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ANNUAL REPORT

OF THE

SEA TURTLE STRANDING AND SALVAGE NETWORK

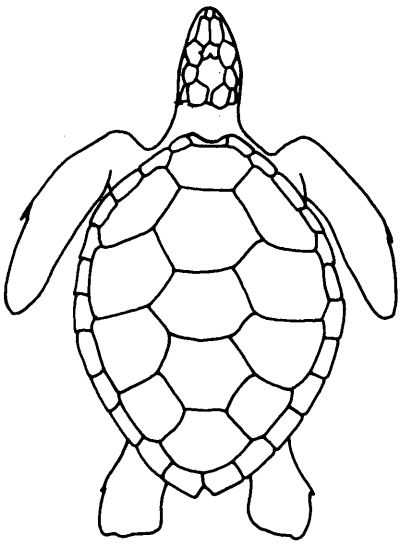
ATLANTIC AND GULF COASTS OF THE UNITED STATES

JANUARY - DECEMBER 1986

By

Barbara A. Schroeder

December 1987



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Contribution Number CRD-87/88-12

1986 ANNUAL REPORT OF THE SEA TURTLE STRANDING AND SALVAGE NETWORK: ATLANTIC AND GULF COASTS OF THE UNITED STATES JANUARY - DECEMBER 1986

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The Sea Turtle Stranding and Salvage Network (STSSN) was formally established in 1980 to collect information on and document strandings of marine turtles along the U.S. Gulf of Mexico and Atlantic coasts. The network encompasses the coastal areas of the eighteen state region from Maine through Texas, and includes portions of the U.S. Caribbean. Data are compiled through the efforts of network participants who document marine turtle strandings in their respective areas and contribute those data to the centralized STSSN data base.

This report summarizes marine turtle strandings documented through the efforts of the STSSN during calendar year 1986. The numbers presented are considered minimum stranding figures, as they are reported strandings only, not all stranding events. Effort expended in the collection of stranding data during 1986 varied both geographically and temporally. Coverage ranged from systematic weekly (or more frequent) sampling to no sampling at all in some coastal areas. Effort cannot be quantified over the entire eighteen state region. It is possible to quantify effort on a smaller scale (in selected areas), but this is beyond the scope of this report which addresses the entire network region.

Stranding figures represent <u>minimum</u> total mortality figures. Little is known about the relationship between reported strandings and actual at-sea mortality. Carcass tagging studies of marine turtles conducted in the coastal waters of South Carolina resulted in a 27.3% reported stranding rate (Ulrich 1978; S. Murphy, pers. comm.). These data suggest that a significant percentage of the coastal marine turtle mortality may not be documented by the STSSN. Currents may carry carcasses away from the coastal beaches, leaving them to decompose entirely at sea. Carcasses may be entirely or partially consumed by scavengers and therefore not wash ashore. Additionally, certain size classes of turtles (life history stages) may occupy more distant pelagic habitats not adjacent to coastal areas.

The incidental capture and mortality of marine turtles by the shrimping fleet of the Gulf of Mexico and southeast U.S. Atlantic has been identified as a significant source of non-natural mortality of marine turtles in these waters (Hillestad et al. 1981). The temporal and/or geographical relationships between beach strandings and shrimping effort continue to be a subject of debate. The relationship between strandings and shrimping effort is <u>not</u> necessarily, in all places and at all times, directly proportional. The probability that a turtle will be incidentally captured in a shrimp trawl ultimately depends upon the co-occurrence of turtles and trawlers. A high level of shrimping effort concentrated in an area where the turtle population is seasonally less abundant (or absent all together) would result in relatively low capture rates with expected correspondingly low stranding levels. Conversely, a low level of

effort in an area where turtles are abundant and/or aggregated may have a much greater mortality effect on the population and result in much higher stranding levels. The potential correlations between shrimping effort and strandings are not examined in this annual report. Evidence of these relationships has been well documented and discussed by others in the scientific literature (e.g. papers by Ulrich 1978; Rabalais and Rabalais 1980; Talbert et al. 1980; Ruckdeschel and Zug 1982; Ehrhart 1987).

A total of 1916 stranded marine turtles were reported during 1986. Of these, 1847 were "wild" strandings and the remaining 69 were known headstarted turtles. Headstarted turtles are hatched and raised in captivity for approximately six to twelve months before being tagged and released. Strandings of headstarted turtles are documented separately in the summary tables (Tables 1 - 19), but are <u>not</u> included in any of the figures presented in the text or in the histograms (Figures 1 - 10). Strandings of headstarted turtles are excluded from the primary report because they may represent a bias if their stranding was an artifact of captive rearing and release. Reports of incidentally captured turtles and live sighting reports received through the network were archived, but are not included in this report as these records were not considered to be true strandings. True strandings are defined as turtles which wash ashore dead or alive or are found floating dead or alive (generally in a weakened condition).

Fourteen states reported strandings during the twelve month period. They are: Texas, Louisiana, Mississippi, Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, New York, Rhode Island, and Massachusetts. There were no stranding records received from Maine, New Hampshire, Connecticut, or Alabama. For the U.S. Caribbean, records were received only from Puerto Rico.

Annual Comparison

Figure 1 depicts annual stranding totals for all species combined over the entire network area. Direct annual comparisons are complicated by the variation in effort between and/or within years. Network-wide, data collection efforts have been most consistent during the period 1984 - 1986. The 1986 stranding total of 1847 turtles is a 58% increase over the 1985 stranding total, and is considered a real increase in strandings, not an artifact of increased sampling. The 1986 total accounted for 18.4% of all reported strandings over the seven year period 1980 - 1986. This represents the second highest annual stranding total since the formal establishment of the network in 1980 when 2100 stranded turtles were reported.

State and Regional Distribution

Reported strandings during 1986 are summarized by state in Table 1 and Figure 2. Florida reported the highest number of strandings during 1986, accounting for 33% of the total (8% Florida-Gulf, 25% Florida-Atlantic). Texas accounted for 19% of the total reported wild strandings and 93% of all reported headstarted strandings. Georgia reported the third highest frequency of strandings, accounting for 12% of the total.

Regionally, 34.5% of the strandings were reported from the Gulf of Mexico (TX,LA,MS,AL,FL-Gulf), 54.5% from the southeast U.S. Atlantic (FL-Atlantic,GA,SC,NC), 10% from the northeast U.S. Atlantic (VA,MD,DE,NJ,NY,CT,RI,MA,NH,ME), and 1% from the U.S. Caribbean (PR). Stranding records are summarized on a detailed state by state basis in Tables 4 - 19. These tables summarize strandings by species and month (all counties combined) and by county and month (all species combined) for each state which reported.

Network-wide, 86.2% of all reports were classified as offshore strandings and 13.8% were classified as inshore strandings. Offshore strandings are defined as strandings occurring on the ocean beaches, while inshore strandings are those occurring landward of the ocean coastline, primarily in bays and sounds. The regional distribution of inshore versus offshore strandings for 1987 (excluding Puerto Rico) was as follows:

	GULF	SOUTHEAST U.S.	NORTHEAST U.S.
INSHORE	81 (12.7%)	59 (5.9%)	112 (60.2%)
OFFSHORE	557 (87.3%)	1007 (94.1%)	74 (39.8%)

Effort expended in data collection was significantly lower in inshore areas (bays, sounds, etc.) of the Gulf of Mexico and southeast U.S. Atlantic as compared to offshore effort (ocean beaches). This is primarily due to the inaccessibility of much of the inshore coastline. Carcasses are less visible in inshore areas, due to shoreline characteristics and the smaller size classes of turtles utilizing the inshore habitat. For these reasons, it is likely that a greater proportion of the inshore strandings were not documented as compared to the offshore strandings. The distribution of mortality, as indicated by reported strandings, may not reflect the true inshore/offshore distribution of total mortality in the Gulf and southeast U.S. regions.

In contrast to the distribution in the Gulf and southeast U.S., approximately two-thirds of all strandings in the northeast U.S. were reported from inshore areas. Data collection efforts

in the northeast U.S. are more equally distributed between inshore and offshore areas. Adding considerably to the inshore stranding total are the recovery of cold stunned turtles from Long Island Sound and Cape Cod Bay (24.7% of all northeast region strandings) and strandings of turtles in Chesapeake Bay during May and June (10.8% of all northeast region strandings). The Chesapeake Bay strandings during May and June are primarily related to the pound net fishery operating in those waters (Musick 1979; Lutcavage and Musick 1980, Bellmund et al 1987).

Species Composition

Throughout the network region, loggerheads (Caretta caretta) were the most frequently stranded species making up 65.9% of the total. Kemp's ridleys (Lepidochelys kempi) were the second most frequently reported species at 18.4%; green turtle (Chelonia mydas) strandings comprised 7.1% of the total; leatherbacks (Dermochelys coriacea) accounted for 3.2% of all reports; and hawksbills (Eretmochelys imbricata) were reported least frequently making up 2.5% of the total. Turtles which could not be identified to species accounted for 2.8% of all reports.

Within the Gulf of Mexico (Figure 3), stranding frequencies of loggerheads and Kemp's ridleys were similar, 46% and 39% respectively. The remaining species were reported at low but approximately equal levels. In the southeast U.S. Atlantic (Figure 4), loggerheads accounted for the overwhelming majority of strandings making up 83% of the total. Green turtles were the second most frequently stranded turtle comprising 9% of the southeast total. Within the northeast U.S. Atlantic (Figure 5), loggerheads comprised 49% or almost half of all strandings, Kemp's ridleys made up 29% of the total, and leatherbacks accounted for 18% of the northeast total.

Between regions, the most notable differences in species composition were:

1) the differential regional distribution of Kemp's ridley, with proportionally fewer strandings occurring in the southeast U.S. region as compared to the Gulf and northeast U.S. regions;

2) the low levels of leatherback strandings in the Gulf and southeast U.S. regions as compared to the northeast U.S. region;

3) a much higher percentage of loggerhead strandings in the southeast U.S. region as compared to the Gulf and northeast U.S. regions, and;

4) a higher percentage of green turtle strandings in the southeast U.S. region as compared to the Gulf and northeast U.S. regions.

The species composition of strandings within the three regions is consistent with described distributions for these species.

Distribution By Statistical Zone

Strandings are summarized by statistical zones in order to evaluate the geographic distribution within regions. The statistical zones utilized were originally designed by the Bureau of Commercial Fisheries (now NMFS) for shrimp catch and effort data collection and have subsequently been utilized for defining areas where Turtle Excluder Devices (TEDs) will be required. The actual coastal area encompassed by each zone is not necessarily equivalent.

There are 21 zones in the U.S. Gulf of Mexico (Figure 6), beginning with Zone 1 in the Florida Keys and numbered consecutively through the Gulf to the Mexico border. Total strandings by zone for the Gulf of Mexico are depicted in Figure 6. Seventy-five percent (75%) of the Gulf combined species strandings and 96% of the Gulf Kemp's ridley strandings were reported from the western Gulf (zones 13 - 21). Zones 17 and 18 contributed 45% of the combined species Gulf strandings and 75% of all Gulf Kemp's ridley strandings. The coastal areas of Louisiana and upper Texas have been previously described as important non-nesting habitat for immature and adult Kemp's ridleys (Liner 1954; Hildebrand 1982; Chavez 1969; Pritchard and Marquez 1973; Fuller 1986; L. Ogren, pers. comm.). Twenty-five percent of all Gulf strandings were reported from the eastern Gulf (zones 1 - 12). Sixty percent of these eastern Gulf strandings were reported from zones 4 and 5. In the western Gulf, 34% of the strandings were loggerheads and 53% were Kemp's ridleys. In comparison, 82% of the eastern Gulf strandings were loggerheads with ridleys making up only 7% of the total.

Thirteen statistical zones are defined by degree of latitude for the southeast U.S. Atlantic. Zones are numbered from south to north, based on the line of latitude which forms the southern boundary of the zone (Figure 7). Zone 36 is a partial zone, ending at the North Carolina/Virginia border. Figure 7 depicts total southeast U.S. strandings by statistical zone. Peak strandings were reported from zone 30 off the northeast Florida coast and southern tip of Georgia, 25% of the combined southeast U.S. strandings and 32% of the southeast U.S. Kemp's strandings occurred in this zone. Zone 32, the southern half of South Carolina, accounted for the second highest frequency of reported strandings comprising 18% of the total.

Nine statistical zones are defined for the northeast U.S. Atlantic beginning with the Virginia portion of zone 36 and continuing north through zone 44 and ending at the Canadian border (Figure 8). Zones 40 and 41 accounted for 53% of the total northeast U.S. strandings and primarily represent strandings from Long Island Sound and Cape Cod Bay. Strandings in zones 36 and 37 represent 34% of the total northeast U.S. strandings and primarily reflect turtles stranding in Chesapeake Bay and along the Virginia barrier beaches.

Temporal Distribution of Strandings

Table 2 summarizes 1986 strandings by month and state for all species combined. Table 3 summarizes strandings by species and month of occurrence for all states combined.

The monthly frequency distribution for Gulf of Mexico strandings is presented in Figure 8. Strandings occurred during all months, with peaks during the period March - June. Stranding levels were lowest during the months of January, February, and December. In the southeast U.S. Atlantic (Figure 9), strandings began increasing in April, peaked in June, and gradually decreased through mid-fall. In the northeast U.S. Atlantic (Figure 10), strandings were reported during all months with peaks during June and December.

Condition of Stranded Turtles

Of 1847 stranded turtles, 92.3% were dead, 6.3% were alive, and the conditions of the remaining 1.4% were not recorded on the initial stranding report. Of the 117 live turtles, 23% were released, 31% subsequently died, and the fates of the remaining 54 turtles (46%) are unknown.

The conditions of the 1704 turtles stranded dead were reported as follows:

Fresh Dead	428 (25.1%)
Moderately Decomposed	678 (39.7%)
Severely Decomposed	449 (26.3%)
Dried Carcass	90 (5.3%)
Skeleton, Bones Only	59 (3.5%)

The availability of suitable carcasses for complete necropsy workup (including histopathology) is limited by the condition of the carcass. Not all carcasses reported as fresh dead will yield tissues fresh enough for histopathology. Ambient temperature and water temperature will affect the rate of decomposition. Post-mortem changes can mask the underlying actual cause(s) of

mortality and this must not be overlooked if attempts are made to classify strandings by cause of death.

This is not to say that valuable information cannot be gained from decomposing carcasses. External observations are extremely important in quantifying the occurrence of anomalies such as papillomas, entanglement, and tar/oil impacts. Additionally, gross necropsies (including stomach and digestive tract content analyses) can provide information on feeding habits and the ingestion of non-natural materials. Non-biodegradable materials such as plastics and fishing hooks will persist in the digestive tract through the dried carcass stage. Dried carcasses may also yield evidence relating to feeding habits through the presence of exoskeletons of crustaceans and mollusks, which may persist for some time. Skeletal materials collected at any stage of decomposition can be useful as museum specimens for reference and future study.

Carcass Anomalies

Observations (not necessarily causes of death) recorded on stranding reports specific to the individual turtle are coded as a permanent part of each stranding record. The most frequently reported remarks and/or observations are summarized in Table 20. These figures are considered absolute minimum percent occurrences, as a report form lacking remarks does not always indicate a "clean" turtle.

Propeller wounds were one of the most frequently reported observations, noted on 5.8% of all reports. Propeller wounds may not always be indicative of the cause of death, as a boat strike can occur postmortem during the time the carcass is floating at the surface of the water. Carapace and plastron damage, from unknown causes, were reported on 4.9% and 0.6% of all reports respectively. The reported occurrence of skull injuries was 1.2%, five of these seventeen events (23%) were attributable to direct blows to the skull.

Turtles missing skulls and some combination (or all) of their flippers from unknown causes were reported at a rate of 5.6% (104 events). Stranded turtles with skulls intact but missing some combination (or all) of their flippers were also reported at a rate of 5.6%. Eighty four of these 104 events (81%) were classified as naturally occurring wounds and 20 (19%) were classified as man induced. Partial flipper damage (not totally missing) was recorded on 3.4% of all reports.

Entanglement was noted on 2.4% of all reports. This category includes monofilament line, crab/lobster trap line, unclassified line or net types, fishing hooks, and non-fishing gear such as ropes and plastics. Nineteen turtles (1.0%)

exhibited bullet wounds, primarily inflicted in the skull or neck region. Apparent deliberate mutilation by man was reported at a rate of 2.0%. Apparent shark wounds were recorded on 1.1% of all reports, although these are not classifiable as antemortem or postmortem.

External tumors were reported from 0.8% of all stranded carcasses. Ten of these fourteen events were typical green turtle papillomas (7.6% of all stranded green turtles). Four loggerheads exhibited tumors of unknown type. Nine turtles (0.5%) were impacted by tar/oil. Forty strandings (2.2%) were cold stun related, all from the northeast region.

Acknowledgements

The efforts of all network participants who assisted in the documentation and compilation of marine turtle stranding records during 1986 are acknowledged. Sincere appreciation is extended to the state coordinators for their efforts and assistance. Amy Webster of the NMFS/Miami Laboratory served as data entry coordinator, ensuring the quality of the data contained herein. Without the dedication of these people the network would not function as effectively as it does. Gale Morina assisted with typing, her efforts are greatly appreciated. Many thanks to L. Hansen, L. Ogren, P. Raymond, N. Thompson, and A. Webster for reviewing earlier drafts of the report and providing helpful comments and suggestions.

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(December 1987)

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Table 1. Marine turtle strandings reported from 1 January - 31 December 1986 by species and state of occurrence. All months are combined. Additional strandings of headstarted turtles are given in parentheses. Only states which reported strandings are included.

	TX	LA	MS	FG	FA	GA	SC	NC	VA	MD	DE	NJ	NY	MA	RI	PR	TOTAL
C. caretta	139	29	8	117	351	201	173	108	54	2	3	17	15	0	0	0	1217
C. mydas	6	1	2	22(1)	84(2)	2	1	2	2	0	0	0	2	2	0	6	132(3)
D. coriacea	7	3	1	1	6	1	2	5	1	0	0	2	12	11	7	1	60
E. imbricata	30	1	1	2	3	0	0	0	0	0	0	0	0	0	0	9	46
L. kempi	147(64)	92(2)	6	4	7	14	8	9	6	0	1	0	34	13	0	0	341(66)
Unidentified	18	0	0	1	13	8	2	7	2	0	0	0	0	0	0	0	51
TOTAL	347(64)	126(2)	18	147(1)	464(2)	226	186	131	65	2	4	19	63	26	7	16	1847(69)

Table 2. Marine turtle strandings reported from 1 January - 31 December 1986 by month and state of occurrence. All species are combined. Additional strandings of headstarted turtles are given in parentheses. Only states which reported strandings are included.

	TX	LA	MS	FG	FA	GA	SC	NC	VA	MD	DE	NJ	NY	MA	RI	PR	TOTAL
January	0	0	1	5	12	1	0	6	1	0	0	1	5	0	1	2	35
February	2	0	1	17	16	1	0	6	2	0	0	0	2	0	0	1	48
March	51(1)	0	0	24	19	1	0	2	0	0	0	0	2	0	0	0	99(1)
April	95(4)	4	0	22	34	7	2	4	0	0	0	0	2	0	0	0	170(4)
May	39(39)	13	3	21	50	57	5	20	5	0	0	0	0	0	0	0	213(39)
June	19(14)	45	5	18	137(1)	58	51	18	29	2	1	1	3	0	0	0	387(15)
July	18(3)	18	0	9	36	34	75	16	7	0	0	3	7	0	4	4	231(3)
August	29	34(1)	0	5(1)	46	28	27	6	7	0	1	4	3	2	1	7	200(2)
September	36	9(1)	1	2	58(1)	6	9	7	4	0	0	7	7	3	0	1	150(2)
October	42(2)	1	2	9	25	18	9	5	4	0	2	3	3	1	1	1	126(2)
November	9(1)	2	3	8	14	14	7	23	5	0	0	0	4	9	0	0	98(1)
December	7	0	2	7	17	1	1	18	1	0	0	0	25	11	0	0	90
TOTAL	347(64)	126(2)	18	147(1)	464(2)	226	186	131	65	2	4	19	63	26	7	16	1847(69)

Table 3. Marine turtle strandings reported from 1 January - 31 December 1986 by species and month of occurrence. All states are combined. Additional strandings of headstarted turtles are given in parentheses.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	17	34	55	85	146	293	175	134	99	79	57	43	1217
C. mydas	10	9	9	21	16	27(1)	10	5(1)	8(1)	5	5	7	132(3)
D. coriacea	2	0	1	5	9	6	10	6	4	4	7	6	60
E. imbricata	2	0	2	0	1	3	2	5	13	17	1	0	46
L. kempi	4	4	28(1)	56(4)	36(39)	45(14)	23(3)	49(1)	21(1)	15(2)	27(1)	33	341(66)
Unidentified	0	1	4	3	5	13	11	1	5	6	1	1	51
TOTAL	35	48	99(1)	170(4)	213(39)	387(15)	231(3)	200(2)	150(2)	126(2)	98(1)	90	1847(69)

Table 4(a). Marine turtle strandings reported from TEXAS, 1 January - 31 December 1986 by species and month of occurrence. Additional strandings of headstarted turtles are given in parentheses.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	1	17	35	17	5	10	14	12	16	6	6	139
C. mydas	0	0	3	1	0	1	0	0	0	1	0	0	6
D. coriacea	0	0	1	5	1	0	0	0	0	0	0	0	7
E. imbricata	0	0	2	0	0	0	0	0	10	17	1	0	30
L. kempi	0	1	24(1)	51(4)	21(39)	13(14)	6(3)	15	10	4(2)	2(1)	0	147(64)
Unidentified	0	0	4	3	0	0	2	0	4	4	0	1	18
TOTAL	0	2	51(1)	95(4)	39(39)	19(14)	18(3)	29	36	42(2)	9(1)	7	347(64)

Table 4(b). Marine turtle strandings reported from TEXAS, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included. Additional strandings of headstarted turtles are given in parentheses.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Jefferson	0	0	6	19(1)	9	5	1	8	7	5	1	1	62(1)
Chambers	0	0	0	2	0	1	0	0	0	0	0	0	3
Galveston	0	0	17	47	10	7	6	5	8	5(1)	1	1	107(1)
Brazoria	0	0	4	0	0	0	2	0	0	0	0	0	6
Matagorda	0	0	1	0	0	0	0	0	2	0	0	0	3
Calhoun	0	1	2	2	0	0	0	1	0	2	0	0	8
Aransas	0	0	0	2	7(34)	2(14)	4(3)	1	1	3(1)	1(1)	0	21(53)
Refugio	0	0	0	0(3)	0	0	0	0	0	0	0	0	0(3)
San Patricio	0	0	0	0	0	1	1	0	0	0	0	0	2
Nueces	0	0	3	10	9(4)	2	3	14	15	18	5	1	80(4)
Kleberg	0	0	7(1)	4	1(1)	1	0	0	1	3	0	0	17(2)
Kennedy	0	1	9	5	1	0	0	0	0	0	0	3	19
Willacy	0	0	0	1	2	0	0	0	0	0	0	1	4
Cameron	0	0	2	3	0	0	1	0	2	6	1	0	15
TOTAL	0	2	51(1)	95(4)	39(39)	19(14)	18(3)	29	36	42(2)	9(1)	7	347(64)

Table 5(a). Marine turtle strandings reported from LOUISIANA, 1 January - 31 December 1986. Additional strandings of headstarted turtles are given in parentheses.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	1	3	14	3	7	1	0	0	0	29
C. mydas	0	0	0	0	0	1	0	0	0	0	0	0	1
D. coriacea	0	0	0	0	0	3	0	0	0	0	0	0	3
E. imbricata	0	0	0	0	0	1	0	0	0	0	0	0	1
L. kempi	0	0	0	3	10	26	15	27(1)	8(1)	1	2	0	92(2)
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	4	13	45	18	34(1)	9(1)	1	2	0	126(2)

Table 5(b). Marine turtle strandings reported from LOUISIANA, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included. Additional strandings of headstarted turtles are given in parentheses.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Plaquemines	0	0	0	4	3	0	0	0	0	0	0	0	7
Jefferson	0	0	0	0	0	0	0	0	1	0	0	0	1
Terrebonne	0	0	0	0	0	4	2	1	0	0	0	0	7
Vermilion	0	0	0	0	0	0	1	0	0	0	0	0	1
Cameron	0	0	0	0	10	41	15	33(1)	8(1)	1	2	0	110(2)
TOTAL	0	0	0	4	13	45	18	34(1)	9(1)	1	2	0	126(2)

Table 6(a). Marine turtle strandings reported from MISSISSIPPI, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	1	0	0	3	3	0	0	0	1	0	0	8
C. mydas	0	0	0	0	0	1	0	0	0	0	1	0	2
D. coriacea	0	0	0	0	0	1	0	0	0	0	0	0	1
E. imbricata	0	0	0	0	0	0	0	0	1	0	0	0	1
L. kempi	1	0	0	0	0	0	0	0	0	1	2	2	6
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	3	5	0	0	1	2	3	2	18

Table 6(b). Marine turtle strandings reported from MISSISSIPI, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Jackson	1	0	0	0	2	1	0	0	1	2	1	1	9
Harrison	0	1	0	0	1	4	0	0	0	0	2	1	9
TOTAL	1	1	0	0	3	5	0	0	1	2	3	2	18

Table 7(a). Marine turtle strandings reported from FLORIDA(GULF), 1 January - 31 December 1986. Additional strandings of headstarted turtles are given in parentheses.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	1	13	20	19	19	14	6	4	2	7	8	4	117
C. mydas	4	4	4	2	0	3	0	1(1)	0	1	0	3	22(1)
D. coriacea	0	0	0	0	0	0	1	0	0	0	0	0	1
E. imbricata	0	0	0	0	0	1	1	0	0	0	0	0	2
L. kempi	0	0	0	1	2	0	0	0	0	1	0	0	4
Unidentified	0	0	0	0	0	0	1	0	0	0	0	0	1
TOTAL	5	17	24	22	21	18	9	5(1)	2	9	8	7	147(1)

Table 7(b). Marine turtle strandings reported from FLORIDA(GULF), 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included. Additional strandings of headstarted turtles are given in parentheses.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Monroe	3	6	3	2	2	4	1	0	0	1	2	2	26
Collier	0	0	1	0	1	0	0	0	0	0	0	0	2
Lee	1	4	7	2	1	0	1	1	0	0	1	1	19
Sarasota	0	5	3	7	5	4	0	0	0	3	0	1	28
Manatee	0	0	6	3	1	0	0	1	0	0	0	0	11
Hillsborough	0	0	0	1	2	1	0	0	0	0	0	2	6
Pinellas	1	2	2	4	5	6	2	1(1)	1	4	3	0	31(1)
Pasco	0	0	0	0	0	0	0	0	0	0	0	1	1
Franklin	0	0	1	1	2	1	0	0	0	0	0	0	5
Gulf	0	0	1	0	0	0	0	1	0	0	0	0	2
Bay	0	0	0	2	2	0	2	0	1	1	1	0	9
Walton	0	0	0	0	0	0	2	0	0	0	0	0	2
Okaloosa	0	0	0	0	0	2	0	1	0	0	0	0	3
Santa Rosa	0	0	0	0	0	0	1	0	0	0	0	0	1
Escambia	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	5	17	24	22	21	18	9	5(1)	2	9	8	7	147(1)

Table 8(a). Marine turtle strandings reported from FLORIDA(ATLANTIC), 1 January - 31 December 1986. Additional strandings of headstarted turtles are given in parentheses.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	6	11	16	16	33	106	29	42	49	23	11	9	351
C. mydas	6	4	2	18	14	21(1)	5	3	7(1)	1	1	2	84(2)
D. coriacea	0	0	0	0	0	0	0	1	0	0	2	3	6
E. imbricata	0	0	0	0	1	1	0	0	1	0	0	0	3
L. kempi	0	1	1	0	2	0	0	0	0	0	0	3	7
Unidentified	0	0	0	0	0	9	2	0	1	1	0	0	13
TOTAL	12	16	19	34	50	137(1)	36	46	58(1)	25	14	17	464(2)

Table 8(b). Marine turtle strandings reported from FLORIDA(ATLANTIC), 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included. Additional strandings of headstarted turtles are given in parentheses.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Nassau	0	0	1	0	6	21	1	8	0	3	1	3	44
Duval	0	0	1	2	5	32	5	10	17	10	2	4	88
St. John's	3	0	1	3	5	32(1)	12	8	18	3	4	2	91(1)
Flagler	0	0	4	2	2	13	1	3	2	2	4	2	35
Volusia	0	5	5	2	1	2	4	2	2	3	2	3	31
Brevard	7	3	3	1	4	6	2	4	5	0	1	2	38
Indian River	0	1	0	0	1	3	0	1	0	1	0	0	7
St. Lucie	2	0	0	16	11	14	1	0	5(1)	0	0	0	49(1)
Martin	0	3	2	1	3	1	2	1	2	1	0	1	17
Palm Beach	0	0	0	1	6	5	2	3	2	0	0	0	19
Broward	0	1	2	6	6	6	3	5	5	0	0	0	34
Dade	0	1	0	0	0	0	1	1	0	1	0	0	4
Monroe	0	2	0	0	0	2	2	0	0	1	0	0	7
TOTAL	12	16	19	34	50	137(1)	36	46	58(1)	25	14	17	464(2)

Table 9(a). Marine turtle strandings reported from GEORGIA, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	1	1	0	7	49	53	33	27	5	14	10	1	201
C. mydas	0	0	0	0	1	0	0	0	0	0	1	0	2
D. coriacea	0	0	0	0	1	0	0	0	0	0	0	0	1
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	1	0	1	3	0	1	1	4	3	0	14
Unidentified	0	0	0	0	5	2	1	0	0	0	0	0	8
TOTAL	1	1	1	7	57	58	34	28	6	18	14	1	226

Table 9(b). Marine turtle strandings reported from GEORGIA, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Chatham	0	0	0	0	6	16	15	5	1	1	2	0	46
Liberty	0	0	0	0	3	4	1	1	0	0	2	0	11
McIntosh	0	0	0	0	5	5	5	3	1	1	1	0	21
Glynn	0	0	0	0	32	14	6	3	0	10	2	0	67
Camden	1	1	1	7	11	19	7	16	4	6	7	1	81
TOTAL	1	1	1	7	57	58	34	28	6	18	14	1	226

Table 10(a). Marine turtle strandings reported from SOUTH CAROLINA, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	2	3	49	72	25	8	7	6	1	173
C. mydas	0	0	0	0	0	0	1	0	0	0	0	0	1
D. coriacea	0	0	0	0	2	0	0	0	0	0	0	0	2
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	2	1	2	1	1	1	0	8
Unidentified	0	0	0	0	0	0	1	0	0	1	0	0	2
TOTAL	0	0	0	2	5	51	75	27	9	9	7	1	186

Table 10(b). Marine turtle strandings reported from SOUTH CAROLINA, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Horry	0	0	0	0	0	1	1	2	2	0	0	0	6
Georgetown	0	0	0	0	3	3	5	3	0	0	1	0	15
Charleston	0	0	0	1	1	25	44	16	6	5	3	0	101
Colleton	0	0	0	0	0	2	5	0	0	0	0	0	7
Beaufort	0	0	0	1	1	20	20	6	1	4	3	1	57
TOTAL	0	0	0	2	5	51	75	27	9	9	7	1	186

Table 11(a). Marine turtle strandings reported from NORTH CAROLINA, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	6	4	2	4	14	17	13	5	7	5	13	18	108
C. mydas	0	0	0	0	1	0	0	0	0	0	1	0	2
D. coriacea	0	0	0	0	5	0	0	0	0	0	0	0	5
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	1	0	0	0	0	0	0	0	0	8	0	9
Unidentified	0	1	0	0	0	1	3	1	0	0	1	0	7
TOTAL	6	6	2	4	20	18	16	6	7	5	23	18	131

Table 11(b). Marine turtle strandings reported from NORTH CAROLINA, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Currituck	0	0	0	0	0	0	0	0	0	0	10	0	10
Dare	5	6	2	0	1	1	3	3	2	3	10	10	46
Hyde	1	0	0	0	0	0	1	0	0	0	1	0	3
Carteret	0	0	0	1	4	17	6	0	0	0	2	8	38
Onslow	0	0	0	0	1	0	0	0	0	0	0	0	1
Pender	0	0	0	0	0	0	2	0	0	1	0	0	3
New Hanover	0	0	0	0	2	0	0	1	1	0	0	0	4
Brunswick	0	0	0	3	12	0	4	2	4	1	0	0	26
TOTAL	6	6	2	4	20	18	16	6	7	5	23	18	131

Table 12(a). Marine turtle strandings reported from VIRGINIA, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	1	2	0	0	5	27	6	6	3	2	2	0	54
C. mydas	0	0	0	0	0	0	0	0	0	1	0	1	2
D. coriacea	0	0	0	0	0	0	0	0	0	0	1	0	1
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	1	0	1	1	1	2	0	6
Unidentified	0	0	0	0	0	1	1	0	0	0	0	0	2
TOTAL	1	2	0	0	5	29	7	7	4	4	5	1	65

Table 12(b). Marine turtle strandings reported from VIRGINIA, 1 January - 31 December 1986 by county/city and month of occurrence. Coastal areas in Virginia include counties and independent cities. All species are combined. Only areas from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Accomack	0	0	0	0	1	3	0	1	0	0	1	1	7
Gloucester	0	0	0	0	0	3	0	1	0	0	0	0	4
Mathews	0	0	0	0	3	3	0	0	0	0	0	0	6
Northampton	0	2	0	0	0	0	1	0	0	0	0	0	3
Northumberland	0	0	0	0	0	1	0	0	0	0	0	0	1
York	0	0	0	0	0	4	0	1	0	0	0	0	5
Hampton	0	0	0	0	0	3	0	0	2	0	1	0	6
Newport News	0	0	0	0	0	1	0	0	0	0	0	0	1
Norfolk	1	0	0	0	1	2	0	0	0	0	1	0	5
Virginia Beach	0	0	0	0	0	9	6	4	2	4	2	0	27
TOTAL	1	2	0	0	5	29	7	7	4	4	5	1	65

Table 13(a). Marine turtle strandings reported from MARYLAND, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	2	0	0	0	0	0	0	2
C. mydas	0	0	0	0	0	0	0	0	0	0	0	0	0
D. coriacea	0	0	0	0	0	0	0	0	0	0	0	0	0
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	2	0	0	0	0	0	0	2

Table 13(b). Marine turtle strandings reported from MARYLAND, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Calvert	0	0	0	0	0	1	0	0	0	0	0	0	1
Somerset	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL	0	0	0	0	0	2	0	0	0	0	0	0	2

Table 14(a). Marine turtle strandings reported from DELAWARE, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	1	0	1	0	1	0	0	3
C. mydas	0	0	0	0	0	0	0	0	0	0	0	0	0
D. coriacea	0	0	0	0	0	0	0	0	0	0	0	0	0
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	0	0	0	0	1	0	0	1
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	1	0	1	0	2	0	0	4

Table 14(b). Marine turtle strandings reported from DELAWARE, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Kent	0	0	0	0	0	1	0	0	0	1	0	0	2
Sussex	0	0	0	0	0	0	0	1	0	0	0	0	1
Unknown	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL	0	0	0	0	0	1	0	1	0	2	0	0	4

Table 15(a). Marine turtle strandings reported from NEW JERSEY, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	1	3	3	7	3	0	0	17
C. mydas	0	0	0	0	0	0	0	0	0	0	0	0	0
D. coriacea	1	0	0	0	0	0	0	1	0	0	0	0	2
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	0	0	0	0	1	3	4	7	3	0	0	19

Table 15(b). Marine turtle strandings reported from NEW JERSEY, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic	0	0	0	0	0	0	1	0	2	0	0	0	3
Cape May	0	0	0	0	0	1	2	0	2	0	0	0	5
Middlesex	0	0	0	0	0	0	0	0	1	0	0	0	1
Monmouth	0	0	0	0	0	0	0	2	1	0	0	0	3
Ocean	1	0	0	0	0	0	0	2	1	3	0	0	7
TOTAL	1	0	0	0	0	1	3	4	7	3	0	0	19

Table 16(a). Marine turtle strandings reported from NEW YORK, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	2	1	0	1	0	1	0	0	5	0	1	4	15
C. mydas	0	0	0	0	0	0	1	0	1	0	0	0	2
D. coriacea	0	0	0	0	0	2	5	1	1	2	0	1	12
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	3	1	2	1	0	0	1	2	0	1	3	20	34
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5	2	2	2	0	3	7	3	7	3	4	25	63

Table 16(b). Marine turtle strandings reported from NEW YORK, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Nassau	1	0	0	1	0	0	0	0	1	0	0	2	5
Suffolk	4	2	2	1	0	3	7	3	6	3	4	23	58
TOTAL	5	2	2	2	0	3	7	3	7	3	4	25	63

Table 17(a). Marine turtle strandings reported from MASSACHUSETTS, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	0	0	0	0	0	0	0	0
C. mydas	0	0	0	0	0	0	0	0	0	0	1	1	2
D. coriacea	0	0	0	0	0	0	0	1	3	1	4	2	11
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	0	0	1	0	0	4	8	13
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	2	3	1	9	11	26

Table 17(b). Marine turtle strandings reported from MASSACHUSETTS, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Barnstable	0	0	0	0	0	0	0	1	3	0	7	9	20
Bristol	0	0	0	0	0	0	0	1	0	0	0	0	1
Dukes	0	0	0	0	0	0	0	0	0	1	2	0	3
Norfolk	0	0	0	0	0	0	0	0	0	0	0	1	1
Plymouth	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL	0	0	0	0	0	0	0	2	3	1	9	11	26

Table 18(a). Marine turtle strandings reported from RHODE ISLAND, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	0	0	0	0	0	0	0	0
C. mydas	0	0	0	0	0	0	0	0	0	0	0	0	0
D. coriacea	1	0	0	0	0	0	4	1	0	1	0	0	7
E. imbricata	0	0	0	0	0	0	0	0	0	0	0	0	0
L. kempi	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	0	0	0	0	0	4	1	0	1	0	0	7

Table 18(b). Marine turtle strandings reported from RHODE ISLAND, 1 January - 31 December 1986 by county and month of occurrence. All species are combined. Only counties from which strandings were reported are included.

COUNTY	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Washington	1	0	0	0	0	0	4	1	0	1	0	0	7
TOTAL	1	0	0	0	0	0	4	1	0	1	0	0	7

Table 19. Marine turtle strandings reported from PUERTO RICO, 1 January - 31 December 1986.

SPECIES	MONTH												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
C. caretta	0	0	0	0	0	0	0	0	0	0	0	0	0
C. mydas	0	1	0	0	0	0	3	1	0	1	0	0	6
D. coriacea	0	0	0	0	0	0	0	1	0	0	0	0	1
E. imbricata	2	0	0	0	0	0	1	5	1	0	0	0	9
L. kempi	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	1	0	0	0	0	4	7	1	1	0	0	16

Table 20. Reported rates of occurrence of selected carcass anomalies from marine turtle strandings during 1986. Occurrence rates are minimum estimates as not all observers report remarks.

CARCASS ANOMALY	REPORTED RATE OF OCCURRENCE
Propeller Wounds	5.8%
Carapace Damage (Unknown Cause)	4.9%
Plastron Damage (Unknown Cause)	0.6%
Skull Injuries	1.2%
Skull & Flipper(s) Combination Missing	5.6%
Flipper(s) Missing (Probably Natural)	4.5%
Flipper(s) Missing (Man Induced)	1.1%
Partial Flipper Damage (Unknown Cause)	3.4%
Entanglement	2.4%
Bullet Wounds	1.0%
Apparent Shark Wounds	1.1%
External Tumors	0.8%
Apparent Deliberate Mutilation	2.0%
Tar or Oil Impact	0.5%
Cold Stun Related	2.2%

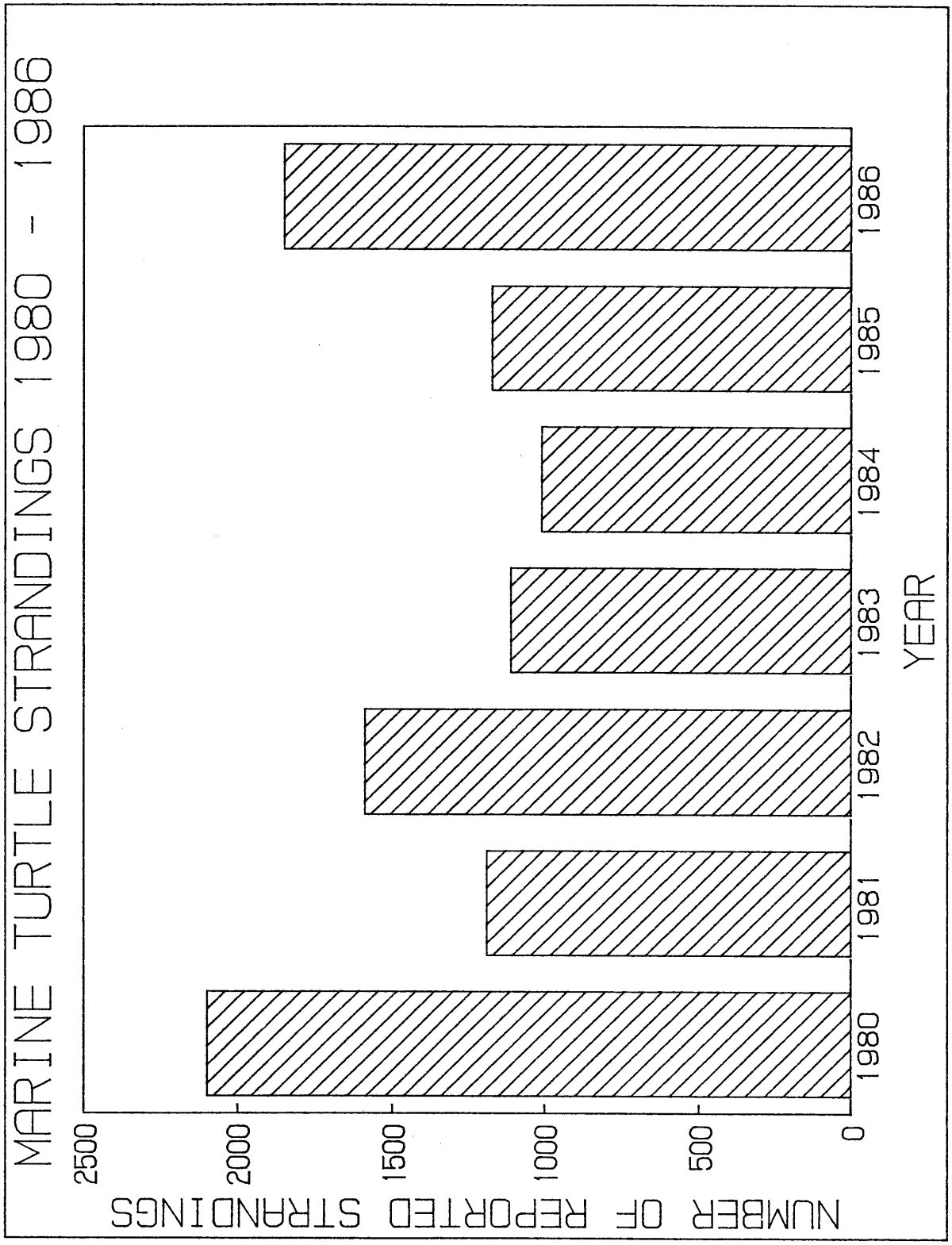


Figure 1. Marine turtle strandings reported annually from the U.S. Atlantic and Gulf of Mexico, 1980-1986. All species are combined. Strandings of known headstarted turtles are not included.

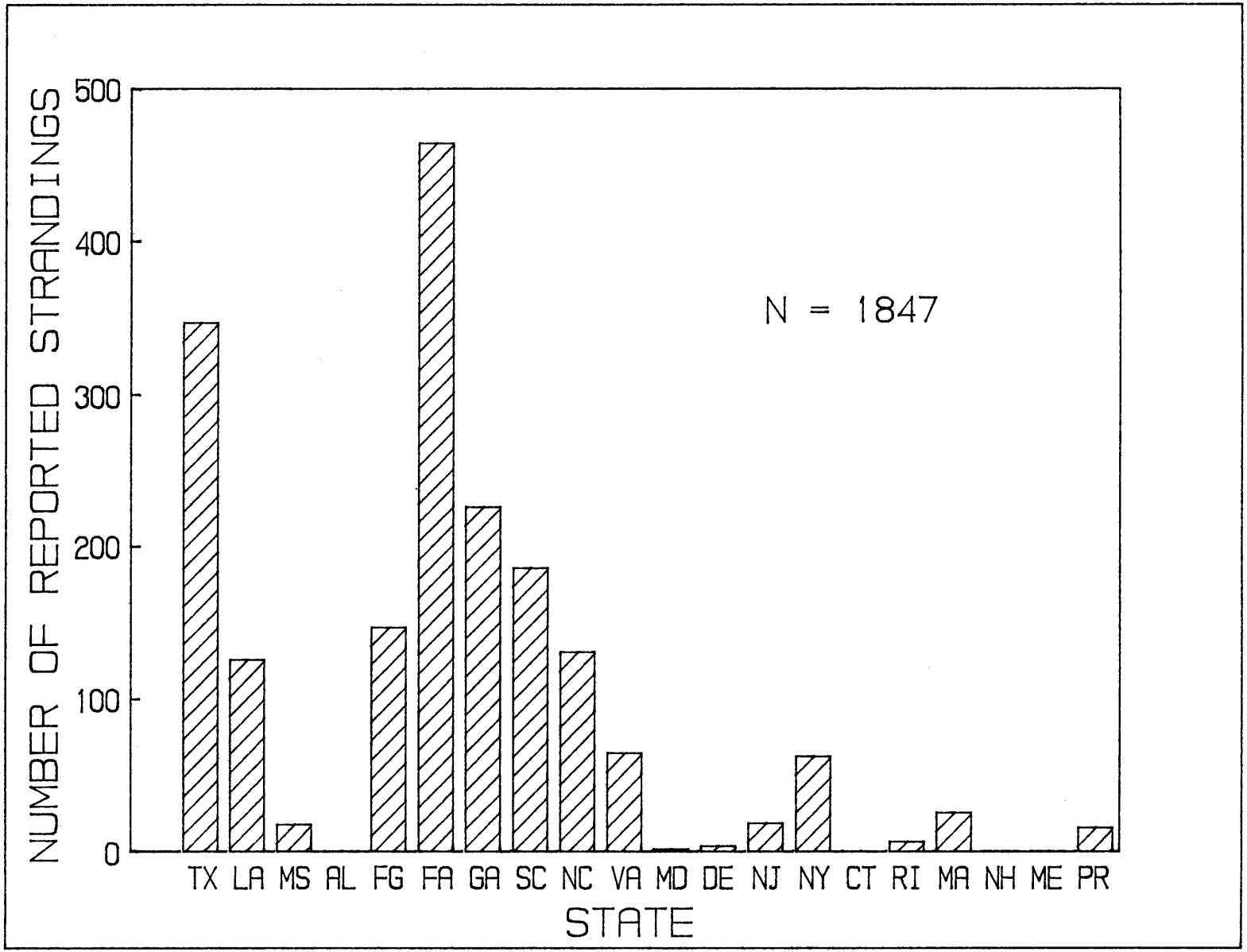


Figure 2. Marine turtle strandings reported from the U.S. Atlantic and Gulf of Mexico, 1 January-31 December 1986. Strandings of known headstarted turtles are not included. FG = Florida-Gulf, FA = Florida-Atlantic.

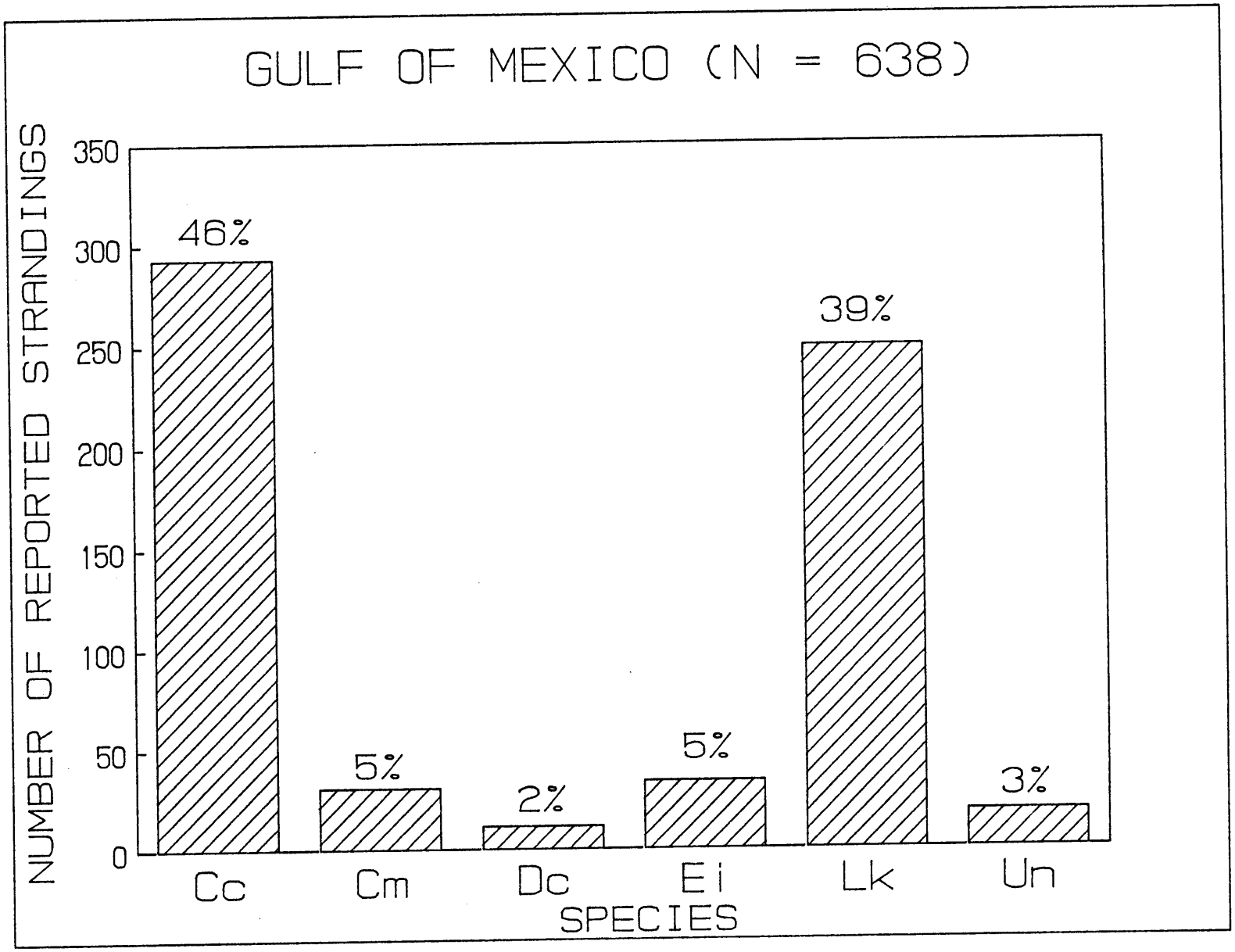


Figure 3. Species composition of stranded marine turtles reported from the Gulf of Mexico, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.

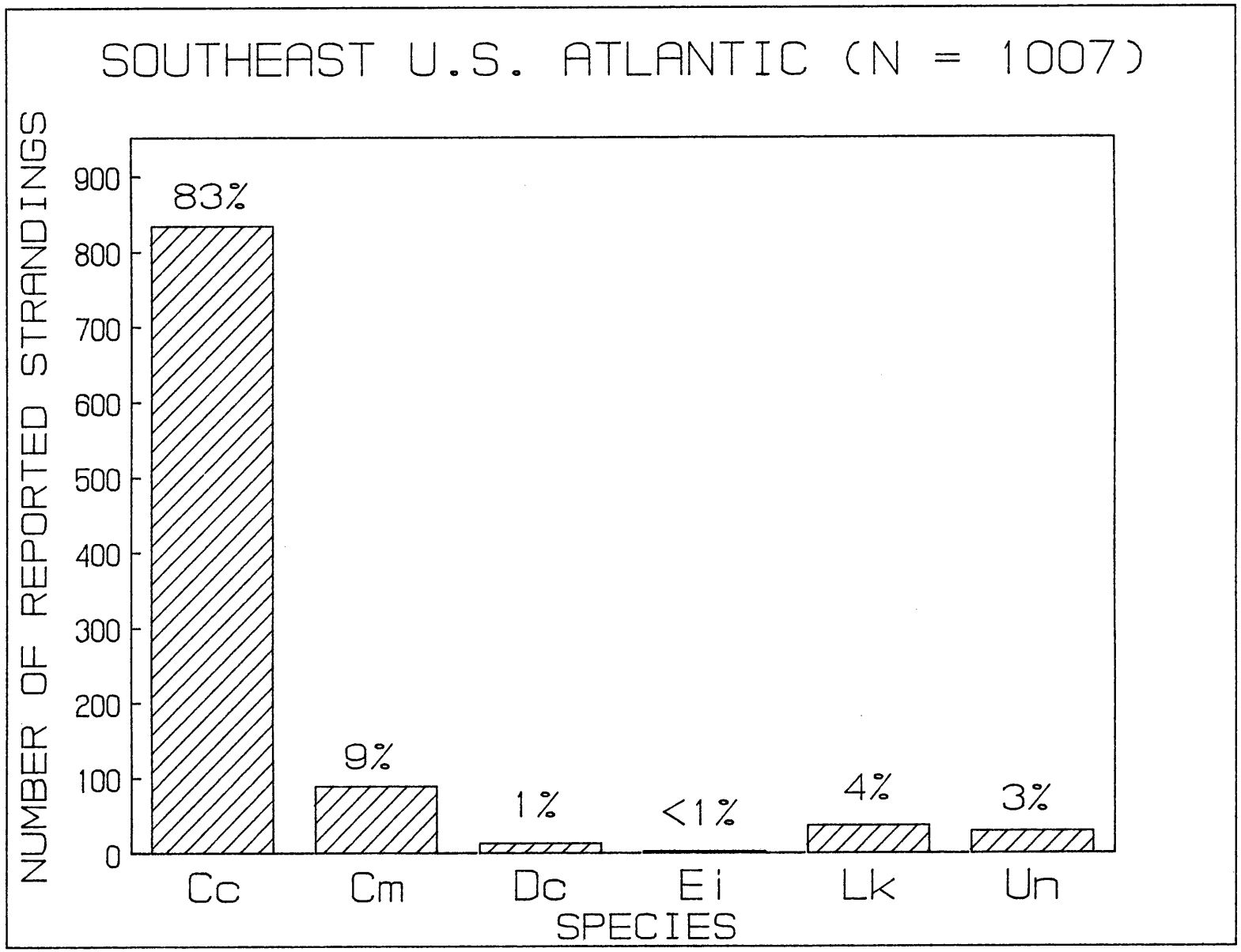


Figure 4. Species composition of stranded marine turtles reported from the southeast U.S. Atlantic, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.

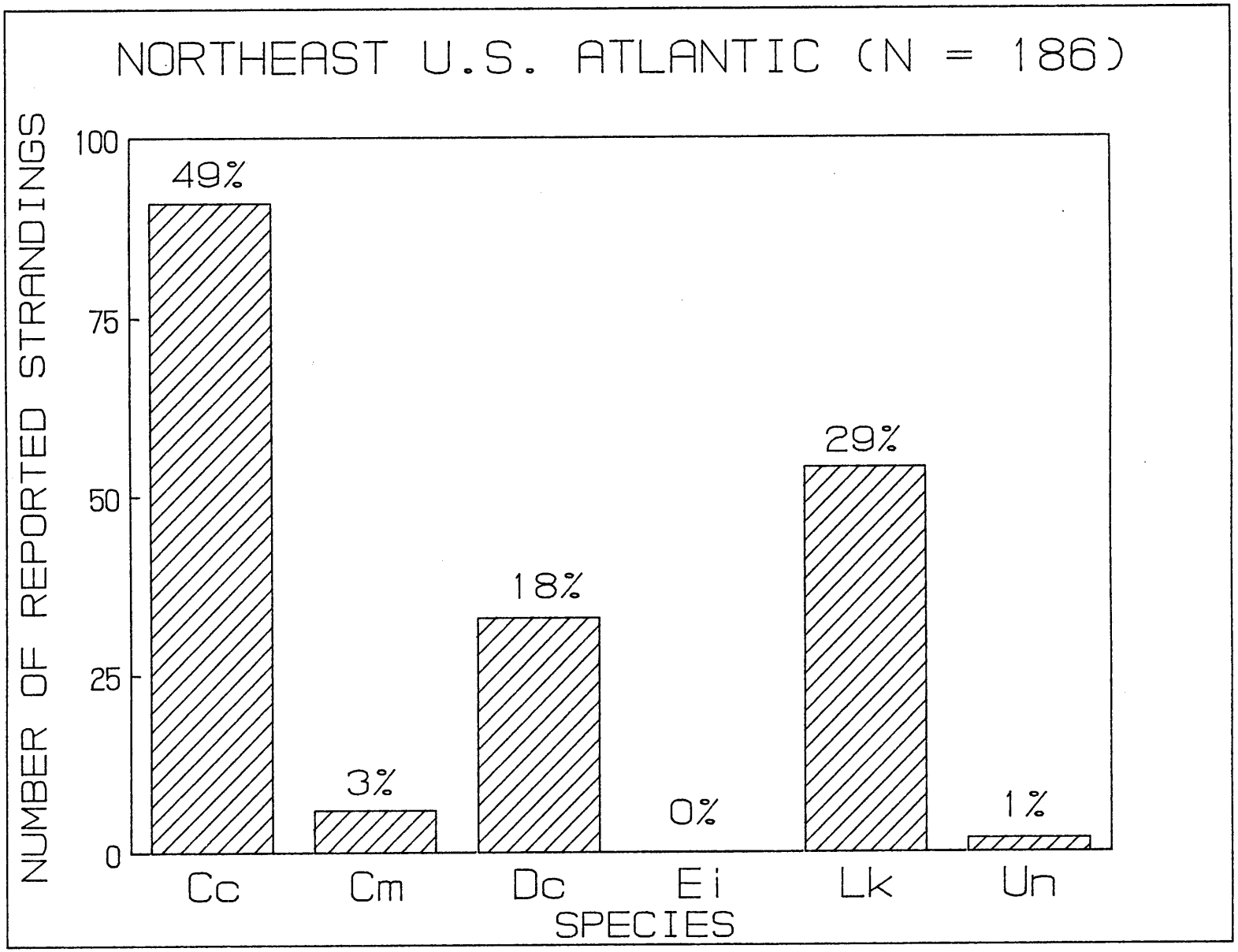
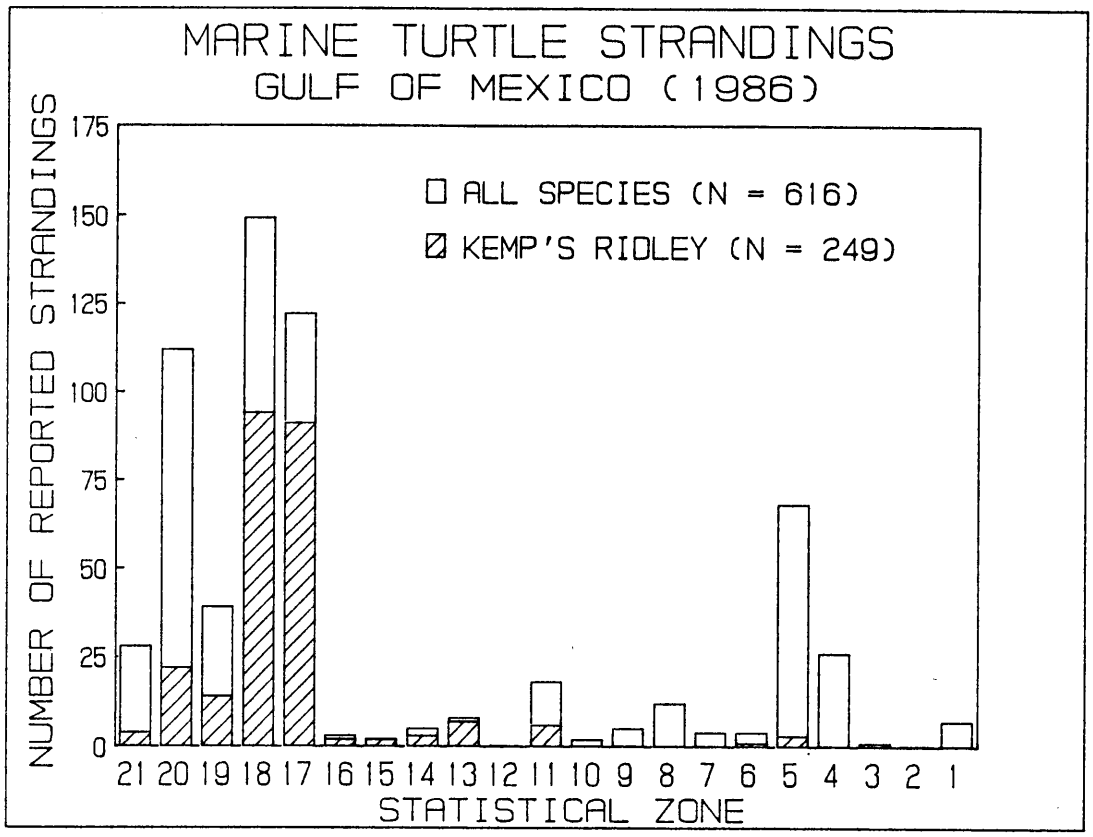


Figure 5. Species composition of stranded marine turtles reported from the northeast U.S. Atlantic, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.



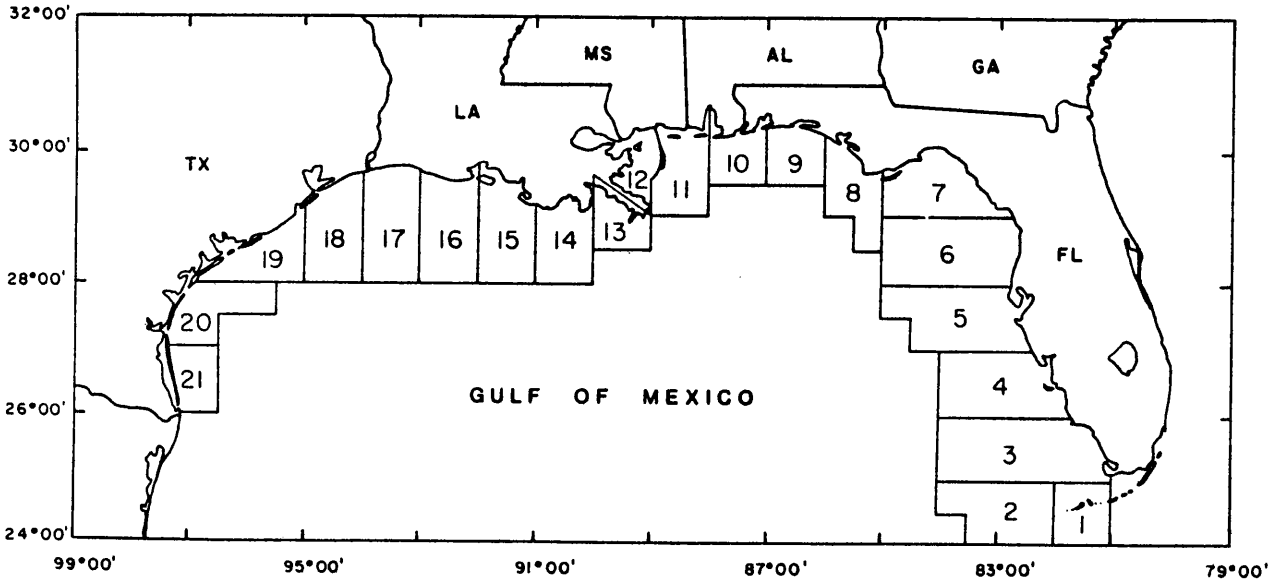
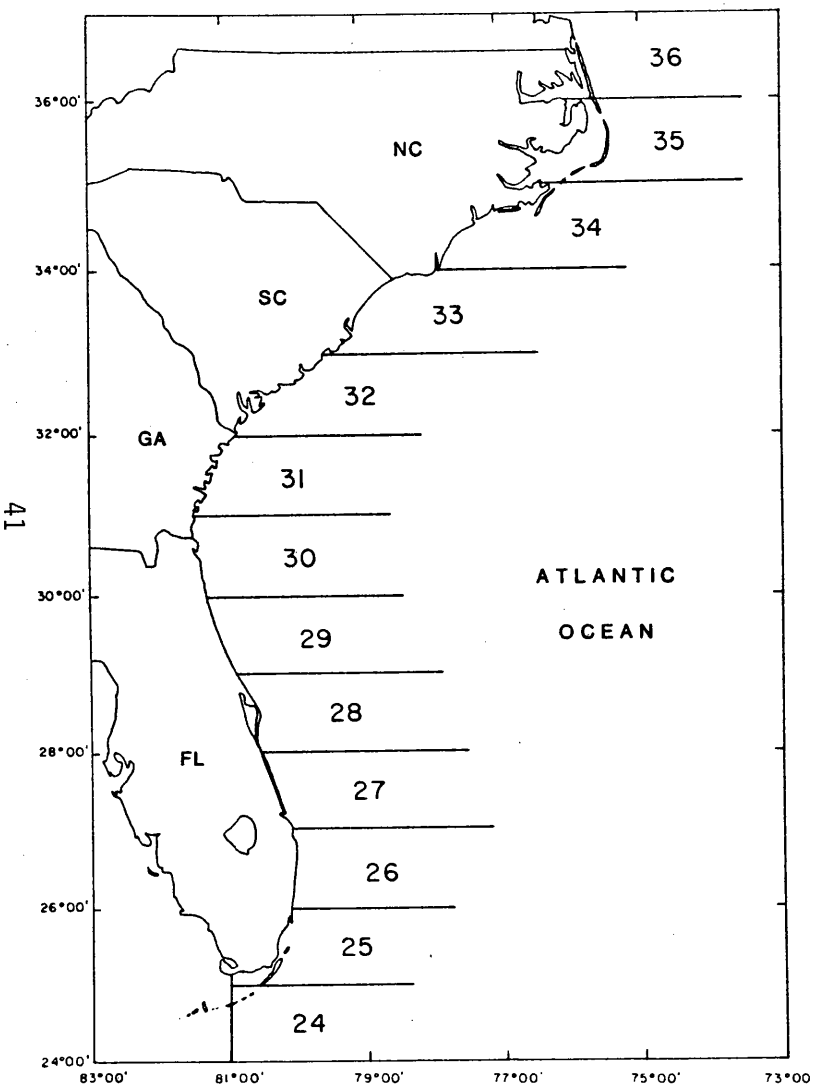


Figure 6. Marine turtle strandings reported from the Gulf of Mexico by statistical zone, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.



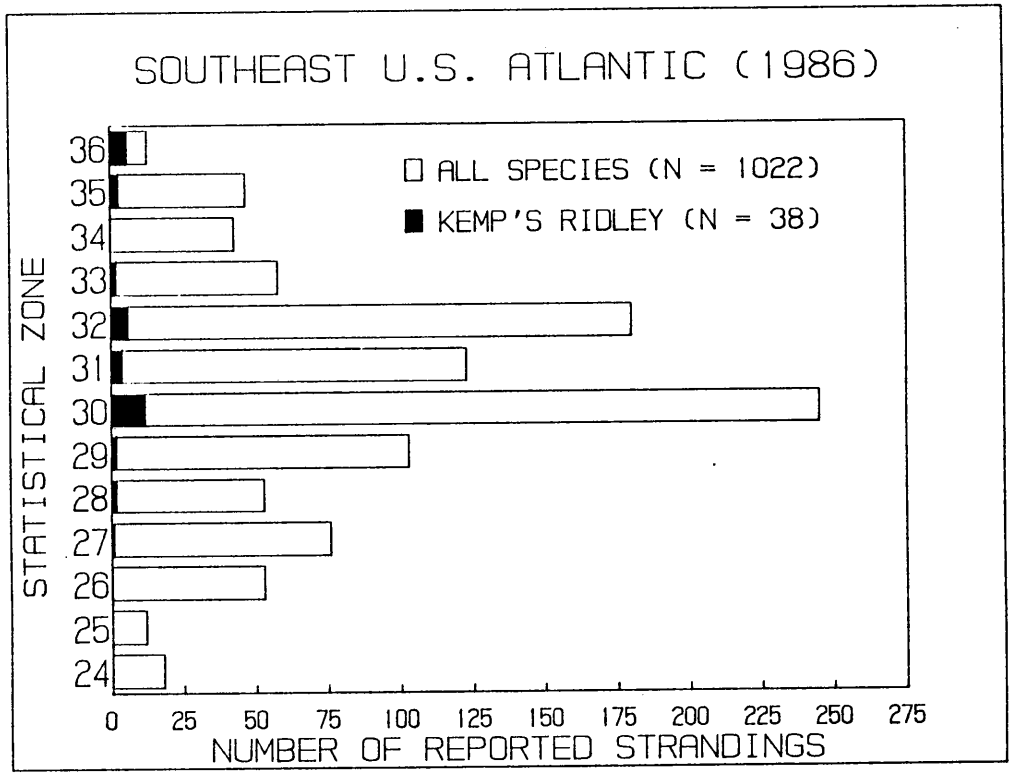
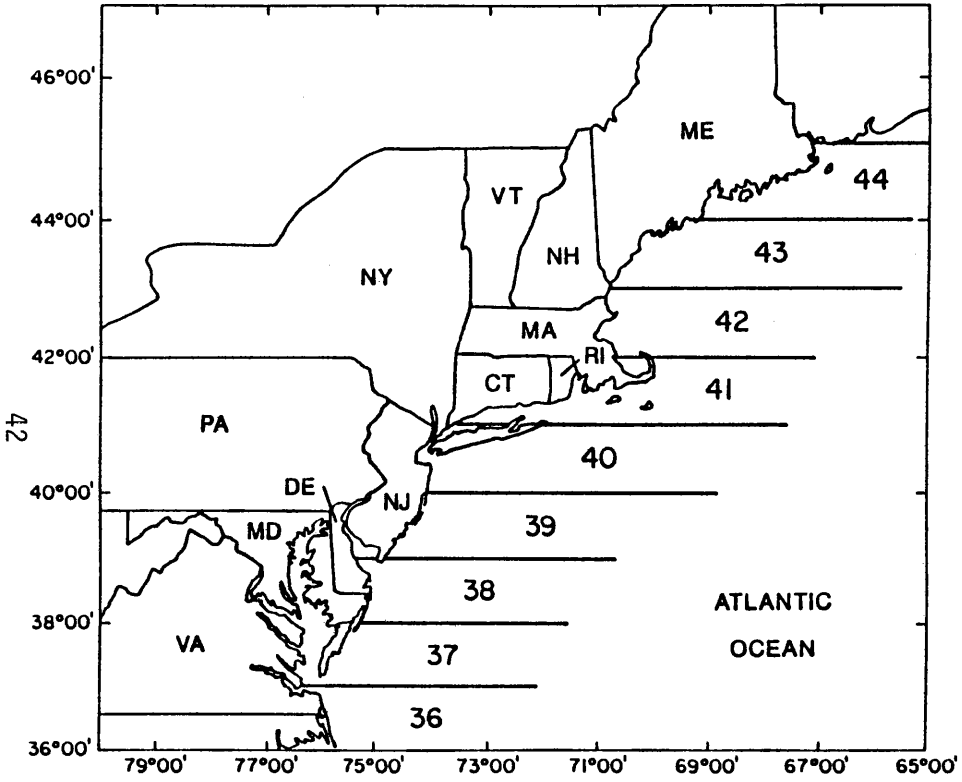


Figure 7. Marine turtle strandings reported from the southeast U.S. Atlantic by statistical zone, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.



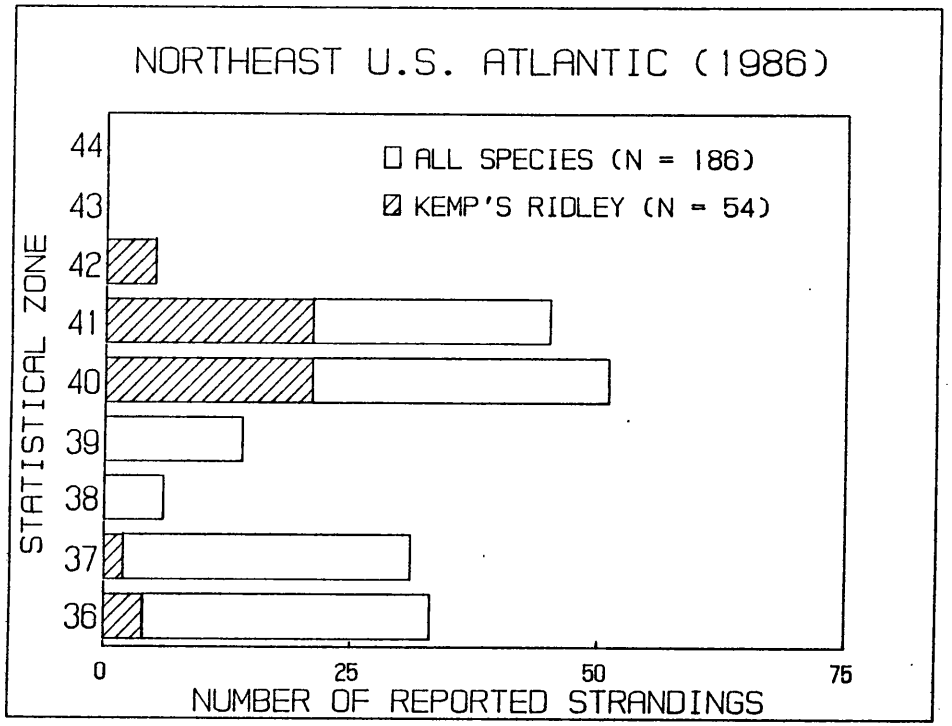


Figure 8. Marine turtle strandings reported from the northeast U.S. Atlantic by statistical zone, 1 January - 31 December 1986. Strandings of known headstarted turtles are not included.

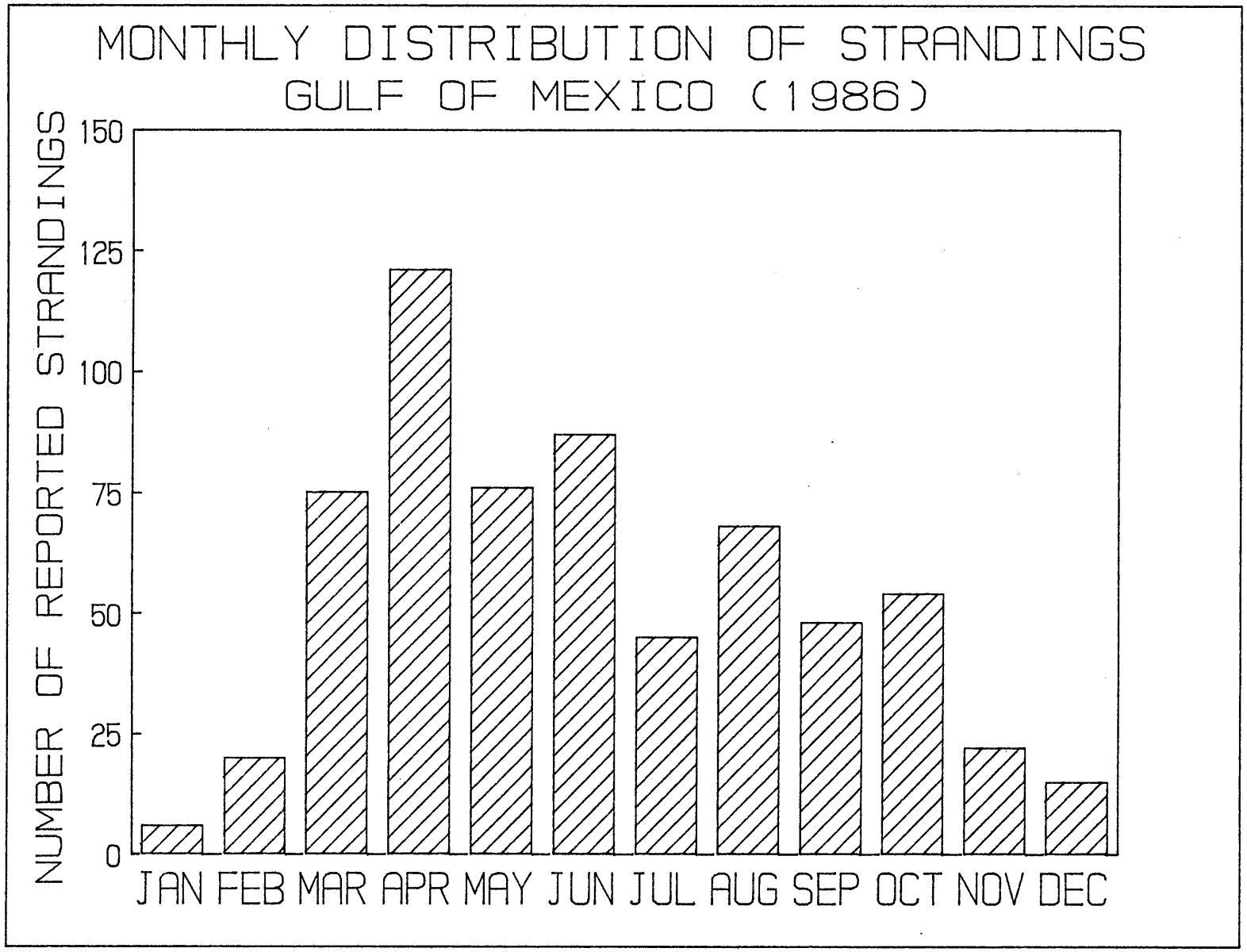


Figure 9. Monthly distribution of marine turtle strandings reported from the Gulf of Mexico, 1 January - 31 December 1986. All species are combined, known headstarted are not included.

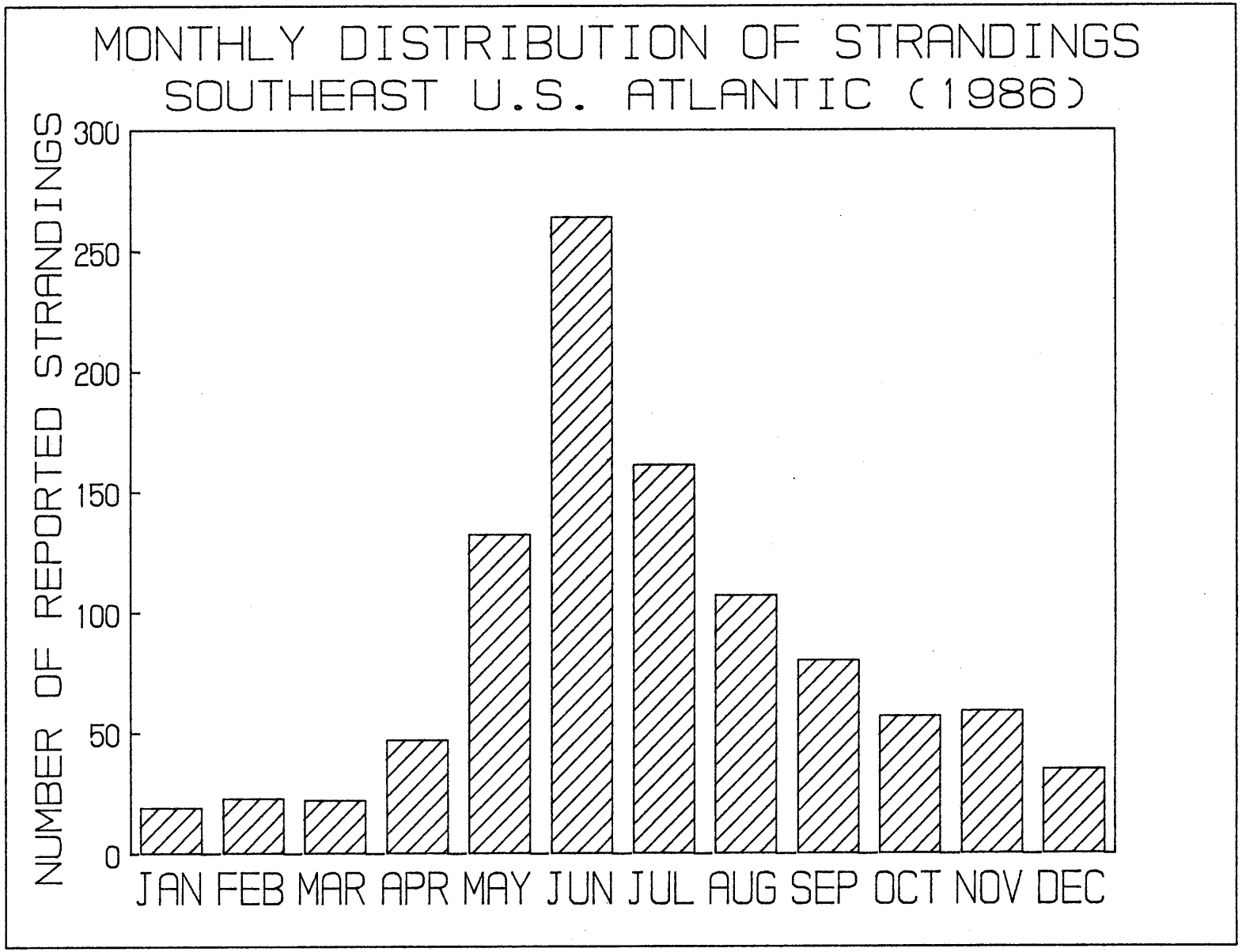


Figure 10. Monthly distribution of marine turtle strandings reported from the southeast U.S. Atlantic, 1 January - 31 December 1986. All species are combined, known headstarted turtles are not included.

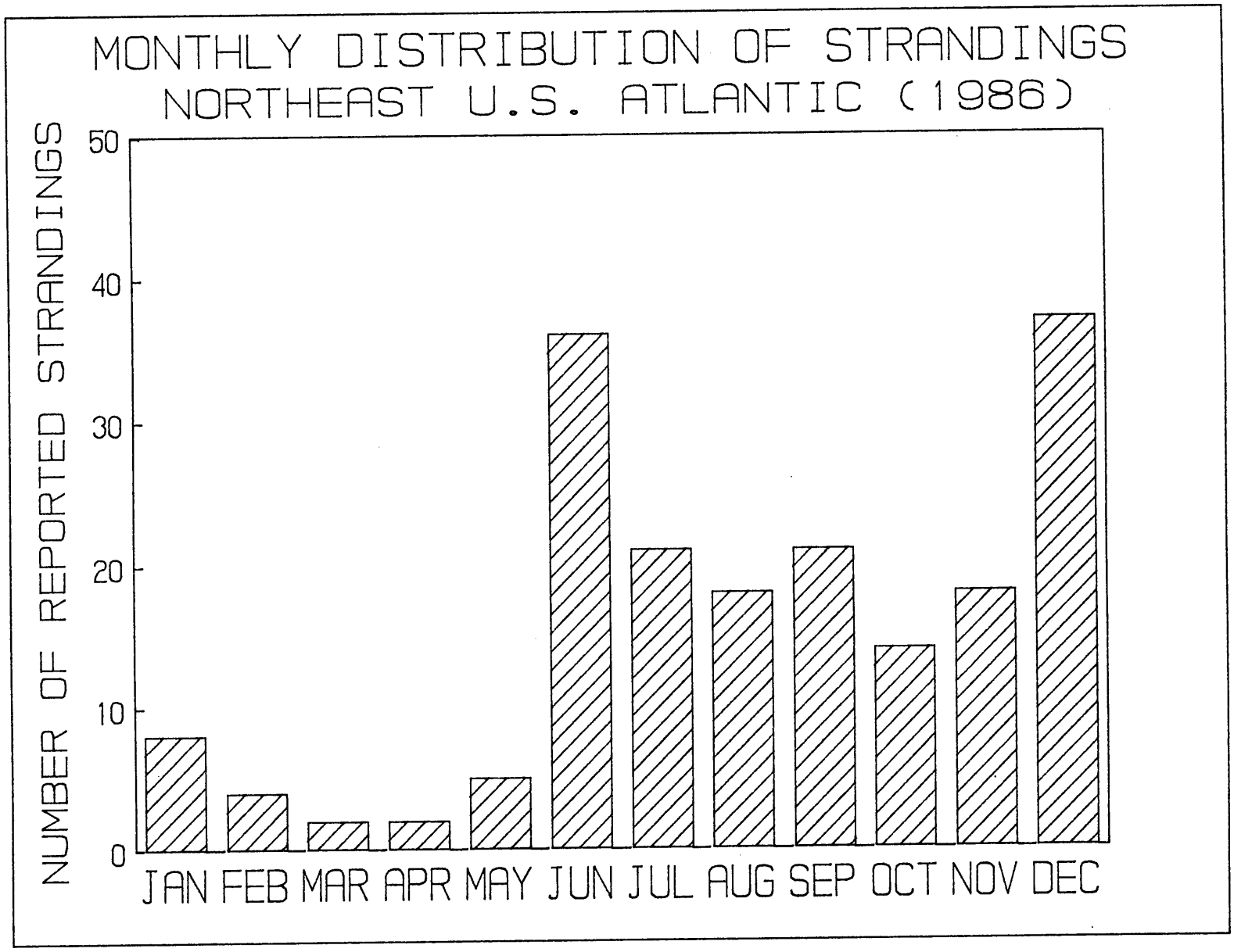


Figure 11. Monthly distribution of marine turtle strandings reported from the northeast U.S. Atlantic, 1 January - 31 December 1986. All species are combined. Strandings of known headstarted turtles are not included.