

numerous branches to form a network throughout the valley. Most of this region formerly provided excellent bluebird habitat, but during the past 15 or 20 years starlings have taken over nearly all of the natural nesting cavities and bluebirds have become quite scarce. Readers who are interested in cooperating seriously should get in touch with Ira L. Campbell, Route 1, Box 191, Timberville, Virginia 22853.

For further information or assistance or for printed instructions for building, mounting, and selecting suitable locations for bluebird nesting boxes, call or write Lawrence Zeleny, 4312 Van Buren St., University Park, Hyattsville, Maryland 20782; telephone 301-927-3971. Please enclose a stamped addressed envelope for reply.

Bald Eagle Nest Survey 1973

JACKSON M. ABBOTT

THE 1973 NESTING season for the bald eagle in the Chesapeake Bay region was the best in production of young eaglets that we have experienced since the aerial survey began in 1962. Twenty-four of 66 rechecked active nests produced 41 eaglets for a nesting success of 36.3 percent. This degree of success is higher than in the past 3 years but lower than the 40.8 percent experienced in 1969 when 20 of 49 rechecked active nests produced 30 eaglets.

In addition to these 66 known active breeding pairs of eagles, there are at least 15

more nest sites that have been active at least once in the past 5 years. In many of these sites adult eagles were seen during the nesting season of 1973 but an active nest could not be located. This is not unusual in this region, since only 36 of the 66 active nests for 1973 were also active in each of the preceding 3 years. As I have reported previously, the majority of our Chesapeake Bay breeding pairs of eagles are not regular annual producers of eaglets. In fact, we have only 1 pair now that has successfully produced eaglets in each of the past 4 years. This healthy pair nests on Tilghman's Neck, Queen Annes County, Maryland, on a large, private estate.

There is probably at least 1 other such healthy pair in Dorchester County, Maryland, where 8 pairs were active this year in an area containing 25 existing nests. Only about 3 of these nests are used in 2 or more successive years. This year, 5 of the 8 active pairs hatched out 11 eaglets while the other 3 abandoned their nests. This compares with the 1972 season when 10 active pairs had 33 nests to choose from and 5 pairs hatched out only 5 young.

If there is one place in the Chesapeake Bay region where a detailed study could be made of a relatively normal and stable population of bald eagles in a relatively undisturbed area for comparison with the obviously disturbed populations elsewhere in this region, southern Dorchester County is the place to do it. Unfortunately, not one of the active nesting pairs in Dorchester County in 1973 was on Blackwater National Wildlife Refuge, although four were just outside its boundaries by a hundred yards or so. It would seem very prudent for the federal government to buy up a few more thousand acres of this beautiful, swampy, cypress-studded marshland before developers figure a way to drain it and develop it economically.

BALD EAGLE NEST RESULTS, 1936 AND 1962-73

1936 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973

Total Active Nests, No.	58	62	42	52	46	28	40	52	50	56	66	59	65
Not Rechecked, No.	20	24	5	7	11	9	3	6	1	4	6	8	0
Rechecked, No.	38	38	37	45	35	19	37	46	49	52	60	51	65
Abandoned, No.	3	34	33	39	27	16	28	36	29	34	40	35	41
Hatching young, No.	35	4	4	6	8	3	9	10	20	18	20	16	24
Hatching young, %	92.1	10.5	10.8	13.3	22.8	15.8	24.3	21.7	40.8	34.6	33.3	31.4	36.3
Young hatched, No.	74	6	6	9	11	3	10	13	30	23	26	22	41
Average number young per successful nest	2.1	1.5	1.5	1.5	1.4	1.0	1.1	1.3	1.5	1.3	1.3	1.4	1.7

158 Reprinted from ATLANTIC NATURALIST

Copyright by the Audubon Naturalist Society
of the Central Atlantic States, Inc.

VOL. 28, NO. 4 WINTER, 1973

The accompanying table gives the results of bald eagle nest surveys in this region from 1962 through 1973 with results from the first such study made in 1936 by Bryant Tyrell of the National Audubon Society.

It indicates that, despite a rather stable population of 50 to 60 or more active pairs of eagles each year (in 1963 and 1965-1967 coverage was reduced due to lack of aircraft), the percentage of rechecked active nests producing young plummeted from 92.1 percent in 1936 to 10.5 percent in 1962 but has slowly increased to an apparent plateau between 30 and 40 percent in the 1969-73 period.

During this same period, the average number of young eaglets produced per successful nest fell below the 1936 average of 2.1 and has approached this "norm" only in 1973, with an average of 1.7 eaglets per successful nest. The 1973 average is helped by 3 of the 23 successful pairs producing 3 eaglets each (2 in Dorchester County and one in St. Marys County, Maryland) while 11 more successful pairs produced 2 eaglets each (4 in Virginia and 7 in Maryland).

It is interesting to note that we found 33 active nests in Maryland and 32 in Virginia. In Maryland, 15 of the 33 produced 28 eaglets (1.86 eaglets per nest) while in Virginia only 9 of 32 produced 13 eaglets (1.44 eaglets per nest).

Another interesting statistic is that we had 20 active nests along the Potomac River, 11 in Virginia and 9 in Maryland; but only 1 Virginia nest produced eaglets (2) while 6 Maryland nests produced eaglets (10).

Speaking of rivers, the situation along the Chickahominy-James river system in Virginia is tragic. As recently as 1964 there were 13 pairs nesting along this river system. The number *dropped* to 11 pairs in 1965, 7 pairs in 1966, 5 pairs in 1967 through 1969, 4 pairs in 1970, 2 pairs in 1971, and just 1 pair in 1972 and 1973. Throughout these years only 1 pair produced young (1 eaglet in 1964, 1965, and 1969). In 1963, an adult eagle was picked up under a nest tree on Jamestown Island; the bird was deathly sick, trembling all over, and later died. Its body was autopsied at the Patuxent Wildlife Research Center in Maryland and was found to have DDT residues in its organs ranging from 6.9 parts per million (ppm) in the brain to a high of 34.3 ppm in the heart.

Workers from the Patuxent Wildlife Research Center were able to obtain several abandoned eagle eggs for analysis this year. A nest with 3 eggs was seen from the air with no eagles nearby on April 24. The nest tree was climbed on April 30. During the climb, 2 adult eagles appeared and 1 landed on the nest. Two of the eggs had holes in them, as if pierced by the bill of a crow. One contained a green, paste-like mass (no embryo) and the other had an embryo estimated to be about 20 days old. The third egg was unbroken and contained a dry paste-like mass (no embryo). The latter egg is being analyzed for chemical residues.

The success of this survey is again due to the fine cooperation from the Bureau of Sport Fisheries and Wildlife, U.S. Department of the Interior, which provided the planes and pilots. Pilots Morton M. Smith and Edgar Ferguson flew Fred Scott and me as observers. Other personnel from the Fish and Wildlife Service who made valuable contributions were Stanley Wiemeyer, John Maestrelli, and George Sliker of the Patuxent Wildlife Research Center; Manager William Julian, Biologist Guy Willey, and Pilot Larry Thurman of the Blackwater National Wildlife Refuge; and Manager Norman E. Holgersen of the Bombay Hook National Wildlife Refuge. Others who provided welcome ground observations at several nests were: James Banagan, Peter Nolte, Dr. Ralph Baxter, E.J. Willoughby, Dr. Charles R. Blem, R.J. Tripician, David Roszell, Fred Maxwell, Dr. Mitchell Byrd, Charles Vaughn, W.A. Rothery, and Nelson H. Cruikshank.

Special thanks go to the Audubon Naturalist Society for funds to finance several flights with private planes in May when all the Fish and Wildlife Service planes and pilots were on their annual midwest duck survey.

Anyone who finds an eagle nest, makes observations at one, or who is willing to check out some nests from the ground in the 1974 season is requested to write or call Jackson M. Abbott, 8501 Doter Dr., Alexandria, Va., 22308; telephone 703-360-4308.