

Refuge Copy

- Proposal*
- Outline**
- Amendment**
- Final Report*
- Progress Report # _____ * Period _____ to _____

**TRANSMITTAL
REFUGE MANAGEMENT STUDY**

Central Office (RF)
 R.O. (RF)

Refuge name and State <u>Chincoteague NWR, VA</u>	Region <u>5</u>	Project no. <u>CNWR - No.1</u>
------------------------------------------------------	--------------------	-----------------------------------

Study title-(Brief descriptive title)
An Attempt at the Northward Extension of the Breeding Range of the Atlantic Loggerhead Turtle (*Caretta caretta caretta*) by Egg Transplants

Principal Investigator Name <u>Otto Florschutz</u>	Title <u>East Coast Biologist</u>	Study being conducted by <input checked="" type="checkbox"/> Original investigator <input type="checkbox"/> Other investigator
-------------------------------------------------------	--------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

Purpose-(For proposal or outline-give a brief objective statement. For progress or final report-give a brief abstract of the report. For an amendment-state the nature of the amendment.)
To attempt to extend the northern breeding range of the Loggerhead Turtle by transplanting eggs from Cape Romain National Wildlife Refuge, South Carolina to a similar barrier island environment on Chincoteague National Wildlife Refuge, Virginia - a straight line distance of about 400 miles and about 275 miles north of the present known breeding range.

Cooperator-(Outside the Division of Wildlife Refuges)

- Division of _____
- Coop. Wild. Res. Unit _____
- State _____

- University or College of _____
- Other-(specify) _____
- None

THIS BLOCK COMPLETED BY PROJECT LEADER						
Bureau Costs	Cost Code	F.Y. <u>74</u>	Cost Code	F.Y. <u>75</u>	Cost Code	F.Y. <u>76</u>
Estimated	0115-414	540.00	61750	3207.00	0115-414	3207.00
Actual	0115-414	-	61750	-	0115-414	-
Accrued to date	0115-414	2,355.00	61750	-	0115-414	-

SIGNATURES AND APPROVALS

Submitted by (name and title) <i>Ralph M. Kuehler</i> Wildlife Biologist	Date <u>3/13/74</u>	Regional Office Representative (name and title)	Date
Project Leader (name and title) <i>J.C. Appel</i> Refuge Manager	Date <u>3/13/74</u>	CENTRAL OFFICE REVIEW Refuge Division Representative (name and title)	Date
Cooperator Representative (name and title)	Date	Research Division Representative (name and title)	Date

WILDLIFE MANAGEMENT STUDY OUTLINE
Division of Wildlife Refuges, Region 5

Project - Chincoteague, Virginia & Cape Romain, South Carolina

1. Title of Study

An Attempt at the Northward Extension of the Breeding Range of the Atlantic Loggerhead Turtle (Caretta caretta caretta) by Transplants.

2. Objective

To attempt to extend the northern breeding range of the Loggerhead Turtle by transplanting eggs from Cape Romain National Wildlife Refuge, South Carolina, to a similar barrier island environment on Chincoteague National Wildlife Refuge, Virginia, a straight-line distance of approximately 400 miles and about 275 miles north of the present known breeding range.

3. Justification

Upon reaching maturity at six to ten years of age, the female Loggerhead leaves the ocean to lay a clutch of 100 to 150 eggs or more in an ocean-front beach-dune environment. She may make as many as four egg-laying crawls in one nesting season from mid-May to late August. The eggs are extremely vulnerable to predators such as raccoons, sand or ghost crabs and human egg hunters. Hatchlings are easy prey for fish, sharks and gulls as well as for raccoons and sand crabs. The species is subject to inadvertent perils such as incompatible ocean-front development and shrimp trawlers. Little is known about the worldwide population status of the loggerhead turtle since it nests on many of the more remote islands, but there is evidence indicating that significant declines in their numbers are occurring in many places. The Department of Interior has recently proposed adding the loggerhead turtle to its list of foreign endangered fish and wildlife. Loggerhead turtle sightings have occurred as Cape May, New Jersey and it is thought that nesting has also occurred that far north. Tag recoveries on adult females have shown the females return not only to the same island to nest but often in close proximity to previous nest sites. It is thought that the adult female returns to her natal beach but that is uncertain.

The Chincoteague Refuge has about 10 miles of ocean-front beach that receives low density public use since it is open to foot traffic only between the hours of 4:30 AM to 10:00 PM. It is on this beach frontage that the attempt to establish a loggerhead nesting colony is taking place.

In the original Study Outline, the egg transplant was to be conducted for three years from 1969 through 1971. The study

was amended and approved on January 13, 1972 to continue the egg transplants through 1977. It is recommended that the study be continued through 1977 even though Cape Romain and Chincoteague Refuges are no longer in the same region.

4. Procedures

The study will consist of two main activities, 1) the transplanting of eggs from Cape Romain NWR to Chincoteague NWR, and 2) the patrolling of refuge beaches to confirm the return of egg-laying adults.

A.. Egg Transplantation

Ten to twelve nests about 47 days old and totalling approximately 1000 eggs will be transferred to Chincoteague Refuge and handled as follows:

1. Each clutch of eggs will be transported in separate styrofoam coolers and packed in sand from the nest site.
2. Each nest will be re-buried in 16 to 18 inches of sand and completely enclosed by screen wire cylinders. The nests will be sited above the normal high tide mark.
3. The nest sites will be checked three times daily and daily logs kept for each nest.
4. Hatchlings will be removed from the enclosures and carried to the swash zone to prevent predation by ghost crabs and their falling into ghost crab burrows.
5. Records on the nests will be forwarded to the East Coast Biologist by September 30 each year and contain the following:
 - a. Number of eggs in each nest and age at time of transplant
 - b. Number eggs hatched
 - c. Number hatchlings entering sea
 - d. Number hatchlings failing to emerge from nest.
 - e. Number of eggs not hatched
 - f. Number of eggs contained embryos but failed to hatch.

B. Determination of Nesting Establishment

Long term beach monitoring patrols will be required to evaluate the egg transplant program. The patrols will begin during the summer of 1974 when mature females from the 1969 transplant may return to make their first egg-laying crawls. The following procedure will begin in 1974 and continue through 1985 - eight years after the last transplant.

1. Daytime patrols will be conducted daily beginning the first week in June and ending the last week of August.
2. Patrols will be conducted on a low tide cycle so the wet beach can be driven.
3. Patrols will cover the beach area from Fishing Point

at the southern tip of Assateague Island to the Maryland State line, a round trip distance of about 30 miles.

4. During the patrol a search for crawls, turtles and nests will be made and observations recorded. Any nests discovered will be dug up and reburied inside an enclosure to prevent predation.
5. Results will be sent annually to the East Coast Biologist by September 7.

5. Cooperators

None outside of Division of Refuges, BSF&W.

6. Responsibility

Nest aging and marking at Cape Romain Refuge will be conducted by Cape Romain NWR personnel. The nests to be transferred to Chincoteague Refuge will be dug up by personnel from both refuges and transported to Virginia by Chincoteague personnel. Chincoteague personnel will also transplant the eggs and conduct the daily nest checks. Progress and final reports will be prepared and submitted by the East Coast Biologist annually following receiving of the data as set forth in section 4A5.

7. Costs

Procedure A- Egg Collection and Transportation

Manpower - 8 man-days	416.00
Vehicle - 1200 miles @ 15¢/mi. =	180.00
Per Diem - 8 man-days	200.00
Materials- Coolers, tape, tarp, etc.	<u>25.00</u>
Sub-total	821.00

Procedure A- Egg Transplanting and Monitoring

Manpower	633.00
Reburial of nests - 9 man-hours	- 51.00
Daily nest checks -78 man-hours	-390.00
Administration - 3 man-days	-192.00
Vehicle - 936 mi. @ 15¢/mi.	140.00
Materials - nest enclosures, screen wire, etc.	<u>140.00</u>
Sub-total	913.00

Total Procedure A 1,734.00

Procedure B- Beach Patrol

Manpower	1,038.00
Beach patrol - 182 man-hours-	910.00
Administration - 2 man-days	- 128.00
Vehicle - 2,730 mi. @ 15¢/mi.	410.00
Materials	<u>25.00</u>
Total Procedure B	1,473.00

Grand Total \$3207.00

8. Schedule

Procedure A was begun in 1969. It is recommended that this procedure continue through 1977. The starting date for Procedure B is June 1, 1974 with a closing date of August 31, 1985.

9. Reports

Progress reports on Procedure A are due October 31 of each year this procedure is conducted. Final report will be due October 31, 1977. Progress reports on Procedure B are due September 30 each year this procedure is conducted. Final report due September 30, 1985. Copies of reports will be distributed as follows:

Regional Office - two copies

Central Office - one copy

Cape Romain NWR - one copy

Chincoteague NWR - one copy

East Coast Biologist - one copy

10. Publication

By the fall of 1977 enough data should be available on both procedures to be considered for publication in an appropriate professional journal.

APPENDIX A
LOGGERHEAD TURTLE EGG TRANSPLANT
SUMMARY FOR CHINCOTEAGUE NWR

<u>YEAR</u>	<u>NO. EGGS TRANSPLANTED</u>	<u>NO. HATCHED</u>	<u>% HATCH</u>
1969	612	248	44.4
1970	672	23	3.4
1971	1,488	594	39.9
1972	1,346	1,075	79.9
1973	1,080	936	87.0