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# Ecology of Sea Turtles in Virginia

Annual Report for 1997 Submitted to

The National Marine Fisheries Service

By

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The sea turtle research program at the Virginia Institute of Marine Science (VIMS) has been in continuous existence since 1979. Seasonally, a network of trained volunteers from state, local and private organizations collect data from stranded and incidentally captured sea turtles. VIMS is the central repository for all Virginian sea turtle data, which is yearly distributed to the National Marine Fisheries Service. There are 3 data forms distributed to volunteers and organizations: detailed form, general form and short form. All forms include species, reliability, and condition of specimen, date, examiners, location, presence of tags, curved carapace lengths, disposition of carcass, and a description of wounds. More detailed information is required for the other forms, some of which require the use of special tools and training. The stranding forms are generally distributed with regard to training and resource requirements placed on the volunteers. This database is archived and maintained at VIMS in a Microsoft Access format. In 1997 the VIMS Sea Turtle Project was comprised of many integrated activities which contributed to knowledge of the ecology and conservation of these endangered and threatened animals. Unfortunately, reduction of funding has severely curtailed normal activities of the VIMS Sea Turtle Research Project in Virginia.

Live turtles

During 1997 we continued our studies on live sea turtles captured by cooperating poundnet fishermen (Appendix 1 indicates sub-permittees). We examined 28 loggerheads and 2 Kemp's ridleys. Healthy turtles were tagged (flipper tags and PIT tags), measured, weighed, and released in the Chesapeake Bay. Required data were sent to the southeast NMFS Lab.

Loggerheads maintained in captivity

Two hatchlings were acquired from a nest laid at Back Bay National Wildlife Refuge (BBNWR) on September 5, 1995 as part of an ongoing research project with the Fish and Wildlife Service. These animals are maintained in fiberglass tanks and are on display to the public in an aquarium setting. Aquarium personnel are performing a growth study; weight and length are measured on a biweekly basis. Furthermore, these turtles are under the care of our resident veterinarian, Dr. George.

Sick turtles and rehabilitation

During 1995, 7 sick loggerheads were reported and/or brought to VIMS for rehabilitation, and our resident veterinarian, Dr. George, examined all. Four turtles died in captivity; upon examination by necropsy two of the animals died of GME and two animals died of undetermined causes. Three loggerheads were successfully rehabilitated and released into the Chesapeake Bay. All required data were sent to the southeast NMFS Lab.

Monitoring and Salvage of Stranded Turtles

A total of 293 dead sea turtles were recorded from Virginia by stranding network participants in 1997. This total included 254 loggerheads, 21 Kemp's ridleys, 12 leatherbacks and 6 unidentified turtles. Length frequency data were tabulated from stranded turtles for 1997, and the sizes of the turtles indicate that most were juveniles (figure 1). A majority of the turtles were recovered near the Chesapeake Bay mouth. More than 65% of the turtles recorded in 1997 were recovered from only 4 locations: Virginia Beach (ocean side) (24%), Northampton County

(19%), Virginia Beach (bay side) (15%), and Norfolk (10%) (table 1). Of the 293 dead sea turtles, 8.2% of the fatalities were from propeller wounds, .3% from gunshot wounds, 1% from net/fishing line entanglement and the remaining fatalities were from unknown causes. Required stranding data were sent to the STSSN (southeast NMFS region).

Satellite Telemetry

Two female loggerheads were found nesting at Back Bay National Wildlife Refuge (BBNWR) in 1997 (14 July and 20 July). Satellite transmitters (Telonics model ST-14) were affixed to the carapace of the turtle with plastic resin, a non-invasive procedure. The turtle was then immediately released at the same location as the nesting event, and movements and behavior were monitored until positions were no longer received (Appendix 2).

Summary

The data from the VIMS sea turtle research project has provided valuable information on sea turtles, particularly juvenile loggerheads and Kemp's ridleys. The latter is one of the most endangered animals on earth. There are few other places where juvenile sea turtles congregate in such numbers, and the Chesapeake Bay is a major developmental habitat for juvenile loggerhead and ridley sea turtles. Since hatchling or nesting females are the only wild sea turtles normally available to researchers, VIMS scientists are fortunate to be able to study wild, juvenile sea turtles. Our database on demography and life history of juvenile loggerheads and ridleys is the longest in existence, covering 19 years. This database includes records of dead and live strandings, incidental captures, and occurrences of nesting. It is important that this project continues, since by monitoring juveniles, we will observe effects of conservation efforts at nesting

beaches on hatchling survivorship long before those efforts are seen at the nesting beaches themselves. The juvenile turtles from Virginia's waters are important to the continued existence of the species, as they will be recruited into the breeding population in the next decade.

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Figure 1. Length frequency of stranded turtles in Virginia for 1996.

Cc= Loggerhead sea turtle, Lk=Kemp's ridley sea turtle, and Dc=Leatherback sea turtle

**Length Frequency of Sea Turtles in Chesapeake Bay 1997**

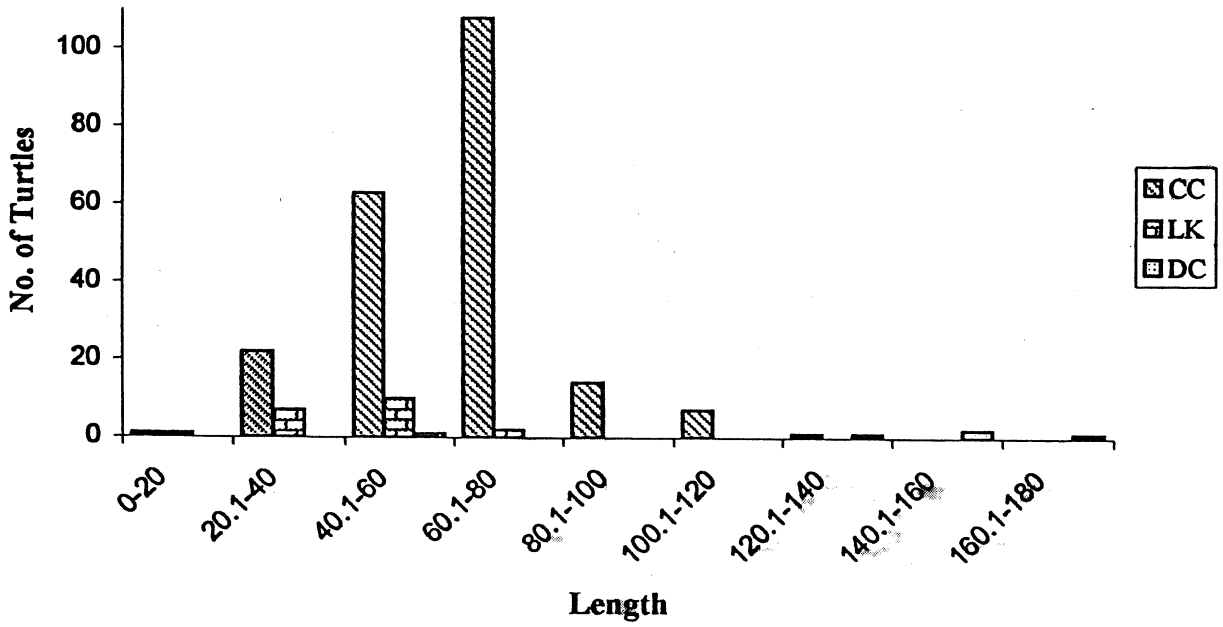

Table 1. Location and numbers of strandings recorded for the years 1979-1996 and 1997.

| County, State | 1979-1996 | 1997 |
|---|---|---|
| VA Beach (ocean), VA | 591 | 70 |
| Northampton, VA | 341 | 54 |
| VA Beach (bay), VA | 156 | 45 |
| Norfolk, VA | 157 | 22 |
| Mathews, VA | 163 | 17 |
| Hampton, VA | 189 | 15 |
| Accomack, VA | 94 | 11 |
| York, VA | 102 | 8 |
| Gloucester, VA | 152 | 7 |
| Currituck, NC | 30 | 4 |
| Lancaster, VA | 10 | 3 |
| Northumberland, VA | 38 | 2 |
| Middlesex, VA | 14 | 2 |
| Poquoson, VA | 4 | 1 |
| Suffolk, VA | 2 | 1 |
| Somerset, MD | 4 | 0 |
| Queen Annes, MD | 3 | 0 |
| Dare, NC | 2 | 0 |
| Saint Mary's, MD (live) | 369 | 30 |

Appendix 1. Persons sub-permitted under VIMS Endangered Species Permit No. 929.

| NAME | AFFILIATION |
|---|---|
| R. George | VIMS veterinarian |
| F. Jett | Commercial Fisherman (VA) |
| T. Jett | Commercial Fisherman (VA) |
| M. Swingle | Virginia Marine Science Museum |
| C. O'Hara | Center for Marine Conservation |
| C. Barr | Mathematics and Science Center |
| D. Warmolts | Columbus Zoo |

Appendix 2. Final report submitted to the Army Corps of Engineers on the movements of two adult female loggerhead sea turtles found nesting in VA in 1997.