

RECENT OBSERVATIONS ON BREEDING BIRDS IN THE HUDSON HIGHLANDS

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One hundred years have passed since Edgar A. Mearns pioneered a field study of birds in the Hudson Highlands region. The results of his work, mostly from 1874 to 1882, were presented in several issues of the *Bulletin of the Essex Institute* (1878-1881). Although often inconclusive, Mearns' study was important since it laid the foundation for later studies. P. M. Silloway (1920) and Louis Kohler (1922) reported a breeding avifauna somewhat similar to Mearns' list.

An inspection and comparison of Mearns' list of breeders and the list developed by the author from 1976-81 (only the area *west* of the Hudson River was studied, similar to Mearns' work) exhibits a moderate amount of difference, although the number of breeding species is about the same (Mearns, 115; Speiser, 120). One notices immediately that several spectacular raptors, such as the Bald and Golden Eagles, and Peregrine Falcon, no longer occur, along with the Marsh Hawk and Long-eared Owl. Some other species extirpated or no longer found include the Black-crowned Night Heron, American Bittern, Sora, Passenger Pigeon, Common Nighthawk, Short-billed Marsh Wren, Purple Martin, Northern Parula, Savannah Sparrow, and Vesper Sparrow. Those that have greatly decreased in number, among others, include the Black Duck, Sharp-shinned and Cooper's Hawks, Common Gallinule, Least Flycatcher, Cliff Swallow, White-eyed Vireo, Yellow-breasted Chat, and Orchard Oriole.

Altogether, approximately 32 species have disappeared or decreased greatly since Mearns' time. These extirpations and reductions are attributed primarily to: 1) land "development" (habitat loss) and cessation of agricultural endeavors; 2) pesticides, including DDT; 3) overshooting; and, 4) introduction of competitive species. Conversely, about 28 species have increased greatly in number or are new breeders in the Highlands since Mearns' time. Several other species are new summer residents which have not yet been proven to breed (*e.g.*, Kentucky Warbler). These increases and additions are attributed primarily to: 1) habitat changes, especially maturation of "northern hardwoods" and hemlock forests; 2) compression of habitats and bird populations by urbanization; 3) natural extensions of range; and 4) introductions and escapes from domestication.

About 25 species of today's breeders and summer residents are of

“northern” affinity, whereas about 18 species have a “southern” origin. Northern species seem to have entered the Highlands mainly along the Reading Prong connection with northwestern Connecticut and southeastern New York (Taconic Mountains) as some populations have increased concomitant with more habitat becoming available through maturation of beech-maple woods and encroachment of hemlocks into deciduous woods (Charney, 1981).

Historically, southern species extending their range have found the Highlands to be a barrier; northward dispersal has been mainly by way of the lower Hudson Valley and Gorge (Griscom, 1923; Deed, 1951; Beddall, 1963). Deed cited the Carolina Wren and Cardinal as excellent examples. However, it is an oversimplification to view the Hudson River Valley and Gorge as the principal route of invasion. The Highlands is also dissected by the smaller Ramapo River valley and others farther south in New Jersey; these also serve as avenues for dispersal of southern species. Field work has determined that Kentucky Warblers are extending their range by way of the Ramapo River valley, where all recent sightings have occurred. Also, the only Highlands record for the Yellow-throated Warbler was far from the Hudson River. Furthermore, Cerulean Warblers are clearly extending their range from the west. Other species (*e.g.*, Acadian Flycatcher) appear to be following the backbone of the Highlands (Reading Prong) rather than the coastal plain and Piedmont areas.

It should be noted that the “life zones” of the Highlands, as a general rule, are reversed. That is, the more boreal-like “transition zone” forests are often located at lower elevations, such as lower slopes, ravines, and coves. In contrast, the highest elevations are dominated by a more southern, coastal-plain type flora; pitch pine, red cedar, scarlet oak, chestnut oak, and scrub oak are examples. Forests of the Highlands are locally segregated by moisture and soil depth (Ohmann and Buell, 1968). The result is a mingling of northern and southern species at the ecotone where the two types of forest meet, often with surprising associations. Some examples: Acadian Flycatcher singing adjacent to an active Goshawk nest; Dark-eyed Junco singing in the same tree as a Tufted Titmouse; and, Cerulean Warbler singing above a Canada Warbler’s territory.

Recent field work has answered several questions on the status, distribution, and ecology of avians of the Highlands. The following are, in the author’s opinion, the most important findings.

- PIED-BILLED GREBE** (*Podilymbus podiceps*). Casual breeder. Only three "modern" breeding records, 1961 (Mr. and Mrs. John Dye) and 1978 (JB, RS)—both in July and from estuarine Moodna Marsh (Cornwall Bay); adult with five young at West Haverstraw marsh 12 June 1981 (Robert Deed).
- BLACK DUCK** (*Anas rubripes*). Very uncommon to rare. Greatly decreased in numbers as a breeder since about 1975, as Mallards continue to increase.
- GOSHAWK** (*Accipiter gentilis*). Very rare. Breeding sporadically since 1964; maximum—three pairs, 1977.
- SHARP-SHINNED HAWK** (*Accipiter striatus*). Rare. Only one "modern" breeding record—pair with nest in hemlock, Harriman State Park, June 1977 (RS).
- RED-SHOULDERED HAWK** (*Buteo lineatus*). Very uncommon. Re-establishing its numbers following a population crash in the late 1950s and 1960s.
- OSPREY** (*Pandion haliaetus*). Rare summer resident, along Hudson River and locally in the interior. Recent breeding not proven.
- TURKEY** (*Meleagris gallopavo*). Wild stock released in Harvard Black Rock Forest and U.S. Military Reservation in 1979. Evidence of breeding, but too soon to determine if introductions were successful.
- COMMON GALLINULE** (*Gallinula chloropus*). Only one recent summer record—an adult at Mt. Ivy Marsh, Haverstraw Township, 9 June 1979 (JB, RS).
- BARRED OWL** (*Strix varia*). Uncommon. Almost all suitable habitats were occupied.
- ACADIAN FLYCATCHER** (*Empidonax virescens*). Uncommon. Several nests were located, usually in beech or hemlock (JB, RS).
- ALDER FLYCATCHER** (*Empidonax alnorum*). Very rare summer resident. Found only in lowlands.
- LEAST FLYCATCHER** (*Empidonax minimus*). Has decreased in numbers since mid-1970s; now a rare breeder.
- CLIFF SWALLOW** (*Petrochelidon pyrrhonota*). Local breeder at only one locality of the U.S. Military Reservation; at least 4 pairs, summer 1980 (JB, RS).
- RED-BREASTED NUTHATCH** (*Sitta canadensis*). Rare and local. First breeding records—pair feeding three young, Harriman State Park 17 June 1980 (JB, RS) and pair feeding three young, Harvard Black Rock Forest, 5 July 1980 (JB, RS).

- BROWN CREEPER** (*Certhia familiaris*). Uncommon, but increasing in numbers each year. Pair with nest under hemlock bark, near Echo Lake, Tuxedo Township, 4 June 1980 (RS).
- EASTERN BLUEBIRD** (*Sialia sialis*). Uncommon. Almost all suitable habitat occupied. Census in 1980 revealed at least 65 males on territory (Speiser and Benzinger, 1981); most were in wooded swamps and burned mountaintops of Harriman State Park. Difficult to attract into new areas with nest boxes.
- GOLDEN-CROWNED KINGLET** (*Regulus satrapa*). Rare and local breeder in Harvard Black Rock Forest—pair with one juvenile, 7 July 1979 (JB, RS) and 5 July 1980 (JB, RS).
- SOLITARY VIREO** (*Vireo solitarius*). Species increasing in number. Five nests found during study (JB, RS).
- YELLOW-RUMPED WARBLER** (*Dendroica coronata*). First summer record—singing male near Sterling Lake, Sterling Forest, 29 June 1979 (JB). Returned during summer 1980 but no evidence of breeding.
- YELLOW-THROATED WARBLER** (*Dendroica dominica*). First summer record—singing male at Sterling Forest, 23 June 1978 (JB, RS); returned summer 1979, but no evidence of breeding.
- BAY-BREASTED WARBLER** (*Dendroica castanea*). First summer record—pair in spruce-cedar bog in Sterling Forest, 14 July 1978 (JB, RS). Probably very early fall migrants.
- CERULEAN WARBLER** (*Dendroica cerulea*). Increasing in number since mid-1970s. Two small colonies in the Highlands. Pair with nest, Long Mountain area, Harriman State Park, 9 June 1979 (JB, RS) but nesting unsuccessful.
- NORTHERN WATERTHRUSH** (*Seiurus noveboracensis*). Local breeder. At least 7 singing males in swamp near Lake Welch, Harriman State Park, 20 June 1980 (JB, RS). Adults with young noted in two places of Harvard Black Rock Forest area, Summer 1980 (JB, RS, PJ).
- KENTUCKY WARBLER** (*Oporornis formosus*). A few individuals found in the southwest section of the Highlands, Summer 1980 (JB) but no evidence of breeding.
- PURPLE FINCH** (*Carpodacus purpureus*). Local breeder. Small colony in the Arden area.
- DARK-EYED JUNCO** (*Junco hyemalis*). Local breeder in Harriman State Park. Nest found (RS) and young observed (JB, EB).

Observers: EB, Eugene Brown; JB, John Benzinger; PJ, Paul Jeheber; RS, Robert Speiser.

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