

Table 2. Comparison of hatchability of Canada goose eggs in transferred nests and non-transferred nests.

Year	Number eggs not moved	Number eggs hatched	Percent	Number eggs moved	Number eggs Hatched	Percent
1967	49	34	69.5	34	21	62.0
1968	49	32	65.5	22	10	45.5
1969	56	38	68.0	31	23	74.0
Total	154	104	67.5	87	54	62.0

#### LITERATURE CITED

- Bednarik, K. 1970. Buckeye Honkers. (In: Home-grown honkers. Eds. H. H. Dill and F. B. Lee) U.S.D.I. U. S. Fish and Wildl. Serv. pp. 89-102.
- Brakhage, G. K. 1965. Biology and behavior of tub-nesting Canada geese. *J. Wildl. Mgmt.* 29(4):751-771.
- Craighead, J. J. and D. S. Stockstad. 1961. Evaluating the use of aerial nesting platforms by Canada geese. *J. Wildl. Mgmt.* 25(4):363-372.
- Dill, H. H. and F. B. Lee (Editors) 1970. Home-grown honkers. U.S.D.I. U. S. Fish and Wildl. Serv. 154 pp.
- Gore, J. F. and C. J. Barstow. 1969. Status of a free-flying flock of Canada geese in Tennessee. Proc. 23d Conf. S. E. Assoc. Game and Fish Comm., Mobile Alabama, pp. 101-103.
- Gore, J. F. 1967. Canada Goose production and history of the Comer Estate in Middle Tennessee. *Tenn. Game and Fish Comm.* Nashville, 9 pp.

## BAND RECOVERIES FROM AN ISOLATED GADWALL COLONY IN EASTERN NORTH CAROLINA

by

*Otto Florschütz, Jr.*  
*East Coast Biologist*

*Division of Wildlife Refuges, Region 4*

Pea Island National Wildlife Refuge is located about one quarter of the way down the North Carolina Outer Banks and lies between Pamlico Sound and the Atlantic Ocean. Since 1940 it has had a small gadwall nesting colony averaging about 50 broods annually. An estimated 1,800 young were produced from 1968 to 1972 and 327 or 18.2 percent were banded during this five-year period.

### *Recovery Locations*

As of May 1, 1973, band recovery reports were received from 26 (8.0 percent) of these 327 gadwalls. In addition we have a record of one 1961 - banded gadwall being recovered in 1966. Of these 27 recoveries, six came from North Carolina and the rest were from six States and four Canadian Provinces. Virginia also had six recoveries, five just north of North Carolina in the Back Bay area, Maryland and Michigan each had three and New York and Minnesota had two each (Table 1).

The most distant recovery came from Luseland, Saskatchewan, a straight line distance of approximately 2,000 miles. The closest recoveries came from Bodie Island, a few miles north of the banding site where the National Park Service conducts a public waterfowl hunting area. Two birds were recovered on this area where gadwalls comprised only 5.7 percent of the duck kill in the past seven years. Two more North Carolina recoveries came from Currituck Sound, about 40 miles north of Pea Island. One was taken 25 miles north and the remaining one was recovered on the coast a straight line distance of about 150 miles south. This was the only bird recovered south of its point of origin.

The majority of the continental gadwall population is produced in the prairie Provinces, the Dakotas and Montana. It is interesting to note in Table 1 and the accompanying map, that 15 of the 27 recoveries came from coastal regions including Chesapeake Bay and 12 came from the interior. This indicates a bond between the coastal and interior gadwall populations. By examining Table 1, it is apparent that birds recovered in the second year tended to travel a greater distance to the interior. Conversely, those gadwalls recovered in their first hunting seasons were more coastal in nature and stayed closer to home.

Table 1. Recovery Locations of Gadwalls Banded at Pea Island NWR (Through May, 1973)

State or Province	Number Recovered	First Year	Second Year
North Carolina	6	6	0
Virginia	6	5	1
Maryland	3	1	2
New York	2	2	0
Quebec	1	0	1
Ontario	1	0	1
Michigan	3	2	1
Minnesota	2	0	2
South Dakota	1	0	0
Manitoba	1	0	1
Saskatchewan	1	0	1

### Recovery Rates

Table 2 shows the low band recovery rates of the Pea Island gadwalls. Annual rates vary from 8.2 percent from exposure to one hunting season of the 1972-banded sample to 12.9 percent for the 1969-banded birds which have gone through four hunting seasons to date. The last two columns of Table 2 present cumulative totals of gadwalls banded through the five hunting seasons and the percentages recovered.

Table 2. Recovery Rates for 327 Pea Island NWR - Banded Gadwalls 1968 - 72

Banding Year	Number Banded	Recovery Data			
		Number	Percent	No. Available	% Recov. Rate
1968	15	1	6.7	15	6.7
1969	31	4	12.9	46	10.9
1970	74	5	6.8	120	8.3
1971	110	8	7.3	230	7.8
1972	97	8	8.2	327	8.0
Totals	327	26	8.0	-	-

Table 3 shows that no banded gadwalls were recovered after their second hunting season. This is very interesting because it may indicate that the remaining birds are extremely wary, that they are not subjected to much hunting pressure, or that there is little survival past the second year. Records show that many of these birds leave Pea Island NWR in August and September the year they are hatched and fly north and west. Sixteen of them were shot in their first hunting season and 10 in their second season. One was banded on August 2 at Pea Island and killed in Michigan October 30, less than three months later.

Table 3. Annual Recoveries of Pea Island NWR - Banded Gadwalls, 1968 - 72

Banding Year	Hunt Season Recovered				
	1968-69	1969-70	1970-71	1971-72	1972-73
1968	0	1	0	0	0
1969	-	3	1	0	0
1970	-	-	3	2	0
1971	-	-	-	2	6
1972	-	-	-	-	8

A sex-vulnerability factor could be indicated by the limited initial recovery data on hand. Of 16 first-year recoveries 4 males, 8 females and 4 were unknowns. Second year returns included 5 males, 3 females and 2 unknowns.

In conclusion, we intend to continue our efforts to capture and band local gadwalls in the Pea Island NWR colony and evaluate additional recoveries. The species is reported as increasingly important in the total Flyway harvest although it still rates considerably behind the most popular duck species.

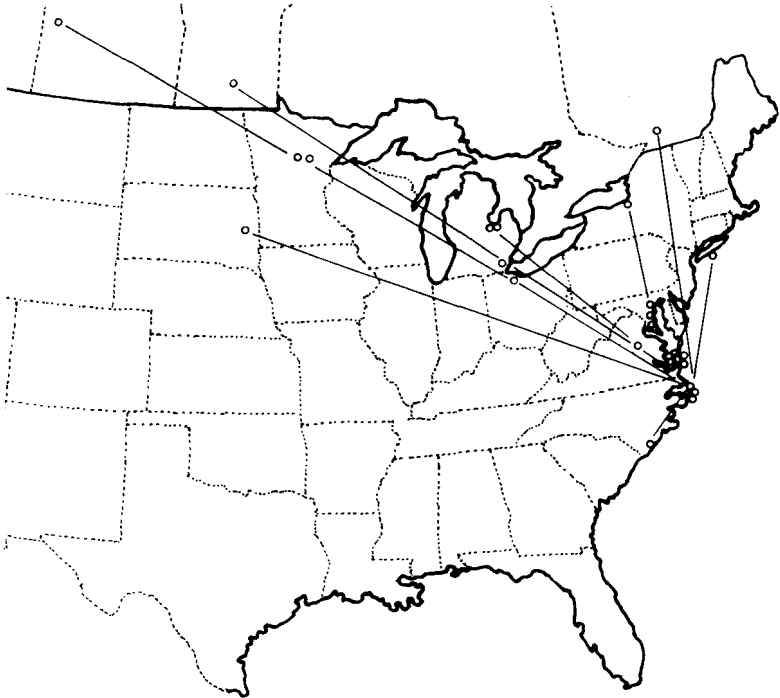


Figure 1. Twenty-seven recoveries of gadwalls banded at Pea Island National Wildlife Refuge.

#### LITERATURE CITED

- Geis, A. D. 1972. Use of Banding Data in Migratory Game Bird Research and Management, U. S. Fish and Wildlife Service Special Scientific Report - Wildlife No. 154. 47 pages.
- Kortright, F. H. 1943. The Ducks, Geese and Swans of North America. The American Wildlife Institute, Washington, D. C. 476 pages.