger turtles in each monitoring year validates this area's importance to the life cycle of Gulf ridley stocks.

Barataria and Caminada Passes

Concern over the mass stranding of an estimated 100 Kemp's ridleys off Grand Isle in 1993 was a prime reason for monitoring the Barataria-Caminada Pass study area. These stranded ridleys were generally juveniles which, enforcement authorities speculate, drowned in trawls of an intense shrimp fishery operating off Grand Isle. The Barataria-Caminada Pass study area theoretically provided an ideal situation in which to characterize sea turtle/fishing industry conflicts. Such a situation did not materialize near Barataria and Caminada Passes in 1995.

Sea turtle utilization of nearshore habitats adjacent to these passes was virtually nil in 1995.

The two turtles captured by this study's second largest netting effort were considered mere tokens from a transient population traversing the area in search of favorable environmental conditions. Hypoxia/anoxia zones surrounding this study area rendered it a desert to foraging sea turtles. Trawl samples taken during the height of depressed DO conditions were essentially devoid of prey items such as blue crabs. This void severely compromised the attractiveness of constituent environs to sea turtles. Retreat of hypoxic waters from Barataria-Caminada Pass generally occurred during fall months of reduced water temperature and increased oxygen solubility. These fall conditions, while essential to dilution of the "dead zone", are normally characterized by cool water temperatures and reduced food availability which precipitate sea turtle movement to more thermally-stable habitats further offshore or along the lower Gulf coast.

Overall Assessment

The present study further substantiated the importance of Sabine and Calcasieu Passes to Kemp's ridley stocks of the northwestern Gulf. Conversely, little information was generated concerning sea turtle dependence on habitats within the Barataria-Caminada Pass area. Dissolved-oxygen deficits negated a true assessment of the latter area's role in sea turtle life history. Hypoxia/anoxia events have become an annual, northcentral Gulf anomaly whose deleterious effects coincide with peak sea turtle utilization of coastal waters. The severity of these events is generally greatest in offshore waters immediately west of the Mississippi River discharge. Barataria and Caminada Passes lie in the historical path of these "dead zones" and, as such, are more likely to display environmental features unattractive to sea turtles or the prey species they depend upon for growth and development. As such, this study area may only serve sea turtle needs during years in which these hypoxic/anoxic events do not occur or in spring and early summer months prior to onset of depressed oxygen conditions. If true, this situation may prevent the Grand Isle area from ever being considered with Sabine Pass as a ridley index habitat. However, uncertainties regarding status of Gulf turtle stocks and the potential for conflict between these stocks and the shrimping industry in intensively fish areas such as Grand Isle make it mandatory that additional monitoring be conducted in the Barataria-Caminada Pass area to validate

1995 findings. Several years of monitoring are needed to describe the natural progression of environmental features which influence use of this area by sea turtles. Index habitats such as Sabine and Calcasieu Passes also must be monitored for the long term to provide a standard upon which to evaluate population fluctuations and assess the role that other areas such as Barataria-Caminada Pass play in sea turtle life history.

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Appendix Table 1. Sea turtle captures during 1995.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
4/24/95	12 00	3	3.6	*L. kempii*	29.6	28.4	30.5	32.1	3.04	SP95-4-1	QQZ897 QQZ898				221C354757	wild	4/26/95	08 20
4/27/95	11 30	3	3.6	*L. kempii*	29.3	28.2	30.7	32.6	3.41	SP95-4-2	QQZ899 QQZ900				221C35626D	wild	4/28/95	08 36
5/18/95	09 55	1	4.8	*L. kempii*	44.2	42.2	45.6	46.9	no scale	SP95-5-1	SSK101 SSK102				221C26787E	wild	5/22/95	09 17
5/18/95	12 06	1	4.8	*L. kempii*	36.1	33.6	37.4	38.1	no scale	SP95-5-2	SSK103 SSK104				221C21274D	wild	5/22/95	09 18
5/19/95	13 34	1	4.8	*L. kempii*	33.0	31.2	34.2	34.0	4.85	SP95-5-3	SSK105 SSK106				221C29314A	wild	5/23/95	09 17
5/19/95	13 53	1	4.8	*L. kempii*	34.9	31.5	35.8	36.4	5.30	SP95-5-4	SSK107 SSK108	159.138	737		221C0D6F3E	wild	5/23/95	14 21
5/19/95	13 53	1	4.8	*L. kempii*	35.1	33.8	36.4	38.2	5.63	SP95-5-5	SSK109 SSK110				221C386D69	wild	5/23/95	09 18
5/20/95	12 01	1	4.8	*L. kempii*	35.9	33.3	37.3	37.9	5.81	SP95-5-6	SSK111 SSK112				221C36267D	wild	5/24/95	07 52
5/21/95	12 09	3	3.6	*L. kempii*	34.9	31.3	36.0	35.4	5.23	SP95-5-7	SSK113 SSK114	159.260	750		221C262C63	wild	5/25/95	16 21
5/24/95	08 35	1	4.8	*C. caretta*	50.7	42.2	54.7	50.5	17.28	SP95-5-8	SSK121 SSK122				221C1E7A66	wild	5/27/95	09 20
5/24/95	09 07	1	4.8	*L. kempii*	34.3	33.2	35.4	37.3	5.80	SP95-5-9	SSK115 SSK116				221C1D7649	wild	5/28/95	11 53
5/24/95	09 30	1	4.8	*L. kempii*	32.6	31.9	33.6	35.6	4.63	SP95-5-10	SSK117 SSK118				221C233C05	wild	5/28/95	11 53
5/24/95	09 34	1	4.8	*L. kempii*	33.9	32.0	35.1	36.0	5.84	SP95-5-11	SSK119 SSK120				221C10502B	wild	5/28/95	11 53
5/24/95	11 14	1	4.8	*L. kempii*	47.1	44.5	48.3	49.0	13.33	SP95-5-12	SSK123 SSK124				221C205347	wild	5/28/95	11 53
6/7/95	14 00	1	4.8	*C. caretta*	54.7	44.8	59.2	55.2	22.54	GI95-6-1	SSK126 SSK128	164.0996	40		221C0C5228	wild	6/9/95	16 20
6/13/95	10 07	3	3.6	*L. kempii*	36.2	31.8	37.6	36.0	6.26	SP95-6-1	SSL951 SSL952				221D27344F	wild	6/16/95	08 14
6/14/95	10 48	1	4.8	*L. kempii*	40.0	37.2	40.5	41.4	8.34	SP95-6-3	SSL955 SSL956	159.461	756		221C313814	wild	6/15/95	09 02
6/14/95	07 51	1	4.8	*L. kempii*	32.5	30.9	35.7	34.7	4.49	SP95-6-2	SSL953 SSL954	164.2993	35		221C2D2635	wild	6/18/95	10 38
7/1/95	11 22	1	4.8	*L. kempii*	36.2	33.3	38.0	38.5	6.63	C95-7-1	SSL957 SSL958				none	wild	7/1/95	20 35
7/1/95	16 08	1	4.8	*L. kempii*	64.6	61.4	68.2	68.2	39.08	C95-7-2	AA167 SSA000			8003	none	recapture	7/1/95	21 53
7/1/95	17 11	1	4.8	*L. kempii*	37.7	34.0	39.5	39.3	7.34	C95-7-3	SSL959 SSL960				none	wild	7/1/95	20 35
7/2/95	08 33	1	4.8	*L. kempii*	60.0	58.1	63.5	67.6	32.88	C95-7-4	SSL961 SSL962				221C2F2652	wild	7/2/95	16 00
7/6/95	15 26	1	4.8	*L. kempii*	49.3	46.8	51.6	54.5	15.84	SP95-7-1	SSL963 SSL964			8004	221C191F5A	wild	7/9/95	08 00
7/6/95	15 40	1	4.8	*L. kempii*	40.2	38.2	41.8	42.4	7.63	SP95-7-2	SSL965 SSL966	159.070	739		221C0E6E6E	wild	7/10/95	09 49
7/6/95	15 40	1	4.8	*L. kempii*	35.4	34.8	37.4	37.7	6.70	SP95-7-3	SSL967 SSL968	165.3492	45		221C336F79	wild	7/7/95	17 02
7/7/95	09 39	1	4.8	*L. kempii*	21.8	19.6	22.5	22.0	1.38	SP95-7-4	SSL969 SSL970				221C273C09	wild	7/10/95	08 28
7/8/95	11 27	3	3.6	*L. kempii*	25.1	23.2	25.8	27.1	2.16	SP95-7-5	SSL971 SSL972				221C365057	wild	7/10/95	08 21
7/8/95	13 29	3	3.6	*L. kempii*	27.1	24.2	28.1	27.2	2.71	SP95-7-6	SSL973 SSL974				221C1D6520	wild	7/10/95	08 21

Appendix Table 1. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
7/11/95	15 34	4	3.6	*L. kempii*	39.2	36.3	40.7	41.6	8.36	SP95-7-7	SSL 999 SSL 998	159.120	760		221C0E6963	wild	7/13/95	
7/13/95	10 04	1	4.8	*L. kempii*	64.0	62.8	68.2	71.4	35.09	SP95-7-8	AA401 SSK084			8008	221C110616	recapture	7/17/95	
7/14/95	10 36	1	4.8	*L. kempii*	42.8	41.6	44.1	49.6	9.86	SP95-7-9	SSL 976 SSL 977				221C266D39	wild	7/16/95	11 21
7/14/95	12 28	1	4.8	*C. caretta*	63.4	67.3	58.0	67.0		SP95-7-10						wild		
7/22/95	13 15	3	4.8	*L. kempii*	51.9	49.5	53.6	53.8	19.03	GI95-7-1	SSK129 SSK130				no scanner	wild	7/22/95	14 45
7/25/95	09 21	4	4.8	*L. kempii*	54.1	53.5	56.7	59.1	22.33	C95-7-5	SSK131 SSK132				no scanner	wild	7/25/95	10 38
8/8/95	08 48	1	4.8	*L. kempii*	62.1	60.2	64.4	66.3	30.70	SP95-8-1	SSL978 SSL979				221C0B7826	wild	8/12/95	08 18
8/8/95	15 43	1	4.8	*L. kempii*	33.5	31.3	34.5	35.2	5.33	SP95-8-2	SSL980 SSL981				221C317726	wild	8/12/95	08 19
8/8/95	15 46	1	4.8	*C. caretta*	62.2	52.6	65.6	62.8	32.09	SP95-8-3	SSL982 SSL983				221C12461C	wild	8/12/95	08 19
8/9/95	16 17	1	4.8	*L. kempii*	38.4	35.8	39.5	40.5	7.71	SP95-8-4	SSL984 SSL985				221C156F05	wild	8/13/95	08 01
8/9/95	16 44	1	4.8	*L. kempii*	45.7	43.1	47.5	48.2	11.24	SP95-8-5	SSL986 SSL987				221C374D42	wild	8/13/95	08 02
8/9/95	17 05	1	4.8	*L. kempii*	35.2	32.9	36.3	37.2	6.00	SP95-8-6	SSL988 SSL989				221C1D7370	wild	8/13/95	08 03
8/13/95	09 48	1	3.6	*L. kempii*	30.8	29.5	31.5	33.0	3.86	SP95-8-7	SSK125 SSJ058				1F0F51750C	recapture	8/14/95	08 57
8/15/95	14 30	1	3.6	*L. kempii*	38.5	36.0	40.3	41.5	7.48	SP95-8-8	SSL991 SSL990	159.191	758		221C152D48	wild	8/18/95	08 44
8/19/95	17 21	1	4.8	*L. kempii*	38.5	36.1	40.2	41.3	8.18	SP95-8-9	SSL992 SSL993	159.111	747		221C286777	wild	8/22/95	08 16
8/22/95	07 58	1	4.8	*L. kempii*	53.8	54.1	55.9	59.9	20.51	C95-8-1	SSK135 SSK136			8002	no scanner	wild	8/22/95	16 45
8/22/95	08 25	1	4.8	*L. kempii*	27.6	25.8	29.0	29.2	3.31	C95-8-2	SSK133 SSK134				no scanner	wild	8/22/95	09 13
8/23/95	14 36	1	4.8	*L. kempii*	49.7	48.3	51.8	53.6	17.71	C95-8-3	SSK137 SSK138				no scanner	wild	8/23/95	15 15
8/24/95	08 53	1	4.8	*L. kempii*	43.7	41.6	46.1	46.8	11.43	C95-8-4	SSK139 SSK140				no scanner	wild	8/24/95	15 16
8/24/95	12 10	1	4.8	*L. kempii*	34.5	31.9	36.1	37.2	5.48	C95-8-5	no lt flipper SSK142				no scanner	wild	8/24/95	12 55
8/24/95	13 51	1	4.8	*L. kempii*	49.1	48.5	51.7	55.3	18.02	C95-8-6	SSK143 SSK144				no scanner	wild	8/24/95	14 40
8/24/95	16 00	1	4.8	*L. kempii*	41.4	39.0	43.0	43.8	no scale	C95-8-7	SSK145 SSK146				no scanner	wild	8/24/95	16 41
8/24/95	17 15	1	4.8	*L. kempii*	44.0	40.7	45.8	45.7	no scale	C95-8-8	SSK147 SSK148				no scanner	wild	8/24/95	18 15
8/24/95	17 37	1	4.8	*L. kempii*	43.8	41.4	44.9	46.6	no scale	C95-8-9	SSK149 SSK150				no scanner	wild	8/24/95	18 17
8/25/95	16 17	1	3.6	*L. kempii*	39.8	39.2	41.8	44.1	9.08	C95-8-10	SSK151 SSK152				no scanner	wild	8/25/95	16 56

Appendix Table 2. Sea turtles recaptured at Sabine Pass and Calcasieu Pass habitats during 1995.

ID #	Capture Date	Release Date	Days at Liberty	Research Program	Location	SCL	SCW	CCL	CCW	WT	Eggs Laid	Flipper† Tag Applied	Pit Tag Applied
C95-7-2	5/12/94	5/12/94	-	INP*	Rancho Nuevo, Mexico	68.0	nt	nt	nt	nt	98	(L) AA167	1F30691427
	7/1/95	7/1/95	415	TAMU	Calcasieu Pass, Louisiana	64.6	61.4	68.2	68.2	39.08		(R) SSA000	
SP95-7-8	5/12/94	5/12/94	-	INP	Rancho Nuevo, Mexico	68.5	nt	nt	nt	nt	82	(L) AA401	1F2A49412D
	6/27/94	6/27/94	46	INP	Rancho Nuevo, Mexico	69.0	nt	nt	nt	nt	101		
	5/16/95	5/16/95	323	INP	Rancho Nuevo, Mexico	68.4	nt	nt	nt	nt	86		
	7/13/95	7/17/95	58	TAMU	Sabine Pass, Texas	64.0	62.8	68.2	71.4	35.09		(R) SSK084	221C110616
SP95-8-7	8/8/94	10/5/94	-	NMFS-Galveston	Unknown (Galveston area)	28.4	26.5	nt	nt	3.04		(R) SSJ058	1F0F51750C
	8/13/95	8/14/95	312	TAMU	Sabine Pass, Texas	30.8	29.5	31.5	33.0	3.86		(L) SSK125	

* INP - Instituto Nacional de la Pesca
† (L) and (R) denote left and right flipper, respectively

Appendix Table 3. Sex determination information for sea turtles captured at all monitoring sites during 1995.

Study Area	Species	Turtle #	Capture Date	Capture Time	SCL (cm)	WT (kg)	Blood Sample Time	Test[1]	Cort[2]	Lap[3]	Sex
Sabine Pass	*L. kempii*	SP95-4-2	4/27/95	1130	29.3	3.41	1149	5.28	0.620		Female
Sabine Pass	*L. kempii*	SP95-5-1	5/18/95	0930	44.2	nt	1010	4.16	0.175		Female
Sabine Pass	*L. kempii*	SP95-5-2	5/18/95	1206	36.1	nt	1210	6.61	0.237		Female
Sabine Pass	*L. kempii*	SP95-5-3	5/19/95	1334	33.0	4.85	1337	37.80	0.157		Male
Sabine Pass	*L. kempii*	SP95-5-4	5/19/95	1353	34.9	5.30	1356	5.81	0.530		Female
Sabine Pass	*L. kempii*	SP95-5-5	5/19/95	1353	35.1	5.63	1409	39.60	1.505		Male
Sabine Pass	*L. kempii*	SP95-5-6	5/20/95	1201	35.9	5.81	1203	45.80	1.771		Male
Sabine Pass	*L. kempii*	SP95-5-7	5/21/95	1209	34.9	5.23	1212	23.30	0.194		Male
Sabine Pass	*C. caretta*	SP95-5-8	5/24/95	0835	50.7	17.28	0845	106.00	1.180		Male
Sabine Pass	*L. kempii*	SP95-5-9	5/24/95	0907	34.3	5.80	0911	26.90	0.259	Male	Male
Sabine Pass	*L. kempii*	SP95-5-10	5/24/95	0930	32.6	4.63	nt	nt	nt	Male	Male
Sabine Pass	*L. kempii*	SP95-5-11	5/24/95	0934	33.9	5.84	0937	22.60	7.418	Male	Male
Sabine Pass	*L. kempii*	SP95-5-12	5/24/95	1114	47.1	13.33	1125	4.72	1.541	Female	Female
Sabine Pass	*L. kempii*	SP95-6-1	6/13/95	1007	36.2	6.26	1017	30.90	0.245		Male
Sabine Pass	*L. kempii*	SP95-6-2	6/14/95	0751	32.5	4.49	0755	43.40	0.157		Male
Sabine Pass	*L. kempii*	SP95-6-3	6/14/95	1048	40.0	8.34	1052	92.30	0.226		Male
Sabine Pass	*L. kempii*	SP95-7-1	7/6/95	1526	49.3	15.84	1529	5.22	0.558		Female
Sabine Pass	*L. kempii*	SP95-7-2	7/6/95	1540	40.2	7.63	1543	3.12	3.299	Female	Female
Sabine Pass	*L. kempii*	SP95-7-3	7/6/95	1540	35.4	6.70	1544	36.30	3.190		Male
Sabine Pass	*L. kempii*	SP95-7-4	7/7/95	0939	21.8	1.38	0942	12.00	1.726	Female	Female
Sabine Pass	*L. kempii*	SP95-7-5	7/8/95	1127	25.1	2.16	1129	102.00	0.328	Male	Male
Sabine Pass	*L. kempii*	SP95-7-6	7/8/95	1329	27.1	2.71	1330	213.00	0.265	Male	Male
Sabine Pass	*L. kempii*	SP95-7-7	7/11/95	1534	39.2	8.36	1535	6.00	0.315		Female
Sabine Pass	*L. kempii*	SP95-7-8	7/13/95	1004	64.0	35.09	1009	5.44	1.008		Female
Sabine Pass	*L. kempii*	SP95-7-9	7/14/95	1036	42.8	9.86	1040	92.20	0.750		Male
Sabine Pass	*L. kempii*	SP95-8-1	8/8/95	0848	62.1	30.70	0851	3.56	0.598	Female	Female
Sabine Pass	*L. kempii*	SP95-8-2	8/8/95	1543	33.5	5.33	1548	5.06	1.311	Female	Female
Sabine Pass	*C. caretta*	SP95-8-3	8/8/95	1546	62.2	32.09	1551	5.92	1.005		Female
Sabine Pass	*L. kempii*	SP95-8-4	8/9/95	1617	38.4	7.71	1621	38.70	4.984	Male	Male
Sabine Pass	*L. kempii*	SP95-8-5	8/9/95	1644	45.7	11.24	1648	53.10	0.409		Male
Sabine Pass	*L. kempii*	SP95-8-6	8/9/95	1705	35.2	6.00	1709	46.30	0.442	Male	Male
Sabine Pass	*L. kempii*	SP95-8-7	8/13/95	0948	30.8	3.86	0956	29.60	0.957		Male
Sabine Pass	*L. kempii*	SP95-8-8	8/15/95	1430	38.5	7.48	1435	71.10	1.080		Male
Sabine Pass	*L. kempii*	SP95-8-9	8/19/95	1721	38.5	8.18	1725	35.90	0.165		Male
Calcasieu Pass	*L. kempii*	C95-7-1	7/1/95	1122	36.2	6.63	1131	40.50	1.060		Male
Calcasieu Pass	*L. kempii*	C95-7-2	7/1/95	1608	64.6	39.08	1611	10.30	0.196		Female
Calcasieu Pass	*L. kempii*	C95-7-3	7/1/95	1711	37.7	7.34	1717	4.53	3.058		Female
Calcasieu Pass	*L. kempii*	C95-7-4	7/2/95	0833	60.0	32.88	0840	15.60	0.936		Indeterminant
Calcasieu Pass	*L. kempii*	C95-7-5	7/25/95	0921	54.1	22.33	0929	8.92	2.430		Female
Bar/Cam Passes	*L. kempii*	GI95-7-1	7/22/95	1315	51.9	19.03	1321	4.91	2.227		Female

[1] Test denotes serum testosterone concentration.

[2] Cort dentoes corticosterone concentration.

[3] Lap denotes laparoscopic examination.

Appendix Table 4. Abundance and size of nekton species in trawl tows at Sabine Pass jetty sites (1,4) during 1995.

Site 1
5/25/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Actiniaria	2	0	0	2	0.07	NA	NA
Loliguncula brevis	6	12	31	49	1.74	21	55
Order Isopoda	2	6	2	10	0.35	11	19
Penaeus sp.	0	1112	837	1949	69.02	NA	NA
Penaeus aztecus	17	61	26	104	3.68	34	85
Penaeus setiferus	3	1	0	4	0.14	72	114
Callinectes sapidus	24	19	29	72	2.55	8	170
Brevoortia patronus	1	0	1	2	0.07	87	98
Dorosoma cepedianum	0	0	1	1	0.04	100	100
Harengula jaguana	0	0	1	1	0.04	88	88
Anchoa mitchilli	25	113	2	140	4.96	38	61
Arius felis	5	9	2	16	0.57	77	269
Porichthys plectrodon	0	0	1	1	0.04	127	127
Prionotus tribulus	0	1	2	3	0.11	14	20
Family Carangidae	1	5	0	6	0.21	24	40
Chloroscombrus chrysurus	1	5	1	7	0.25	18	91
Archosargus probatocephalus	0	0	1	1	0.04	18	18
Cynoscion arenarius	29	82	113	224	7.93	8	148
Larimus fasciatus	0	1	0	1	0.04	35	35
Leiostomus xanthurus	1	1	0	2	0.07	77	88
Micropogonias undulatus	38	93	36	167	5.91	35	80
Stellifer lanceolatus	3	6	0	9	0.32	29	102
Trichiurus lepturus	4	13	9	26	0.92	85	269
Symphurus plagiusa	3	9	4	16	0.57	58	100
Sphoeroides parvus	0	6	5	11	0.39	12	19
TOTAL	165	1555	1104	2824	100.00		

Appendix Table 4. Continued.

Site 1
6/13/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus sp.	1289	1238	379	2906	76.70	NA	NA
Penaeus setiferus	26	17	12	55	1.45	45	187
Xiphopenaeus kroyeri	2	3	0	5	0.13	105	123
Callinectes sapidus	3	5	3	11	0.29	28	130
Anchoa mitchilli	60	206	279	545	14.38	11	66
Arius felis	13	32	21	66	1.74	84	226
Prionotus tribulus	1	0	0	1	0.03	17	17
Caranx hippos	1	0	0	1	0.03	30	30
Chloroscombrus chrysurus	2	0	0	2	0.05	96	114
Selene vomer	1	0	0	1	0.03	45	45
Cynoscion arenarius	13	27	9	49	1.29	36	156
Larimus fasciatus	0	1	0	1	0.03	100	100
Leiostomus xanthurus	0	0	1	1	0.03	71	71
Micropogonias undulatus	14	32	10	56	1.48	56	90
Stellifer lanceolatus	0	7	6	13	0.34	24	82
Chaetodipterus faber	0	1	0	1	0.03	11	11
Polydactylus octonemus	3	0	0	3	0.08	95	106
Trichiurus lepturus	22	20	22	64	1.69	119	440
Peprilus alepidotus	5	2	1	8	0.21	21	52
TOTAL	1455	1591	743	3789	100.00		

Appendix Table 4. Continued.

Site 4
6/6/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus setiferus	0	10	0	10	1.41	76	135
Xiphopenaeus kroyeri	48	89	34	171	24.19	75	108
Callinectes sapidus	9	3	10	22	3.11	51	151
Brevoortia patronus	1	6	0	7	0.99	39	110
Anchoa mitchilli	41	32	6	79	11.17	43	70
Arius felis	9	16	8	33	4.67	77	103
Cynoscion arenarius	42	43	20	105	14.85	19	145
Larimus fasciatus	2	1	0	3	0.42	25	35
Leiostomus xanthurus	2	4	3	9	1.27	60	88
Menticirrhus americanus	11	5	0	16	2.26	40	67
Menticirrhus littoralis	0	0	1	1	0.14	47	47
Micropogonias undulatus	11	6	18	35	4.95	45	98
Stellifer lanceolatus	44	73	76	193	27.30	21	85
Polydactylus octonemus	1	1	1	3	0.42	56	103
Astroscopus y-graecum	1	0	0	1	0.14	36	36
Trichiurus lepturus	5	3	5	13	1.84	95	240
Etropus crossostus	0	0	1	1	0.14	55	55
Paralichthys lethostigma	0	1	0	1	0.14	110	110
Symphurus plagiusa	0	0	2	2	0.28	88	95
Trinectes maculatus	0	0	2	2	0.28	65	75
TOTAL	227	293	187	707	100.00		

Appendix Table 4. Continued.

Site 1
7/8/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Isopoda	5	4	0	9	0.74	7	12
Penaeus sp.	1	0	0	1	0.08	NA	NA
Penaeus aztecus	0	1	1	2	0.16	20	82
Penaeus setiferus	10	5	10	25	2.06	41	83
Callinectes sapidus	3	2	2	7	0.58	13	152
Brevoortia patronus	1	0	0	1	0.08	85	85
Dorosoma petenense	0	0	1	1	0.08	46	46
Anchoa hepsetus	12	3	2	17	1.40	36	63
Anchoa mitchilli	288	105	108	501	41.30	14	71
Arius felis	5	2	2	9	0.74	103	203
Arius felis eggs	60	17	0	77	6.35	NA	NA
Bagre marinus	1	0	0	1	0.08	77	77
Synodus sp.	0	0	1	1	0.08	36	36
Hippocampus erectus	0	1	0	1	0.08	51	51
Prionotus tribulus	3	0	0	3	0.25	21	23
Caranx hippos	0	0	1	1	0.08	61	61
Chloroscombrus chrysurus	16	18	8	42	3.46	24	51
Selene vomer	47	31	86	164	13.52	29	52
Cynoscion arenarius	13	15	15	43	3.54	30	111
Menticirrhus americanus	1	0	0	1	0.08	21	21
Micropogonias undulatus	1	1	0	2	0.16	72	136
Stellifer lanceolatus	36	62	92	190	15.66	20	61
Chaetodipterus faber	3	7	6	16	1.32	12	39
Sphyraena guachancho	1	1	1	3	0.25	66	94
Polydactylus octonemus	0	0	1	1	0.08	91	91
Scomberomorus cavalla	4	4	9	17	1.40	39	55
Peprilus alepidotus	24	16	11	51	4.20	24	56
Symphurus plagiusa	1	3	3	7	0.58	83	108
Sphoeroides parvus	9	4	5	18	1.48	11	20
Balistes capriscus	1	0	0	1	0.08	22	22
TOTAL	546	302	365	1213	100.00		

Appendix Table 4. Continued.

Site 4
7/9/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Isopoda	0	2	0	2	0.04	NA	NA
Penaeus setiferus	4479	307	1	4787	90.20	54	88
Callinectes sapidus	1	1	0	2	0.04	38	134
Dorosoma petenense	0	1	0	1	0.02	67	67
Anchoa hepsetus	13	5	4	22	0.41	46	66
Anchoa mitchilli	108	125	26	259	4.88	21	61
Bagre marinus	45	0	0	45	0.85	62	90
Selene vomer	48	7	17	72	1.36	26	51
Cynoscion arenarius	16	9	3	28	0.53	21	95
Larimus fasciatus	1	0	0	1	0.02	26	26
Stellifer lanceolatus	17	3	0	20	0.38	22	96
Chaetodipterus faber	54	5	0	59	1.11	28	46
Scomberomorus cavalla	1	0	0	1	0.02	25	25
Scomberomorus maculatus	0	1	0	1	0.02	49	49
Peprilus alepidotus	4	2	1	7	0.13	37	60
TOTAL	4787	468	52	5307	100.00		

Appendix Table 4. Continued.

Site 1
8/10/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	15	17	11	43	3.45	9	39
Penaeus sp.	23	34	133	190	15.26	NA	NA
Penaeus setiferus	3	6	5	14	1.12	27	109
Xiphopenaeus kroyeri	34	1	0	35	2.81	30	51
Callinectes sapidus	1	3	1	5	0.40	23	95
Dorosoma petenense	2	1	0	3	0.24	64	82
Harengula jaguana	1	0	0	1	0.08	34	34
Anchoa hepsetus	16	24	6	46	3.69	26	78
Anchoa mitchilli	219	160	267	646	51.89	28	56
Arius felis	0	0	1	1	0.08	102	102
Bagre marinus	1	2	2	5	0.40	44	69
Prionotus tribulus	1	0	0	1	0.08	29	29
Chloroscombrus chrysurus	1	6	1	8	0.64	27	43
Selene vomer	20	23	9	52	4.18	37	67
Cynoscion arenarius	4	6	4	14	1.12	19	110
Stellifer lanceolatus	109	17	34	160	12.85	15	61
Trichiurus lepturus	1	0	0	1	0.08	245	245
Peprilus alepidotus	9	4	1	14	1.12	40	62
Symphurus plagiusa	3	2	0	5	0.40	95	106
Sphoeroides parvus	1	0	0	1	0.08	19	19
TOTAL	464	306	475	1245	100.00		

Appendix Table 4. Continued.

Site 4
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	6	0	6	0.59	32	37
Squilla empusa	0	0	1	1	0.10	47	47
Superfamily Paguroidea	0	4	1	5	0.49	NA	NA
Anchoa mitchilli	1	0	0	1	0.10	36	36
Chloroscombrus chrysurus	463	223	311	997	97.55	34	52
Cynoscion arenarius	0	1	0	1	0.10	39	39
Menticirrhus americanus	3	2	1	6	0.59	33	58
Chaetodipterus faber	2	3	0	5	0.49	21	53
TOTAL	469	239	314	1022	100.00		

Appendix Table 4. Continued.

Site 1
10/23/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Beroë sp.	0	0	1	1	0.56	28	28
Loliguncula brevis	1	2	2	5	2.81	16	43
Squilla empusa	9	1	1	11	6.18	49	84
Order Isopoda	1	0	0	1	0.56	17	17
Penaeus setiferus	12	7	5	24	13.48	24	95
Xiphopenaeus kroyeri	0	0	9	9	5.06	40	71
Callinectes sapidus	2	1	3	6	3.37	41	186
Brevoortia patronus	1	1	0	2	1.12	110	118
Dorosoma petenense	0	1	1	2	1.12	80	92
Anchoa hepsetus	1	0	0	1	0.56	92	92
Anchoa mitchilli	2	0	0	2	1.12	35	61
Arius felis	1	1	2	4	2.25	63	252
Chloroscombrus chrysurus	1	0	0	1	0.56	54	54
Cynoscion arenarius	0	3	1	4	2.25	18	93
Stellifer lanceolatus	62	2	18	82	46.07	17	57
Chaetodipterus faber	10	4	5	19	10.67	58	80
Trichiurus lepturus	0	0	1	1	0.56	251	251
Peprilus alepidotus	0	2	1	3	1.69	53	72
TOTAL	103	25	50	178	100.00		

Appendix Table 4. Continued.

Site 4
10/21/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus setiferus	3	0	1	4	2.58	88	97
Dorosoma petenense	4	6	6	16	10.32	67	89
Anchoa mitchilli	20	55	20	95	61.29	28	60
Arius felis	1	2	1	4	2.58	77	114
Chloroscombrus chrysurus	1	1	0	2	1.29	35	39
Oligoplites saurus	1	0	0	1	0.65	87	87
Selene vomer	2	3	1	6	3.87	41	51
Archosargus probatocephalus	0	0	1	1	0.65	331	331
Stellifer lanceolatus	4	0	0	4	2.58	51	58
Trichiurus lepturus	14	2	2	18	11.61	118	297
Scomberomorus cavalla	1	0	0	1	0.65	74	74
Peprilus alepidotus	2	0	1	3	1.94	51	82
TOTAL	53	69	33	155	100.00		

Appendix Table 5. Abundance and size of nekton species in trawl tows at Sabine Pass beachfront sites (3,5) during 1995.

Site 3
4/25/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Bunodasoma cavernata	5	0	1	6	0.16	11	27
Penaeus setiferus	11	22	5	38	1.00	25	82
Xiphopenaeus kroyeri	0	2	0	2	0.05	30	31
Clibanarius vittatus	0	1	0	1	0.03	NA	NA
Callinectes sapidus	2	10	4	16	0.42	10	80
Callinectes similis	0	0	2	2	0.05	16	16
Brevoortia patronus	1	3	2	6	0.16	39	85
Anchoa mitchilli	409	635	421	1465	38.67	23	62
Arius felis	0	2	0	2	0.05	80	80
Syngnathus louisianae	0	1	0	1	0.03	79	79
Prionotus tribulus	0	4	2	6	0.16	11	17
Cynoscion arenarius	388	685	58	1131	29.86	16	45
Leiostomus xanthurus	1	1	0	2	0.05	40	127
Menticirrhus americanus	0	1	0	1	0.03	21	21
Micropogonias undulatus	471	537	65	1073	28.33	18	137
Chaetodipterus faber	0	1	0	1	0.03	51	51
Mugil cephalus	1	3	2	6	0.16	185	244
Astroscopus y-graecum	0	0	2	2	0.05	20	25
Symphurus plagiusa	2	6	0	8	0.21	37	55
Sphoeroides parvus	8	6	5	19	0.50	11	244
TOTAL	1299	1920	569	3788	100.00		

Appendix Table 5. Continued.

Site 3
5/25/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Necarius sp.	0	1	0	1	0.04	10	10
Loliguncula brevis	0	0	1	1	0.04	21	21
Order Isopoda	1	7	0	8	0.35	7	18
Penaeus sp.	0	1210	578	1788	78.73	NA	NA
Penaeus aztecus	25	30	114	169	7.44	34	88
Penaeus setiferus	5	6	5	16	0.70	82	121
Xiphopenaeus kroyeri	1	0	0	1	0.04	64	64
Callinectes sapidus	7	12	10	29	1.28	21	143
Brevoortia patronus	0	1	0	1	0.04	106	106
Harengula jaguana	0	1	0	1	0.04	119	119
Anchoa mitchilli	5	27	45	77	3.39	18	72
Arius felis	0	16	9	25	1.10	67	94
Prionotus tribulus	0	4	1	5	0.22	11	29
Trachinotus carolinus	0	0	2	2	0.09	63	69
Cynoscion arenarius	16	20	24	60	2.64	9	75
Larimus fasciatus	0	1	1	2	0.09	41	44
Leiostomus xanthurus	0	1	0	1	0.04	60	60
Menticirrhus americanus	0	0	9	9	0.40	18	60
Menticirrhus littoralis	2	7	0	9	0.40	16	43
Micropogonias undulatus	7	19	11	37	1.63	28	84
Stellifer lanceolatus	0	0	10	10	0.44	20	32
Polydactylus octonemus	0	2	2	4	0.18	46	95
Trichiurus lepturus	0	6	5	11	0.48	168	255
Symphurus plagiusa	1	0	0	1	0.04	69	69
Sphoeroides parvus	1	1	1	3	0.13	11	49
TOTAL	71	1372	828	2271	100.00		

Appendix Table 5. Continued.

Site 3
6/12/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	1	60	0	61	4.07	42	60
Penaeus sp.	679	0	0	679	45.30	NA	NA
Penaeus aztecus	20	3	3	26	1.73	62	118
Penaeus setiferus	189	6	6	201	13.41	49	150
Xiphopenaeus kroyeri	4	37	37	78	5.20	50	118
Callinectes sapidus	0	1	0	1	0.07	103	103
Dorosoma petenense	1	0	0	1	0.07	53	53
Anchoa mitchilli	88	34	34	156	10.41	31	74
Arius felis	12	4	4	20	1.33	82	99
Prionotus tribulus	1	1	0	2	0.13	26	43
Trachinotus carolinus	3	1	1	5	0.33	53	101
Bairdiella chrysoura	0	1	1	2	0.13	110	125
Cynoscion arenarius	22	7	7	36	2.40	37	112
Leiostomus xanthurus	2	0	0	2	0.13	67	109
Menticirrhus americanus	1	0	0	1	0.07	27	27
Micropogonias undulatus	28	5	4	37	2.47	42	145
Stellifer lanceolatus	123	15	15	153	10.21	19	73
Chaetodipterus faber	5	0	0	5	0.33	13	18
Polydactylus octonemus	1	0	0	1	0.07	69	69
Trichiurus lepturus	6	1	1	8	0.53	178	249
Peprilus alepidotus	1	0	0	1	0.07	22	22
Paralichthys lethostigma	0	1	0	1	0.07	95	95
Symphurus plagiusa	9	3	3	15	1.00	53	97
Sphoeroides parvus	4	2	1	7	0.47	15	22
TOTAL	1200	182	117	1499	100.00		

Appendix Table 5. Continued.

Site 3
7/7/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Actiniaria	1	0	0	1	0.07	NA	NA
Order Isopoda	1	7	3	11	0.77	9	16
Penaeus sp.	0	2	0	2	0.14	NA	NA
Penaeus aztecus	2	0	0	2	0.14	76	78
Penaeus setiferus	42	3	1	46	3.22	43	90
Callinectes sapidus	3	5	0	8	0.56	17	162
Brevoortia patronus	2	3	0	5	0.35	26	90
Dorosoma petenense	2	3	1	6	0.42	44	78
Harengula jaguana	1	0	0	1	0.07	36	36
Anchoa hepsetus	42	22	24	88	6.15	30	68
Anchoa mitchilli	379	171	179	729	50.98	16	62
Arius felis	6	0	2	8	0.56	89	222
Arius felis eggs	66	0	0	66	4.62	NA	NA
Bagre marinus	6	0	0	6	0.42	67	86
Prionotus tribulus	1	0	1	2	0.14	19	37
Caranx hippos	2	0	0	2	0.14	30	51
Chloroscombrus chrysurus	22	110	46	178	12.45	21	43
Selene vomer	7	10	11	28	1.96	31	49
Trachinotus carolinus	1	0	0	1	0.07	98	98
Cynoscion arenarius	37	8	4	49	3.43	77	118
Menticirrhus americanus	11	1	0	12	0.84	13	28
Micropogonias undulatus	1	0	0	1	0.07	113	113
Stellifer lanceolatus	19	2	0	21	1.47	19	59
Chaetodipterus faber	12	3	1	16	1.12	14	33
Polydactylus octonemus	1	1	1	3	0.21	87	94
Scomberomorus cavalla	1	0	0	1	0.07	40	40
Scomberomorus maculatus	0	1	0	1	0.07	40	40
Peprilus alepidotus	4	24	31	59	4.13	34	62
Symphurus plagiusa	1	1	2	4	0.28	79	95
Sphoeroides parvus	60	8	4	72	5.03	9	28
Balistes capriscus	1	0	0	1	0.07	34	34
TOTAL	734	385	311	1430	100.00		

Appendix Table 5. Continued.

Site 5
7/12/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	1	1	2	0.08	31	61
Order Isopoda	2	0	1	3	0.11	12	14
Callinectes sapidus	0	2	2	4	0.15	131	165
Brevoortia patronus	0	0	1	1	0.04	151	151
Dorosoma petenense	2	0	0	2	0.08	35	43
Harengula jaguana	0	1	5	6	0.23	23	37
Anchoa hepsetus	73	23	198	294	11.16	28	49
Anchoa mitchilli	273	9	1914	2196	83.37	26	38
Arius felis	4	0	35	39	1.48	93	153
Caranx hippos	0	1	2	3	0.11	35	62
Chloroscombrus chrysurus	1	10	61	72	2.73	22	47
Selene vomer	0	1	5	6	0.23	40	57
Trachinotus carolinus	1	0	0	1	0.04	57	57
Leiostomus xanthurus	0	0	1	1	0.04	82	82
Chaetodipterus faber	0	0	1	1	0.04	53	53
Scomberomorus cavalla	2	0	1	3	0.11	112	153
TOTAL	358	48	2228	2634	100.00		

Appendix Table 5. Continued.

Site 3
8/10/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	5	9	7	21	1.24	13	28
Penaeus sp.	28	134	72	234	13.84	NA	NA
Penaeus setiferus	2	0	1	3	0.18	24	116
Callinectes sapidus	0	1	1	2	0.12	69	74
Brevoortia patronus	3	13	0	16	0.95	66	95
Dorosoma petenense	5	10	22	37	2.19	54	71
Anchoa hepsetus	143	89	60	292	17.27	26	77
Anchoa mitchilli	294	371	380	1045	61.80	29	44
Bagre marinus	1	1	0	2	0.12	83	97
Chloroscombrus chrysurus	6	7	3	16	0.95	26	47
Selene vomer	1	2	3	6	0.35	38	57
Trachinotus carolinus	1	1	0	2	0.12	74	79
Bairdiella chrysoura	0	0	1	1	0.06	114	114
Stellifer lanceolatus	4	0	0	4	0.24	25	41
Chaetodipterus faber	0	0	3	3	0.18	39	50
Scomberomorus cavalla	0	1	1	2	0.12	77	99
Peprilus alepidotus	3	1	0	4	0.24	38	47
Sphoeroides parvus	0	1	0	1	0.06	21	21
TOTAL	496	641	554	1691	100.00		

Appendix Table 5. Continued.

Site 5
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	1	0	0	1	0.13	38	38
Superfamily Paguroidea	0	32	39	71	8.95	NA	NA
Arius felis	136	430	96	662	83.48	50	115
Bagre marinus	3	2	0	5	0.63	89	106
Chloroscombrus chrysurus	0	2	26	28	3.53	31	77
Selene vomer	1	0	0	1	0.13	60	60
Trachinotus carolinus	2	0	0	2	0.25	68	75
Micropogonias undulatus	0	1	0	1	0.13	150	150
Chaetodipterus faber	0	2	11	13	1.64	21	53
Citharichthys spilopterus	0	2	0	2	0.25	75	84
Achirus lineatus	0	1	0	1	0.13	65	65
Symphurus plagiusa	0	0	1	1	0.13	77	77
Trinectes maculatus	1	0	0	1	0.13	87	87
Sphoeroides parvus	0	1	3	4	0.50	32	47
TOTAL	144	473	176	793	100.00		

Appendix Table 5. Continued.

Site 3
10/21/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Squilla empusa	0	0	1	1	0.04	77	77
Order Isopoda	0	0	2	2	0.09	9	11
Penaeus setiferus	137	128	169	434	18.88	47	105
Xiphopenaeus kroyeri	370	418	971	1759	76.51	49	86
Callinectes sapidus	5	7	6	18	0.78	19	150
Anchoa mitchilli	4	11	2	17	0.74	40	65
Prionotus tribulus	0	1	0	1	0.04	15	15
Chloroscombrus chrysurus	0	0	2	2	0.09	36	46
Archosargus probatocephalus	1	0	0	1	0.04	13	13
Cynoscion arenarius	2	4	3	9	0.39	18	194
Menticirrhus littoralis	1	2	2	5	0.22	26	32
Stellifer lanceolatus	4	2	40	46	2.00	28	100
Symphurus plagiusa	0	1	3	4	0.17	70	118
TOTAL	524	574	1201	2299	100.00		

Appendix Table 5. Continued.

Site 5
10/21/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus sp.	0	0	21	21	1.20	NA	NA
Penaeus setiferus	272	416	394	1082	61.58	35	113
Xiphopenaeus kroyeri	37	150	139	326	18.55	31	77
Superfamily Paguroidea	1	1	1	3	0.17	NA	NA
Callinectes sapidus	0	1	0	1	0.06	25	25
Dorosoma petenense	1	0	0	1	0.06	55	55
Anchoa mitchilli	12	24	30	66	3.76	23	56
Cynoscion arenarius	9	19	10	38	2.16	22	45
Larimus fasciatus	13	8	6	27	1.54	18	30
Menticirrhus americanus	8	9	4	21	1.20	21	44
Pogonias cromis	2	0	0	2	0.11	139	143
Stellifer lanceolatus	7	47	110	164	9.33	19	33
Chaetodipterus faber	2	0	1	3	0.17	14	77
Trichiurus lepturus	0	0	2	2	0.11	266	294
TOTAL	364	675	718	1757	100.00		

Appendix Table 6. Hydrographic measurements at Sabine Pass during March-October 1995.

Date	Time	Site	Depth (m)	Temperature (C) Air	Temperature (C) Water Surface	Temperature (C) Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity (mS/cm) Surface	Conductivity (mS/cm) Bottom	Visibility (m)
3/6/95	0840	3	1.20	20.0	15.86	15.06	12.50	21.10	21.00	34.50	0.40
3/6/95	1245	3	0.90	22.0	16.50	16.44	12.60	18.10	21.70	29.50	0.20
3/6/95	1445	3	1.00	21.0	16.28	16.12	11.50	21.20	24.50	33.70	0.20
3/9/95	0830	3	1.30	11.0	9.54	8.17	16.30	23.30	27.00	36.90	0.20
3/9/95	1200	3	1.40	15.0	11.78	11.73	23.80	23.80	37.50	37.40	0.32
3/9/95	1415	3	1.20	14.0	13.10	13.09	23.80	23.90	37.60	37.70	0.32
3/10/95	0830	3	1.50	15.0	12.93	12.93	19.80	21.60	31.80	34.40	0.33
3/10/95	1210	3	1.70	16.0	13.46	13.38	22.10	22.30	35.10	35.50	0.36
3/10/95	1420	3	1.60	18.0	13.70	13.48	22.50	22.60	35.70	35.80	0.53
4/24/95	1010	3	0.90	16.0	19.78	19.74	16.50	16.50	27.10	27.00	0.12
4/24/95	1300	3	1.00	19.0	21.41	20.88	16.90	20.40	27.50	32.60	0.24
4/24/95	1655	3	1.10	24.0	22.77	21.99	20.10	22.80	32.20	36.10	0.45
4/24/95	1200	3	1.10	19.0	21.41	20.88	16.90	20.40	27.50	32.60	0.24
4/26/95	0845	3	1.30	19.0	20.48	20.75	11.80	16.20	19.80	26.60	0.16
4/26/95	1300	3	1.60	23.5	22.05	21.88	14.60	15.90	24.00	26.10	0.28
4/26/95	1545	3	1.20	22.0	22.55	22.72	13.90	16.00	23.10	26.60	0.22
4/27/95	0800	3	1.20	21.0	21.61	22.15	13.00	20.20	21.80	32.60	0.08
4/27/95	1300	3	1.40	26.0	22.25	22.13	9.00	20.80	16.90	33.30	0.27
4/27/95	1655	3	1.10	24.5	22.55	22.31	7.50	20.90	12.74	33.40	0.18
4/27/95	1130	3	1.50	27.5	22.38	22.03	12.20	20.80	21.10	33.30	0.26
4/28/95	0900	3	1.40	21.5	22.56	22.42	15.90	18.80	26.10	31.00	0.18
4/28/95	1300	3	1.50	23.5	23.65	23.17	16.30	19.20	26.90	31.10	0.28
4/28/95	1745	3	1.30	24.0	24.47	24.42	13.40	14.80	23.20	24.50	0.63
5/18/95	0826	1	2.80	25.7	26.80	26.90	15.60	16.10	25.70	26.40	0.57
5/18/95	0955	1	2.40	29.0	27.02	26.90	16.00	16.00	26.10	26.20	0.53
5/18/95	1206	1	2.50	33.0	27.41	27.30	16.20	16.50	26.50	27.10	0.42
5/19/95	0818	1	2.50	20.0	25.65	26.03	8.30	16.90	14.35	27.50	0.38
5/19/95	1250	1	2.40	24.5	26.40	26.48	7.80	20.40	13-14	32.60	0.44
5/19/95	1717	1	2.30	27.5	25.65	26.39	8.00	19.40	13.92	31.20	0.40
5/19/95	1334	1	2.40	25.0	26.50	26.50	7.30	20.40	12.74	32.70	0.28
5/19/95	1353	1	2.40	25.0	26.50	26.50	7.30	20.40	12.74	32.70	0.28
5/20/95	0812	1	2.60	20.0	25.05	25.91	7.00	19.70	13-14	31.60	0.26
5/20/95	1218	1	2.60	24.5	26.15	26.21	20.10	21.00	32.30	33.70	0.34
5/20/95	1732	1	2.40	29.0	26.80	26.08	13.10	20.60	22.10	33.00	0.40
5/20/95	1201	1	2.60	24.5	26.15	26.21	20.10	21.00	32.30	33.70	0.34
5/21/95	0810	3	1.40	25.5	24.90	24.54	9.70	15.50	16.60	25.20	0.39
5/21/95	1301	3	1.30	26.0	26.59	25.16	12.00	16.50	20.20	27.10	0.42
5/21/95	1701	3	1.00	27.5	27.61	26.44	11.60	14.50	19.60	24.10	0.41
5/21/95	1209	3	1.30	26.0	26.60	25.26	12.90	17.20	21.60	28.00	0.66
5/22/95	0900	3	1.10	26.0	25.09	25.12	12.90	13.10	21.50	21.70	0.60
5/24/95	0825	3	2.60	26.0	25.96	26.19	15.80	18.30	25.90	29.60	0.28
5/24/95	0835	3	1.70	23.8	25.96	26.19	15.80	18.30	25.90	29.60	0.28
5/24/95	0907	3	2.10	23.8	25.96	26.19	15.80	18.30	25.90	29.60	0.28
5/24/95	0930	3	1.80	31.0	26.06	26.60	12.60	18.10	21.10	29.40	0.50
5/24/95	0934	3	2.50	29.1	26.06	26.16	12.60	18.10	21.10	29.40	0.50
5/24/95	1114	3	2.00	29.0	26.06	26.16	12.60	18.10	21.10	29.40	0.50
5/25/95	1148	1	2.90	33.0	27.13	26.46	10.60	18.90	17.90	30.50	no disk
5/25/95	0945	3	1.30	29.0	27.30	26.45	12.80	16.50	21.20	27.00	no disk
6/12/95	0757	1	2.30	20.5	27.98	28.71	16.10	18.80	26.40	30.30	0.47
6/12/95	1345	1	2.40	20.5	28.41	28.63	14.10	17.90	23.40	29.00	0.38
6/12/95	1810	1	1.90	21.7	28.19	28.44	17.40	18.00	28.20	29.20	0.54
6/13/95	0730	1	2.70	23.0	25.51	26.31	20.80	21.20	33.00	33.90	0.17
6/13/95	0800	3	0.90	20.0	23.79	23.91	19.40	19.40	31.30	31.30	0.15
6/13/95	0800	3	1.40	21.5	25.97	26.82	17.70	18.10	28.80	29.40	0.70
6/13/95	0810	4	3.20	28.0	24.10	23.70	18.50	20.60	29.80	31.90	no disk
6/13/95	1007	3	1.60	27.0	26.25	26.42	21.60	21.70	34.50	34.50	0.42
6/13/95	1303	3	1.40	21.3	27.22	27.21	17.70	17.70	28.80	28.80	0.40
6/13/95	1649	3	1.50	27.7	28.03	27.94	17.50	17.50	28.50	28.50	0.62

Appendix Table 6. Continued.

Date	Time	Site	Depth (m)	Temperature (C) Air	Temperature (C) Water Surface	Temperature (C) Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity (mS/cm) Surface	Conductivity (mS/cm) Bottom	Visibility (m)
6/14/95	0751	1	2.40	26.0	26.41	26.29	19.30	20.10	31.00	32.30	0.78
6/14/95	0800	1	2.40	26.0	26.41	26.29	19.30	20.10	31.00	32.30	0.78
6/14/95	1048	1	2.50	23.0	27.19	26.40	16.20	16.50	26.50	27.00	0.74
6/14/95	1258	1	2.30	35.0	27.98	27.22	19.20	19.90	31.00	32.00	0.69
6/14/95	1730	1	2.50	24.9	28.97	28.61	16.10	16.20	26.30	26.50	0.78
6/15/95	0800	1	2.60	22.5	27.37	26.81	16.00	16.30	26.20	26.70	0.48
6/15/95	1310	1	2.40	24.2	28.31	28.10	16.20	16.70	26.50	27.30	0.50
6/16/95	0835	3	1.60	23.7	27.25	27.25	15.60	15.50	25.60	25.60	0.26
6/16/95	1250	3	1.30	24.9	28.21	28.16	16.10	16.10	26.50	26.40	0.26
6/16/95	1640	3	1.50	24.8	26.08	26.42	17.40	17.20	28.20	27.90	0.32
7/6/95	0905	1	2.20	27.3	28.51	28.45	13.90	24.60	23.30	38.70	0.32
7/6/95	1302	1	2.30	28.8	29.06	28.36	12.00	22.40	20.40	35.50	0.44
7/6/95	1720	1	2.10	28.2	30.24	21.90	14.30	19.90	23.77	31.80	0.37
7/6/95	1526	1	1.90	28.2	29.90	29.04	15.40	19.70	25.50	31.20	0.40
7/6/95	1540	1	1.90	28.2	29.90	29.04	15.40	19.70	25.50	31.20	0.40
7/7/95	0800	1	2.40	28.0	28.86	29.78	11.20	19.30	19.00	31.10	0.34
7/7/95	1300	1	2.50	32.0	30.20	29.39	11.50	18.20	19.30	29.40	0.52
7/7/95	1719	1	1.90	32.0	31.70	30.40	12.30	15.80	20.60	26.50	0.48
7/7/95	0939	1	2.50	31.0	26.24	26.28	16.50	19.90	27.90	32.20	0.53
7/7/95	0856	3	2.80	31.0	29.93	29.38	14.50	18.30	23.10	29.30	0.78
7/8/95	0810	3	1.10	28.5	29.78	30.93	12.80	16.60	21.40	27.20	0.24
7/8/95	1300	3	1.10	31.5	31.52	31.29	15.90	16.20	26.10	26.60	0.34
7/8/95	1645	3	0.30	32.0	32.68	32.68	15.20	15.20	25.10	25.00	0.10
7/8/95	1127	3	1.40	34.0	31.22	30.87	15.50	16.00	25.50	26.00	0.23
7/8/95	1329	3	0.80	31.0	31.77	31.67	15.50	25.60	25.50	25.60	0.33
7/9/95	0835	5	1.00	29.0	29.31	29.31	13.50	13.50	24.10	24.00	0.44
7/9/95	1250	5	1.00	32.0	31.09	30.91	14.50	14.50	24.00	24.00	0.48
7/9/95	1620	5	0.50	33.0	nt	33.16	nt	14.40	nt	23.80	0.44
7/10/95	0900	4	2.60	29.0	28.81	28.65	20.90	21.80	33.60	34.70	0.42
7/11/95	0805	4	2.60	28.5	28.28	28.26	28.80	28.70	44.40	44.40	1.14
7/11/95	1300	4	2.50	30.0	28.79	28.45	28.10	29.00	43.90	44.80	0.92
7/11/95	1534	4	2.30	32.0	29.34	28.62	25.40	29.10	39.80	45.00	1.00
7/11/95	1730	4	2.20	32.0	29.28	28.64	26.70	29.20	41.60	45.00	0.64
7/12/95	0900	5	0.80	29.5	28.31	28.31	29.30	29.40	45.20	45.20	0.54
7/12/95	1300	5	0.90	31.0	29.75	29.74	29.00	29.00	44.80	44.80	0.60
7/12/95	0900	5	0.80	29.5	28.31	28.31	29.30	29.40	45.20	45.30	0.54
7/13/95	0825	1	2.60	29.0	29.77	29.74	26.20	27.50	40.90	42.60	0.40
7/13/95	1004	1	2.30	34.0	30.26	28.98	26.40	28.70	41.20	44.30	0.47
7/13/95	1300	1	2.40	33.0	31.70	28.83	28.00	29.00	43.40	44.90	0.28
7/14/95	0910	1	2.50	29.0	28.89	28.86	29.60	29.60	45.60	45.50	0.38
7/14/95	1036	1	2.40	32.0	29.15	28.96	29.60	29.60	45.50	45.60	0.40
7/14/95	1228	1	2.50	32.0	29.67	29.32	30.00	30.10	46.20	46.30	0.44
7/14/95	1330	1	2.50	32.0	29.67	29.32	30.00	30.10	46.20	46.30	0.44
8/8/95	0800	1	2.40	30.0	28.94	29.02	27.80	28.20	43.20	43.80	0.60
8/8/95	0848	1	2.40	32.0	28.94	29.02	27.80	28.20	43.20	43.80	0.60
8/8/95	1400	1	2.40	31.5	30.81	29.93	27.40	27.80	42.60	43.20	1.16
8/8/95	1543	1	2.50	32.0	31.29	30.25	27.50	28.30	42.90	43.70	0.48
8/8/95	1800	1	2.00	30.5	31.97	30.97	26.00	27.90	39.90	43.40	nt
8/9/95	0800	1	2.40	30.0	29.70	29.86	27.10	27.20	42.10	42.30	0.74
8/9/95	1300	1	2.40	32.0	30.45	30.00	27.00	27.40	42.00	42.60	0.48
8/9/95	1617	1	2.30	33.0	30.85	30.08	26.80	27.50	41.70	42.60	0.46
8/9/95	1644	1	2.20	33.0	30.96	30.63	27.00	27.50	42.00	42.70	0.56
8/9/95	1755	1	2.20	33.0	30.96	30.63	27.00	27.50	42.00	42.70	0.56
8/10/95	0810	1	1.30	29.5	29.73	30.06	25.70	26.30	40.20	41.40	0.60
8/10/95	1300	1	1.40	32.0	30.95	30.72	26.10	26.40	40.70	41.10	0.60
8/10/95	1600	1	1.50	31.0	31.35	31.14	26.20	26.10	40.90	40.90	0.50
8/11/95	0805	1	2.60	30.0	30.02	30.12	25.80	26.00	40.40	40.60	0.58

Appendix Table 6. Continued.

Date	Time	Site	Depth (m)	Temperature (C) Air	Temperature (C) Water Surface	Temperature (C) Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity (mS/cm) Surface	Conductivity (mS/cm) Bottom	Visibility (m)
8/11/95	1300	1	2.60	32.0	30.70	30.41	25.70	26.00	40.20	40.70	0.36
8/11/95	1500	1	2.60	32.0	30.88	30.78	26.00	26.00	40.60	40.60	0.34
8/13/95	0815	1	2.40	30.0	30.44	30.52	25.50	25.50	39.90	39.90	0.40
8/13/95	0948	1	1.90	32.0	30.73	30.62	25.40	25.70	39.70	40.20	0.10
8/13/95	1304	1	2.20	33.0	39.90	30.75	25.50	25.40	30.78	39.80	0.30
8/14/95	0940	1	2.30	32.0	29.88	29.45	22.40	25.10	35.50	39.50	0.32
8/14/95	1300	1	2.30	30.8	30.59	29.75	21.60	24.70	34.70	38.80	0.46
8/14/95	1610	1	2.30	31.7	31.07	30.71	20.90	23.20	33.30	36.70	nt
8/15/95	0810	1	2.00	29.8	30.15	30.37	21.40	22.70	34.00	36.10	0.44
8/15/95	1300	1	1.90	31.1	30.92	30.56	20.20	21.60	32.40	24.50	0.25
8/15/95	1430	1	1.90	32.1	31.83	30.97	19.60	21.60	31.60	34.30	0.50
8/15/95	1700	1	1.90	31.2	32.33	32.29	18.50	20.70	29.80	31.10	0.30
8/16/95	0800	1	1.20	29.4	30.32	30.78	21.10	22.30	33.70	35.30	0.48
8/16/95	1300	1	0.90	32.8	32.48	32.21	19.90	20.40	32.00	32.70	0.46
8/16/95	1600	1	0.90	33.1	33.64	33.43	20.20	20.30	32.40	32.50	0.28
8/17/95	0807	1	2.70	29.3	31.18	31.74	19.10	21.70	30.70	34.50	0.76
8/17/95	1300	1	2.30	33.6	31.96	31.54	16.70	21.60	27.30	34.50	0.42
8/17/95	1734	1	2.30	33.7	32.25	31.93	15.70	21.40	25.90	31.10	0.52
8/18/95	0750	1	1.40	28.2	29.93	30.81	23.20	25.50	36.70	39.90	1.10
8/19/95	0754	1	2.50	27.9	31.38	31.24	24.80	25.30	38.90	39.70	0.44
8/19/95	1257	1	2.40	33.5	31.59	31.37	21.00	25.40	33.70	39.80	0.56
8/19/95	1730	1	2.00	32.5	32.09	31.81	21.10	24.50	33.80	38.50	0.40
8/20/95	1220	4	1.30	33.0	31.48	30.76	25.60	29.50	40.90	45.30	1.20
8/20/29	1125	5	0.10	32.0	30.90	30.79	26.70	26.90	41.70	41.80	0.05
9/15/95	0752	3	1.30	29.3	29.75	nt	nt	nt	nt	nt	0.20
9/15/95	1300	3	0.90	33.2	30.95	30.87	22.80	22.80	36.10	36.10	0.20
9/17/95	0815	4	2.80	31.2	29.83	29.83	23.00	23.00	36.40	36.40	0.43
9/17/95	1340	4	2.40	32.7	29.89	30.34	23.80	23.00	37.60	36.40	0.36
10/19/95	0910	1	2.40	23.2	29.06	42.02	23.29	28.25	43.48	23.31	0.25
10/19/95	1300	1	2.70	26.4	27.60	40.40	23.58	26.76	41.16	24.04	0.60
10/19/95	1650	1	2.40	25.0	27.63	37.95	23.58	24.78	41.35	24.32	0.60
10/21/95	0830	1	2.10	13.0	26.04	31.12	20.00	21.74	36.35	20.32	0.30
10/21/95	1305	1	2.70	20.5	25.95	36.70	20.84	25.50	37.00	21.46	0.30
10/21/95	1655	1	2.70	24.5	26.50	38.40	22.04	26.38	38.52	22.00	0.60

Appendix Table 7. Sea and meteorological conditions at Sabine Pass during March-October 1995.

			Tides		Tidal		Sea	% Cloud	Wind	
Date	Time	Site	High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
3/6/95	0840	3	0714;1651	1115	none notice	none	lt chop	100 (fog)	5-10	SE
3/6/95	1245	3	0714;1651	1115	none notice	none	lt chop	99	10-15	SSE
3/6/95	1445	3	0714;1651	1115	none notice	none	lt chop	100	10-15	SSE
3/9/95	0830	3	1502	0234	in	moderate	lt chop	25	10-15	NE
3/9/95	1200	3	1502	0234	none notice	none	lt chop	75	10-15	ENE
3/9/95	1415	3	1502	0234	none notice	none	lt chop	90	10	ENE
3/10/95	0830	3	1304	0343	in	slight	lt chop	99	5-10	E
3/10/95	1210	3	1304	0343	in	slight	md chop	99	10-15	E
3/10/95	1420	3	1304	0343	none notice	none	lt chop	100	5-10	E
4/24/95	1010	3	1133;2337	1752	none	none	md-h chop	30	10-15	NNW
4/24/95	1300	3	1133;2338	1753	none	none	lt-md chop	40	10-15	NNE
4/24/95	1655	3	1133;2339	1754	none	none	rippled-lt chop	45	5-10	N
4/24/95	1200	3	1133;2340	1755	none	none	md chop	40	10-15	N
4/26/95	0845	3	0047;1219	0653;1851	none	none	md-h chop	20	10-15	SSE
4/26/95	1300	3	0047;1219	0653;1851	out	slight	md chop	10	10-15	SE
4/26/95	1545	3	0047;1219	0653;1851	none	none	md chop	30	10-15	SE
4/27/95	0800	3	0146;1239	0742;1820	out	slight	rippled-lt chop	0	10	E
4/27/95	1300	3	0146;1239	0742;1820	out	moderate	rippled-lt chop	60	5-10	NE
4/27/95	1655	3	0146;1239	0742;1820	none	none	lt chop	30	5-10	SE
4/27/95	1130	3	0146;1239	0742;1820	out	moderate	rippled-lt chop	30	10	NE
4/28/95	0900	3	0239;1258	0725;1900	none	none	lt-md chop	40	10-15	E
4/28/95	1300	3	0239;1258	0725;1900	in	slight	lt chop	5	10-15	ESE
4/28/95	1745	3	0239;1258	0725;1900	in	slight	lt chop	10	10-15	SSE
5/18/95	0826	1	0704;1521	1248;2337	in	strong	md chop	90	10-15	SSW
5/18/95	0955	1	0704;1521	1248;2337	in	slight	md chop	99	10-15	SSW
5/18/95	1206	1	0704;1521	1248;2337	none	none	md chop	100	10-15	SSW
5/19/95	0818	1	0756;1700	1419	none	none	h chop	0	15-20	NNW
5/19/95	1250	1	0756;1700	1419	none	none	md chop	<10	10-20	NNW
5/19/95	1717	1	0756;1700	1419	out	slight	md chop	<10	10-15	NNW
5/19/95	1334	1	0756;1700	1419	out	slight	md chop	<10	10-15	NNW
5/19/95	1353	1	0756;1700	1419	out	slight	md chop	<11	10-15	NNW
5/20/95	0812	1	0842;1901	0039;1520	in	slight	md chop	10	10-15	NE
5/20/95	1218	1	0842;1901	0039;1520	out	slight	lt chop	<10	5-10	E
5/20/95	1732	1	0842;1901	0039;1520	none	none	rippled	<10	5-10	S
5/20/95	1201	1	0842;1901	0039;1520	out	slight	lt chop	<10	5-10	E
5/21/95	0810	3	0921;2057	0146;1606	out	slight	lt chop	30	5-10	SSE
5/21/95	1301	3	0921;2057	0146;1606	none	none	lt chop	0	10-15	ESE
5/21/95	1701	3	0921;2057	0146;1606	none	none	md chop	<10	10-15	SSE
5/21/95	1209	3	0921;2057	0146;1606	none	none	lt chop	0	10-15	ESE
5/22/95	0900	3	0953;2240	0302;1647	none	none	md-h chop	5	10-15	S
5/24/95	0825	3	0006;1045	0539;1757	none	none	rippled	90	5-10	SSW
5/24/95	0835	3	0006;1045	0539;1757	none	none	rippled-lt chop	80	10	S
5/24/95	0907	3	0006;1045	0539;1757	none	none	rippled-lt chop	70	10-15	S
5/24/95	0930	3	0006;1045	0539;1757	in	slight	md chop	80	10	S
5/24/95	0934	3	0006;1045	0539;1757	none	none	rippled-lt chop	60	10-15	S
5/24/95	1114	3	0006;1045	0539;1757	none	none	hv chop	40	>25	S
6/12/95	0757	1	1404	0951;2134	none	none	md chop	30	15-20	NNE
6/12/95	1345	1	1404	0951;2135	none	none	h chop	20	15-20	NNE
6/12/95	1810	1	1404	0951;2136	none	none	md chop	10	15-20	NNE
6/13/95	0730	1	0516;1455	1038;2223	none	none	rippled	0	5	NE
6/13/95	0800	3	0516;1455	1038;2223	none	none	rippled-lt chop	40	10-15	NE
6/13/95	0800	3	0516;1455	1038;2223	none	none	rippled-lt chop	0	5	NNE
6/13/95	0810	4	0516;1455	1038;2223	none	none	lt-md chop	5	15-20	SSW
6/13/95	1007	3	0516;1455	1038;2223	none	none	rippled	0	5	NE
6/13/95	1303	3	0516;1455	1038;2223	none	none	rippled	0	5-10	SE
6/13/95	1649	3	0516;1455	1038;2223	none	none	rippled	10	5-10	SE

Appendix Table 7. Continued.

Date	Time	Site	Tides		Tidal		Sea	% Cloud	Wind	
			High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
6/14/95	0751	1	0500;1329	0959;2133	none	none	lt chop	50	< 5-10	WNW
6/14/95	0800	1	0500;1329	0959;2133	none	none	lt chop	50	< 5-10	WNW
6/14/95	1048	1	0500;1329	0959;2133	out	slight	glassy	20	high/variable	variable
6/14/95	1258	1	0500;1329	0959;2133	none	none	rippled/lt chop	1	< 5-10	S
6/14/95	1730	1	0500;1329	0959;2133	out	slight	rippled/lt chop	5	5-10	SW
6/15/95	0800	1	0651;1650	1220	in	slight	lt chop	20	5-10	SSE
6/15/95	1310	1	0651;1650	1220	none	none	lt chop	10	10-15	SE
6/16/95	0835	3	1158	1915	in	slight	lt chop	20	15-20	ENE
6/16/95	1250	3	1158	1915	none	none	md chop	10	15-20	ESE
6/16/95	1640	3	1158	1915	out	slight	md chop	10	10-15	SE
7/6/95	0905	1	0930	1706	none	none	lt chop	70	5	SSE
7/6/95	1302	1	0930	1706	in	slight	rippled	20	10	SE
7/6/95	1720	1	0930	1706	in	slight	rippled-lt chop	20	10	SE
7/6/95	1526	1	0930	1706	out	slight	rippled	30	10	SE
7/6/95	1540	1	0930	1706	out	slight	rippled	30	10	SE
7/7/95	0800	1	1235;1009	0221;1800	none	none	rippled	5	<5	variable
7/7/95	1300	1	1235;1009	0221;1800	in	moderate	glassy-rippled	5	<5	variable
7/7/95	1719	1	1235;1009	0221;1800	none	none	md chop	30	5-10	SSW
7/7/95	0939	1	1235;1009	0221;1800	none	none	rippled	30	5	E
7/7/95	0856	3	1235;1009	0221;1800	none	none	rippled	30	5	E
7/8/95	0810	3	1058	1853	none	none	glassy/rippled	<5	<5	NE
7/8/95	1300	3	1058	1853	none	none	lt chop	30	5-10	SE
7/8/95	1645	3	1058	1853	none	none	lt chop	25	5-10	SSE
7/8/95	1127	3	1058	1853	none	none	rippled	5	5	ENE
7/8/95	1329	3	1058	1853	none	none	lt chop	20	5-10	ENE
7/9/95	0835	5	0146;0911	0544;1758	none	none	rippled	0	5	NW
7/9/95	1250	5	0146;0911	0544;1758	none	none	lt chop	5	5-10	SW
7/9/95	1620	5	0146;0911	0544;1758	none	none	lt chop	5	10	SW
7/9/95	0902	1	0146;0911	0544;1758	none	none	rippled	5	5	ENE
7/9/95	0853	4	0146;0911	0544;1758	none	none	lt chop	0	5-10	NW
7/10/95	0900	4	0233;1256	0851;2036	none	none	lt chop	40	10-15	WNW
7/11/95	0805	4	1516;1129	0751;1941	none	none	rippled	100	10	WNW
7/11/95	1300	4	1516;1129	0751;1941	in	slight	lt chop	70 hazy	10-15	SW
7/11/95	1534	4	1516;1129	0751;1941	in	slight	rippled-lt chop	10	10	SW
7/11/95	1730	4	1516;1129	0751;1941	in	moderate	md chop	20	15-20	SW
7/12/95	0900	5	1457	1023;2215	none	none	rippled-lt chop	5	5-10	NW
7/12/95	1300	5	1457	1023;2215	in	slight	lt chop	80	10-15	SW
7/12/95	0900	5	1457	1023;2215	none	none	rippled-lt chop	5	5-10	NW
7/13/95	0825	1	0431;1352	0928;2120	out	slight	lt chop	0-hazy	5	NW
7/13/95	1004	1	0431;1352	0928;2120	none	none	rippled-lt chop	50	5	N
7/13/95	1300	1	0431;1352	0928;2120	nome	none	glassy rippled	20	0-2	SSE
7/14/95	0910	1	0506;1505	1020;2207	none	none	lt chop	30	10-15	ENE
7/14/95	1036	1	0506;1505	1020;2207	none	none	lt chop	40	>15	ESE
7/14/95	1228	1	0506;1505	1020;2207	none	none	lt chop	40	10-15	SE
7/14/95	1330	1	0506;1505	1020;2207	none	none	lt chop	40	10-15	SE
8/8/95	0800	1	0216;1036	0653;1843	in	moderate	md chop	10	10	S
8/8/95	0848	1	0216;1036	0653;1843	in	moderate	lt chop	40	5-10	SSW
8/8/95	1400	1	0216;1036	0653;1843	out	slight	rippled	20	10	SSE
8/8/95	1543	1	0216;1036	0653;1843	none	none	lt chop	30	10-15	S
8/8/95	1800	1	0216;1036	0653;1843	out	slight	rippled	<5	10	SSE
8/9/95	0800	1	0247;1156	0730;1933	none	none	lt chop	20	10	SE
8/9/95	1300	1	0247;1156	0730;1933	out	slight	lt chop	10	10-15	ESE
8/9/95	1617	1	0247;1156	0730;1933	in	moderate	lt chop	10	10	SE
8/9/95	1644	1	0247;1156	0730;1933	in	slight	rippled-lt chop	5	5-10	SE
8/9/95	1755	1	0247;1156	0730;1933	in	slight	rippled-lt chop	5	5-10	SE
8/10/95	0810	1	0316;1308	0811;2021	none	none	rippled	15	5-10	NE
8/10/95	1300	1	0316;1308	0811;2021	in	slight	md chop	10	10-15	SE
8/10/95	1600	1	0316;1308	0811;2021	none	none	lt chop	5	10-15	SE
8/11/95	0805	1	0344;1417	0854;2106	none	none	lt chop	60	10-15	E
8/11/95	1300	1	0344;1417	0854;2106	none	none	md-h chop	20	15-20	SE

Appendix Table 7. Continued.

Date	Time	Site	Tides		Tidal		Sea	% Cloud	Wind	
			High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
8/11/95	1500	1	0344;1417	0854;2106	none	none	md-h chop	20	15-20	SE
8/13/95	0815	1	0438;1638	1028;2229	in	slight	lt chop	60	<5	SW
8/13/95	0948	1	0438;1638	1028;2229	indeterminate	none	rippled	90	<5	SSW
8/13/95	1304	1	0438;1638	1028;2229	none	none	h chop	85	20-25	SW
8/14/95	0940	1	0503;1756	1120;2306	none	none	lt chop	40	10-15	SSE
8/14/95	1300	1	0503;1756	1120;2306	none	none	md chop	40	10-15	SSE
8/14/95	1610	1	0503;1756	1120;2306	none	none	md chop	40	5-10	S
8/15/95	0810	1	0527;1925	1214;2339	none	none	lt chop	30	5-10	SSW
8/15/95	1300	1	0527;1925	1214;2339	out	moderate	rippled-lt chop	70	5	SSW
8/15/95	1430	1	0527;1925	1214;2339	out	moderate	lt chop	30	10	SW
8/15/95	1700	1	0527;1925	1214;2339	out	slight	lt chop	20	10-15	SW
8/16/95	0800	1	0549;2114	1314	none	none	rippled	70	5	ENE
8/16/95	1300	1	0549;2114	1314	in	slight	lt chop	10	5-10	SSE
8/16/95	1600	1	0549;2114	1314	none	none	md chop	20	10	SW
8/17/95	0807	1	0606;0002	1419	none	none	lt chop	1	5-10	NNE
8/17/95	1300	1	0606;0002	1419	out	slight	rippled	5	5-10	SSW
8/17/95	1734	1	0606;0002	1419	none	none	md chop	0	5-10	SSW
8/18/95	0750	1	0603	1523	none	none	lt chop	5	10	N
8/19/95	0754	1			out	slight	lt chop	10	5-10	N
8/19/95	1257	1			none	none	rippled	0	<5	variable
8/19/95	1730	1			none	none	md chop	0	5-10	SW
9/15/95	0752	3	0120;1426	0605	in	moderate	rippled	80	5	SE
9/15/95	1300	3	0120;1426	0605	none	none	md chop	60	10-15	SE
9/17/95	0815	4	0040	1525	in	moderate	lt chop	30	10-15	SSW
9/17/95	1340	4	0040	1525	in	slight	rippled	30	10	SW
10/19/95	0910	1	1040;2357	0552;1653	in	slight	lt -mdchop	90	10	E
10/19/95	1300	1	1040;2357	0552;1653	none	none	lt chop	35	5-10	E
10/19/95	1650	1	1040;2357	0552;1653	in	slight	lt chop	15	10	E
10/21/95	0830	1	0014;1248	0616;1822	none	none	rippled	0	2	NNE
10/21/95	1305	1	0014;1248	0616;1822	in	slight	lt chop	0	5	S
10/21/95	1655	1	0014;1248	0616;1822	out	moderate	lt chop	0	8	S

Appendix Table 8. Abundance and size of nekton species in trawl tows at Calcasieu Pass jetty sites (1,4) during 1995.

Site 1
7/29/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Isopoda	1	2	0	3	0.16	9	10
Penaeus setiferus	0	2	1	3	0.16	52	90
Brevoortia patronus	2	0	0	2	0.11	101	111
Dorosoma petenense	8	5	2	15	0.81	78	101
Harengula jaguana	0	0	1	1	0.05	72	72
Anchoa hepsetus	9	10	2	21	1.13	65	107
Anchoa mitchilli	4	14	0	18	0.97	39	74
Arius felis	0	19	2	21	1.13	40	268
Caranx hippos	3	1	0	4	0.22	40	91
Chloroscombrus chrysurus	499	666	584	1749	94.03	52	69
Selene vomer	0	1	1	2	0.11	59	60
Cynoscion arenarius	0	2	0	2	0.11	138	152
Stellifer lanceolatus	0	1	0	1	0.05	52	52
Chaetodipterus faber	0	0	2	2	0.11	38	49
Trichiurus lepturus	0	4	0	4	0.22	210	415
Scomberomorus maculatus	4	1	2	7	0.38	142	184
Peprilus alepidotus	1	2	0	3	0.16	69	95
Symphurus plagiusa	1	1	0	2	0.11	102	111
TOTAL	532	731	597	1860	100.00		

Appendix Table 8. Continued.

Site 4
7/29/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	8	4	5	17	3.16	16	58
Order Isopoda	1	0	2	3	0.56	5	9
Penaeus aztecus	0	1	0	1	0.19	34	34
Penaeus setiferus	12	5	8	25	4.65	20	43
Xiphopenaeus kroyeri	1	0	0	1	0.19	24	24
Callinectes sapidus	2	2	1	5	0.93	18	60
Brevoortia patronus	12	4	1	17	3.16	74	106
Dorosoma petenense	30	39	29	98	18.22	67	100
Harengula jaguana	0	1	0	1	0.19	68	68
Anchoa hepsetus	0	3	0	3	0.56	85	86
Anchoa mitchilli	12	6	10	28	5.20	30	61
Arius felis	1	1	2	4	0.74	45	55
Bagre marinus	3	8	4	15	2.79	88	125
Caranx hippos	1	0	1	2	0.37	56	65
Chloroscombrus chrysurus	20	23	40	83	15.43	22	70
Selene setapinnis	0	0	1	1	0.19	63	63
Selene vomer	1	0	0	1	0.19	59	59
Cynoscion arenarius	62	61	35	158	29.37	50	110
Leiostomus xanthurus	2	0	0	2	0.37	67	76
Micropogonias undulatus	0	0	1	1	0.19	118	118
Stellifer lanceolatus	1	1	7	9	1.67	23	42
Chaetodipterus faber	6	4	1	11	2.04	21	30
Trichiurus lepturus	17	6	10	33	6.13	250	353
Scomberomorus maculatus	1	1	1	3	0.56	112	167
Peprilus alepidotus	2	1	5	8	1.49	50	66
Citharichthys spilopterus	0	1	0	1	0.19	48	48
Paralichthys lethostigma	1	0	0	1	0.19	82	82
Symphurus plagiusa	0	6	0	6	1.12	49	93
TOTAL	196	178	164	538	100.00		

Appendix Table 8. Continued.

Site 1
8/26/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	3	4	2	9	1.20	16	23
Penaeus setiferus	1	0	1	2	0.27	25	25
Anchoa mitchilli	0	0	6	6	0.80	27	40
Arius felis	2	1	1	4	0.53	117	138
Caranx hippos	1	0	1	2	0.27	52	122
Chloroscombrus chrysurus	430	47	237	714	95.45	35	71
Chaetodipterus faber	0	0	1	1	0.13	57	57
Peprilus alepidotus	4	0	5	9	1.20	50	64
Symphurus plagiusa	1	0	0	1	0.13	103	103
TOTAL	442	52	254	748	100.00		

Appendix Table 8. Continued.

Site 4
8/26/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Arius felis	0	2	2	4	0.25	64	151
Chloroscombrus chrysurus	2	1153	423	1578	99.43	36	59
Trachinotus carolinus	0	1	0	1	0.06	102	102
Micropogonias undulatus	1	0	0	1	0.06	137	137
Chaetodipterus faber	0	2	0	2	0.13	109	112
Scomberomorus maculatus	1	0	0	1	0.06	145	145
TOTAL	4	1158	425	1587	100.00		

Appendix Table 8. Continued.

Site 1
10/16/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Squilla empusa	0	2	0	2	0.23	87	89
Order Isopoda	0	0	3	3	0.34	9	13
Penaeus aztecus	20	0	5	25	2.86	51	106
Penaeus setiferus	14	19	18	51	5.84	46	78
Callinectes sapidus	0	1	0	1	0.11	82	82
Anchoa mitchilli	116	49	130	295	33.75	32	68
Arius felis	1	2	0	3	0.34	87	100
Prionotus tribulus	4	6	1	11	1.26	8	25
Chloroscombrus chrysurus	85	57	81	223	25.51	47	84
Cynoscion arenarius	0	2	2	4	0.46	42	88
Micropogonias undulatus	71	78	97	246	28.15	21	34
Chaetodipterus faber	2	1	0	3	0.34	82	94
Trichiurus lepturus	0	1	0	1	0.11	257	257
Scomberomorus maculatus	2	0	1	3	0.34	81	101
Peprilus alepidotus	0	0	1	1	0.11	94	94
Symphurus plagiusa	0	1	1	2	0.23	107	108
TOTAL	315	219	340	874	100.00		

Appendix Table 8. Continued.

Site 4
10/16/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	1	0	1	0.41	125	125
Squilla empusa	0	1	0	1	0.41	69	69
Penaeus setiferus	4	6	4	14	5.81	65	165
Xiphopenaeus kroyeri	0	1	0	1	0.41	33	33
Callinectes sapidus	1	0	0	1	0.41	23	23
Dorosoma petenense	1	1	1	3	1.24	115	125
Anchoa hepsetus	5	5	2	12	4.98	94	108
Anchoa mitchilli	95	15	31	141	58.51	42	76
Arius felis	4	8	1	13	5.39	88	174
Centropristis philadelphica	0	1	0	1	0.41	116	116
Caranx hippos	0	1	0	1	0.41	112	112
Chloroscombrus chrysurus	5	2	0	7	2.90	32	76
Oligoplites saurus	1	0	0	1	0.41	71	71
Cynoscion arenarius	3	9	10	22	9.13	86	195
Leiostomus xanthurus	1	0	0	1	0.41	150	150
Micropogonias undulatus	1	0	0	1	0.41	33	33
Stellifer lanceolatus	1	9	1	11	4.56	67	121
Trichiurus lepturus	0	2	4	6	2.49	255	291
Scomberomorus maculatus	1	0	1	2	0.83	77	86
Symphurus plagiusa	0	1	0	1	0.41	96	96
TOTAL	123	63	55	241	100.00		

Appendix Table 9. Abundance and size of nekton species in trawl tows at Calcasieu Pass beachfront sites (3,5) during 1995.

Site 3
7/29/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Bunodasoma cavernata	1	8	4	13	0.70	NA	NA
Loliguncula brevis	1	2	0	3	0.16	30	85
Order Isopoda	5	1	1	7	0.37	7	15
Penaeus setiferus	0	2	2	4	0.21	35	76
Dorosoma petenense	0	1	2	3	0.16	99	132
Anchoa hepsetus	0	0	1	1	0.05	61	61
Anchoa mitchilli	1	0	0	1	0.05	38	38
Arius felis	118	1	10	129	6.91	42	273
Caranx hippos	1	0	1	2	0.11	39	106
Chloroscombrus chrysurus	377	98	1210	1685	90.25	52	88
Trachinotus carolinus	1	0	2	3	0.16	72	76
Chaetodipterus faber	1	2	1	4	0.21	28	71
Polydactylus octonemus	1	0	0	1	0.05	172	172
Scomberomorus maculatus	1	2	8	11	0.59	141	221
TOTAL	508	117	1242	1867	100.00		

Appendix Table 9. Continued.

Site 5
7/29/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	1	0	1	2	0.10	75	120
Order Isopoda	1	0	1	2	0.10	9	12
Penaeus aztecus	0	0	1	1	0.05	53	53
Penaeus setiferus	1	0	2	3	0.15	72	98
Callinectes sapidus	2	1	1	4	0.20	130	165
Brevoortia patronus	0	0	1	1	0.05	102	102
Dorosoma petenense	2	1	2	5	0.25	95	124
Harengula jaguana	1	0	0	1	0.05	73	73
Anchoa mitchilli	19	2	3	24	1.21	43	76
Arius felis	1	0	0	1	0.05	131	131
Bagre marinus	4	4	10	18	0.91	90	160
Caranx hippos	2	0	0	2	0.10	35	43
Chloroscombrus chrysurus	1009	243	603	1855	93.55	55	70
Selene setapinnis	3	1	4	8	0.40	56	69
Selene vomer	10	2	8	20	1.01	43	80
Cynoscion arenarius	3	4	5	12	0.61	63	141
Larimus fasciatus	1	1	0	2	0.10	59	63
Stellifer lanceolatus	0	0	3	3	0.15	55	58
Chaetodipterus faber	2	0	0	2	0.10	34	36
Trichiurus lepturus	2	1	5	8	0.40	243	359
Scomberomorus maculatus	1	0	0	1	0.05	255	255
Peprilus alepidotus	3	1	4	8	0.40	71	96
TOTAL	1068	261	654	1983	100.00		

Appendix Table 9. Continued.

Site 3
8/26/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	3	2	5	1.55	41	57
Penaeus setiferus	3	4	1	8	2.48	26	37
Callinectes sapidus	0	1	0	1	0.31	79	79
Brevoortia patronus	0	2	1	3	0.93	75	93
Dorosoma petenense	0	0	5	5	1.55	64	67
Anchoa hepsetus	2	1	4	7	2.17	70	84
Anchoa mitchilli	59	63	0	122	37.77	32	59
Arius felis	17	27	7	51	15.79	49	233
Bagre marinus	5	4	0	9	2.79	103	152
Caranx hippos	0	0	4	4	1.24	60	67
Chloroscombrus chrysurus	0	14	7	21	6.50	35	69
Selene setapinnis	0	0	7	7	2.17	48	54
Selene vomer	2	5	0	7	2.17	46	61
Bairdiella chrysoura	2	0	0	2	0.62	122	122
Cynoscion arenarius	1	5	1	7	2.17	45	81
Menticirrhus americanus	0	1	0	1	0.31	51	51
Micropogonias undulatus	0	1	0	1	0.31	153	153
Stellifer lanceolatus	1	5	0	6	1.86	26	40
Chaetodipterus faber	2	27	7	36	11.15	44	70
Scomberomorus maculatus	1	1	0	2	0.62	143	146
Peprilus alepidotus	0	4	0	4	1.24	50	76
Symphurus plagiusa	0	14	0	14	4.33	95	107
TOTAL	95	182	46	323	100.00		

Appendix Table 9. Continued.

Site 5
8/26/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	0	1	1	0.02	60	60
Order Isopoda	1	3	0	4	0.09	8	16
Penaeus aztecus	0	0	5	5	0.11	81	121
Penaeus setiferus	2	6	1	9	0.19	76	139
Brevoortia patronus	1	0	0	1	0.02	106	106
Harengula jaguana	0	1	0	1	0.02	87	87
Anchoa hepsetus	1	5	1	7	0.15	84	102
Anchoa mitchilli	5	16	0	21	0.45	46	71
Arius felis	291	6	85	382	8.24	60	144
Bagre marinus	0	3	0	3	0.06	128	136
Caranx hippos	0	1	7	8	0.17	39	96
Chloroscombrus chrysurus	125	231	3788	4144	89.41	39	74
Oligoplites saurus	1	0	0	1	0.02	107	107
Selene setapinnis	2	3	0	5	0.11	53	77
Selene vomer	2	0	1	3	0.06	69	71
Cynoscion arenarius	2	34	0	36	0.78	45	87
Larimus fasciatus	0	0	1	1	0.02	58	58
Chaetodipterus faber	1	1	0	2	0.04	55	78
Peprilus alepidotus	0	1	0	1	0.02	79	79
TOTAL	434	311	3890	4635	100.00		

Appendix Table 9. Continued.

Site 3
10/16/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus setiferus	1	3	1	5	9.09	80	136
Callinectes sapidus	0	2	0	2	3.64	136	147
Anchoa hepsetus	2	0	0	2	3.64	97	102
Anchoa mitchilli	1	0	0	1	1.82	75	75
Arius felis	1	1	0	2	3.64	86	99
Chloroscombrus chrysurus	33	3	4	40	72.73	30	70
Micropogonias undulatus	0	2	1	3	5.45	22	27
TOTAL	38	11	6	55	100.00		

Appendix Table 9. Continued.

Site 5
10/16/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus setiferus	6	8	16	30	24.59	49	101
Arenaeus cribrarius	0	0	1	1	0.82	100	100
Anchoa hepsetus	0	1	1	2	1.64	101	107
Anchoa mitchilli	8	7	39	54	44.26	50	71
Centropristis philadelphica	0	0	1	1	0.82	34	34
Chloroscombrus chrysurus	1	11	9	21	17.21	31	82
Cynoscion arenarius	0	2	8	10	8.20	34	96
Chaetodipterus faber	0	0	1	1	0.82	28	28
Scomberomorus maculatus	1	0	0	1	0.82	58	58
Peprilus alepidotus	0	0	1	1	0.82	63	63
TOTAL	16	29	77	122	100.00		

Appendix Table 10. Hydrographic measurements at Calcasieu Pass during June-October 1995.

Date	Time	Site	Depth (m)	Temperature (C) Air	Water Surface	Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity (mS/cm) Surface	Conductivity (mS/cm) Bottom	Visibility (m)
6/27/95	0735	3	1.50	26.50	29.22	28.72	26.44	27.78	43.50	45.32	0.60
6/27/95	1310	3	1.20	38.50	31.70	30.32	27.30	27.46	46.82	46.38	0.60
6/27/95	1655	3	1.20	31.50	31.74	31.42	27.52	27.50	47.58	47.25	0.30
6/28/95	0730	4	2.40	26.80	29.75	29.91	29.08	29.05	48.04	48.34	0.30
6/28/95	1315	4	2.10	30.60	30.68	30.56	28.90	28.92	48.56	48.36	0.30
7/1/95	1045	1	2.40	26.00	28.24	28.00	16.90	17.50	28.42	29.42	0.30
7/1/95	1305	1	2.10	29.50	28.80	28.24	16.29	16.45	27.90	27.74	0.30
7/1/95	1715	1	2.40	32.50	29.89	28.26	16.83	16.92	29.54	28.60	0.30
7/2/95	0750	1	2.40	26.00	28.12	28.10	16.82	17.30	28.24	28.92	0.90
7/2/95	1300	1	2.40	34.00	30.10	28.44	15.30	17.44	26.62	29.72	0.90
7/2/95	1645	1	2.40	33.50	30.54	29.80	15.70	15.80	27.44	27.32	0.60
7/25/95	0800	4	3.00	30.00	29.85	29.78	34.40	34.39	56.41	56.60	0.30
7/25/95	1300	4	3.60	36.00	30.58	30.00	32.66	33.32	54.44	54.90	0.30
7/25/95	1650	4	3.30	33.00	30.44	29.84	33.52	33.76	55.85	55.66	0.30
7/26/95	0755	5	2.80	30.00	29.78	29.82	34.66	34.88	56.94	57.24	0.30
7/26/95	1310	5	2.70	33.50	31.06	30.36	33.34	33.64	55.88	55.80	0.24
7/26/95	1640	5	2.40	33.00	31.14	30.32	33.38	33.32	56.21	55.50	0.42
7/27/95	0740	4	2.70	28.50	30.00	30.00	34.58	34.70	57.42	57.44	0.24
7/27/95	1300	4	2.70	30.00	31.38	30.70	34.24	34.50	57.82	57.68	0.46
7/27/95	1650	4	2.70	33.00	30.78	30.64	34.24	34.06	57.18	57.00	0.34
7/28/95	0750	4	3.30	28.60	30.36	29.99	34.94	32.88	57.85	54.26	0.26
7/28/95	1300	4	3.60	32.50	31.44	31.07	34.75	32.96	58.77	55.44	0.32
7/28/95	1655	4	2.70	33.70	31.41	30.60	34.54	34.74	58.59	58.21	0.22
8/22/95	0745	1	3.00	26.39	31.01	29.50	31.96	30.72	54.00	50.85	0.30
8/22/95	1320	1	3.00	34.66	31.73	32.04	29.40	29.52	50.42	45.07	0.60
8/23/95	0745	1	3.00	26.64	30.92	31.13	31.61	30.54	53.01	52.01	0.50
8/23/95	1300	1	3.00	33.92	31.48	30.88	28.03	27.89	47.85	47.27	0.80
8/23/95	1700	1	2.70	32.01	32.16	31.96	28.12	22.73	48.42	39.67	0.60
8/24/95	0728	1	3.00	27.80	30.75	29.74	31.62	27.02	52.84	45.26	0.60
8/24/95	1305	1	3.00	34.49	31.65	31.20	28.12	28.00	48.15	47.42	1.00
8/24/95	1725	1	2.70	35.23	32.22	32.32	28.24	27.21	48.85	47.24	1.00
8/25/95	0725	1	2.60	28.72	30.68	30.41	29.75	30.21	50.16	50.91	1.20
8/25/95	1300	1	2.70	36.01	32.60	32.27	28.38	28.08	49.32	48.88	1.20
8/25/95	1710	1	2.50	33.87	33.00	32.00	27.87	26.50	49.20	45.83	0.70
8/26/95	0740	3	1.80	29.08	31.34	31.43	29.96	29.74	51.00	50.84	0.40
10/12/95	0840	1	2.30	22.42	23.21	23.30	27.86	21.75	41.58	33.14	0.60
10/12/95	1300	1	2.30	25.32	24.51	24.49	27.30	24.41	41.48	37.34	0.40
10/12/95	1655	1	2.50	23.57	24.02	23.98	32.36	26.95	48.24	40.82	0.50
10/13/95	0810	1	2.70	23.00	24.22	24.28	33.72	33.70	51.00	51.00	0.60
10/13/95	1255	1	2.40	25.00	24.22	24.30	32.65	33.48	48.88	50.14	0.50
10/13/95	1655	1	2.70	23.50	24.02	24.40	31.10	34.50	46.35	51.34	0.60
10/17/95	0825	3	1.80	16.50	22.10	22.34	27.92	28.13	40.58	40.92	0.30
10/17/95	1300	3	1.50	26.00	22.92	22.90	27.04	26.86	40.12	39.78	0.15
10/17/95	1645	3	1.50	25.00	23.50	23.48	26.66	26.50	39.74	39.65	0.30

Appendix Table 11. Sea and meteorological conditions at Calcasieu Pass during June-October 1995.

Date	Time	Site	Tides		Tidal		Sea	% Cloud	Wind	
			High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
6/27/95	0735	3	0319;1102	0932;2021	in	slight	rippled	1	5	SW
6/27/95	1310	3	0319;1102	0932;2021	detectable	none	md. chop	30	10	S
6/27/95	1655	3	0319;1102	0932;2021	detectable	none	md. chop	60	10-15	S
6/28/95	0730	4	0346;1138	1045;2052	in	slight	lt. chop	50	5-10	S
6/28/95	1315	4	0346;1138	1045;2052	detectable	none	lt. chop	99	5-10	SE
7/1/95	1045	1	0515;1344	1133;2233	out	moderate	md. chop	95	5-10	N
7/1/95	1305	1	0515;1344	1133;2233	out	strong	md. chop	60	5-10	N
7/1/95	1715	1	0515;1344	1133;2233	none	none	rippled-lt. chop	60	5-10	N
7/2/95	0750	1	0542;1506	1218	in	slight	lt. chop	75	5-10	ENE
7/2/95	1300	1	0542;1506	1218	in	slight	rippled	70	5-10	SE
7/2/95	1645	1	0542;1506	1218	none	none	md. chop	75	5-10	SE
7/25/95	0800	4	0227;1030	0826;1931	noticable	none	lt. chop	10	10	S
7/25/95	1300	4	0227;1030	0826;1931	in	slight	rippled	25	10	SW
7/25/95	1650	4	0227;1030	0826;1931	noticable	none	lt. chop	15	10-15	S
7/26/95	0755	5	0245;1119	0830;2001	in	slight	lt. chop	25	10	SW
7/26/95	1310	5	0245;1119	0830;2001	noticable	none	lt. chop	25	10	SW
7/26/95	1640	5	0245;1119	0830;2001	noticable	none	lt. chop	10	10	SW
7/27/95	0740	4	0307;1207	0849;2031	none	none	rippled	25	5	NW
7/27/95	1300	4	0307;1207	0849;2031	in	slight	lt. chop	10	10	WSW
7/27/95	1650	4	0307;1207	0849;2031	noticable	none	lt. chop	5	10-15	SW
7/28/95	0750	4	0329;1255	0918;2101	noticable	none	lt. chop	5 (hazy)	10-12	NNW
7/28/95	1300	4	0329;1255	0918;2101	noticable	none	rippled	5	5	WSW
7/28/95	1655	4	0329;1255	0918;2101	east	slight	rippled	10	5	WSW
8/22/95	0745	1	0121;0944	0731;1834	none	none	rippled	0	5	NE
8/22/95	1320	1	0121;0944	0731;1834	none	none	rippled	5	5	SSE
8/23/95	0745	1	0133;1043	0728;1905	none	none	rippled	15	5	NE
8/23/95	1300	1	0133;1043	0728;1905	none	none	lt. chop	45	5-10	ENE
8/23/95	1700	1	0133;1043	0728;1905	none	none	rippled-lt.chop	50	3-5	SE
8/24/95	0728	1	0150;1136	0740;1936	none	none	glassy-rippled	30	5	NNE
8/24/95	1305	1	0150;1136	0740;1936	none	none	glassy-rippled	75	2	SSE
8/24/95	1725	1	0150;1136	0740;1936	none	none	rippled	75	3	S
8/25/95	0725	1	0208;1228	0803;2006	none	none	rippled	10	2	N
8/25/95	1300	1	0208;1228	0803;2006	none	none	lt. chop	40	3	S
8/25/95	1710	1	0208;1228	0803;2006	none	none	lt.chop	60	5	SE
8/26/95	0740	3	0228;1321	0834;2038	none	none	lt. chop	45	3-5	N
10/12/95	0840	1	2233	0941	none	none	rippled	100	5-10	NE
10/12/95	1300	1	2233	0941	none	none	rippled	100	5-10	ENE
10/12/95	1655	1	2233	0941	none	none	rippled	100	5	ENE
10/13/95	0810	1	2317	1037	out	slight	rippled	100	5	NE
10/13/95	1255	1	2317	1037	in	slight	glassy-rippled	100	1-2	NE
10/13/95	1655	1	2317	1037	in	slight	rippled	100	5	NE
10/17/95	0825	3	0242	1345	out	slight	rippled	50	5-10	NNE
10/17/95	1300	3	0242	1345	in	moderate	lt. chop	45	5-10	E
10/17/95	1645	3	0242	1345	in	strong	md. chop	70	15	ESE

Appendix Table 12. Abundance and size of nekton species in trawl tows at Barataria and Caminada Pass beachfront sites (1-5) during 1995.

Site 1
5/19/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Bunodasoma cavernata	0	18	1	19	1.83	NA	NA
Loliguncula brevis	2	0	1	3	0.29	20	31
Penaeus aztecus	210	214	95	519	49.95	51	78
Callinectes sapidus	2	2	6	10	0.96	27	151
Callinectes similis	12	0	0	12	1.15	26	40
Dorosoma petenense	0	1	0	1	0.10	90	90
Anchoa mitchilli	173	137	13	323	31.09	37	65
Arius felis	0	0	21	21	2.02	72	96
Archosargus probatocephalus	1	0	0	1	0.10	270	270
Lagodon rhomboides	0	1	0	1	0.10	75	75
Bairdiella chrysoura	0	1	8	9	0.87	80	140
Cynoscion arenarius	31	12	18	61	5.87	17	70
Leiostomus xanthurus	3	9	5	17	1.64	54	93
Menticirrhus americanus	5	3	2	10	0.96	24	151
Micropogonias undulatus	0	1	1	2	0.19	62	99
Gobionellus oceanicus	1	0	0	1	0.10	125	125
Trichiurus lepturus	16	11	1	28	2.69	100	175
Symphurus plagiusa	0	1	0	1	0.10	69	69
TOTAL	456	411	172	1039	100.00		

Appendix Table 12. Continued.

Site 2
5/19/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	1	0	1	0.08	17	17
Order Isopoda	1	0	1	2	0.17	10	13
Penaeus sp.	0	2	0	2	0.17	NA	NA
Penaeus aztecus	108	17	74	199	16.72	39	76
Superfamily Paguroidea	1	0	0	1	0.08	NA	NA
Callinectes sapidus	1	2	5	8	0.67	18	48
Myrophis punctatus	0	0	1	1	0.08	210	210
Anchoa mitchilli	236	25	177	438	36.81	43	69
Arius felis	0	0	3	3	0.25	83	109
Prionotus tribulus	0	1	2	3	0.25	26	75
Chloroscombrus chrysurus	1	0	0	1	0.08	14	14
Bairdiella chrysoura	9	0	0	9	0.76	91	200
Cynoscion arenarius	133	67	93	293	24.62	22	68
Larimus fasciatus	10	4	27	41	3.45	24	58
Leiostomus xanthurus	19	12	25	56	4.71	51	88
Menticirrhus americanus	0	4	8	12	1.01	18	132
Micropogonias undulatus	26	24	53	103	8.66	53	127
Astroscopus y-graecum	0	0	1	1	0.08	44	44
Trichiurus lepturus	1	3	8	12	1.01	56	186
Symphurus plagiusa	0	0	1	1	0.08	29	29
Sphoeroides parvus	0	1	2	3	0.25	8	25
TOTAL	546	163	481	1190	100.00		

Appendix Table 12. Continued.

Site 1
6/14/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Anchoa hepsetus	23	0	2	25	18.52	38	60
Anchoa mitchilli	106	0	0	106	78.52	43	54
Family Carangidae	0	0	1	1	0.74	28	28
Elagatis bipinnulata	0	0	1	1	0.74	44	44
Archosargus probatocephalus	1	0	0	1	0.74	456	456
Menticirrhus americanus	0	1	0	1	0.74	60	60
TOTAL	130	1	4	135	100.00		

Appendix Table 12. Continued.

Site 2
6/10/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Penaeus aztecus	4	8	17	29	5.26	61	90
Penaeus setiferus	1	0	0	1	0.18	89	89
Callinectes sapidus	0	2	7	9	1.63	21	90
Brevoortia patronus	7	1	3	11	2.00	37	84
Anchoa hepsetus	5	1	4	10	1.81	38	61
Anchoa mitchilli	76	82	302	460	83.48	25	57
Chloroscombrus chrysurus	0	0	1	1	0.18	36	36
Selene vomer	1	1	0	2	0.36	41	46
Cynoscion arenarius	0	0	2	2	0.36	58	59
Micropogonias undulatus	1	0	0	1	0.18	76	76
Stellifer lanceolatus	1	0	3	4	0.73	43	53
Astroscopus y-graecum	0	0	1	1	0.18	36	36
Peprilus alepidotus	6	1	9	16	2.90	24	39
Sphoeroides parvus	0	0	4	4	0.73	28	35
TOTAL	102	96	353	551	100.00		

Appendix Table 12. Continued.

Site 1
7/23/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Chloroscombrus chrysurus	6	0	0	6	46.15	14	26
Selene vomer	4	0	0	4	30.77	31	35
Chaetodipterus faber	0	0	1	1	7.69	16	16
Peprilus alepidotus	2	0	0	2	15.38	33	51
TOTAL	12	0	1	13	100.00		

Appendix Table 12. Continued.

Site 2
7/23/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Isopoda	1	0	0	1	0.42	10	10
Penaeus aztecus	2	0	0	2	0.84	82	87
Superfamily Paguroidea	2	0	0	2	0.84	NA	NA
Anchoa mitchilli	4	1	0	5	2.10	35	42
Arius felis	2	0	0	2	0.84	113	121
Bagre marinus	6	0	0	6	2.52	41	97
Chloroscombrus chrysurus	71	27	38	136	57.14	34	130
Selene vomer	19	0	0	19	7.98	30	45
Cynoscion arenarius	4	0	0	4	1.68	152	190
Leiostomus xanthurus	41	4	0	45	18.91	54	120
Micropogonias undulatus	4	0	0	4	1.68	72	109
Chaetodipterus faber	1	0	0	1	0.42	58	58
Scomberomorus cavalla	1	1	0	2	0.84	133	147
Scomberomorus maculatus	6	1	0	7	2.94	120	177
Peprilus alepidotus	2	0	0	2	0.84	37	50
TOTAL	166	34	38	238	100.00		

Appendix Table 12. Continued.

Site 3
7/23/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Callinectes sapidus	6	0	0	6	40.00	139	185
Menippe adina	0	0	2	2	13.33	10	15
Anchoa mitchilli	0	1	0	1	6.67	44	44
Chloroscombrus chrysurus	0	4	0	4	26.67	50	53
Scomberomorus maculatus	1	1	0	2	13.33	117	226
TOTAL	7	6	2	15	100.00		

Appendix Table 12. Continued.

Site 1
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
All taxa	0	0	0	0	0		
TOTAL	0	0	0	0	0		

Appendix Table 12. Continued.

Site 2
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Callinectes sapidus	0	0	1	1	5.00	31	31
Anchoa hepsetus	0	14	2	16	80.00	62	80
Rachycentron canadum	1	0	0	1	5.00	249	249
Scomberomorus maculatus	2	0	0	2	10.00	171	205
TOTAL	3	14	3	20	100.00		

Appendix Table 12. Continued.

Site 3
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Isopoda	0	0	1	1	25.00	21	21
Rachycentron canadum	0	0	1	1	25.00	262	262
Chloroscombrus chrysurus	0	1	0	1	25.00	198	198
Eucinostomus argenteus	0	0	1	1	25.00	92	92
TOTAL	0	1	3	4	100.00		

Appendix Table 12. Continued.

Site 4
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Anchoa hepsetus	2	0	2	4	57.14	31	36
Arius felis	2	0	0	2	28.57	186	269
Rachycentron canadum	0	1	0	1	14.29	206	206
TOTAL	4	1	2	7	100.00		

Appendix Table 12. Continued.

Site 5
8/20/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
All taxa	0	0	0	0	0		
TOTAL	0	0	0	0	0		

Appendix Table 12. Continued.

Site 1
10/9/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	5	3	8	1.37	14	40
Penaeus aztecus	0	0	1	1	0.17	33	33
Clibanarius vittatus	0	0	1	1	0.17	NA	NA
Dorosoma petenense	42	0	0	42	7.19	51	73
Harengula jaguana	1	0	0	1	0.17	54	54
Anchoa hepsetus	11	0	0	11	1.88	34	90
Anchoa mitchilli	184	30	74	288	49.32	27	53
Chloroscombrus chrysurus	166	53	4	223	38.18	28	57
Archosargus probatocephalus	0	3	1	4	0.68	265	352
Menticirrhus americanus	0	0	2	2	0.34	26	30
Stellifer lanceolatus	0	0	3	3	0.51	20	23
TOTAL	404	91	89	584	100.00		

Appendix Table 12. Continued.

Site 2
10/9/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Bunodasoma cavernata	0	2	0	2	0.08	NA	NA
Loliguncula brevis	6	4	2	12	0.47	15	41
Penaeus aztecus	1	5	17	23	0.90	23	41
Libinia dubia	0	0	1	1	0.04	20	20
Brevoortia patronus	1	0	0	1	0.04	112	112
Dorosoma petenense	1	0	2	3	0.12	65	68
Anchoa hepsetus	10	14	4	28	1.09	33	90
Anchoa mitchilli	513	372	341	1226	47.74	31	59
Chloroscombrus chrysurus	313	721	182	1216	47.35	28	51
Selene setapinnis	0	7	18	25	0.97	29	51
Selene vomer	0	0	2	2	0.08	30	32
Trachinotus carolinus	0	0	1	1	0.04	110	110
Cynoscion arenarius	0	0	6	6	0.23	59	82
Larimus fasciatus	0	7	3	10	0.39	29	37
Leiostomus xanthurus	0	0	1	1	0.04	102	102
Stellifer lanceolatus	0	0	4	4	0.16	26	53
Trichiurus lepturus	1	0	6	7	0.27	157	300
TOTAL	846	1132	590	2568	100.00		

Appendix Table 12. Continued.

Site 3
10/9/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Order Actiniaria	1	55	0	56	4.32	NA	NA
Bunodasoma cavernata	0	0	466	466	35.93	NA	NA
Loliguncula brevis	3	1	1	5	0.39	15	25
Penaeus aztecus	3	0	4	7	0.54	23	38
Callinectes sapidus	0	3	2	5	0.39	11	51
Brevoortia patronus	1	0	0	1	0.08	82	82
Dorosoma petenense	5	0	1	6	0.46	47	63
Anchoa mitchilli	38	75	33	146	11.26	20	55
Arius felis	1	0	0	1	0.08	75	75
Chloroscombrus chrysurus	32	193	201	426	32.85	22	52
Selene setapinnis	0	0	1	1	0.08	33	33
Selene vomer	1	0	3	4	0.31	30	40
Trachinotus falcatus	1	0	0	1	0.08	54	54
Lutjanus griseus	0	0	1	1	0.08	54	54
Eucinostomus argenteus	0	1	1	2	0.15	56	64
Bairdiella chrysoura	0	0	2	2	0.15	95	109
Cynoscion arenarius	0	0	2	2	0.15	79	194
Larimus fasciatus	5	0	3	8	0.62	28	37
Micropogonias undulatus	0	0	1	1	0.08	145	145
Stellifer lanceolatus	3	24	129	156	12.03	18	38
TOTAL	94	352	851	1297	100.00		

Appendix Table 12. Continued.

Site 4
10/9/95

TAXON	REPLICATE 1	2	3	TOTAL	%	LENGTH/WIDTH MIN	MAX
Loliguncula brevis	0	0	14	14	2.17	8	43
Superfamily Paguroidea	0	0	1	1	0.16	NA	NA
Dorosoma petenense	0	0	4	4	0.62	52	59
Harengula jaguana	0	4	0	4	0.62	47	51
Anchoa hepsetus	0	76	3	79	12.27	36	41
Anchoa mitchilli	45	254	13	312	48.45	27	55
Chloroscombrus chrysurus	8	2	218	228	35.40	30	54
Larimus fasciatus	1	0	0	1	0.16	34	34
Menticirrhus americanus	1	0	0	1	0.16	20	20
TOTAL	55	336	253	644	100.00		

Appendix Table 13. Hydrographic measurements at Barataria and Caminada Passes during May-October 1995.

Date	Time	Site	Depth (m)	Temperature (C) Air	Temperature (C) Water Surface	Temperature (C) Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity-(mS/cm) Surface	Conductivity-(mS/cm) Bottom	Visibility (m)
5/5/95	0740	1	2.30	30.0	27.53	27.43	12.10	12.20	20.30	20.40	0.36
5/5/95	1257	1	2.30	33.0	28.81	27.38	13.10	17.10	21.90	27.90	0.55
5/5/95	1745	1	1.70	33.0	30.20	28.36	13.51	14.20	22.50	23.50	0.34
5/11/95	0815	1	2.40	30.0	26.53	26.49	19.00	18.70	30.60	30.40	0.90
5/11/95	1300	1	2.30	33.0	27.15	26.15	19.90	20.80	31.90	33.20	0.16
5/16/95	0832	1	2.30	31.0	28.22	28.18	14.40	15.30	23.90	25.20	0.36
5/16/95	1300	1	2.30	35.5	29.33	27.39	17.20	19.70	28.00	31.70	0.62
5/16/95	1743	1	1.80	34.0	29.66	29.52	16.40	16.60	26.60	27.10	0.54
5/21/95	0820	2	2.10	29.0	24.69	24.47	14.40	14.60	23.80	24.10	0.50
5/21/95	1300	2	2.40	30.0	27.45	25.61	14.80	15.50	24.50	25.50	0.38
5/21/95	1745	2	2.30	30.0	27.27	25.99	15.40	17.90	25.30	29.00	0.66
6/7/95	0800	1	2.40	30.5	27.90	28.00	21.90	20.10	36.20	33.40	0.36
6/7/95	1300	1	2.40	31.5	29.12	28.88	21.32	22.10	36.10	36.90	0.69
6/7/95	1750	1	1.50	34.0	30.38	29.89	21.04	21.66	36.16	36.94	0.86
6/8/95	0743	1	2.20	32.0	28.92	28.88	20.17	20.70	33.90	34.72	0.68
6/8/95	1301	1	2.10	34.0	30.24	29.94	19.00	19.34	32.74	33.10	1.00
6/8/95	1700	1	1.70	40.0	31.14	30.91	18.87	19.04	32.88	33.02	0.50
6/9/95	0926	1	2.10	32.0	29.75	29.83	13.57	13.79	23.80	24.04	0.46
6/9/95	1300	1	1.80	34.5	31.13	30.85	12.42	13.5	22.40	24.06	0.56
6/9/95	1658	1	1.80	33.5	31.16	31.18	11.76	12.12	21.30	21.94	0.50
6/11/95	0830	2	2.40	33.0	30.10	29.79	10.98	13.29	19.58	23.18	0.54
6/11/95	1245	2	2.10	34.0	30.26	29.60	16.32	16.13	28.38	27.70	0.70
6/11/95	1345	2	1.80	36.0	30.62	30.45	16.32	15.80	28.70	27.52	0.49
6/13/95	0730	1	2.10	25.5	27.50	28.20	23.46	26.50	38.19	43.14	1.20
6/13/95	1300	1	2.10	28.5	27.70	28.14	21.84	24.96	35.70	40.77	0.90
6/13/95	1645	1	1.80	34.0	28.84	28.90	23.82	23.72	39.38	39.41	0.98
6/15/95	0918	2	1.80	30.0	27.00	27.22	19.63	19.93	32.02	32.62	0.93
6/15/95	1300	2	1.80	30.0	28.26	28.20	20.54	20.62	34.22	34.07	0.82
6/15/95	1745	2	1.50	35.0	28.83	28.86	20.46	20.36	34.22	34.16	0.72
7/18/95	0750	1	2.00	31.0	29.39	28.75	29.90	26.12	49.34	43.30	2.00
7/18/95	1315	1	2.10	36.0	31.10	29.51	24.32	31.43	41.74	51.68	1.50
7/18/95	1645	1	2.00	39.0	32.18	31.46	22.66	26.96	39.84	45.78	0.70
7/19/95	0755	2	2.10	31.0	29.70	29.30	27.20	30.30	45.45	50.00	1.20
7/19/95	1310	2	2.10	35.5	31.48	29.81	27.12	30.84	46.68	51.30	1.10
7/19/95	1650	2	1.80	35.5	32.29	31.10	23.48	27.49	41.35	46.94	1.10
7/20/95	0750	2	2.20	35.0	29.54	29.80	28.02	30.11	46.59	50.02	1.60
7/21/95	0805	3	2.40	32.0	28.62	28.32	34.60	36.00	56.02	57.64	1.40
7/21/95	1300	3	2.70	35.5	29.59	29.02	35.32	35.35	57.76	57.20	1.30
7/21/95	1655	3	2.70	35.0	30.00	30.12	35.50	35.30	58.56	58.32	1.60
7/22/95	0743	3	3.00	35.0	27.65	27.60	37.79	37.78	59.51	59.34	1.10
7/22/95	1300	3	3.00	34.0	29.10	28.74	36.28	36.85	58.78	59.10	1.80
8/15/95	0810	3	2.10	29.5	30.69	30.14	28.33	28.84	47.68	48.46	0.90
8/15/95	1300	3	1.80	37.5	32.08	32.34	23.58	23.94	41.66	42.28	0.60
8/15/95	1640	3	1.80	33.5	33.04	31.25	23.23	27.08	41.71	46.52	0.60
8/16/95	0740	3	2.10	29.5	31.25	31.20	27.60	29.46	47.42	50.24	1.00
8/16/95	1258	3	2.10	36.5	33.00	32.04	24.00	26.18	43.06	45.90	1.00
8/16/95	1640	3	2.10	38.0	34.52	34.20	23.64	24.18	43.04	43.90	1.00
8/17/95	0742	2	2.10	30.5	31.30	31.06	27.08	27.84	46.60	47.34	1.80
8/17/95	1301	2	2.10	36.5	32.22	30.52	23.65	30.60	41.54	51.40	0.90
8/18/95	0755	4	3.00	29.0	30.58	29.70	33.82	35.30	56.52	57.90	1.80
8/18/95	1300	4	3.00	36.5	32.02	30.62	28.92	30.25	49.40	50.89	1.40
8/18/95	1635	4	3.00	34.5	32.54	31.28	28.40	29.12	49.44	49.58	1.50
8/19/95	0734	5	3.00	29.5	31.00	31.20	29.82	30.14	50.54	51.04	1.20

Appendix Table 13. Continued.

Date	Time	Site	Depth (m)	Temperature (C) Air	Water Surface	Water Bottom	Salinity (ppt) Surface	Salinity (ppt) Bottom	Conductivity (mS/cm) Surface	Conductivity (mS/cm) Bottom	Visibility (m)
8/19/95	1309	5	2.70	35.5	32.49	32.71	25.30	24.05	44.46	42.66	1.80
10/7/95	0925	1	2.10	20.0	22.40	22.40	28.14	28.00	41.10	42.00	0.30
10/7/95	1320	1	2.10	26.3	23.74	23.99	28.40	28.40	42.44	42.48	0.50
10/7/95	1645	1	3.00	26.5	24.26	24.72	30.00	31.78	45.10	48.00	0.30
10/10/95	0840	3	1.70	22.0	24.65	24.58	34.72	34.52	52.00	51.74	0.90
10/10/95	1305	3	1.80	27.5	24.36	25.02	29.80	33.33	45.39	51.02	0.60
10/10/95	1645	3	1.80	26.5	25.50	25.46	33.58	33.50	51.04	51.00	0.70

Appendix Table 14. Sea and meteorological conditions at Barataria and Caminada Passes during May-October 1995.

Date	Time	Site	Tides		Tidal		Sea	% Cloud	Wind	
			High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
5/5/95	0740	1	0952	2036	easterly	strong	rippled	20	5	W
5/5/95	1257	1	0952	2036	none	none	rippled	20	2-3	SE
5/5/95	1745	1	0952	2056	noticable	none	rippled	5	5-10	S
5/11/95	0815	1	0800	1704	noticable	none	lt. chop	100	5-10	S-SW
5/11/95	1300	1	0800	1704	noticable	none	lt. chop	100	10	SSW
5/16/95	0832	1	1040	2132	easterly	strong	lt.-md. chop	50	10-15	SSW
5/16/95	1300	1	1040	2132	easterly	strong	lt. chop	10	10-15	SSW
5/16/95	1743	1	1040	2132	none	none	lt. chop	60	10	S
5/21/95	0820	2	1310	0011	in /westerly	moderate	rippled	10	5	E
5/21/95	1300	2	1310	0011	in	slight	rippled	5	5	NE
5/21/95	1745	2	1310	0011	none	none	lt. chop	0	10-15	E
6/7/95	0800	1	0724	1842	easterly	strong	md. chop	40	15	SW
6/7/95	1300	1	0724	1842	east	moderate	lt. chop	40	5	SW
6/7/95	1750	1	0724	1842	noticable	none	rippled-lt. chop	30	5-10	S
6/8/95	0743	1	0657	1615	east	moderate	md. chop	15	15	NE
6/8/95	1301	1	0657	1615	west	slight	lt. chop	40	5-8	N
6/8/95	1700	1	0657	1615	none	none	lt. chop	40	10-12	S
6/9/95	0926	1	0706	1722	easterly	slight	md. chop	30	5-10	S
6/9/95	1300	1	0706	1722	westerly	strong	lt. chop	10	5-10	S
6/9/95	1658	1	0706	1722	westerly	strong	lt. chop	40	5	SSE
6/11/95	0830	2	0812	1852	detectable	none	md. chop	35	10-15	SW
6/11/95	1245	2	0812	1852	westerly	strong	md. chop	65	15	WSW
6/11/95	1345	2	0812	1852	westerly	moderate	md. chop	50	15-20	W
6/13/95	0730	1	0944	2033	easterly	moderate	md. chop	5	20	ENE
6/13/95	1300	1	0944	2033	easterly	moderate	lt. chop	0	10	NE
6/13/95	1645	1	0944	2033	westerly	moderate	rippled	15	10	N
6/15/95	0918	2	1119	2203	westerly	slight	rippled-lt. chop	0	5	E
6/15/95	1300	2	1119	2203	westerly	moderate	lt. chop-md. chop	10	5-10	E
6/15/95	1745	2	1119	2203	none	none	lt. chop-md. chop	10	10	E
7/18/95	0750	1	0437	1729	east	slight	lt. chop	20	15	N
7/18/95	1315	1	0437	1729	noticable	none	rippled	100	10-12	N
7/18/95	1645	1	0437	1729	noticable	none	md. chop	90	20	W
7/19/95	0755	2	0445	1613	westerly	slight	rippled	5	5	NE
7/19/95	1310	2	0445	1613	noticable	none	rippled	20	5	NE
7/19/95	1650	2	0445	1613	easterly	slight	lt. chop	35	10	W
7/20/95	0750	2	0414	1629	noticable	none	lt. chop	30	5-7	SW
7/21/95	0805	3	0551	1701	easterly	slight	md. chop	25	10-15	W
7/21/95	1300	3	0551	1701	none	none	md. chop	50	15-20	W
7/21/95	1655	3	0551	1701	none	none	h. chop	40	20-25	W
7/22/95	0743	3	0632	1737	noticable	none	lt. chop	55	1-8	SW
7/22/95	1300	3	0632	1737	noticable	none	md. chop	80	10-15	SW
8/15/95	0810	3	0151	1133	n/noticalbe	none	rippled	65	5	N
8/15/95	1300	3	0151	1133	n/noticable	none	lt. chop	65	10-12	E
8/15/95	1640	3	0151	1133	out	slight	rippled	45	5	ESE
8/16/95	0740	3	0224	1328	n/noticable	none	rippled	5	8-10	NE
8/16/95	1258	3	0224	1328	n/noticable	none	rippled	30	4-6	E
8/16/95	1640	3	0224	1328	n/noticable	none	rippled	5	5	S
8/17/95	0742	2	0308	1429	easterly	slight	md. chop	100	15	W
8/17/95	1301	2	0308	1429	easterly	strong	lt. chop	95	10-12	W
8/18/95	0755	4	0358	1521	n/noticable	none	glassy-rippled	100	2-3	E
8/18/95	1300	4	0358	1521	n/noticalbe	none	rippled	0 (hazy)	1-2	S
8/18/95	1635	4	0358	1521	n/noticalbe	none	lt. chop	0 (hazy)	2-3	S
8/19/95	0734	5	0451	1609	easterly	slight	rippled	75 (hazy)	2	NE
8/19/95	1309	5	0451	1609	westerly	strong	lt. chop	35	3	S

Appendix Table 14. Continued.

Date	Time	Site	Tides		Tidal		Sea	% Cloud	Wind	
			High	Low	Flow	Strength	State	Cover	Speed(kts)	Direction
10/7/95	0925	1	2126	0434	westerly	slight	md. chop	0	15-20	NE
10/7/95	1320	1	2126	0434	none	none	lt. chop-md. chop	5 (horizon)	10-15	NE
10/7/95	1645	1	2126	0434	easterly	slight	lt. chop	5 (horizon)	10	NE
10/10/95	0840	3	0813	2246	westerly	slight	lt. chop	35	10-15	NE
10/10/95	1305	3	0813	2246	westerly	moderate	h. chop	10	15-20	ENE
10/10/95	1645	3	0813	2246	westerly	moderate	h. chop	5 (horizon)	15-20	ENE

Appendix Table 15. Sea turtle captures at Sabine Pass and Calcasieu Pass from 1992-1994.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
6/27/92	14 54	1	3.7	*L. kempii*	35.0	34.4	38.5	37.2	5.475	SP92-6-1						wild		
6/27/92	15 16	1	3.7	*L. kempii*	34.2	30.7	37.6	36.4	4.975	SP92-6-2	QQC763	no	no	yes	nt	wild	7/13/92	13 15
7/3/92	12 43	1	4.9	*L. kempii*	25.7	22.5	26.5	24.5	1.8	SP92-7-1	QQC756 QQC757	no	no	no	nt	wild	7/4/92	08 21
7/4/92	11 59	1	4.9	*L. kempii*	35.5	33.0	36.1	35.9	6.0	SP92-7-2	QQC758 QQC759	no	no	yes	nt	wild	7/6/92	14 28
7/4/92	14 16	1	4.9	*L. kempii*	35.5	33.5	36.1	37.2	6.5	SP92-7-3	QQC760 QQC761	no	no	yes	nt	wild	7/6/92	11 31
7/8/92	09 50	1	4.9	*L. kempii*	28.0	26.7	28.8	29.5	2.65	SP92-7-4	QQL196 QQC762	no	no	no	nt	headstart	7/9/92	08 07
7/9/92	11 46	1	4.9	*L. kempii*	63.4	59.1	66.7	68.3	32.7	SP92-7-5	QQC764	no	no	yes	nt	wild	7/13/92	12 14
4/26/93	18 25	1	4.9	*L. kempii*	30.7	29.4	32.0	32.9	3.98	SP93-4-1	QQZ811 QQZ812 QQW363	no	no	no	no scanner	headstart	4/28/93	08 33
4/26/93	18 46	1	3.7	*L. kempii*	31.0	29.0	32.1	34.0	3.68	SP93-4-2	QQZ813 QQZ814	no	no	no	nt	wild	4/28/93	08 47
4/27/93	10 12	1	4.9	*L. kempii*	35.4	34.2	36.8	38.6	6.08	SP93-4-3	QQZ815 QQZ816	no	no	no	nt	wild	4/29/93	06 45
4/27/93	17 30	1	3.7	*L. kempii*	36.2	28.5	37.9	32.5	6.43	SP93-4-4	SSA980 SSA981	no	no	no	1F20372961	wild	8/19/93	14 48
4/28/93	09 03	1	3.7	*L. kempii*	24.1	22.1	25.2	25.8	1.58	SP93-4-5	QQZ819 QQZ820	no	no	no	nt	wild	4/30/93	11 24
4/28/93	12 51	1	3.7	*C. mydas*	28.3	23.3	29.2	25.5	1.93	SP93-4-6	QQZ821 QQZ822	no	no	no	nt	wild	4/30/93	11 24
4/28/93	14 21	1	4.9	*L. kempii*	21.6	19.8	22.6	23.8	1.05	SP93-4-7	QQZ824 QQZ823	no	no	no	nt	wild	4/30/93	11 24
5/13/93	08 51	1	3.7	*L. kempii*	26.7	25.2	28.2	29.4	3.10	SP93-5-1	QQX073 QQZ832	no	no	no	no scanner	headstart	5/15/93	07 38
5/13/93	08 58	3	3.7	*L. kempii*	33.0	31.1	35.0	36.2	5.40	SP93-5-2	QQZ817 QQZ818	yes	yes	no	1F0A5F1761	wild	5/15/93	11 52
5/13/93	15 48	1	3.7	*L. kempii*	29.7	28.1	32.0	33.5	4.65	SP93-5-3	QQW343 QQZ833	no	no	no	no scanner	headstart	5/15/93	07 38
5/13/93	16 43	1	3.7	*L. kempii*	26.9	25.4	29.0	30.0	3.00	SP93-5-4	QQX028 QQZ834	no	no	no	no scanner	headstart	5/15/93	07 37
5/13/93	18 04	1	3.7	*L. kempii*	29.0	27.4	30.9	32.7	3.70	SP93-5-5	QQZ835 QQZ836	no	no	no	1F0A5E0079	wild	5/15/93	07 37
5/13/93	18 15	3	3.7	*L. kempii*	33.3	31.3	36.0	36.6	5.50	SP93-5-6	QQZ825 QQZ831	no	no	no	1F0A306146	wild	6/20/93	11 47
5/14/93	13 21	3	3.7	*L. kempii*	35.1	32.3	36.5	36.7	6.20	SP93-5-7	QQZ839 QQZ840	yes	yes	no	1F0EG24928	wild	5/16/93	07 54
5/14/93	16 40	3	4.9	*C. caretta*	36.9	30.2	39.7	36.3	6.90	SP93-5-8	QQZ837 QQZ838	yes	yes	no	1F0A5B0E6E	wild	5/16/93	11 55
5/16/93	10 31	5	3.7	*L. kempii*	24.3	22.4	26.5	27.2	2.40	SP93-5-9	QQZ841 QQZ842	no	no	no	1F0F4D2164	wild	5/17/93	12 02
5/16/93	17 18	4	3.7	*L. kempii*	23.4	21.0	24.0	24.2	1.90	SP93-5-10	QQZ843 QQZ844	no	no	no	1F0F325848	wild	5/18/93	07 50
5/19/93	09 52	1	4.9	*C. caretta*	53.7	47.5	57.0	53.7	22.0	SP93-5-12	QQZ847 QQZ848	no	no	yes	1F0E64600F	wild	5/22/93	19 00
5/19/93	09 48	3	3.7	*L. kempii*	33.2	30.3	35.3	37.0	5.80	SP93-5-11	QQZ845 QQZ846	yes	yes	no	1F0A59106E	wild	5/21/93	17 33

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
5/19/93	10 18	1	7.3	*L. kempii*	26.2	24.9	27.9	30.9	5.00	SP93-5-13	QQW451 QQZ849	no	no	no	no scanner	headstart	5/20/93	09 32
5/19/93	10 50	1	4.9	*L. kempii*	33.6	30.4	35.8	35.0	5.55	SP93-5-14	QQZ850 QQZ851	yes	yes	no	1F7A1A5447	wild	5/20/93	15 17
5/19/93	12 10	3	3.7	*L. kempii*	31.3	29.5	32.6	33.3	4.25	SP93-5-15	QQZ852 QQZ853	no	no	no	1F0F051835	wild	5/20/93	09 39
5/19/93	13 32	3	3.7	*C. mydas*	28.4	22.5	29.9	25.2	3.23	SP93-5-16	QQZ854 QQZ855	no	no	no	1F0A366041	wild	5/20/93	09 40
5/19/93	15 07	1	4.9	*L. kempii*	23.7	21.4	24.6	25.5	2.24	SP93-5-17	QQZ856 QQZ857	no	no	no	1F0A497E10	wild	5/20/93	09 34
5/19/93	15 35	3	3.7	*L. kempii*	31.6	30.4	33.2	35.3	4.70	SP93-5-18	QQZ858 QQZ859	no	no	no	1F0A59314D	wild	5/20/93	09 40
5/19/93	16 14	1	7.3	*L. kempii*	24.7	22.2	26.2	26.6	2.50	SP93-5-19	QQZ860 QQZ861	no	no	no	1F0A2F0127	wild	5/20/93	09 35
5/19/93	16 14	3	3.7	*L. kempii*	28.8	27.0	30.1	31.0	3.53	SP93-5-20	QQZ862 QQZ863	no	no	no	1F0A686E01	wild	5/20/93	09 41
5/20/93	12 01	3	3.7	*L. kempii*	26.3	25.0	28.3	29.2	3.0	SP93-5-21	QQW470 QQZ876	no	no	no	no scanner	headstart	5/21/93	13 03
5/20/93	14 02	3	3.7	*L. kempii*	24.7	22.5	26.7	27.9	2.35	SP93-5-22	QQZ878 QQZ879	no	no	no	1F0E7C5601	wild	5/21/93	13 03
5/20/93	14 15	3	3.7	*L. kempii*	23.5	21.5	25.5	26.3	2.15	SP93-5-23	QQZ880 QQZ881	no	no	no	1F0A647A79	wild	5/21/93	13 03
5/20/93	18 07	3	3.7	*L. kempii*	31.8	28.4	33.5	34.5	4.70	SP93-5-24	QQZ866 QQZ867	no	no	no	1F0E7E183D	wild	5/21/93	13 03
5/20/93	18 13	3	3.7	*L. kempii*	30.5	29.4	31.8	34.5	4.19	SP93-5-25	QQZ864 QQZ865	no	no	no	1F0E570C70	wild	5/21/93	13 02
6/13/93	16 33	1	4.9	*L. kempii*	24.5	21.8	28.7	28.9	2.22	SP93-6-3	QQZ874 QQZ875	no	no	no	1F0E757A64	wild	6/17/93	10 37
6/13/93	08 04	1	4.9	*L. kempii*	35.4	32.8	37.2	37.8	5.85	SP93-6-1	QQZ870 QQZ871	no	no	no	1F0A5E0A6F	wild	6/17/93	10 39
6/13/93	10 48	3	4.9	*L. kempii*	36.4	33.9	37.7	39.0	6.24	SP93-6-2	QQZ872 QQZ873	yes	yes	no	1F0E571765	wild	6/18/93	07 48
6/15/93	09 47	3	3.7	*L. kempii*	36.0	33.8	37.1	38.5	6.94	SP93-6-4	SSA801 SSA802	no	no	yes	1F0B793E1F	wild	6/17/93	10 48
6/15/93	15 43	3	3.7	*L. kempii*	30.8	28.8	32.2	32.3	4.64	SP93-6-5	QQX265 QQZ877	no	no	no	7F7D3D6340	headstart	6/17/93	11 17
6/18/93	09 48	3	3.7	*L. kempii*	26.5	24.6	28.0	28.5	3.02	SP93-6-6	SSA803 SSA804	no	no	no	1F0A586C13	wild	6/21/93	11 47
7/7/93	10 59	1	4.9	*L. kempii*	33.6	32.2	34.5	36.3	5.5	SP93-7-1	SSA805 SSA806	yes	yes	no	1F0F35405D	wild	7/9/92	11 15
7/7/93	12 00	1	4.9	*L. kempii*	46.8	45.1	48.4	49.7	13.05	SP93-7-2	SSA807 SSA808	yes	yes	yes	1F0E771B41	wild	8/18/93	11 14
7/7/93	14 03	1	4.9	*L. kempii*	25.5	23.1	26.5	27.3	2.4	SP93-7-3	SSA809 SSA810	no	no	no	1F0E650965	wild	7/9/93	07 54
7/7/93	16 22	1	4.9	*L. kempii*	36.4	34.5	37.6	39.3	6.85	SP93-7-4	SSA811 SSA812	no	no	yes	1F0F37415A	wild	7/8/93	18 58
7/7/93	16 44	1	4.9	*L. kempii*	42.1	41.0	43.8	45.7	10.98	SP93-7-5	SSA835 SSA814	no	no	yes	1F0B7B0358	wild	7/9/93	11 01
7/7/93	18 05	1	4.9	*L. kempii*	35.3	33.5	36.3	37.6	6.31	SP93-7-6	SSA815 SSA836	no	no	yes	1F0A460F02	wild	7/8/93	18 57
7/7/93	18 08	1	4.9	*L. kempii*	26.7	24.6	27.4	28.0	2.75	SP93-7-7	SSA817 SSA818	yes	yes	no	1F0F372873	wild	7/9/93	06 52

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
8/10/93	12 43	1	4.9	*L. kempii*	37.5	35.2	39.3	40.1	7.70	SP93-8-2	SSA874 SSA875	no	no	yes	1F0B667C74	wild	8/14/93	10 58
8/10/93	15 23	3	3.7	*L. kempii*	25.6	23.3	27.1	27.3	2.72	SP93-8-3	SSA901 SSA902	no	no	no	1F0B6B5417	wild	8/14/93	12 05
8/10/93	15 59	1	4.9	*L. kempii*	34.1	30.6	35.1	35.5	5.79	SP93-8-4	SSA903 QQW422	no	no	yes	7F7D2C690E	headstart	8/14/93	10 58
8/10/93	17 46	3	3.7	*L. kempii*	32.5	30.7	33.7	34.4	4.98	SP93-8-5	SSA925 QQX804	yes	yes	no	7F7D3D5F20	headstart	8/13/93	16 50
8/10/93	17 03	1	4.9	*L. kempii*	41.0	39.5	42.5	43.2	9.39	SP93-4-3	QQZ815 QQZ816	no	no	yes	1F0B79500D	recapture	8/14/93	10 58
8/12/93	10 24	4	4.9	*L. kempii*	42.1	41.1	43.5	47.5	10.86	SP93-8-6	SSA904 SSA905	yes	yes	no	1F0F092821	wild	8/14/93	11 08
8/13/93	13 33	4	4.9	*L. kempii*	28.8	26.5	29.7	30.2	3.56	SP93-8-7	SSA906 SSA907	no	no	no	1F0F087753	wild	8/17/93	12 34
8/16/93	09 15	1	4.9	*L. kempii*	36.4	35.3	37.8	39.6	7.08	SP93-8-8	SSA908 SSA909	no	no	no	1F0B78312D	wild	8/18/93	11 20
8/16/93	10 10	1	4.9	*L. kempii*	27.6	25.4			2.66	SP93-8-9	na	no	no	no	nt	wild		
8/16/93	10 46	1	4.9	*L. kempii*	39.0	35.7	40.3	41.1	7.83	SP93-8-10	SSA910 SSA911	no	no	yes	1F0F454C41	wild	8/18/93	11 13
8/16/93	11 47	1	4.9	*L. kempii*	36.9	33.4	38.2	38.5	6.58	SP93-8-11	SSA912 SSA913	no	no	no	1F0A2E6742	wild	8/18/93	11 19
8/16/93	13 12	1	4.9	*L. kempii*	37.9	34.4	39.2	39.0	7.58	SP93-8-12	SSA914 SSA915	no	no	no	1F0B71461F	wild	8/18/93	11 17
8/16/93	13 25	1	4.9	*L. kempii*	42.5	40.7	44.3	46.0	10.28	SP93-8-13	SSA916 SSA917	yes	yes	no	1F1F40087A	wild	8/19/93	14 49
8/16/93	13 38	1	4.9	*L. kempii*	41.6	41.2	42.6	46.7	10.51	SP93-8-14	SSA918 SSA919	yes	yes	no	1F0B772F30	wild	8/18/93	14 59
8/16/93	14 30	1	4.9	*L. kempii*	26.5	24.0	27.1	28.6	2.74	SP93-8-15	SSA920 SSA921	no	no	no	1F0E6D7175	wild	8/18/93	11 19
8/16/93	14 34	1	4.9	*L. kempii*	25.9	23.7	26.6	26.9	2.59	SP93-8-16	SSA922 SSA923	no	no	no	1F0F3C1A7C	wild	8/18/93	11 20
8/16/93	14 49	1	4.9	*L. kempii*	31.0	30.6	31.8	35.0	4.24	SP93-8-17	SSA979 QQX641	no	no	no	7F7D3D5907	headstart	8/18/93	11 20
8/16/93	10 14	1	4.9	*L. kempii*	48.5	46.8			14.27	SP93-7-2	SSA807 SSA808	no	no	yes	1F0E771B41	recapture	8/18/93	11 14
8/16/93	09 49	1	4.9	*L. kempii*	32.0	31.1	33.1	35.0	4.96	SP93-7-22	SSA851 QQW781	no	no	no	7F7E687416	recapture	8/18/93	11 20
8/17/93	09 48	1	4.9	*L. kempii*	40.4	38.0	41.7	43.1	8.96	SP93-8-18	SSA976 SSA977	no	no	yes	1F0B724E16	wild	8/19/93	14 48
9/11/93	08 02	3	3.7	*L. kempii*	30.8	28.2	32.2	32.6	4.09	SP93-9-1	SSA983 SSA982	no	no	no	1F20274456	wild	9/16/93	09 29
9/11/93	08 16	3	3.7	*L. kempii*	29.7	27.1	30.8	31.5	3.68	SP93-9-2	SSA985 SSA984	no	no	no	1F203C7510	wild	9/16/93	09 23
9/11/93	16 52	3	3.7	*L. kempii*	33.9	32.6	34.7	36.5	5.11	SP93-9-3	SSA877 SSA876	no	no	no	1F1F5C677F	wild	9/16/93	09 25
9/15/93	08 22	1	4.9	*L. kempii*	29.2	26.4	29.8	30.2	3.47	SP93-9-4	SSA878 SSA879	no	no	no	1F1E2F2A6A	wild	9/18/93	10 42
9/15/93	12 36	1	4.9	*L. kempii*	24.0	21.2	24.5	25.1	2.22	SP93-7-24	SSA854 SSA855	no	no	no	1F0A66660D	recapture	9/18/93	10 43
9/15/93	12 49	1	4.9	*L. kempii*	29.3	26.4	30.4	31.0	3.57	SP93-9-5	SSA881 SSA880	no	no	no	1F1E321D74	wild	9/18/93	10 42

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
7/7/93	18 36	1	4.9	*L. kempii*	35.3	33.7	36.3	37.4	6.24	SP93-7-8	SSA819 SSA820	no	no	yes	1F0A5D1169	wild	7/9/93	07 52
7/7/93	19 11	1	4.9	*L. kempii*	25.9	24.4	26.9	28.1	2.97	SP93-7-9	SSA821 SSA838	yes	yes	no	1F0E6B194F	wild	7/10/93	10 21
7/8/93	07 50	1	4.9	*L. kempii*	37.3	35.9	38.9	40.7	8.01	SP93-7-10	SSA823 SSA824	yes	yes	no	1F0B7A2933	wild	7/9/93	15 08
7/8/93	08 32	1	4.9	*L. kempii*	33.5	33.5	34.5	37.6	5.80	SP93-7-11	SSA825 SSA826	yes	yes	no	1F0A682946	wild	7/11/93	10 15
7/8/93	10 09	1	4.9	*L. kempii*	59.1	57.5	61.5	64.7	30.5	SP93-7-12	SSA827 SSA828	yes	yes	yes	1F0A660D64	wild	7/10/93	06 44
7/8/93	11 08	1	4.9	*L. kempii*	36.1	31.7	37.5	35.7	5.85	SP93-7-13	SSA829 SSA830	no	no	no	1F0B7C5B7F	wild	7/10/93	08 45
7/8/93	13 34	1	4.9	*L. kempii*	37.4	34.7	38.9	39.9	7.6	SP93-7-14	SSA831 SSA832	no	no	yes	1F0A2E5554	wild	7/9/93	15 03
7/8/93	15 26	1	4.9	*L. kempii*	36.0	33.7	37.2	37.7	6.68	SP93-7-15	SSA833 SSA834	no	no	yes	1F0A311412	wild	7/9/93	16 25
7/8/93	16 59	1	4.9	*L. kempii*	33.2	31.6	34.5	35.7	4.77	SP93-7-16	SSA847 SSA848	no	no	no	1F0F3E484C	wild	7/10/93	08 46
7/8/93	18 14	1	4.9	*L. kempii*	37.3	34.4	39.9	39.6	7.16	SP93-7-17	SSA839 SSA840	no	no	no	1F1E2E286D	wild	9/11/93	16 18
7/8/93	18 16	1	4.9	*L. kempii*	35.7	32.1	36.9	37.9	6.0	SP93-7-18	SSA841 SSA842	no	no	no	1F0A676010	wild	7/11/93	10 14
7/9/93	07 02	5	3.7	*L. kempii*	31.8	30.8	33.3	35.9	4.93	SP93-7-19	SSA843 SSA844	yes	yes	no	1F0A4A5B32	wild	7/11/93	17 33
7/9/93	16 01	4	3.7	*L. kempii*	33.2	30.8	33.9	35.3	5.10	SP93-7-20	SSA845 SSA846	no	no	no	1F0B704F17	wild	7/11/93	17 31
7/10/93	09 52	3	4.9	*L. kempii*	22.6	20.7	23.5	24.1	1.84	SP93-7-21	SSA849 SSA850	no	no	no	1F0F0A7256	wild	7/13/93	07 36
7/10/93	11 41	3	4.9	*L. kempii*	30.5	29.4	31.6	33.7	4.58	SP93-7-22	SSA851 QQW781	no	no	no	7F7E687416	headstart	8/18/93	11 20
7/10/93	11 41	3	4.9	*L. kempii*	27.7	25.2	28.7	29.4	3.15	SP93-7-23	SSA852 SSA853	no	no	no	1F0E5E0C69	wild	7/13/93	07 37
7/11/93	13 27	1	4.9	*L. kempii*	22.2	19.6	22.9	22.9	1.85	SP93-7-24	SSA854 SSA855	no	no	no	1F0A66660D	wild	7/16/93	07 58
7/11/93	16 15	1	4.9	*L. kempii*	31.8	30.6	32.6	34.0	4.40	SP93-7-25	SSA857 QQW335	no	no	no	7F7D3D5134	headstart	7/16/93	08 00
7/11/93	16 45	1	4.9	*L. kempii*	45.6	45.1	47.2	50.9	13.4	SP93-7-26	SSA858 SSA859	no	no	no	1F0B724C18	wild	7/18/93	08 59
7/14/93	12 14	4	4.9	*L. kempii*	59.5	57.6	62.3	69.4	28.82	SP93-7-27	SSA860 SSA861	yes	yes	yes	1F0B737A69	wild	7/16/93	16 43
7/14/93	14 00	4	4.9	*L. kempii*	25.2	22.5	26.5	25.9	2.59	SP93-7-28	SSA862 SSA863	no	no	no	1F0A2E0D1C	wild	7/18/93	08 53
7/16/93	13 59	6	4.9	*L. kempii*	34.8	32.7	36.6	36.9	6.02	SP93-7-29	SSA864 SSA865	no	no	no	1F0E670963	wild	7/18/93	09 06
7/17/93	14 40	5	4.9	*C. caretta*	53.4	44.2	56.7	53.5	22.63	SP93-7-30	SSA866 SSA867	no	no	no	1F0E70677C	wild	7/19/93	09 31
7/18/93	11 21	3	3.7	*L. kempii*	27.2	23.9	28.6	28.5	2.95	SP93-7-31	SSA868 SSA869	no	no	no	1F0A2D7F28	wild	7/19/93	09 49
7/18/93	11 56	3	3.7	*L. kempii*	27.9	26.5	29.0	30.7	3.21	SP93-7-32	SSA870 SSA871	no	no	no	1F0E5A4633	wild	7/19/93	09 50
8/10/93	12 17	1	4.9	*L. kempii*	38.6	36.7	40.2	41.5	8.06	SP93-8-1	SSA872 SSA873	no	no	yes	1F0A456B27	wild	8/14/93	10 58

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
10/15/93	10 20	1	4.9	*L. kempii*	30.8	29.4	31.9	33.8	4.30	SP93-10-1	SSA884 SSA885	no	no	no	1F1F2E563E	wild	10/18/93	10 02
3/25/94	10 24	1	16	*L. kempii*	58.4	56.4	61.8	64.5	25.36	SP94-3-1	SSA891 SSA890				1F1F662735	wild	5/10/94	07 59
4/29/94	12 48	1	16	*L. kempii*	56.0	52.9	58.5	59.0	21.78	SP94-4-1	SSA892 SSA893				1F1E4D4A2C	wild	5/1/94	11 32
4/29/94	13 49	1	16	*L. kempii*	39.7	39.0	41.5	44.5	10.04	SP94-4-2	SSA894 SSA895				1F1F607072	wild	5/1/94	11 33
4/29/94	14 05	1	16	*L. kempii*	21.2	20.0	22.0	24.4	1.69	SP94-4-3	SSA896 SSA897				1F20420E71	wild	5/1/94	11 33
5/10/94	11 46	1	16	*L. kempii*	31.7	29.7	33.0	33.6	4.87	SP94-5-1	SSA898 SSA899	164.101	32 kHz		1F1D1B0A1F	wild	5/13/94	09 41
5/13/94	14 24	1	16	*L. kempii*	31.3	28.9	33.2	33.1	5.23	SP94-5-2	SSA988 SSA989	165.054	40 kHz		1F20266437	wild	5/15/94	13 47
5/13/94	14 48	1	16	*L. kempii*	47.8	47.9	50.3	52.6	17.89	SP94-5-3	QQL449 SSA900	164.252	55 kHz		7F7D2D3322	headstart	5/15/94	08 32
6/3/94	10 55	1	16	*L. kempii*	21.6	19.9	22.1	22.9	1.37	SP94-6-1	SSA927 SSA928				1F2043314D	wild	6/5/94	10 57
6/3/94	14 05	1	16	*L. kempii*	54.9	54.1	57.7	62.3	23.42	SP94-6-2	SSA929 SSA930				1F2019495F	wild	6/5/94	10 58
6/3/94	14 35	1	16	*L. kempii*	32.7	29.9	33.5	33.9	5.28	SP94-6-3	SSA931 SSA932	165.450	70		1F2053610D	wild	6/5/94	10 30
6/3/94	15 08	1	16	*L. kempii*	35.2	33.8	36.9	39.2	7.01	SP94-6-4	SSA933 SSA934	164.702	60		1F20253468	wild	6/5/94	13 09
6/4/94	08 43	3	12	*C. mydas*	70.9	59.6	74.6	72.6	>50	SP94-6-5	SSK001 SSA936				1F7833377F	wild	6/7/94	07 41
6/4/94	09 40	1	16	*L. kempii*	30.4	28.7	31.2	32.2	4.34	SP94-6-6	SSA937 SSA938				1F77713A3F	wild	6/6/94	08 35
6/4/94	12 19	3	12	*L. kempii*	25.4	22.4	36.1	25.7	2.36	SP94-6-7	SSA939 SSA940				1F7835575D	wild	6/6/94	08 35
6/4/94	14 15	1	16	*L. kempii*	33.1	30.6	34.6	35.1	5.14	SP94-6-8	SSA941 SSA942				1F783C6C41	wild	6/7/94	18 54
6/4/94	14 45	1	16	*L. kempii*	38.0	36.9	39.8	41.6	8.35	SP94-6-9	SSA943 QQX732				7F7F787872	headstart	6/7/94	15 24
6/6/94	14 18	3	12	*L. kempii*	23.1	20.9	24.2	24.0	1.76	SP94-6-12	SSA949 SSA948				1F78295769	wild	6/7/94	18 56
6/6/94	15 02	1	16	*L. kempii*	54.4	53.0	57.0	58.5	22.32	SP94-6-13	SSA991 SSA990				1F7B524351	wild	6/7/94	18 54
6/6/94	16 04	3	12	*L. kempii*	23.5	21.5	24.5	25.1	2.09	SP94-6-16	SSA997 SSA996				1F7A78501F	wild	6/7/94	18 56
6/6/94	16 58	1	16	*L. kempii*	57.9	58.7	59.5	64.4	32.23	SP94-6-18	SSK004 QQA650				1F7A323B7A	headstart	6/7/94	18 53
6/6/94	09 41	1	16	*L. kempii*	39.8	37.9	41.5	42.6	9.01	SP94-6-10	SSA945 SSA944				1F7B5B7912	wild	6/8/94	12 10
6/6/94	10 47	1	16	*L. kempii*	54.5	54.6	63.0	66.5	23.92	SP94-6-11	SSA947 SSA946				1F7A7E1F4A	wild	6/8/94	12 10
6/6/94	15 42	3	12	*L. kempii*	33.8	32.1	35.5	36.2	6.04	SP94-6-14	SSA993 SSA992				1F7A7E2445	wild	6/8/94	12 15
6/6/94	15 46	3	12	*L. kempii*	33.6	31.8	34.5	35.6	5.42	SP94-6-15	SSA995 SSA994				1F7B5C0E7C	wild	6/8/94	12 15
6/6/94	16 36	3	12	*L. kempii*	23.9	21.7	25.5	25.5	2.01	SP94-6-17	SSK003 SSK002				1F7B02687C	wild	6/8/94	12 15

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
6/6/94	17 25	1	16	*L. kempii*	45.7	44.7	48.0	50.0	15.45	SP93-4-3	QQZ815 QQZ816	164.090	80		1F0B79500D	recapture	6/8/94	10 24
6/7/94	13 13	1	16	*L. kempii*	57.2	56.2			25.40	SP94-6-21						wild		
6/7/94	09 13	5	12	*C. caretta*	55.5	48.3	60.0	57.3	26.13	SP94-6-19	SSK005 SSK006				1F7A766110	wild	6/8/94	12 29
6/7/94	09 53	1	16	*L. kempii*	36.7	35.6	37.4	39.7	7.27	SP94-6-20	SSK007 QQX835				7F7D3D6224	headstart	6/8/94	12 10
6/7/94	13 30	1	16	*L. kempii*	34.9	31.8	36.9	36.2	6.28	SP94-6-22	SSK011 SSK010				1F7A7B4428	wild	6/8/94	12 10
6/7/94	15 07	1	16	*L. kempii*	53.8	54.8	56.0	60.8	23.00	SP94-6-23	SSK013 SSK012				1F7A205770	wild	6/8/94	12 10
6/7/94	15 23	1	16	*L. kempii*	25.3	23.2	26.2	27.3	1.50	SP94-6-24	SSK015 SSK014				1F7B06253B	wild	6/8/94	12 10
7/12/94	11 21	3	12	*L. kempii*	26.5	23.7	27.5	27.0	2.55	SP94-7-1	SSK038 SSK039				1F780E4219	wild	7/16/94	07 41
7/12/94	13 30	4	16	*C. caretta*	64.4	55.0	68.5	66.5	44.25	SP94-7-2	SSK040 SSK041				1F7B172926	wild	7/14/94	08 37
7/12/94	16 13	4	16	*C. caretta*	35.6	28.6	37.5	33.2	5.83	SP94-7-3	SSA959 PPC404				1F7A2E3C7D	headstart	7/14/94	08 38
8/17/94	10 52	4	16	*L. kempii*	44.3	41.5	46.1	47.5	11.34	SP94-8-1	SSK066 SSK067				1F7843683E	wild	8/20/94	10 27
8/17/94	12 48	4	16	*L. kempii*	58.4	58.3	61.8	65.0	30.09	SP94-8-2	SSK068 SSK069				1F78345263	wild	8/20/94	10 27
8/17/94	12 51	4	16'	*L. kempii*	38.7	34.2	39.8	39.1	7.39	SP94-8-3	SSK070 SSK071				1F78240045	wild	8/20/94	10 28
8/17/94	12 55	4	16'	*L. kempii*	40.7	39.0	42.8	43.9	8.82	SP94-8-4	SSK076 SSK077				1F7A2E1623	wild	8/20/94	10 29
8/17/94	13 05	4	16	*L. kempii*	26.6	24.4	28.3	29.5	2.53	SP94-8-5	SSK078 SSK079				1F783C230A	wild	8/20/94	10 30
8/18/94	11 07	4	16	*L. kempii*	25.9	23.7	26.6	28.7	2.73	SP94-8-6						wild		
8/18/94	11 42	4	16	*L. kempii*	39.1	36.2	40.2	40.6	7.84	SP94-8-7	SSK085 SSK086				1F77723246	wild	8/20/94	10 30
8/18/94	12 41	5	12	*L. kempii*	29.1	26.9	30.6	31.2	3.56	SP94-8-8	SSK087 SSK088				1F78261330	wild	8/20/94	10 34
8/18/94	14 36	5	12	*L. kempii*	27.4	25.6	28.2	29.9	3.08	SP94-8-9	SSK089 SSK090				1F78346451	wild	8/20/94	10 34
8/18/94	16 10	4	16	*L. kempii*	31.3	28.4	33.1	32.6	4.33	SP94-8-10	SSK091 SSK092				1F7B663050	wild	8/20/94	10 31
8/18/94	16 50	5	12	*L. kempii*	28.2	25.9	29.3	29.1	2.90	SP94-8-11	SSK 093 SSK 094				1F78026502	wild	8/20/94	10 34
9/20/94	16 39	3	12	*L. kempii*	32.6	30.7	33.7	33.0	4.87	SP94-9-1	QQZ891 QQZ892				1F78080160	wild	9/22/94	08 37
9/20/94	16 44	3	12	*L. kempii*	40.0	37.7	41.3	42.3	8.85	SP94-9-2	SSK083 SSC584				7F7D321B2C	headstart	9/22/94	08 37
9/20/94	16 51	3	12	*L. kempii*	31.9	30.8	33.0	35.1	4.75	SP94-9-3	QQZ893 QQZ894				1F7B003263	wild	9/22/94	08 39
9/20/94	17 04	3	12	*L. kempii*	33.2	32.7	34.1	35.8	5.57	SP94-9-4	SSK095 SSD880				1F7B6F6F6F	headstart	9/22/94	08 40
10/26/94	11 02	3	12	*L. kempii*	29.8	27.4	30.9	32.5	3.98	SP94-10-1	QQZ895 QQZ896				1F78250F35	wild		

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
5/22/93	08 48	3	4.9	*L. kempii*	39.6	38.9	41.1	42.2	10.05	C93-5-1	QQL137 QQZ882 QQZ883	no	no	yes	no scanner	headstart	5/25/93	12 26
6/22/93	11 04	3	4.9	*L. kempii*	58.7	56.2	61.4	62.3	25.5	C93-6-1	QQZ884 QQZ885	no	no	yes	1F0A614036	wild	6/26/93	13 01
6/24/93	10 20	4	3.7	*L. kempii*	23.9	21.7	25.3	25.3	2.10	C93-6-2	QQZ886 QQZ887	no	no	no	1F0A4A4A43	wild	6/26/93	12 57
7/20/93	16 49	3	4.9	*L. kempii*	36.6	34.5	39.4	39.7	7.97	C93-7-1	QQZ889 QQZ890	no	no	yes	none	wild	7/24/93	15 00
9/19/93	10 46	3	4.9	*L. kempii*	36.7	34.5	38.0	39.0	5.78	C93-9-1	SSA883 SSA882	no	no	no	1F1E4A7B7E	wild	9/22/93	11 49
7/2/94	11 56	1	16	*L. kempii*	46.7	43.9	48.6	49.0	15.00	C94-7-1	SSK024 SSK025				1F7829526E	wild	7/4/94	17 36
7/2/94	12 09	3	12	*L. kempii*	38.4	36.2	40.0	39.9	7.72	C94-7-2	SSK022 SSK023				1F7B5C0406	wild	7/4/94	17 42
7/2/94	16 05	3		*L. kempii*	24.7	22.0	25.8	25.2	2.21	C94-7-3	SSK016 SSK017				1F782C3805	stranding	7/4/94	13 43
7/2/94	16 05	3		*L. kempii*	34.1	30.7	34.5	36.3	5.28	C94-7-4	SSK018 SSK019				1F7B67106F	stranding		
7/3/94	09 04	3	16	*L. kempii*	39.2	36.7	41.0	40.2	9.51	C94-7-5	SSK020 SSK021				1F7B64443E	wild	7/4/94	17 36
7/3/94	13 26	1	16	*L. kempii*	53.1	54.7	55.9	62.8	21.34	C94-7-6	SSJ056			7296	1F0AGA214C	wild	10/15/94	09 31
7/3/94	13 40	1	16	*L. kempii*	39.5	35.2	41.1	39.1	8.50	C94-7-7	SSA951 SSA952				1F7A77422E	wild	7/4/94	17 35
7/3/94	15 42	3	12	*L. kempii*	23.6	20.5	24.3	24.5	1.91	C94-7-8	SSA953 SSA954				1F7B091449	wild	7/4/94	17 41
7/3/94	18 14	1	16	*L. kempii*	36.4	34.4	37.8	38.2	7.18	C94-7-9	SSA955 SSA956				1F780F1545	wild	7/4/94	17 36
7/4/94	09 22	3	12	*L. kempii*	30.1	29.0	31.3	32.8	4.02	C94-7-10	SSA957 SSD816	164.9127	45		1F0F304C56	headstart	7/5/94	19 20
7/4/94	10 23	3	12	*L. kempii*	26.4	24.5	27.4	28.0	2.86	C94-7-11	SSA958 no left flipper				1F7A1C606B	wild	7/6/94	12 33
7/4/94	10 31	3	12	*L. kempii*	48.7	46.9	51.0	53.1	16.54	C94-7-12	SSA960 SSA961			7290	1F777A0769	wild	7/6/94	12 41
7/4/94	11 39	3	12	*L. kempii*	32.0	30.0	33.0	33.0	4.60	C94-7-13	SSA975 SSD402				1F0E7A2D2C	headstart	7/6/94	12 33
7/4/94	11 55	3	12	*L. kempii*	27.6	23.9	28.9	28.1	3.07	C94-7-14	SSA962 SSA963				1F7B16410F	wild	7/6/94	12 32
7/4/94	11 55	3	12	*L. kempii*	39.5	40.3	41.2	44.2	9.46	C94-7-15	QQW143 SSK 031			7291	7F7D4D765A	headstart	7/6/94	12 42
7/4/94	12 21	4	16	*L. kempii*	25.7	23.2	26.9	27.1	2.61	C94-7-16	SSA964 SSA965				1F7A2E1227	wild	7/6/94	12 26
7/4/94	12 56	3	12	*L. kempii*	28.3	25.6	29.1	29.7	3.37	C94-7-17	SSA966 SSA967				1F7A2C3407	wild	7/6/94	12 34
7/4/94	12 43	4	16	*L. kempii*	34.4	31.8	35.2	35.7	5.91	C94-7-18	SSA968 SSA969	165.2517	50		1F79030D58	wild	7/7/94	11 43
7/4/94	13 54	3	12	*L. kempii*	27.9	25.5	29.0	29.5	3.19	C94-7-19	SSA970 SSA971	164.741	32		1F7A336F45	wild	7/6/94	12 42
7/4/94	14 27	3	12	*L. kempii*	29.0	25.6	29.2	30.2	3.25	C94-7-20	SSA972 SSA973	164.170	80		1F77771D56	wild	7/5/94	18 57
7/4/94	14 42	3	12	*C. mydas*	28.3	23.9	28.9	26.7	3.07	C94-7-21	SSK026 SSK027				1F7803776F	wild	7/6/94	12 33

Appendix Table 15. Continued.

Date	Capture Time	Site	Net Size	Species	SCL	SCW	CCL	CCW	WT	ID #	Flipper Tag #	Radio	Sonic	Satellite	Pit Tag	Status	Release Date	Release Time
7/6/94	08 48	4	16	*L. kempii*	26.3	23.4	28.0	26.1	2.55	C94-7-22	SSK032 SSK033				1F7A43693B	wild	7/9/94	11 36
7/6/94	11 42	4	16	*L. kempii*	48.1	44.8	50.0	50.0	15.82	C94-7-23	SSK034 SSK035			7292	1F77703644	wild	7/8/94	13 40
7/6/94	13 22	4	16	*L. kempii*	28.7	26.0	29.8	30.1	3.62	C94-7-24	SSK036 SSK037	164.412	65		1F78412F79	wild	7/8/94	13 43
8/10/94	11 35	3	12	*L. kempii*	24.9	22.7	26.2	25.2	2.26	C94-8-1	SSK045 SSK044				1F7B073728	wild	8/12/94	11 47
8/10/94	13 22	3	12	*L. kempii*	30.2	26.6	31.1	29.9	3.83	C94-8-2	SSK047 SSK046	164.5521	40		1F781C212C	wild	8/12/94	17 00
8/10/94	14 52	3	12	*L. kempii*	28.7	24.2	30.3	28.9	3.48	C94-8-3	SSK049 SSK048	164.213	36Khz		1F777B747B	wild	8/12/94	13 40
8/11/94	07 54	4	16	*C. caretta*	45.7	39.3	49.3	44.7	13.01	C94-8-4	SSK051 SSK050	165.710	35		1F78314573	wild	8/14/94	18 06
8/11/94	10 40	4	16	*L. kempii*	56.3	56.2	58.7	61.6	23.78	C94-8-5	SSK053 SSK052			7294	1F7B00181E	wild	8/12/94	16 55
8/11/94	16 58	4	16	*L. kempii*	65.6	64.9	68.4	72.5	38.34	C94-8-6	AA132 SSK054			7293	1F7B656565	wild	8/12/94	13 34
8/11/94	17 25	4	16	*L. kempii*	65.8	64.9	69.9	72.3	42.60	C94-8-7	SSK055 SSK056			7295	1F781F2525	wild	8/13/94	07 42
8/11/94	17 58	4	16	*L. kempii*	35.1	34.4	36.1	38.0	6.88	C94-8-8	SSK057 SSD317	165.390	34 Khz		1F0A5A631A	headstart	8/13/94	07 48
8/13/94	07 25	3	12	*L. kempii*	29.7	27.4	31.2	31.8	3.81	C94-8-9	SSK058 SSK059	164.852	60		1F7B04451D	wild	8/14/94	18 30
8/13/94	10 58	3	12	*C. caretta*	54.0	44.6	57.6	53.0	21.44	C94-8-10	SSK060 SSK061				1F7A3C6249	wild	8/15/94	07 32
8/13/94	16 53	3	12	*L. kempii*	26.4	24.5	27.6	28.6	2.66	C94-8-11	SSK062 SSK063	165.900	75KHz		1F7437240C	wild	8/15/94	08 30
8/14/94	08 04	3	16	*L. kempii*	29.4	25.8	30.2	29.7	3.58	C94-8-12	SSK064 SSK075	164.999	55		1F7B105501	wild	8/15/94	11 02