

Breeding Season Birds of Long Hope Creek Valley, Watauga and Ashe Counties, N.C.

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On 17-19 June 1988, the two authors along with Vaughn Morrison and Karen Lynch conducted a survey of the breeding birds of Long Hope Creek Valley, Watauga-Ashe Counties, North Carolina. The purpose of the visit was to document the breeding season avifauna of the most extensive spruce bog complex in the North Carolina mountains. The habitats in the valley more closely resemble, botanically and ecologically, boreal forest and sphagnum bog communities of the central Appalachians (West Virginia and Maryland). The valley is also notable in that it is one of the few areas in North Carolina where red spruce (*Picea rubens*) occurs in a streamside habitat instead of in its more typical upland, mountaintop setting.

Long Hope Valley has long been recognized as an exceptionally significant botanical area in the southern Appalachians (N.C. Natural Heritage Program files). The bogs in the valley contain a number of rare and endangered plants of northern affinities including many at or near the southern limits of their range. However, until this survey no systematic ornithological field work had ever been undertaken.

This paper documents the occurrence of 71 breeding and presumed breeding species from Long Hope Valley, including a number of taxa restricted to high-elevation spruce-fir forests and several uncommon to rare species presently known from only a few locations in the North Carolina mountains.

DESCRIPTION OF THE SITE

Long Hope Creek Valley is located along the Watauga-Ashe County line in the Blue Ridge Mountains of northwestern North Carolina. The valley contains the headwaters and upper reaches of Long Hope Creek, a tributary of the North Fork of the New River. From its headwaters in Watauga County, the creek flows north for about 3.4 miles through a relatively wide, high-elevation valley before it plunges through a narrow gorge along the east flank of The Peak. Approximately two-thirds of the valley is in Watauga County with the northern third in Ashe County. The creek ranges in elevation from about 4,200 feet at the northern end of the valley to about 4,520 feet at its southern end near the headwaters.

A coniferous forest community dominated by red spruce and eastern hemlock (*Tsuga canadensis*) occurs along the floodplain of Long Hope Creek. Scattered northern hardwoods in the canopy include yellow birch (*Betula lutea*) and American beech (*Fagus grandifolia*). The spruce-hemlock-northern hardwoods community occupies broad, poorly-drained flats overlain by perennially saturated, highly organic soils. Dense thickets of great laurel (*Rhododendron maximum*) occur in the understory.

Four sphagnum bogs which range in size from one to three acres are scattered along the stream floodplain within the spruce-hemlock forest. Mats of sphagnum moss, various graminoids (*Scirpus expansus*, *Carex* spp.), cranberry (*Vaccinium macrocarpon*), and other bog plants are characteristic of the open bogs. A distinct shrub zone occurs around the fringes of the bogs. Common species include minniebush (*Menziesia pilosa*), long-stalked holly (*Ilex collina*), large leaf holly (*Ilex montana*), black chokeberry (*Sorbus melanocarpa*) and northern wild-raisin (*Viburnum cassinoides*).

The combination of relatively high elevation, cold climate, and a flat stream valley with very poor drainage has produced an unusual landscape of streamside spruce-hemlock forest and sphagnum bogs which more closely resemble boreal habitats. The valley was nominated a National Natural Landmark by the National Park Service in 1974 in recognition of its botanical and ecological significance.

The valley is enclosed by gently sloping mountains. These include on the north—The Peak (elevation 4,880 feet); on the east—Old Field Bald (4,958 feet); on the south—Elk Knob (5,520 feet), Rittle Knob (4,840 feet), and Pine Orchard Knob (4,880 feet); and on the west—Long Hope Mountain (4,680 feet).

Much of the east and west sides of the valley along the slopes of Long Hope Mountain and Old Field Bald are dominated by extensive high-elevation pastures known locally as "balds". These grassy pastures were maintained traditionally by cattle grazing until the early 1980's when portions were converted to Christmas tree plantations. All cattle have been removed from the valley and some of the pastures are presently maintained by mowing. Thickets of various hardwood saplings and shrubs are encroaching on the other pastures. Common species in the abandoned pastures include hawthorn (*Crataegus* sp.), fire cherry (*Prunus pensylvanica*), blackberry (*Rubus* sp.), flame azalea (*Rhododendron calendulaceum*), and mountain laurel (*Kalmia latifolia*). All stages of secondary succession ranging from scattered shrubs and small trees to dense thickets are represented in the overgrown pastures.

A portion of the pastures on Long Hope Mountain have been converted recently to fraser fir (*Abies fraseri*) Christmas tree plantations. Various age-class stands of firs have been planted in a patchwork pattern on the slopes and ridgecrest overlooking Long Hope Creek.

Extensive stands of northern hardwoods are present on the lower slopes of Old Field Bald as well as on the surrounding mountains. Mature stands of yellow birch, American beech, sugar maple (*Acer saccharum*), and buckeye (*Aesculus octandra*) are characteristic of this community. The northern hardwood forest community is almost devoid of conifers, in sharp contrast to the stream valley.

In addition to the previously described habitats, a few scattered cabins and farm buildings exist in the southern portion of the valley on the lower slopes of Long Hope Mountain. A small farmpond is located on a tributary stream near the cabins. No cultivated land exists in the valley.

METHODOLOGY

During the three-day survey of the 2,500-acre valley we spent a total of 31 diurnal man-hours and 3.5 nocturnal man-hours between the hours of

0600 and 2300. Coverage included the entire 3.4 mile valley, including most of the streamside spruce-hemlock forest, several of the sphagnum bogs, the open grasslands and Christmas tree plantations on Long Hope Mountain, and the forested lower slopes and grassy upper slopes of Old Field Bald. We did not census the more distant hardwood-dominated slopes of The Peak, Elk Knob, or Pine Orchard Knob.

NOTABLE SPECIES OF LONG HOPE CREEK VALLEY

The following is an annotated list of the notable species recorded during our three-day survey. Numbers after each species indicate the cumulative three-day total of individuals seen or heard.

Cooper's Hawk: 2. One pair seen in apparent courtship flight over west slopes of Old Field Bald near Ashe-Watauga County line on 18 June; elevation 4,400 feet. Deep, slow, vigorous wingbeats by one of the soaring birds was noted.

American Kestrel: 3. Single birds were seen in the vicinity of extensive pastures on Old Field Bald and on Long Hope Mountain.

Wild Turkey: 8. Four hens observed on lower slopes of Old Field Bald along edge of pasture and four gobblers observed on north slope of Long Hope Mountain, also in pasture; both 18 June. Birds have been released in the area by the North Carolina Wildlife Resources Commission.

American Woodcock: 2. One heard performing aerial flight song on evening of 18 June; two flushed from nearby Christmas tree plantation on 19 June exhibited distraction behavior indicating probable nest or young in vicinity. Elevation of sightings about 4,350 feet.

Black-billed Cuckoo: 1. Heard calling (typical song) 18 June along upper reaches of Pine Orchard Creek at 4,320 feet. Habitat was mixed spruce-hemlock-northern hardwoods. The possibility that this individual was a late migrant cannot be ruled out although we believe the bird was on its breeding grounds based on elevation and habitat.

Yellow-billed Cuckoo: 2. Singles heard calling the typical song at elevations of 4,400 feet and 4,600 feet in mixed hardwood forest on slopes above Long Hope Creek 18-19 June. Breeding season records in North Carolina over 4,000 feet are rare. The birds were believed to be on the breeding grounds although the possibility that they were late migrants cannot be ruled out.

Eastern Screech-Owl: 2. Seen and heard along edges of mixed spruce-hemlock-northern hardwoods at 4,360 feet.

Great Horned Owl: 1. Heard calling in mixed forest along Long Hope Creek, 18 June; elevation 4,320 feet.

Northern Saw-Whet Owl: 1. An adult was seen and heard giving territorial calls from dense spruce-hemlock forest along Long Hope Creek at an elevation of 4,360 feet. The bird called from a red spruce branch about 30 feet above the ground and was observed in a flashlight beam on the evenings of 17 and 18 June. This is the lowest elevation for a documented breeding season occurrence in the state. This locality bridges the breeding season gap between Mt. Rogers, Virginia (Kain, 1987) and Grandfather Mt., North Carolina (Lee, et al., 1985).

- Eastern Wood-Pewee:** 2. In openings and edges of spruce-hemlock-hardwood forest, 4,360-4,440 feet.
- Eastern Phoebe:** 2. One pair observed around barn in open pasture at 4,400 feet.
- Great Crested Flycatcher:** 1. Heard calling at close range along edge of spruce-hemlock forest along Long Hope Creek at 4,350 feet on 17 June. Species is rare in North Carolina mountains at this elevation.
- Barn Swallow:** 8. Small nesting colony at a barn in an open pasture at 4,400 feet.
- Carolina Chickadee:** 4. Noted in spruce-hemlock-northern hardwoods forest near Long Hope Creek at 4,320-4,400 feet elevation.
- Tufted Titmouse:** 8. In spruce-hemlock forest along creek as well as in northern hardwoods on slopes; elevations 4,280-4,520 feet.
- Red-breasted Nuthatch:** 14. In spruce-hemlock-northern hardwood forests of valley and lower slopes down to 4,320 feet. See McNair (1987) for further elevational data in southern Appalachians.
- Brown Creeper:** 1. Seen in dense spruce forest on lower slopes of Old Field Bald at 4,440 feet on June 18.
- Carolina Wren:** 1. Heard singing along edge of pasture adjacent to spruce-hardwood forest near Long Hope Creek at 4,360 feet on 18 June. This elevation is near the upper limit for a breeding season occurrence. See McNair (1987) for further elevational data.
- Golden-crowned Kinglet:** 16. Occur in spruce-hemlock-northern hardwood forest along Long Hope Creek. McNair (1987) gives elevational records for the southern Appalachians.
- White-eyed Vireo:** 1. Heard singing in the shrubby margin of a spruce-hemlock-hardwood forest near Long Hope Creek on 18-19 June at 4,320 feet. McNair (1987) summarizes breeding information from the North Carolina mountains. The highest elevation given for reliable breeding season (and confirmed nesting) records is 4,000 feet in the Highland Plateau. Thus, while we lack breeding evidence, our breeding season observation is the highest documented record in North Carolina.
- Golden-winged Warbler:** 3. Singing males in brushy pastures, 2 in Ashe Co. and 1 in Watauga; near Long Hope Creek. Elevations 4,280-4,360 feet.
- Magnolia Warbler:** 2. We watched singing males probably on territory, on 19 June. One was along the edge of spruce-hemlock-hardwood forest on the west side of Long Hope Creek (4,320 feet) and the other was in similar habitat along the edge of an open bog about 0.75 mile upstream (4,400 feet), both in Watauga Co. This is apparently the sixth breeding season record for North Carolina, all from upland coniferous forests (Lee, et al., 1985; Chat 51:82). Our observations represent the lowest elevation breeding season records for the state. No evidence of breeding was noted at Long Hope Valley and breeding has yet to be confirmed anywhere in the state.
- Blackburnian Warbler:** 5. Restricted to spruce-hemlock-northern hardwood forest along Long Hope Creek. See McNair (1987) and Kain (1987) for additional breeding season data.
- Hooded Warbler:** 2. One singing male was on a hardwood slope adjacent to Long Hope Creek at 4,320 feet, the other singing male was in spruce-

hemlock-northern hardwoods at an elevation of 4,360 feet near Long Hope Creek about one mile south, both on 19 June.

Vesper Sparrow: 17. Includes at least 12 singing males. Primarily in open pastures, but also in young Christmas tree plantations. Several adults observed carrying food. This is probably one of the largest breeding populations in North Carolina. A census of the open balds on Pond Mountain, Ashe County in June 1979 recorded 25 individuals, the highest documented number for the state (LeGrand and Potter, 1980).

Grasshopper Sparrow: 5. Singing males observed in open pastures; also observed singing from young Christmas tree plantations. Elevations ranged from 4,440 feet to 4,640 feet and probably represent the upper limit for breeding in North Carolina.

DISCUSSION

A total of 67 species were recorded during the survey. An additional 4 species have been reported from the valley during the summer but were not seen by us in this study: Ruffed Grouse, Horned Lark, Bewick's Wren, and Red Crossbill. Ruffed Grouse with young have been reported from the valley by the caretaker. Horned Larks were reported from Old Field Bald in July, 1988 by Mike Godfrey. One Bewick's Wren was noted singing near Long Hope Creek in Ashe County July 26, 1973 by Robert Teulings (Chat, 37:109). We did not find the species during the survey although suitable habitat, i.e., barns, fences, and brush at high elevation, is present. One Red Crossbill was heard calling over Long Hope Creek in June 1979 by Harry LeGrand and Tom Haggerty (LeGrand and Potter, 1980). The list mostly includes resident breeding species although we suspect the following fly-overs were non-breeding visitors: Great Blue Heron, Chimney Swift, and Common Grackle.

Notable species of the spruce-hemlock zone include the Northern Saw-whet Owl and Magnolia Warbler. Most of the typical spruce-fir forest birds that nest on high mountains in the state were present in the valley, e.g., Brown Creeper, Golden-crowned Kinglet, and Red-breasted Nuthatch.

Several species typical of low to middle elevations in the mountains were recorded at or near their upper elevational limits in the state: Yellow-billed Cuckoo, Great Crested Flycatcher, Carolina Wren, and White-eyed Vireo. All four were recorded at elevations above 4,300 feet. Also, several species not usually associated with North Carolina spruce forests were recorded in the valley's spruce-hemlock-northern hardwoods stands: Eastern Screech-Owl, Eastern Wood-Pewee, and Hooded Warbler. These species occasionally occur above 4,000 feet in the North Carolina mountains but are usually associated with hardwood-dominated forests. The occurrence of these species in spruce-hemlock forest may be attributable to the unusual streamside habitat of the valley in contrast to typical mountaintop spruce stands in other high elevation areas.

Some species or groups were scarce or absent in the valley. Woodpeckers and flycatchers were poorly represented both in terms of species diversity and population densities. However, this is not particularly unusual at high elevations in the mountains based on our experience. Species expected but not seen included: Mourning Dove, Northern Flicker, Pileated Woodpecker, *Empidonax* flycatchers (Alder, Least, or

Willow), Brown Thrasher, Black-and-white Warbler, Northern Parula, Black-throated Green Warbler, and Eastern Meadowlark. Some of these species undoubtedly occur in low densities, and further field work will verify their presence. Other more conspicuous species such as Mourning Dove and Eastern Meadowlark are apparently absent as breeders in the valley although they are known to occur at high elevations in some areas of the southern Appalachians.

The only species using the Christmas tree plantations were the five species of sparrows (see Appendix), along with Northern Bobwhite, Indigo Bunting, Rufous-sided Towhee, and American Goldfinch. Grasshopper and Vesper sparrows used the fir tops as singing perches but foraged primarily in the grassy areas adjacent to the plantations.

We surveyed several of the sphagnum bogs with the hope of finding species such as Nashville Warbler, Northern Waterthrush, Mourning Warbler, and Swamp Sparrow that are associated with this habitat type in the ecologically similar Cranberry Glades bog complex located in Pocahontas County, West Virginia, about 150 air-miles northeast of Long Hope Valley (Hall, 1983). However, the birds we found in the bogs were common, widespread species such as Song Sparrow and Rufous-sided Towhee, which also occurred in other open, shrubby habitats in the valley. A similar bog located on the summit of nearby Bluff Mountain, Ashe County, has also been surveyed and found to be lacking in species associated with more northern bog habitats (J. M. Lynch, unpublished data).

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APPENDIX
Master Species List for Long Hope Creek Valley,
Watauga and Ashe Counties,
North Carolina

The following is a list of the breeding season avifauna of Long Hope Creek Valley recorded during our three-day survey, 17-19 June 1988. Species in parentheses are those that have been recorded by others in the valley, but were not seen by us during the survey.

Great Blue Heron	House Wren
Turkey Vulture	Winter Wren
Cooper's Hawk	Golden-crowned Kinglet
Broad-winged Hawk	Eastern Bluebird
Red-tailed Hawk	Veery
American Kestrel	American Robin
(Ruffed Grouse)	Gray Catbird
Wild Turkey	Cedar Waxwing
Northern Bobwhite	European Starling
American Woodcock	White-eyed Vireo
Black-billed Cuckoo	Solitary Vireo
Yellow-billed Cuckoo	Red-eyed Vireo
Eastern Screech-Owl	Golden-winged Warbler
Great Horned Owl	Chestnut-sided Warbler
Northern Saw-whet Owl	Magnolia Warbler
Chimney Swift	Black-throated Blue Warbler
Ruby-throated Hummingbird	Blackburnian Warbler
Downy Woodpecker	Ovenbird
Hairy Woodpecker	Common Yellowthroat
Eastern Wood-Pewee	Hooded Warbler
Eastern Phoebe	Canada Warbler
Great Crested Flycatcher	Scarlet Tanager
(Horned Lark)	Rose-breasted Grosbeak
Northern Rough-winged Swallow	Indigo Bunting
Barn Swallow	Rufous-sided Towhee
Blue Jay	Chipping Sparrow
American Crow	Field Sparrow
Common Raven	Vesper Sparrow
Carolina Chickadee	Grasshopper Sparrow
Tufted Titmouse	Song Sparrow
Red-breasted Nuthatch	Dark-eyed Junco
White-breasted Nuthatch	Red-winged Blackbird
Brown Creeper	Common Grackle
Carolina Wren	Brown-headed Cowbird
(Bewick's Wren)	(Red Crossbill)
	American Goldfinch