

Changes in bird life at the western end of Lake Erie

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photographs by Frank K. Schleicher

MANY PEOPLE IMAGINE THAT THE primeval forest was a garden of Eden teeming with birds and other wildlife and that all the changes wrought by modern man were detrimental to the natural attractions. They also imagine that the original deciduous forest of the eastern United States and Canada was uniform and unbroken from the prairies of the midcontinent to the Atlantic seaboard.

Both of these impressions are wrong. The opening of the land by settlers brought new kinds of habitat in the form of brushy clearings, short-grass pastures, and outbuildings that attracted new kinds of birds until today we have more species in most locations than in former times. True, settlement eliminated most large mammals and a few birds, but not many were lost permanently, while others were gained. Indeed, many of our most common and admired birds were not here in ancient times. Among songbirds today more than one-third are new.

In addition, the original woodlands were much more broken and various than our conventional image of the virgin wilderness. For example, most people have forgotten the tracts of grassland within the forest, which had been maintained mainly by fire but were quickly turned by the plough.

The transformation of the landscape occurred nearly everywhere in the eastern United States and Canada, but so long ago that it went unrecorded and largely forgotten. However, at the western end of Lake Erie, the flat lands of the lake plain were so difficult to drain and so plagued with mosquitoes and disease that full settlement was delayed until near the beginning of this century. Consequently, here we have good

Part I of III



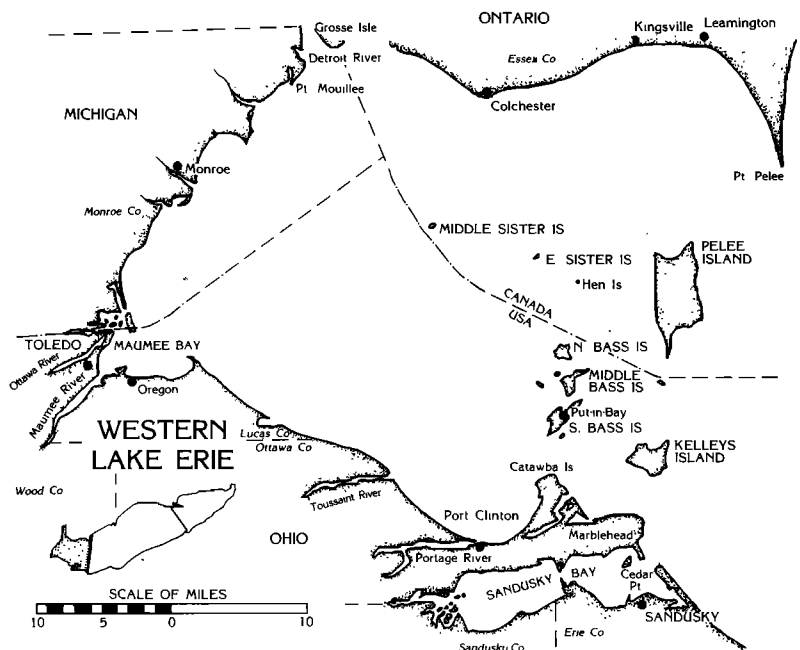
records and eyewitness accounts of the original wilderness and the changes that came about as it was cleared for agriculture.

From the standpoint of the naturalist it is convenient to divide this history into three periods:

1. The wilderness period, before 1820, when the land was in its primeval state except for narrow strips along a few principal streams where Indians farmed.

2. The settlement period, 1820–1890, when most of the forest was cleared by farmers, the remaining woodlots were stripped of selected trees, and the water table lowered by drainage.

3. The urbanization period, 1890 to the present, when agriculture has become mechanized and specialized, and remnants of woodland have been in-



creasingly invaded for suburban homesites.

In general, the opening of the forest and the drying of the soil has brought a "westernization" of the bird life. That is, the birds of the plains and brushlands farther west have been favored to the detriment of the birds of the woodlands. In describing changes that have occurred in the last two centuries, I have tried to select examples for which the evidence is most convincing, while avoiding consideration of rarities and short-term events.

Wilderness Period (before 1820)

Imaginative writers have said that a squirrel might have gone from Maine to Louisiana by leaping from one giant tree to another, moving from bough to



bough for a thousand miles without seeing a flicker of sunlight on the ground. This view of a vast and uniform forest covering eastern North America is mistaken. The primeval woodland was anything but uniform. It differed greatly from place to place, and it was interrupted by streams and other natural openings, as well as by clearings cut and burned by Indians (Day 1953).

The region at the western end of Lake Erie is mainly lake plain, formerly the bottom of a succession of shallow lakes backed up against the face of the Wisconsin Glacier (Forsyth 1959). Wave action over centuries made this lake plain remarkably level, but varying soil types and drainage produced distinctive vegetation in different areas, most of which can be loosely classified into three types: swamp forest, oak openings, and wet prairie. No examples survive in their original state.

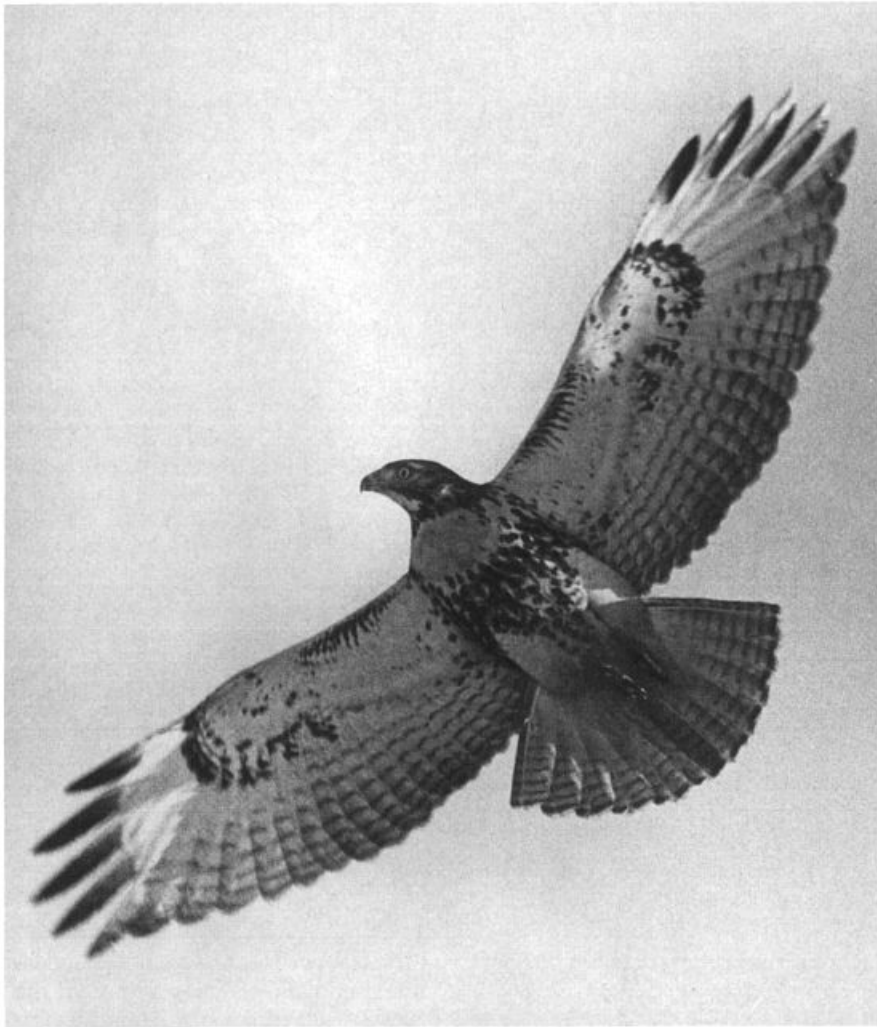
Swamp forest

The greater part of this region was covered by a dense woodland loosely characterized as swamp forest. It was a magnificent woodland. In such level land, a difference of a few inches in elevation altered the moisture content of the soil, encouraging a great variety of tree species, many of them growing to very large size. Some of these supported giant grapevines, remembered today in the name River Raisin, given by the early French explorers.

Some of it is remembered as the Great Black Swamp, extending about 100 miles from near Sandusky Bay in Ohio almost to Fort Wayne, Indiana. The outline of this swamp was irregular and indefinite, but it was roughly 30 miles wide, lying mainly south and east of the Maumee River (Kaatz 1953). Smaller but similar tracts lay north of the river in Ohio and northward into Michigan.

The most numerous trees here were American elm (*Ulmus americana*), black ash (*Fraxinus nigra*), white ash (*F. americana*), silver maple (*Acer saccharinum*), red maple (*A. rubrum*), American basswood (*Tilia americana*), northern red oak (*Quercus rubra*), pin oak (*Q. palustris*), and bur oak (*Q. macrocarpa*). Where the drainage was a little better, many other trees grew profusely, including shellbark hickory (*Carya laciniosa*), eastern cottonwood





(*Q. alba*), and quaking aspen (*Populus tremuloides*). Since this is poor land for farming, it has remained less altered from its original state than other portions of the region, but it too has been changed by draining, control of fire, and cutting of the best trees. Approximations of the original conditions have been preserved in Oak Openings Park, Schwamberger Prairie, and Irwin Prairie west of Toledo.

Wet prairies

Nothing in the natural environment of this region so amazed the earliest white visitors as the wet prairies. Having come through the forested East, they knew swales, marshes, and meadows, but they were unprepared for expanses of tall, waving grass that spread as far as the eye could see. Every early traveler remarked on this scene, and yet no feature of the original land is so hard for us to reconstruct today. We have all the original species but not the association.

To the pioneer, all large natural openings in the forest were prairies. We now know they varied markedly in character from those on the sandy soil of the oak openings, through those on the rich muck of the Black Swamp, to the prairies on the heavy clay of the shore of Lake Erie. They all, however, shared the common feature of standing water during many months of each year. The prairies of the oak openings were flooded consistently from winter into midsummer, as were the prairies within



(*Populus deltoides*), and sycamore (*Platanus occidentalis*) (Shanks 1938).

No examples of truly virgin forest are left in this region, but some of the nearest approximations are found in public preserves such as Pearson Park east of Toledo, Secor Park west of Toledo, and Goll Woods west of Wauseon, Ohio. The woodlands that remain have all been changed by a lowered water table, by selective cutting of choice trees, especially the oaks, black walnut (*Juglans nigra*), and black cherry (*Prunus serotina*), and more recently by wholesale loss of elms from the Dutch elm disease. There were no native conifers here except for a few eastern redcedars (*Juniperus virginiana*) on rocky outcrops and sandy points jutting into Lake Erie.

Oak openings

Just west of Toledo and extending up into Michigan is a strip of sandy land about ten miles wide. It is unlike any-

thing else to be found in Ohio and has a characteristic vegetation that was recognized by the earliest settlers in the name oak openings. A wagon could have been driven through it in any direction (Anderson 1971). Here the remains of ancient sand dunes laid down on the shore of glacial lakes form a gently undulating surface of loose sand on a substrate of dense clay. Hence, the hillocks are dry and the hollows are wet, producing a remarkably diverse flora in close association. The forest is patchy, broken frequently by prairies and marshes. Similar lands are found in Michigan, Wisconsin, and Minnesota, and all have been created in part by fire through the ages (Curtis 1959). This is an area of great interest to botanists, holding more than 100 species of plants found here in greater abundance than in all the rest of Ohio (Moseley 1928), and some nesting birds not found elsewhere in this region (Campbell 1968).

The most abundant tree species are black oak (*Quercus velutina*), white oak

the Black Swamp, and the prairies along Lake Erie were inundated intermittently again and again during the year when northeast winds raised the level of the lake several feet.

Few people today realize the original extent of wet grasslands in this region. One continuous strip extended almost without a break from Sandusky Bay around the southwest corner of Lake Erie and up the western shore almost to Detroit. An early observer estimated the area of this tract at more than 200,000 acres (Brown 1815). Separate tracts within the Great Black Swamp are remembered by names and events of early days. One reminiscence tells of two women rescued after being lost at night in the tall grass in 1851 (Evers 1909). In Wood County, Ohio, alone, a county not bordering on the Lake, the government surveys completed in 1821 showed 40,000 acres of prairie (Shanks 1938). In the oak openings of Lucas County, Ohio, Moseley (1928) noted one tract "destitute of trees when the region was first settled" about seven miles long and one mile wide, and Hehr (1970) mapped other similar areas nearby totaling more than 25,000 acres of prairie.



A graphic description of the marshy plain near Lake Erie comes from a man who walked with a party of soldiers from Maumee Bay to Sandusky Bay in 1813, before there were any settlers in that area. "We found the grass higher than our heads and as thick as a mat, confined together by a species of pea vine . . . The meadow is here appar-

ently ten miles wide . . . The grass was about seven feet high and so thick that it would easily sustain one's hat—in some places a cat could have walked on its surface . . . To break a road four rods was as much as the best of us could perform at one turn" (Brown 1815).

Although the early settlers marveled at the brilliant flowers of the prairies,

with composites and legumes abundant, the dominant plants were tall grasses, sedges, and reeds. Islands of fire-resistant oak dotted the expanses. Since not an acre of these prairies remain, we can only speculate about some details. Probably the most numerous species was the big bluestem (*Andropogon gerardii*). It was often accompanied by switchgrass (*Panicum virgatum*), and Indian grass (*Sorghastrum nutans*). Although early observers mention the coarse quality of these tall grasses, they also found the prairies good pasturage for cattle, and this fact assures us there was a good mixture of shorter species (Anderson 1971), including sedges (*Carex*). In the wettest places the most conspicuous growth may have been (Shanks 1938) fresh-water cordgrass (*Spartina pectinata*), bluejoint grass (*Calamagrostis canadensis*), and common reed (*Phragmites australis*). Many of these marsh species towered above a man on horseback, but even the big bluestem reached a height of nine feet on fertile soil (Gordon 1969).

These isolated prairies of northwestern Ohio and southern Michigan mark the easternmost extension of the "prai-

ne peninsula" from Indiana, although they were not quite contiguous with the continuous prairie land of the West (Transeau 1935). Here the grasslands were kept open in part by standing water for a considerable part of each year, which resisted the encroachment of trees, and in part by fires set by Indians, which set back woody shrubs (Hehr 1970).

In the shallow waters of Maumee Bay, Sandusky Bay, and the estuaries of smaller streams entering the Lake, thousands of acres of wild rice (*Zizania aquatica*) gave the appearance of a continuous marsh (Brown 1815). This food attracted clouds of ducks in fall, but the wild rice has been gone now for many decades. It requires clear, flowing water (Hawkins 1977), and it was killed by silt in the runoff from farmland.

Marshes still exist in preserves near the Lake, but their character has been changed by diking to hold the water levels constant, with great benefit to cat-tails.

The Indian as a factor in the environment

Any account of the wilderness before settlement by white people should not neglect the influence of the Indians. Although they occupied a very small proportion of the total land area, the land in their vicinity was not left in a pristine condition. They cleared some forest for planting crops and they opened extensive areas by their wood gathering. Indians were consumers of firewood at all seasons of the year, and the women were forced to go farther and farther afield for it, until villages finally had to be moved. As a result they created a zone of brushy edge, thickets, and second-growth trees near all their settlements.

Even more far-reaching were their fires in the leaf litter and grass. They burned to clear the land for cultivation, to drive game, to increase the production of wild fruits and plants needed for medicinal and other purposes, and to open the forest for better passage and

visibility (Day 1953). Fire did not often run through swamp forest, but on sandy soils it was a force to maintain openings in the woods. Audubon tells of walking through "burnt forest" in southern Illinois in October 1822 (Buchanan 1869). Everywhere on the continent Indians perpetuated grasslands by regular burning. The first settler on Hull's Prairie, between Bowling Green and Perrysburg, Ohio, in 1836 was warned by Indians that they were about to torch the grass, and he remarked that it had not been burned for two years (Evers 1909).

In this region the best-drained land was on the banks of major streams, and here the Indians located their villages. In the century before the white settlers arrived, the Indian population was quite variable. At times under pressure of more powerful tribes from the East, the Maumee Valley was almost depopulated, but in 1812 there were about 3000 Indians (Kaatz 1953). A little earlier than this the entire Indian population of Ohio had been only about 6000 (Gordon, 1969). At the junction of the Auglaize and Maumee rivers (Defiance, Ohio), General Harrison was astonished to see "very extensive and highly cultivated fields . . . like one continued village for a number of miles." Never before had he "beheld such immense fields of corn in any part of America, from Canada to Florida." (Kaatz 1953). Samuel Brown, writing in 1815, said the prospect from Fort Meigs (Perrysburg, Ohio) "was most delightful . . . with rich open bottoms extending right and left as far as the eye can see." (Brown 1815). He also noted cultivation on the drier parts of the prairies east of Maumee Bay, and remarked that the farm of an Indian chief near Sandusky Bay was "of itself a fortune."

How much effect Indians had on bird life in the region is speculative. Their clearings may have benefited birds of the forest edge and brushlands but probably were not extensive enough to attract birds of the open country. Indians in southern states encouraged Purple Martins (*Progne subis*) by hanging nest cavities made of gourds, but we have no record of that practice here. Indians probably removed game species from the vicinity of their villages, but their hunting activities were purely utilitarian, directed mainly at waterfowl, grouse, and turkey for food. Birds were not sought in significant numbers for their plumage, as revealed by bones left





at village sites (Mayfield 1972). The swamp forest was not good hunting ground.

In total, I believe the effect of Indians on resident and migratory bird species was minimal until traders brought guns and a market for feathers and meat.

Bird losses during the wilderness period

Two conspicuous birds were lost from this region before settlement. The Trumpeter Swan (*Cygnus buccinator*) was a victim of the trader, and the Carolina Parakeet (*Conuropsis carolinensis*) fell before the advancing wave of farmers in regions to the south.

We tend to think that changes in the fauna did not begin until the arrival of the settlers and the clearing of the land. We forget that traders were active in this region for more than a century before farmers arrived. The record is poor be-

cause these men left only a few writings or other marks of their passing, mainly sketch maps of canoe routes and business ledgers of companies in Europe like the Hudson's Bay Company.

Guns gave the Indians the means, and trade goods gave them an incentive, to pursue creatures that had escaped pressure up to that time. Among mammals a prime object was the beaver. Among birds the first to feel the demand was the Trumpeter Swan, whose feathers and down were valuable and easily transported (Banko 1960). Audubon tells of a group of Indian hunters killing more than 50 swans in western Kentucky in 1810, and he said their feathers were bound for the millinery trade in Europe (Adams 1966).

Bones of the Trumpeter Swan are common in prehistoric Indian sites hereabouts (Mayfield 1972). We have no direct evidence of their nesting here, but the marsh habitat must have been as suitable as that in Indiana (Mumford and Keller 1984) and Illinois and Wis-

consin (Schorger, 1965), where it certainly nested. The Trumpeter's preference for ponds and sluggish streams of the interior probably made it more vulnerable to hunters than the Tundra Swan (*Cygnus columbianus*), which still migrates through this region in large numbers but tends to stay at a wary distance on the large marshes and open waters of Lake Erie.

Stray Trumpeters were still reported in migration on Sandusky Bay as late as 1861, but before the end of the century it had retreated to remote areas of the western mountains. In recent times protection has allowed it to creep back into former nesting areas of the Great Plains, and it could possibly survive here again if re-introduced.

The Carolina Parakeet probably vanished from this region very early in the 1800's. We find no mention of it by local settlers, but Audubon said it occurred at "the mouth of the Manimee at its junction with Lake Erie" (Bent 1940). Audubon may have relied on reports of others, because we are not aware of his having visited this area, although he certainly visited the eastern end of Lake Erie and explored southern Ohio thoroughly. There is little reason to doubt his report, however, for the parakeet was conspicuous and recognized by everyone. It was abundant along the Ohio River and reached the northern edge of its range at the Great Lakes.

The parakeet was destined for destruction in any settled land. It was colorful, noisy, tame, gregarious, and it damaged crops. A voracious eater of fruit and grain as well as wild seeds, it aroused the wrath of the farmer wherever it went. It was killed as a pest, trapped to become a caged bird, collected for its plumage, and shot for food. It was easy for hunters to wipe out a flock, because, according to Audubon, several birds could be brought down with a single shot, because the others continued to hover over the fallen members until they too were destroyed (Bent 1940). The last flock in Ohio was seen in Columbus in 1862 (Wheaton 1878). The species held out much longer in the forested regions of the South as far west as Texas and survived in Florida as late as 1913.

This is the first of a three part series. Literature Cited will appear at end of Part III.