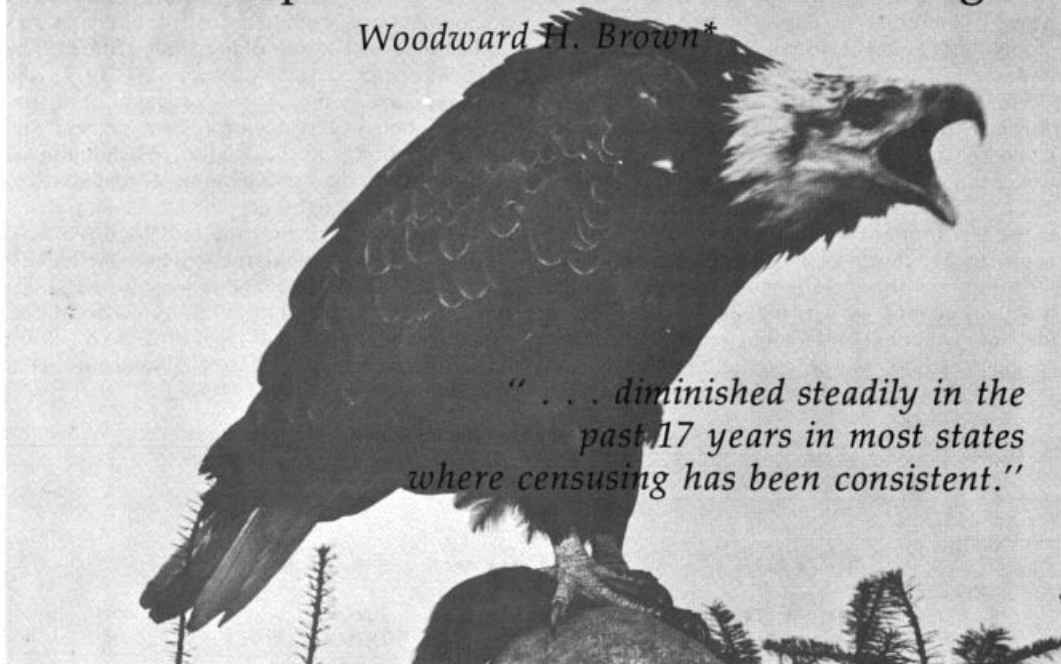


Winter Population Trends in the Bald Eagle

Woodward H. Brown*



"... diminished steadily in the past 17 years in most states where censusing has been consistent."

Photo from N.A.S.

Destruction of habitat and the use of persistent insecticides which inhibit reproduction have given rise to serious doubts regarding the future of the Bald Eagle (*Haliaeetus leucocephalus*). Frequent references to its decreasing numbers have prompted this attempt to learn how well founded are these fears.

METHODS

An analysis of the wintering populations of the Bald Eagle was begun by tabulating the numbers of eagles seen on all Christmas Bird Counts in 36 of the 48 contiguous states for the years 1955, 1960, 1965, and 1970 as published in *Audubon Field Notes* and *American Birds*. The remaining 12 states, with only one or two or no eagles, were not considered. The numbers of party-miles traveled during the counts, and numbers of party-hours in the field were also recorded and frequency rates, expressed as numbers of eagles per 1000 party-miles and per 100 party-hours, were computed. The frequency rates on both the mileage and time bases showed an unexpected stabilization of the populations.

It was soon found that this stabilization was due to the appearance after 1955 of a number of census reports, some from state or national preserves, which included far more eagles than most

of the older counts. Evidently a meaningful illustration of the population trend from 1955 to 1971 would be obtained only by limiting the data to the census figures from those areas which censused in 1955 and each year thereafter. There were reports from 148 locations in 31 states which met this requirement. However, only 79 stations in 28 of these states had reported more than one eagle in the 17 years, and the inclusion of the other 69 in the population study would add nothing.

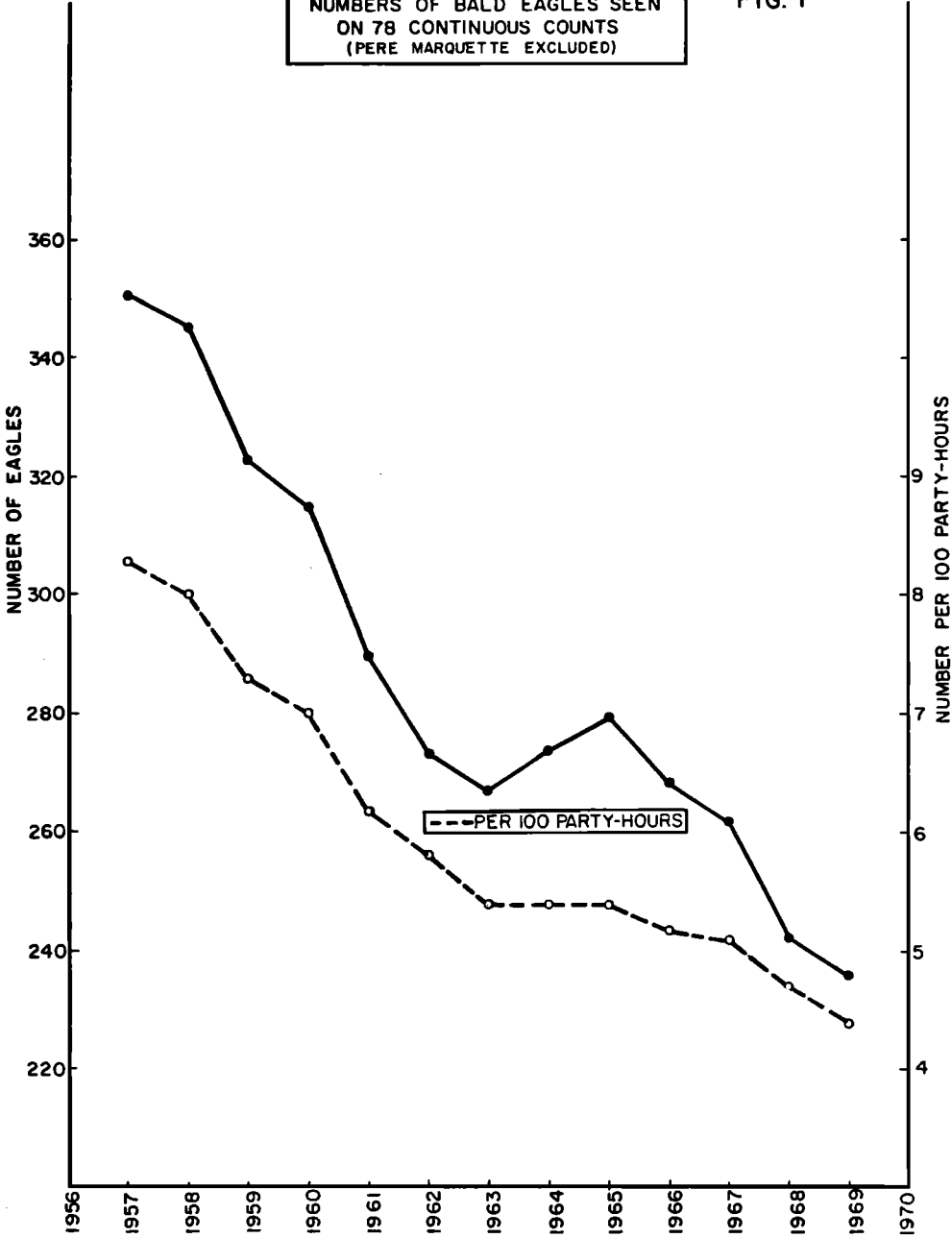
POPULATION CHANGES

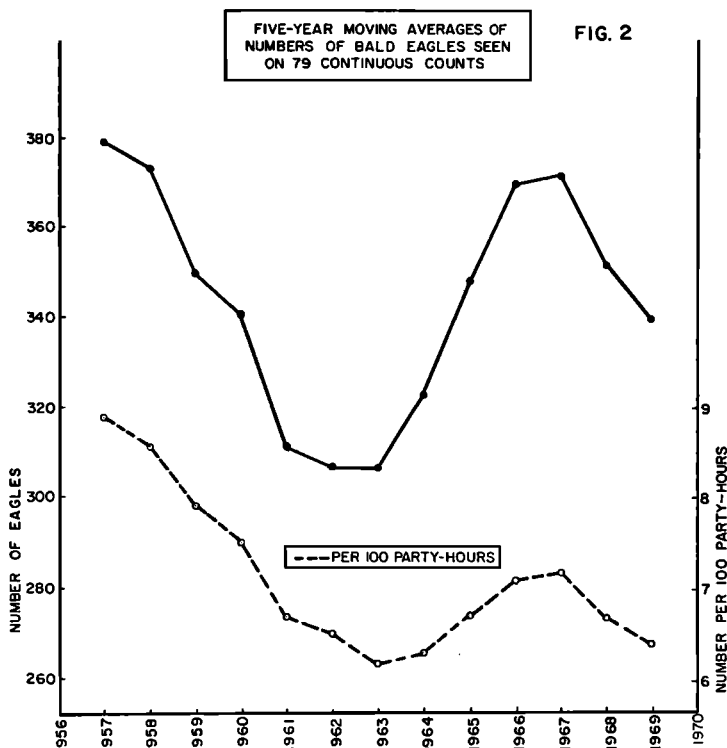
Figure 2 shows the 5-year moving averages of the number of eagles seen at 79 locations, and the corresponding curve for the number per 100 party-hours. The sharp rise from 1965 to 1967 in the curves is due almost entirely to the findings at Pere Marquette State Park in Illinois where 112, 198, and 105 eagles were reported in 1967, 1968, and 1969 respectively, compared with a 17-year average of 57. The 1968 report included this statement "Bald Eagle, 198 (74a, 124i) (considered careful count by refuge personnel)." Figure 1 shows the 5-year moving averages of the number found and the corresponding curve for

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FIVE-YEAR MOVING AVERAGES OF
 NUMBERS OF BALD EAGLES SEEN
 ON 78 CONTINUOUS COUNTS
 (PERE MARQUETTE EXCLUDED)

FIG. 1





the number per 100 party-hours for the other 78 stations after the elimination of the figures for Pere Marquette.

**Table 1
Comparative Numbers of Bald Eagles**

State	No. of Eagle Stations	No. of Eagles Reported Per 100 Party-Hours			
		1955-59	1967-71	1955-59	1967-71
CO	4	33	22	5.1	2.0
DE	2	31	16	5.3	1.9
FL	9	419	314	11.4	6.1
IL	3	345	581	57.5	79.6
IA	4	308	176	33.5	18.9
KS	2	-0-	56	-0-	11.4
ME	1	24	13	9.2	4.3
MD	5	155	82	7.6	3.5
MA	3	16	1	1.3	0.1
MT	2	5	34	1.9	7.6
NJ	8	81	20	3.0	0.6
NY	6	29	27	1.9	1.2
NC	1	13	-0-	3.2	-0-
OH	4	17	2	1.8	0.2
OK	3	110	42	21.2	10.0
TN	1	86	212	43.0	111.6
VA	7	185	49	10.9	1.8
WY	1	5	41	2.9	9.2

The frequency rates per 100 party-hours for the two 5-year periods 1955-59 and 1967-71 were computed for each state. Table I shows the changes between periods in the states where significant numbers of eagles were reported.

The wintering Bald Eagle, unlike some other raptors, ranges much less widely but remains close to open water where its food is found. The four states with the largest number of eagles reported were Illinois, Florida, Iowa, and Tennessee. All but 3 of the 1485 Illinois eagles reported in the 17 years were found at two locations, both on the Mississippi River, and Florida eagles which were found in nine areas were all close to water. In Iowa all but 12 of the 842 reported were found on the Mississippi with the remainder near the Missouri River, while all Tennessee eagles were reported from Reelfoot Lake, an old oxbow of the Mississippi.

SUMMARY

The Bald Eagle population has diminished steadily in the past 17 years in most of the states where censusing has been consistent. The most important exceptions are Illinois and Tennessee, with Pere Marquette State Park in Illinois being solely responsible for the showing in that state