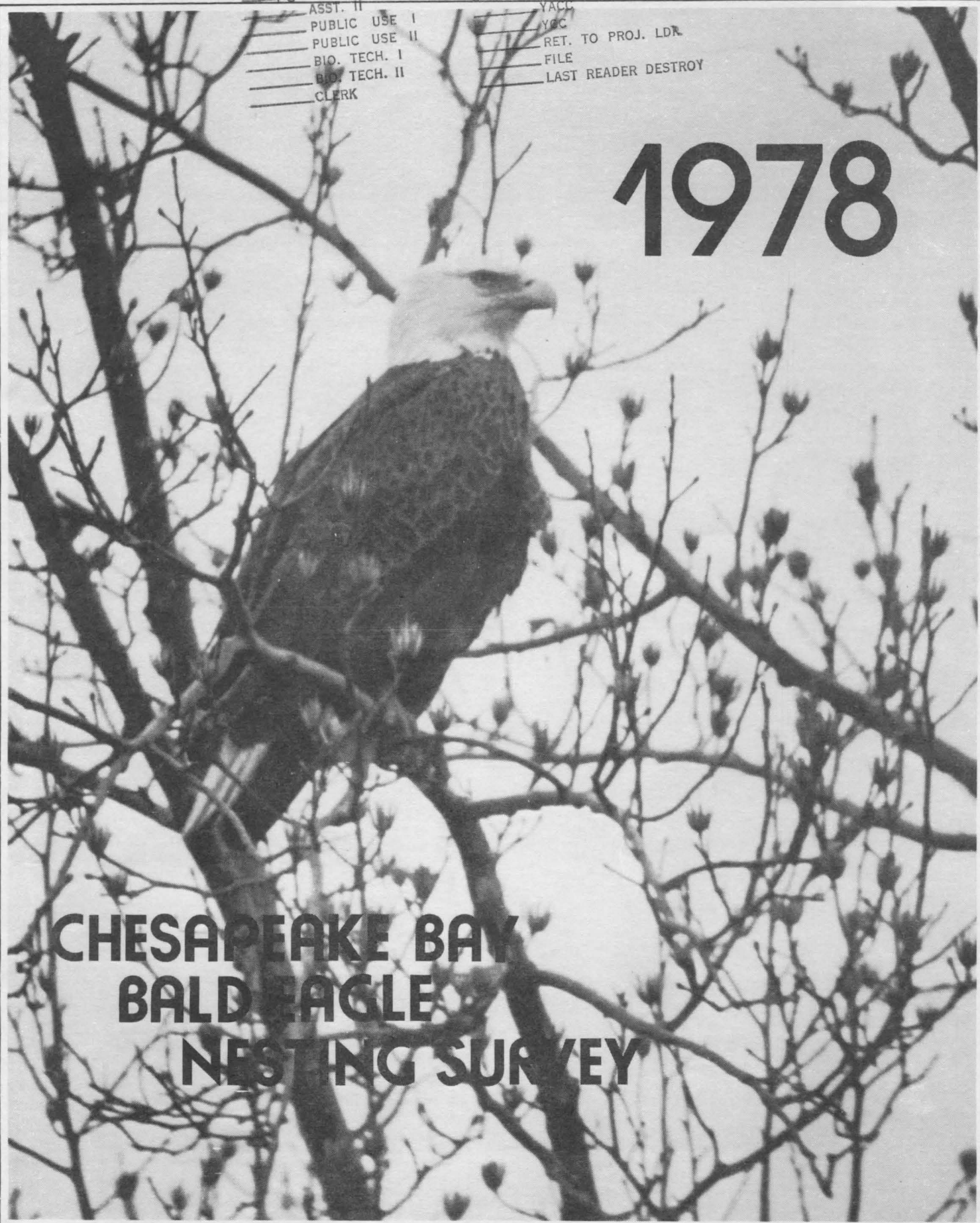


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## CHESAPEAKE BAY BALD EAGLE NESTING SURVEY

## CHESAPEAKE BAY BALD EAGLE BREEDING SURVEY - 1978

Jackson M. Abbott

Now in its second year, the Chesapeake Region Eagle Group (CREG) obtained the data for this report. CREG consists of representatives of the U.S. Fish and Wildlife Service (USFWS), the Delaware Department of Natural Resources and Environmental Control, the Maryland Wildlife Administration, the Virginia State Game and Inland Fisheries, the National Wildlife Federation (NWF), the Maryland Ornithological Society (MOS), the Virginia Society of Ornithology (VSO) and the Audubon Naturalist Society (ANS). The ANS also paid for the publication of this report. Many volunteers contributed by reporting sightings of eagle and eagle nests. The Chesapeake Bay Bald Eagle Recovery Team (CBBERT) formed in July 1977 by the USFWS monitors the activities of CREG and has nearly completed a comprehensive draft Recovery Plan for the bald eagles in the Bay region.

The 1978 nesting season was not as successful as the 1977 season. Although we found ten more active eagle nests in 1978 (87) than in 1977 there were more abandoned nests in 1978 (44 vs 32 in 1977) and fewer young hatched (59 vs 71). Of the 59 eaglets which hatched in 1978, one

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Cover photo by Charles R. Ellis

died of pneumonia when about two weeks old, two disappeared before fledging (one in Md and one in Va), one was killed and eaten in the nest by an unknown predator (g.h. owl suspected) and 44 were banded (29 in Md, 15 in Va). The remaining eleven eaglets apparently fledged successfully, unbanded.

Two additional eaglets which were hatched in captivity by a mated captive pair at the Patuxent Wildlife Research Center were banded and introduced into a wild active nest in Virginia when about three weeks old; the nest held one wild eaglet which was about the same age. It was banded and transferred to another wild nest in the next county which held one eaglet. Both sets of parents accepted the sudden increase in offspring and the two wild eaglets appeared to accept each other with little trouble. Several weeks later the two formerly captive eaglets were seen in the nest well grown (in black plumage) being fed by the female eagle. At the other nest the two wild eaglets had apparently fledged.

The overall young-per-active-nest factor (not counting the two introduced eaglets) dropped from 0.91 in 1977 to 0.68 in 1978. Contributing to this poor showing was the failure of all three active Delaware nests and the 60% failure rate of Virginia nests which fell from 0.74 in 1977 to 0.55 young per active nest in 1978. Even in Maryland the trend was downward: 58% of the active nests hatched young for a factor of 0.84 young per active nest, down from

1.06 in 1977. Additionally, there were six pairs of bald eagles (3 in Md and 3 in Va) seen in the breeding season at or near old nests but none of them laid eggs in 1978. Table I details the results by county for 1978 and compares them with 1977 results. Table II compares results by states in 1978 with results in former years. The map shows the approximate locations of the nests found in 1978.

Most nesting pairs of eagles were off to a late start in 1978. The extreme cold weather in January and February delayed egg laying by many pairs for two to three weeks. Several pairs did not lay their eggs until the third week in March, nearly a month later than normal. High winds for prolonged periods in April blew down one active nest and very likely were the cause for abandonment of several others.

In 1977 USFWS biologists tried an egg transplant at the usually unproductive Fairfax County, Va. eagle nest. The "bad" egg was removed for analysis and two captive-laid "good" eggs were substituted. The adult eagle readily accepted the good eggs and one hatched; the young eaglet was banded and fledged in June 1977. The analysis of the wild egg showed that it had an eggshell which was about 19% thinner than a normal, pre-1946 (before DDT) eagle egg, had 26 ppm of DDE and a whopping 218 ppm of PCBs; this female was obviously saturated with pollutants. In

1978 an egg transplant was tried again in that same nest in which the single "bad" wild egg was replaced with two "good" captive-laid eggs. Only this time it didn't work! The 1978 female was apparently a new "young adult" mate for the male since she still had brown feathers on her head and in her tail. Her egg was viable and hatched in the laboratory! - and the eggshell showed no abnormal thinning indicating that this female had relatively few, if any, environmental pollutants in her system. But this "new" female refused to accept the two "good" eggs. She did not return to the nest for more than four hours and was not seen at or in the nest subsequently. The young eaglet which hatched in the laboratory died of pneumonia when about two weeks old.

For the second year in succession the pair nesting at George Washington's birthplace at Wakefield, Westmoreland Co., Va., raised a young eaglet. Also for the second year in a row, the pair of eagles nesting at Portobello Point, St. Mary's Co., Md., raised three eaglets, the only "triplets" in the 1978 season.

In 1977 a pair nesting on the upper Patuxent River, near Dunkirk, Calvert Co., Md., hatched and fledged two young for their first successful season since the pair nest site was found in 1962. A housing development was started in 1976 around the nest site and a home was built on a

ridge only about 200 feet from the nest tree. We were sure this would cause abandonment of this nest. Yet, proving once more that some bald eagles are extremely tenacious to their nest sites despite much nearby human activity, this pair returned in March 1978 and laid two eggs, one of which hatched! - this eaglet was banded and fledged in June.

As yet unconfirmed reports indicate that there may have been an eaglet hatched in a nest on Chipok Creek on the S. side of the James River, Surry Co., Va. A college student biologist frequently saw 1-2 adult bald eagles in Chipok Creek in April and May, 1978. In late May he found an emaciated, large, black, heavy-billed immature raptor carcass washed up on the shore of Chipok Creek. A local gun owner is reported to know of the location of an eagle's nest on Chipok Creek.

Two abandoned eagle eggs were taken from the nest at the Bombay Hook National Wildlife Refuge in Delaware and subjected to analysis at the Patuxent Wildlife Research Center (PWRC) in Maryland. The chemical/metal residue levels found in these two eggs were generally lower than the levels found in the single abandoned egg collected from this nest in 1977.

Despite these general declines, the level of DDE in the 1978 eggs is excessive (25 and 30 ppm) and the concentrations of dieldrin (0.77 and 0.95 ppm) and PCBs (25 and 32 ppm) are causes for concern. The mercury level in these eggs (0.19 ppm) was much higher than that found in the 1977 egg (less than 0.1 ppm) but does not appear high enough to have an adverse effect on reproduction.

That lead poisoning is a limiting factor in the Chesapeake Bay bald eagle population was confirmed by a PWRC autopsy of an eagle carcass. The stomach contained muskrat fur and 75 lead shotgun pellets which apparently were in the muskrat's body when eaten by the eagle. The analysis attributed the eagle's death to lead poisoning.

Some other facts of interest gleaned from comparing results in 1978 with those in 1977 include:

1. Twenty-seven pairs which hatched in 1977 also hatched young in 1978 (17 in Md, 10 in Va);
2. Twelve pairs which hatched young in 1977 abandoned their nests after laying eggs in 1978 (5 in Md, 6 in Va, 1 in Del);
3. Five pairs which hatched young in 1977 did not lay eggs in 1978 (4 in Md, 1 in Va);

4. The new nests of three pairs (2 in Md, 1 in Va) produced young in 1978 but results in 1977 were not known since their

active nests for that year were not located (or they did not lay eggs) but they had active nests up to 1977 in the site;

c. Three pairs produced young in their new 1978 nests (1 in Md, 2 in Va) but in 1977 they abandoned their nests;

d. Seven pairs (4 in Md, 3 in Va) produced young in their new 1978 nests and also produced young in their 1977 nests;

e. Two pairs, both in Md, produced young in their new 1978 nests but did not lay eggs in 1977;

f. Seven pairs (1 in Md, 6 in Va) built new nests in 1978 which they abandoned, as they did their nests in 1977.

g. One pair in Md abandoned its new 1978 nest and did not lay eggs in 1977.

It is disappointing to see a rather sharp decline after a boom year (1977 was the eagles' best year since the survey began). However, this seems to be a normal phenomenon among wild animal populations of most species and it is hoped that the trend will be upward next year. We are particularly anxious to locate eagle roosts which we have not found since 1965. Anyone who sees a concentration of 5+ bald eagles would help us tremendously if the information was communicated to this compiler: Mr. Jackson M. Abbott, 8501 Doter Drive, Alexandria, Virginia 22308, telephone (703 360-4308, or to the appropriate state representative:



Delaware: Mr. Lloyd Alexander, Jr., Division of Fish and Wildlife,  
Department of Nat'l. Res. & Environ. Control, Dover,  
Delaware 19901

Maryland: Mr. Gary Taylor, Md. Wildlife Admin., Annapolis, Md. 21041

Virginia: Dr. Mitchell Byrd, College of William & Mary, Williamsburg,  
Virginia 23186

1978 (1977) Bald Eagle nesting results, Chesapeake Bay region.

| State & County    | Number of active nests 1978(1977): |                |                   |                       | No. of yng<br>per act. nest | Pr. adults,<br>no active<br>nest |
|-------------------|------------------------------------|----------------|-------------------|-----------------------|-----------------------------|----------------------------------|
|                   | Found                              | Aband-<br>oned | Hatching<br>young | No. of yng<br>hatched |                             |                                  |
| Delaware: Kent    | 1(1)                               | 1(1)           | 0(0)              | 0(0)                  | 0(0)                        | 0(0)                             |
| Sussex            | 2(1)                               | 2(0)           | 0(1)              | 0(1)                  | 0(1)                        | 0(1)                             |
| Totals:           | 3(2)                               | 3(1)           | 0(1)              | 0(1)                  | 0(0.5)                      | 0(1)                             |
| Maryland: Charles | 8(5)                               | 3(0)           | 5(5)              | 6(7)                  | 0.75(1.4)                   | 0(0)                             |
| St. Mary's        | 4(5)                               | 0(2)           | 4(3)              | *7(6)                 | 1.75(1.2)                   | 1(0)                             |
| Calvert           | 1(3)                               | 0(1)           | 1(2)              | 1(4)                  | 1(1.3)                      | 0(0)                             |
| Anne Arundel      | 2(2)                               | 1(2)           | 1(0)              | 2(0)                  | 1(0)                        | 0(1)                             |
| Harford           | 1(1)                               | 0(1)           | 1(0)              | 1(0)                  | 1(0)                        | 0(0)                             |
| Cecil             | 1(1)                               | 1(1)           | 0(0)              | 0(0)                  | 0(0)                        | 0(0)                             |
| Kent              | 2(3)                               | 0(1)           | 2(2)              | 2(4)                  | 1(1.3)                      | 0(0)                             |
| Queen Anne's      | 3(1)                               | 0(0)           | 3(1)              | #4(2)                 | 1.3(2)                      | 0(0)                             |
| Talbot            | 3(3)                               | 2(2)           | 1(1)              | 2(1)                  | 0.66(0.33)                  | 0(1)                             |
| Dorchester        | 16(17)                             | 9(5)           | 7(12)             | 10(22)                | 0.7(1.3)                    | 2(0)                             |
| Wicomico          | 2(1)                               | 1(1)           | 1(0)              | 2(0)                  | 1(0)                        | 0(0)                             |
| Somerset          | 1(0)                               | 1(0)           | 0(0)              | 0(0)                  | 0(0)                        | 0(0)                             |
| Worcester         | 2(2)                               | 1(1)           | 1(1)              | 1(1)                  | 0.5(0.5)                    | 0(1)                             |
| Totals:           | 46(44)                             | 19(17)         | 27(27)            | 38(47)                | 0.84(1.06)                  | 3(3)                             |
| Virginia: Accomac | 1(1)                               | 0(0)           | 1(1)              | ‡1(1)                 | 1(1)                        | 0(0)                             |
| Fairfax           | 1(1)                               | 0(0)           | 1(1)              | @1(1)                 | 1(1)                        | 0(0)                             |
| Stafford          | 1(1)                               | 0(1)           | 1(0)              | 1(0)                  | 1(0)                        | 0(1)                             |
| King George's     | 7(6)                               | 6(4)           | 1(2)              | 1(3)                  | 0.14(0.5)                   | 0(1)                             |
| Westmoreland      | 7(6)                               | 4(2)           | 3(4)              | 4(7)                  | 0.6(1.1)                    | 0(0)                             |
| Northumberland    | 3(4)                               | &2(3)          | 1(1)              | 2(2)                  | 0.66(0.5)                   | 1(0)                             |
| Essex             | 1(1)                               | 0(0)           | 1(1)              | 1(1)                  | 1(1)                        | 0(0)                             |
| Richmond          | 4(4)                               | 0(1)           | 4(3)              | \$6(3)                | 1.5(0.8)                    | 0(2)                             |
| Lancaster         | 2(2)                               | 2(0)           | 0(2)              | 0(3)                  | 0(1.5)                      | 0(0)                             |
| Middlesex         | 3(2)                               | 1(1)           | 2(1)              | 3(1)                  | 1(0.5)                      | 0(0)                             |
| Mathews           | 0(0)                               | 0(0)           | 0(0)              | 0(0)                  | 0(0)                        | 1(1)                             |
| King William      | 2(0)                               | 2(0)           | 0(0)              | 0(0)                  | 0(0)                        | 0(0)                             |
| New Kent          | 4(3)                               | 4(2)           | 0(1)              | 0(1)                  | 0(0.33)                     | 0(0)                             |
| James City        | 1(0)                               | 1(0)           | 0(0)              | 0(0)                  | 0(0)                        | 1(0)                             |
| York              | 1(0)                               | 0(0)           | 1(0)              | 1(0)                  | 1(0)                        | 0(1)                             |
| Totals:           | 38(31)                             | 22(14)         | 16(17)            | 21(23)                | 0.55(0.74)                  | 3(6)                             |
| Grand totals:     | 87(77)                             | 44(32)         | 43(45)            | 59(71)                | 0.68(0.91)                  | 6(10)                            |

\* = one nest had 3 yng for 2nd year in a row. One yng in another nest disappeared before fledging.

# = one yng found dead in nest with a live sibling.

‡ = This yng was killed & eaten by an unknown predator.

@ = This yng died of pneumonia at 2 wks of age.

& = One active nest was blown down.

\$ = One yng disappeared before fledging.

SUCCESS OF BREEDING BALD EAGLES IN THE CHESAPEAKE BAY - 1936, 1962, 1970 - 1978

| STATE | 1936 | 1962 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|-------|------|------|------|------|------|------|------|------|------|------|------|

Active nests:found/rechecked

|          |       |       |       |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Delaware | 4/4   | 1/0   | 2/1   | 2/2   | 2/2   | 1/1   | 1/1   | 1/1   | 1/1   | 3/2   | 3/3   |
| Maryland | 31/16 | 24/15 | 26/24 | 28/23 | 29/23 | 33/33 | 31/31 | 43/43 | 40/39 | 44/44 | 46/46 |
| Virginia | 17/15 | 33/20 | 30/27 | 33/32 | 30/27 | 32/32 | 29/29 | 36/36 | 32/32 | 31/31 | 38/38 |
| Total:   | 52/35 | 58/35 | 58/52 | 63/57 | 61/52 | 66/66 | 61/61 | 80/80 | 73/72 | 78/77 | 87/87 |

Rechecked active nests:abandoned/hatching young

|          |       |      |       |       |       |       |       |       |       |       |       |
|----------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Delaware | 0/4   | -/-  | 0/1   | 2/0   | 2/0   | 1/0   | 1/0   | 1/0   | 0/1   | 1/1   | 3/0   |
| Maryland | *2/14 | 14/1 | 14/10 | 10/13 | 14/9  | 18/15 | 10/21 | 19/24 | 17/22 | 17/27 | 19/27 |
| Virginia | 0/15  | 16/4 | 21/6  | 26/6  | 20/7  | 23/9  | 21/8  | 27/9  | 26/5  | 14/17 | 22/16 |
| Total:   | 2/33  | 30/5 | 35/17 | 38/19 | 36/16 | 42/24 | 32/29 | 47/33 | 43/29 | 32/45 | 44/43 |

Number of young & hatched/per active nest

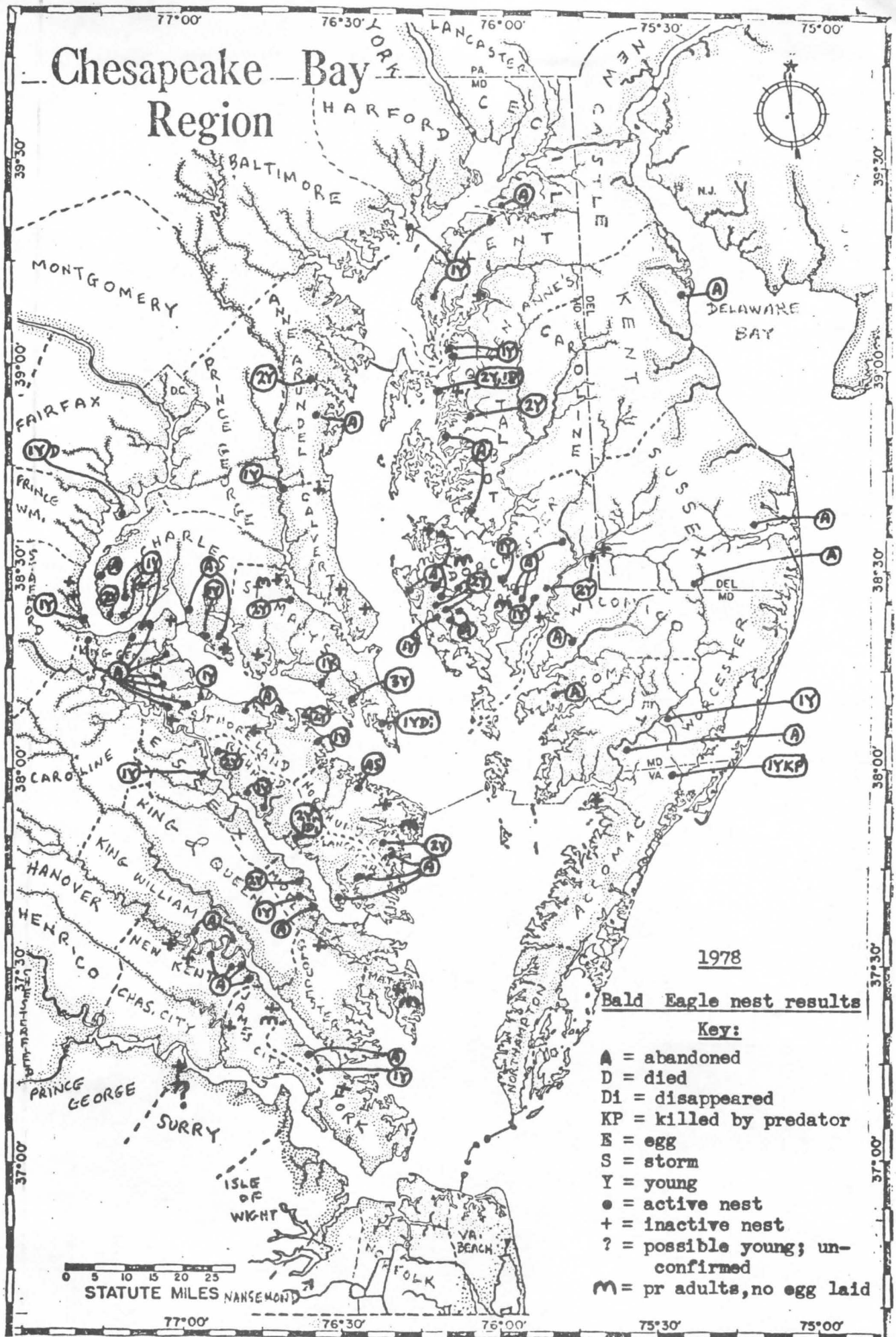
|          |         |        |         |         |         |         |         |         |         |         |         |
|----------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Delaware | 8/2.00  | -/-    | 1/1     | 0/0     | 0/0     | 0/0     | 0/0     | 0/0     | 1/1     | 1/0.5   | 0/0     |
| Maryland | 28/1.10 | 1/0.07 | 13/0.50 | 16/0.57 | 12/0.36 | 28/0.84 | 27/0.87 | 35/0.81 | 31/0.77 | 47/1.06 | 38/0.84 |
| Virginia | 35/2.06 | 6/0.20 | 8/0.27  | 8/0.24  | 10/0.33 | 13/0.40 | 13/0.43 | 11/0.30 | 7/0.21  | 23/0.74 | 21/0.55 |
| Total:   | 71/1.36 | 7/0.16 | 22/0.37 | 24/0.38 | 22/0.36 | 41/0.62 | 40/0.65 | 46/0.57 | 39/0.53 | 71/0.91 | 59/0.68 |

Pairs of adults present but active nests not found

|          |   |    |   |   |   |    |   |   |   |    |   |
|----------|---|----|---|---|---|----|---|---|---|----|---|
| Delaware | 0 | 1  | 0 | 0 | 0 | 1  | 0 | 0 | 0 | 1  | 0 |
| Maryland | 8 | 3  | 6 | 1 | 0 | 4  | 0 | 1 | 5 | 3  | 3 |
| Virginia | 1 | 7  | 1 | 6 | 0 | 2  | 1 | 1 | 2 | 6  | 3 |
| Total:   | 9 | 11 | 7 | 1 | 0 | 12 | 1 | 2 | 7 | 10 | 6 |

\*eggs robbed by oologists

# Chesapeake Bay Region



1978

## Bald Eagle nest results

### Key:

- A = abandoned
- D = died
- Di = disappeared
- KP = killed by predator
- E = egg
- S = storm
- Y = young
- = active nest
- + = inactive nest
- ? = possible young; unconfirmed
- M = pr adults, no egg laid