

**Breeding Bird Survey of Sica Hollow State Park,  
Marshall and Roberts Counties, South Dakota  
Summer 2003**

**Report Prepared for South Dakota Department of Game, Fish and Parks,  
Wildlife Division**

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Cooper's Hawk

## Introduction

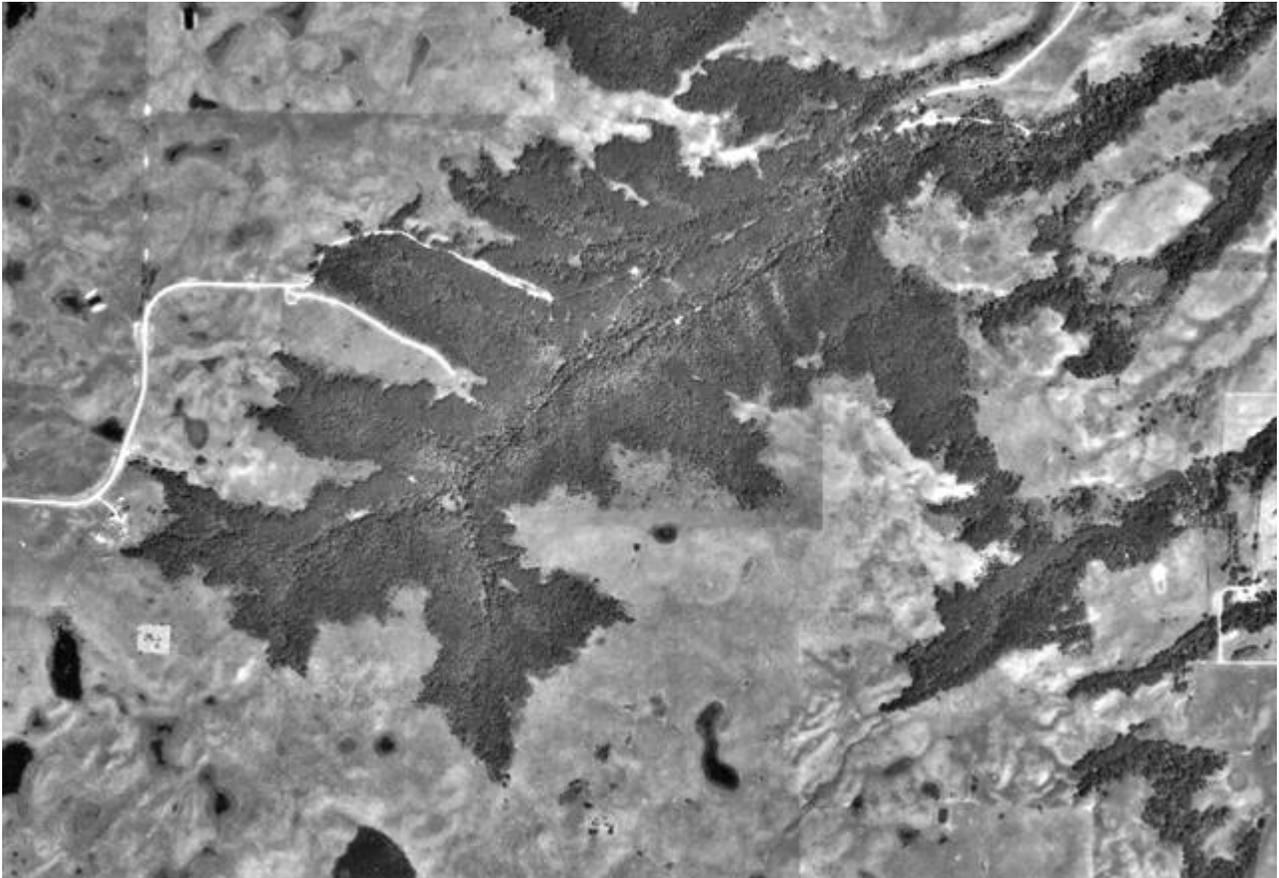
This report presents the findings of the summer 2003 breeding bird survey of Sica Hollow State Park in northeastern South Dakota. The purpose of the project was to compile and update information about the breeding status of birds in Sica Hollow State Park. The project had three objectives:

1. To conduct a comprehensive field survey of breeding birds in Sica Hollow between April 1 and September 1, 2003. This goal was modified due to weather and the reduced numbers of birds by early August, to run from April 19 to Aug. 12.
2. To compile a list of total species sightings for the season, including both migratory and summer resident birds, documenting breeding status, and to update the birding checklist for the park.
3. To compile the historical breeding bird records for Sica Hollow from the personal records of area birders such as Bruce Harris and Dennis Skadsen, both of whom have birded Sica Hollow for many years.

The results provide a current record of the breeding status of species in Sica Hollow State Park: 18 species confirmed (CO), 18 probable (PR), and 19 possible (PO). Details of breeding status plus an overall listing of all species sighted during the survey are found in the data section of the report.

## **Description of Sica Hollow**

Sica Hollow State Park is located at the northern end of the Prairie Coteau in northeastern South Dakota. Situated on the border of Roberts and Marshall Counties, a 15-mile drive north west of Sisseton, it is 13 miles south of the North Dakota border and 30 miles west of Lake Traverse and Big Stone Lake into which the Minnesota River flows. Figure 1, below, is an aerial view of the 800-acre park.



**Figure 1 USGS aerial photo of Sica Hollow and surrounding area**

As Figure 1 shows, Sica Hollow includes 600 densely wooded acres and 200 acres of prairie and grassland surrounding the wooded slopes. The photo shows the main road running east/west through the park. Park boundaries are not visible on this photo.



**Figure 2. DeLorme 3-D Topo Quad X-Map CD-Rom.**

As Figure 2 shows, Sica Hollow is situated on the terrain sloping off the Coteau to the prairie. Elevation varies from 1600 feet above sea level (fsl) at the northern edge at the entrance to the park to 1900 fsl on the upper meadow ridge at the southwestern edge of the park.

## **Project Need**

The project was needed for several reasons:

### **1. Sica Hollow is an important habitat**

Sica Hollow State Park is a large, isolated tract of Eastern hardwood forest surrounded by prairie. As such, the park provides an important habitat for forest-dwelling bird species. Also, because this park is not heavily used, with only minor disturbance of both vegetation and birds, it offers good potential for sheltering an abundance of breeding birds. On the 17 field days of the survey, we observed few people in the park. A county highway cuts through the park, and this road is frequently used by motorists passing through, not stopping. The road is not cleared of snow, and is therefore closed during winter months.

## **2. Declining Species Are Forest Specialists**

Cornell Lab of Ornithology states that many nationally declining species of birds are forest specialists. The Birds in Forested Landscapes project manual from Cornell Lab explains some of the importance of isolated or small tracts of forest: “Ornithologists suspect that fragmentation harms many woodland birds by increasing their susceptibility to predation and nest parasitism. Predators such as jays, crows, raccoons, and cats, as well as the parasitic Brown-headed Cowbird, typically are not abundant in extensive forest. ...The importance of large areas of continuous forest for maintaining forest-interior bird species has been demonstrated in the eastern United States during the past 15 years” (Cornell, 2003, p.1.3).

Sica Hollow encompasses approximately 800 acres, with forested area totaling 600 acres of the park. The nearest forest patch of at least 500 acres is approximately 1.5 miles away. It may be helpful to future management planning at Sica Hollow to know what forest species are successfully breeding there, and what species that could be expected are not present.

## **3. No formal Survey**

Prior to this project, no formal breeding bird survey had been conducted in the park. In addition, few species had even been confirmed as breeding in the park. Confirmed breeding status is listed in the Heritage Database for only three state watch-listed species: Broad-winged Hawk (1982 report), Long-eared Owl (1975), and Veery (1983).

The Natural Heritage Database lists three additional watch-listed species observed in Sica Hollow: Cooper's Hawk, American Woodcock, and Scarlet Tanager. By seeking to document the presence and breeding status of these species as well as other species not previously reported, this project attempted to provide data valuable in monitoring the presence, relative abundance and vulnerability of species using the park.

The project has increased the Heritage Program's data for Sica Hollow and has also added some new species to the Sica Hollow checklist. In addition to collecting information for state records, this survey will add to the body of data used by national organizations such as the Cornell Lab of Ornithology, which lists neither Veery nor Broad-winged Hawk as species of northeastern South Dakota, yet both species are found in Sica Hollow.

# **Field Survey Methods**

## **Determining Habitats and Setting Routes**

To conduct the field survey, we established routes which would allow us to locate the greatest number of species in the greatest variety of habitats. Each route was designated a transect, and data was collected continuously along each transect as species were encountered. Point counts were not used; rather, we surveyed continuously to observe as many species as possible.

Data for each species was recorded, noting breeding status (as defined in the South Dakota Breeding Bird Atlas), relative abundance of breeding pairs, and habitat designation (riparian, interior woods, upper woods, and upper meadow), discussed below in detail.

Initially, because slopes are steep at Sica Hollow, and because of the generally parallel east/west orientation of the park's ridges and gullies, it was anticipated that differences might be discerned in the numbers of birds and species variety between north-facing and south-facing slopes.

However, once we began the survey, we discovered this method was impractical because the orientation of slopes was neither consistent nor easily discernible. Therefore, we designated four habitats: riparian, interior woods, upper woods, and upper meadow, without distinctions regarding north-south orientation. A brief explanation of each habitat follows.

### **Riparian**

The Riparian area includes Roy Creek, which runs through much of the park from west to east. In addition, several springs create wet areas on hillsides near the creek. The Trail of Spirits, at the northeast section of the park along Roy Creek, is the wettest trail with wet hillside area, springs, and running water throughout the summer. Figure 3 below shows Roy Creek in the interior of the park.



**Figure 3: Roy Creek along the road through the park.**

The dense under-story is comprised of shrubs and wildflowers, including marsh marigold, gooseberry, and currant. Figure 4 is an additional photo of the Riparian area.

## **Interior Woods**

Interior Woods includes the woods on all slopes, with sugar maple, basswood and oak trees predominating. The slopes are steep, the canopy is dense, and the ground is covered with a dense, shrubby under-story in many areas. Figure 4 shows the Interior Woods.



**Figure 4. Slope of Interior Woods**

As Figure 4 illustrates, the Interior Woods offer protective habitat needed by several species.

## Upper Woods

A third habitat, Upper Woods, consists of the flat, forested ridge tops. Compared with the Interior Woods, Upper Woods are drier with taller, more open canopy and less dense under-story. The woods are edged with chokecherry, sumac, hawthorn, and wild plum. Figure 5 below shows the canopy in the Upper Woods.



**Figure 5. Cooper's Hawk nest in upper woods.**

The Cooper's Hawk nest is visible in Figure 5 in the third tree from the left near the top at the "Y."

## Upper Meadow

The Upper Meadow, grassland and prairie, surrounds the wooded hollow. Common South Dakota grasses like bluestem, bluegrass, and gramma and typical prairie forbs grow in this zone. Wood Lilies bloom in several places in the upper meadows along the south and west sides of the park. Figure 6 below shows a view of the Upper Meadow.



**Figure 6. View from the southern grassland looking toward “fingers” of the hollow**

Clearly visible in Figure 6 are the “fingers” of woods running up the slopes of the Coteau. From this spot. The elevation is approximately 1900 feet above sea level. This vantage point also provides an inspiring view of the prairie spreading to the east below.

## Identifying Species of Interest

Species of special interest fell into two categories: species previously sighted at Sica Hollow, which our survey was seeking to reconfirm and species found in neighboring states, which have the potential to expand territory into northeastern South Dakota at Sica Hollow.

### Species Previously Sighted in Park

The survey attempted to identify the current breeding status of the three previously confirmed species on the state watch list: Broad-winged Hawk (1982), Long-eared Owl (1975), and Veery (1983)

In addition, several species on the watch list had been observed but no breeding status documented, including Cooper's Hawk, American Woodcock, Red-headed Woodpecker, Yellow-bellied Sapsucker, Wood Thrush, Swainson's Thrush, Scarlet Tanager, Least Flycatcher, Willow Flycatcher, Saw-whet Owl, Ruby-throated Hummingbird, Pileated Woodpecker, and Yellow-throated Vireo.

Species observed in the general area but not reported in Sica Hollow, according to the South Dakota Breeding Bird Atlas (1995), include Barred Owl, Eastern Screech-Owl, Green Heron, and Pine Siskin. Ruffed Grouse have been reported booming in the area, but there has been no documented sighting. The survey sought to confirm these species' presence in the park. Breeding status for common summer resident species was also recorded.

### **Species Recorded in Neighboring States**

In addition, we reviewed species commonly breeding in western Minnesota and southeastern North Dakota. The proximity of Sica Hollow to similar habitat in these two states led us to speculate which species might also breed in Sica Hollow. Sica is only 30 miles west of Lake Traverse into which the Minnesota River flows. It is 15 miles from the North Dakota border and the Teewaukon Wildlife Refuge. Possible species in this category were Black-and-white Warbler, Prothonotary Warbler, and Cerulean Warbler. The National Geographic Field Guide (1987) shows the breeding range of the Black-and-white Warbler skimming the northeast corner of South Dakota, not far from Sica Hollow. Birding Minnesota (1996) includes maps showing the Prothonotary and Cerulean breeding close to South Dakota along the Minnesota River, which flows southeast out of Big Stone Lake.

### **Operating Procedures**

Surveys were conducted on 17 field days from April 19 through August 10 in two-week intervals: once in April, three days in May, five in June, six in July, two in August. Surveys were conducted at various times throughout the day--early morning to dark--to encounter the greatest possible range of species. Field time averaged approximately eight hours per day.

Evidence of breeding status was classified from "observed" to "confirmed" using definitions and criteria published in the South Dakota Breeding Bird Atlas (1995). Relative abundance of breeding pairs of each species was recorded using the method described in the Atlas.

Audio recordings and photographs were used to aid in identification and documentation. We also played recordings at night to discover presence of owls and whip-poor-wills. Additionally, we used recordings from the Cornell Lab of Ornithology\* for target species in conjunction with the Lab-sponsored Birds in Forested Landscapes project.

### **Background Research and Interviews**

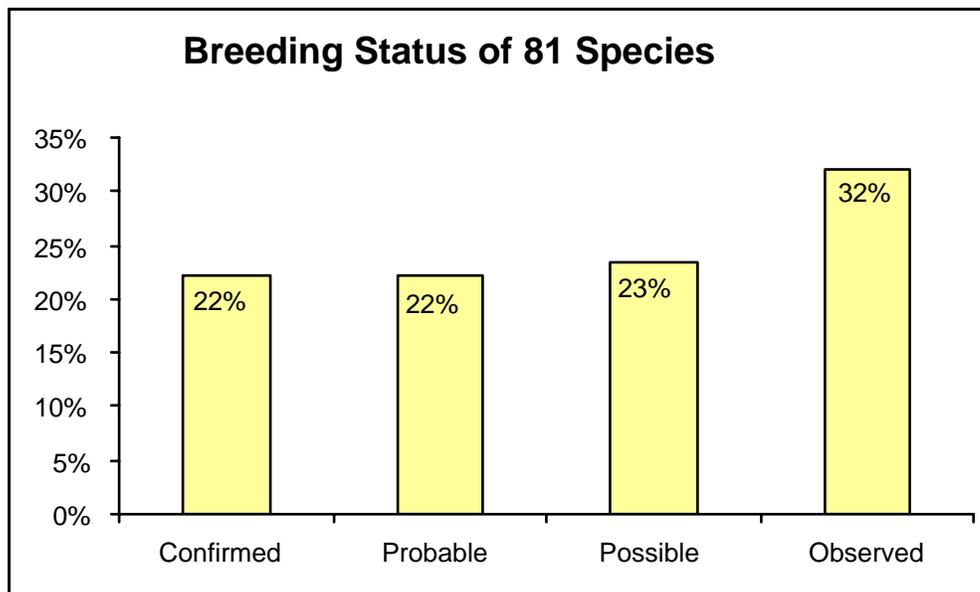
Background research included a review of field guides, natural history references, EROS Data Center images, United States Government Survey topo maps, and birding resources from Minnesota and North Dakota. We interviewed birders with birding experience at Sica Hollow, including Paul Springer, Bruce

Harris, and Dave Swanson. Park manager, Dave Daberkow, provided information on park topography and range of habitats.

\*We participated in The Cornell Lab of Ornithology identification project for Birds in Forested Landscapes during three of our field days in June. This project provided background research and audio-recordings of forest specialist species whose numbers are declining nationwide. Willow Flycatcher, Eastern Wood-Pewee, Yellow-throated Vireo, Yellow-billed Cuckoo, and Cooper’s Hawk. The 5-minute species-calling recordings were followed by a chickadee mobbing recording. Interestingly, while the pewee, vireo, cuckoo, and hawk were all found in the park, only the Eastern Wood-Pewee responded directly to the taped recording of its song and call.

## Results

The results of our research include a comprehensive listing of 81 species of birds in Sica Hollow State Park with breeding status assigned as confirmed (CO), probable (PR), possible (PO), or observed (O), as well as an estimate of the number of breeding pairs of those species confirmed or probably breeding in the park. Figure 7 graphs the results.



**Figure 7. Breeding status of species in Sica Hollow.**

### Confirmed Breeding

We identified 18 species with confirmed (CO) breeding status in the park. Previously observed state-listed species which we confirmed as breeding were Cooper’s Hawk and Scarlet Tanager.

Breeding behavior codes are the following:

- CN Carrying Nesting materials
- DD Distraction Display
- PY Precocial Young
- FL Fledged Young
- ON Occupied Nest
- CF Carrying Food
- FY Fledged Young
- NY Nest with Young

Confirmed breeding was observed for the following species:

Black-capped Chickadee	FY	White-breasted Nuthatch	CF, FY
Clay-colored Sparrow	CN, CF	Black and white Warbler	CF
Common Yellowthroat	CN, DD, CF	Hairy Woodpecker	DD
Eastern Wood-Pewee	ON	Wild Turkey	PY
Ovenbird	DD	Mallard	PY
Red-eyed Vireo	CN	Baltimore Oriole	FY
Scarlet Tanager*	CF	Chipping Sparrow	CF
Song Sparrow	CF, DD	Yellow Warbler	DD, FY
Eastern Phoebe	NY	Cooper's Hawk*	ON, NY

\*State watch-listed species

### Probable Breeding

We identified 18 species with probable (PR) breeding status in the park, including Broad-winged Hawk and Veery (species previously recorded in the Heritage Database as confirmed (CO) in the park).

Breeding behavior codes for probable breeding (PR) are the following:

- M Multiple Males singing in a block during a single visit
- P Pair Observed in suitable habitat
- S Permanent territory presumed by singing in same place, 2 or more occasions
- T Permanent territory presumed through defense of territory
- C Courtship Behavior
- A Agitated Behavior

Probable breeding was observed for the following species:

American Goldfinch	P, S	American Redstart	P
Broad-winged Hawk*	P	Blue Jay	S
Gray Catbird	S	Rose-breasted Grosbeak	P
House Wren	S	Veery*	T
Indigo Bunting	P	Yellow-billed Cuckoo	S
Least Flycatcher	S	Ruby-throated Hummingbird	S
Yellow-throated Vireo	P	Cedar Waxwing	C
Pileated Woodpecker	S	Upland Sandpiper	P
Sedge Wren	S	Wilson's Snipe	C

## Possible Breeding

Possible breeding was confirmed for 19 species. The breeding behavior codes for possible breeding (PO) are:

- ? Male or female observed in suitable habitat and
- X Singing male in suitable habitat.

The following were coded possible breeding:

Red-tailed Hawk	?	Great Crested Flycatcher	?
Field Sparrow	?	Bobolink	X
American Crow	?	Brown Thrasher	?
Chestnut-sided Warbler	X	Turkey Vulture	?
Northern Harrier	?	Downy Woodpecker	?
Vesper Sparrow	?	Brown-headed Cowbird	?
Orchard Oriole	?	Mourning Dove	?
Yellow-bellied Sapsucker	?	Black-billed Cuckoo	X
Warbling Vireo	?	Eastern Kingbird	?
Northern Flicker	?		

## Nesting Pairs

In addition to coding the breeding status of species, the abundance of nesting pairs was also estimated for confirmed and probable breeding species. The complete list is found in Appendix ????. A summary follows of the most common and least common nesting pairs.

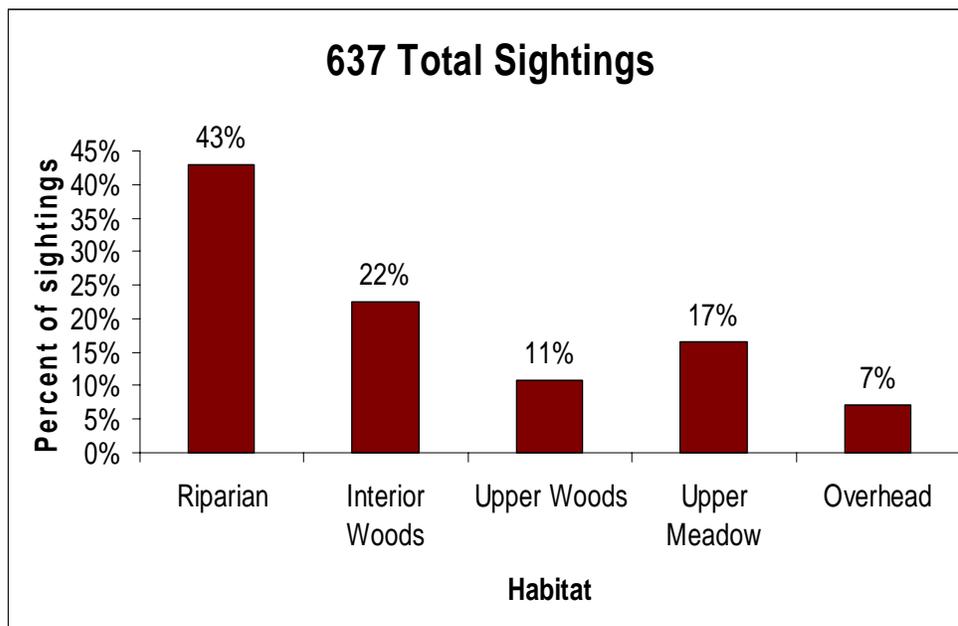
The most abundant pairs (more than 100 pairs) were Common Yellowthroat, Red-eyed Vireo, and Veery. The least abundant pairs (only one nesting pair) were the Pileated Woodpecker and Wilson's Snipe.

## Survey Observations

Data collected during the survey offer a variety of observations about the relationships between the park's various habitats and the 81 species identified.

A total of 637 sightings were logged on data sheets during the survey. Species were recorded a maximum of once in each habitat each survey day. A maximum of five sightings per day was possible for each species, once in each habitat plus overhead. The total number of individuals of each species encountered in each habitat was tallied separately to provide breeding pair estimates.

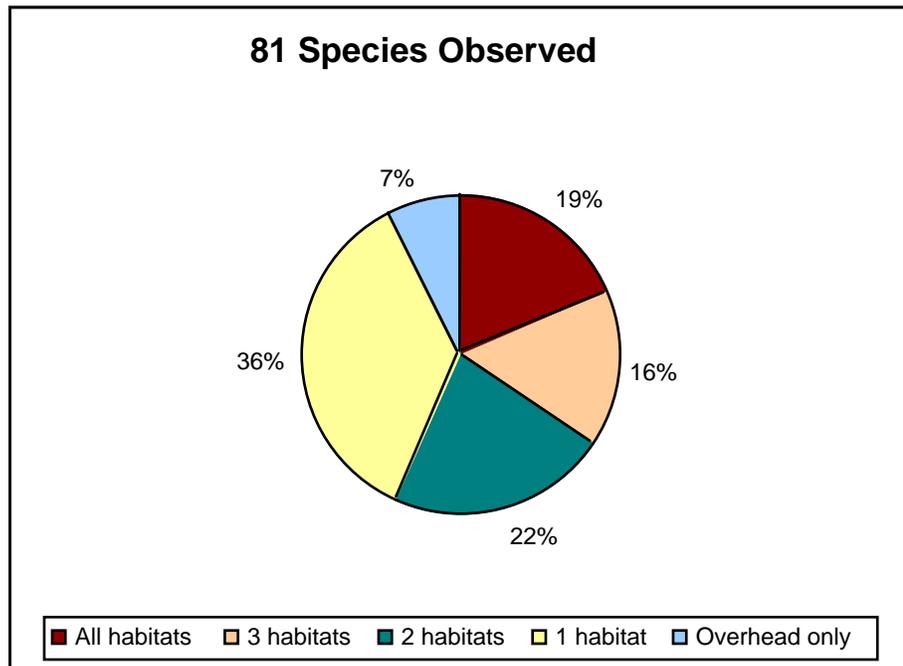
Figure 8 below shows the abundance of sightings by habitat.



**Figure 8. Habitat designations for total sightings.**

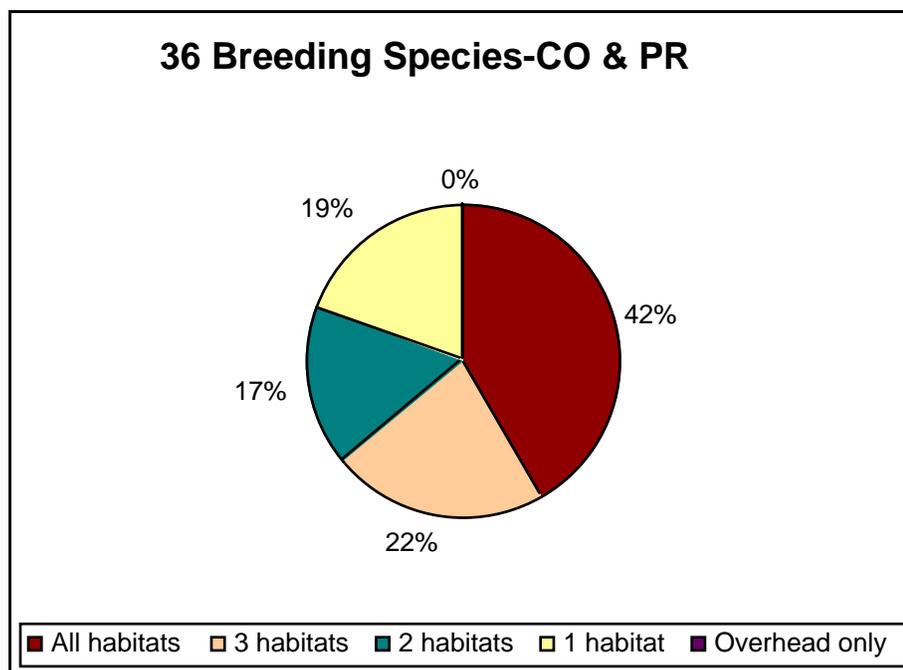
According to Figure 8, of the total number of sightings, 43% occurred in the Riparian habitat, with close proximity to water (Roy Creek) and rather dense under-story vegetation. Fewer total sightings (22%) occurred on the wooded slopes, the Interior Woods, with more open canopy and under-story. The lowest percentage of sightings (11%) occurred in the forested ridge tops, Upper Woods, which were well-removed from the water of Roy Creek and relatively sparse in under-story vegetation. The Upper Meadows, open grasslands and prairies, offered more species (17%) than the Upper Woods, in part because of the number of species found along the edges of the woods.

Figure 9 illustrates a second observation. Of the total observed species, 19 % ranged across all habitats in the park, while an additional 16% ranged over at least three of the four habitats. Therefore, more than one-third of the species sighted range widely through the park. On the other hand, 36% were found in only one habitat.



**Figure 9. Range of species observed.**

When we consider only those 36 species found to be confirmed or probably breeding in the park (Figure 10), the percent ranging over all habitats rises from 19% to 42%.



**Figure 10. Range of breeding species (CO and PR).**

An additional 22% ranged over at least three habitats. Therefore, more than two-thirds of the likely breeding species ranged widely through the park. On the other hand, whereas 36% of total species observed were found in only one habitat, only 19% of the breeding species were so limited.

### Habitat Specialists

The habitat specialists, found only in one habitat all summer, were the following:

**Riparian**

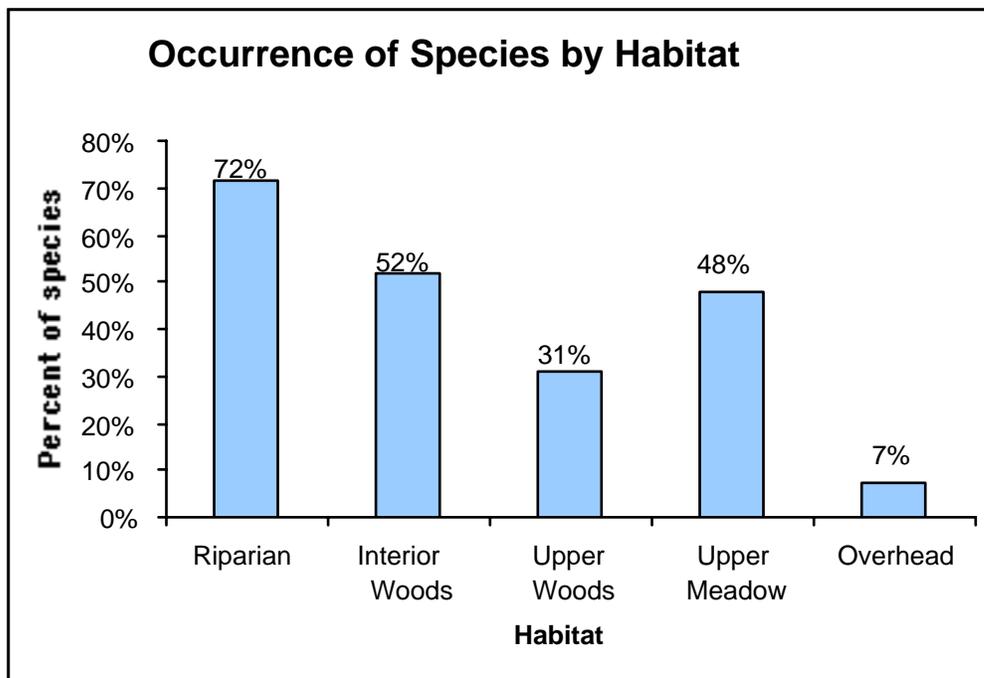
- Baltimore Oriole
- Eastern Phoebe
- Chipping Sparrow

**Upper Meadow**

- Sedge Wren
- Wilson’s Snipe
- Upland Sandpiper
- Mallard

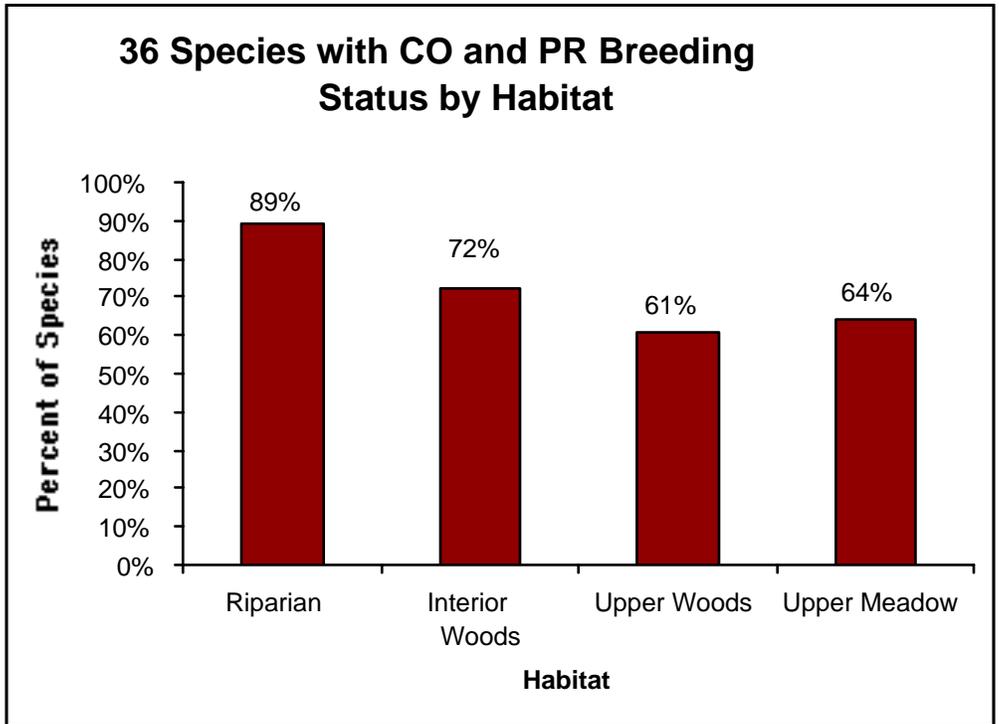
### Concentration of Species

It was interesting to see in which one of all four habitats the highest number of individual species was observed during the survey. Figure 11 shows that of the 81 species observed during the survey, 72% were observed at least once in the Riparian habitat. This chart echoes the chart in Figure 8, total species sightings, showing the highest number of observations in the Riparian habitat and fewest in the Upper Woods.



**Figure 11. Occurrence of species by habitat**

Figure 12 illustrates the concentration by habitat of the confirmed and breeding species. When the 36 species found to be confirmed or probably breeding are considered separately, the number of individual species observed in the Riparian habitat follows the same pattern as the other charts: highest numbers in Riparian, lowest in the Upper Woods.



**Figure 12. CO and PR breeding species by habitat.**

**Species expected but not observed.**

A sidebar to the discussion of habitats in the park and species found in each is to note the species expected but not observed during the survey. The list includes American Woodcock and Long-eared Owl (observed in the past, but neither heard nor seen this last spring and summer) as well as the Whip-poor-will, Wood Thrush, American Robin, and Eastern Towhee (all species found in the southern Coteau deciduous woods of Newton Hills State Park). Most surprising, given the terrain, large trees, and relative lack of human disturbance present at Sica Hollow, was the apparent absence of owls. Despite four nights of listening and using taped calls to elicit response from any of three species, none was heard or seen during the survey.

Below is the list of species expected but not observed:

- |                     |                  |
|---------------------|------------------|
| American Woodcock   | Whip-poor-will   |
| Wood Thrush         | American Robin   |
| Eastern Towhee      | Long-eared Owl   |
| Eastern Screech-Owl | Great Horned Owl |
| Barred Owl          |                  |

## Observation Highlights

The complete survey summary tabulation, found in the Appendix, gives details about the number of sightings and the accumulation of breeding status behaviors observed for each species. A few highlights are worthy of comment.

The most abundant species in the park, determined by total count of individual birds, were Common Yellowthroat and Red-eyed Vireo. Also found in large numbers were Veery, and Ovenbird, followed by Black-capped Chickadee and Eastern Wood-Pewee.

The survey was able to document breeding status for the following State watch-listed species with no prior breeding status: Black-and-white Warbler (CO), Ruby-throated Hummingbird (PR), Pileated Woodpecker (PR), and Yellow-throated Vireo (PR).

In addition, we assigned breeding status to Chestnut-sided Warbler (PO) and Yellow-billed Cuckoo (PR). Yellow-billed Cuckoo is not on the state watch list but is considered by Cornell Lab of Ornithology to be declining nationwide.

A number of observations occurred at the S-curve along the road in the park. Figure 13 shows this location in the Riparian area.



**Figure 13. The S-Curve of the road through the park.**

It was also interesting to watch through May and June the progress of a successful nesting and fledging of Cooper's Hawks. Also exciting was hearing Pileated Woodpecker calling through the woods all summer. Finding Black-and-white Warblers in two separate locations more than a quarter mile apart and on different days raises the possibility that they are likely present in larger numbers than we were able to count. In addition, on each visit through July, we located hummingbirds on their anticipated perches in six different locations, as well as occasionally spotting them in new locations.

Surprises included:

- The large number of Veeries in the park, singing and easily observed through mid-July
- The small number of predatory birds, Blue Jays, Brown-headed Cowbirds, and American Crows
- Very few House Wrens and Rose-breasted Grosbeaks, compared to Newton Hills State Park
- A large number of Turkey Vultures perched in trees after a particularly heavy rain storm.

Sica Hollow State Park is a fine birding spot, with potential to provide ongoing nesting habitat for such eastern forest species as the Pileated Woodpecker, the Black-and-white Warbler, and the Chestnut-sided Warbler. And it offers a mystery to be solved, whether or not owls (and which species) inhabit the park.

## **Conclusion**

The evidence of breeding status for bird species at Sica Hollow State Park in 2003 was collected and organized for use by the Natural Heritage Database Program.

It is hoped that the following benefits of the project will be realized:

1. Increased knowledge of breeding status of birds at Sica Hollow.
2. A current list for spring and summer of both resident and migratory birds. An updated and refined bird checklist for the park.
3. An update of South Dakota birding records for use by state, regional, and national birding interests.

In addition, a Powerpoint presentation of our survey results was created to share findings with interested groups, including the October, 2003 meeting of the South Dakota Ornithologist's Union.

## Citations

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## Appendix

### Breeding Birds of Sica Hollow

The table below shows the results of sightings of all 81 species observed during the survey period. The table is sorted primarily for breeding status and secondarily for Pair abundance and range of occurrence.

Species	Greatest range of occurrence	Highest level of breeding status	Abundance estimates	Notes on breeding evidence
<p>Sighting codes: 1=Riparian, 2=Interior woods, 3=Upper woods, 4=Upper meadow, 5=Riparian plus interior woods, 6=Riparian plus upper woods, 7=Riparian plus upper meadow, 8=All woods, 9=Interior woods plus upper meadow, 10=Upper woods plus upper meadow, 11</p> <p>See sightings codes</p> <p>Breeding status: 4=C, O, 3=PR, 2=PO, 1=O, 0=Not observed or heard.</p> <p>Abundance of pairs: 1=1 pr, 2=2-10, 3=11-100, 4=101-1000, 5=1000, 0=none.</p> <p>See Standardized Breeding Behavior Criteria codes for explanations of letter and punctuation codes in notes. CO=Confirmed breeding, PR=Probable breeding, PO=Possible breeding, O=Observed with no evidence of breeding.</p>				
Black-capped Chickadee	16	4	3	riparian. CO June 23, CN and CF, upper meadow. PR May 18, M. Many singing around edge of field near east entrance.
Clay-colored Sparrow	16	4	3	CO 6/10, ON. Adult on nest at edge of clearing across road from creek. CO 7/28, CF, adult carrying food, riparian area. PR 6/8, C. Pair with one feeding the other while it fluttered its wings, fledgling-like.
Eastern Wood-Pewee	16	4	3	CO 7/12, DD, Severely agitated adult, interior woods. PR May 20, June 8, June 23, July 12, S. Singing repeatedly from steep hillside on south side of park road. Also many birds singing through May, June and July. Adult with fledgling seen 7/27.
Ovenbird	16	4	3	CO 7/13, CF. Riparian. PR 5/20, P. Pair observed along road near creek. PR 6/22, C. Male feeding female.
Scarlet Tanager	16	4	3	CO 7/12, DD, Pair conducting distraction displays together, interior woods. CO 7/28, FY. Adult feeding fledgling, riparian area.. PR 6/9, P. Pair chasing each other in shrubs next to vault toilet at east parking area.
Yellow Warbler	16	4	3	CO 6/8, CN. Pair, with female carrying nesting materials. CO 7/12, DD, female, clearly agitated, upper meadow. CO 7/13 CF, upper meadow. CO 7/27, CF, riparian zone.
Common Yellowthroat	16	4	4	CO 6/8, CN. Adult carrying nesting material. CO 7/12, FY, pair feeding fledgling, interior woods. 7/27, adult with fledgling. 7/28, adult with 3 fledglings.
Red-eyed Vireo	16	4	4	CO 6/9, CF, DD. One carrying food in riparian area. Pair seen further along creek doing distraction display near mink in grass. CO 6/10 & 6/23, CF, Riparian zone.
Song Sparrow	13	4	3	CO 6/9, CF. One carrying food, several heard singing throughout park. CO 7/12, FY, adult w/fledgling, feeding it while it fluttered its wings, riparian area.
White-breasted Nuthatch	11	4	3	CO 6/9, ON. Cooper's Hawk on nest in upper woods near west entrance of park. On same nest on 6/22, 6/23. CO 7/13, NY, adult with three nestlings in the nest.
Cooper's Hawk	6	4	2	CO 7/14 CF while responding to mobbing tape at curve. PR 5/19, P. Pair observed in oak woods on north side of road, 100 yds from east entrance, same location as fledgling later in summer. 6/8, male heard singing in same place. Fledgling B&W Warbler, 7
Black-and-White Warbler	5	4	2	
Hairy Woodpecker	5	4	2	CO 6/23, DD interior woods. Quite a commotion and flying around us. Did not see nest hole.

Species	Greatest range of occurrence	Highest level of breeding status	Abundance estimates	Notes on breeding evidence
Wild Turkey	5	4	2	CO 7/14, PY. Female with several precocial fledglings. Seen again 7/28, riparian area.
Mallard	4	4	2	CO 5/18 PY, in small pond at edge of upper meadow.
Baltimore Oriole	1	4	2	CO 7/13, FY, pair feeding fledgling. Adult female with two fledglings, 7/28.
Eastern Phoebe	1	4	2	CO July 27, NY under bridge on main road through park.
Chipping Sparrow	1	4	3	CO 6/23, CF. PR May 20, T. two males doing territorial display, one chasing the other.
Broad-winged Hawk	16	3	2	overhead. PO 6/8, 6/23, ?. 6/8, two soaring overhead, calling to each other. 6/23, PR, many dates, P,S. Numerous sightings of multiple males, pairs and groups throughout summer.
American Goldfinch	16	3	3	
Gray Catbird	16	3	3	PR 6/23, S. Singing catbirds were found in all areas of the park on numerous days.
House Wren	16	3	3	PR many dates, S.
Indigo Bunting	16	3	3	PR 6/22 P. Pair observed in the upper meadow. PR 7/12, P, pair again in upper meadow.
Least Flycatcher	16	3	3	PR 7/13 S. Numerous sightings in riparian area. Numerous singing Least throughout park on several visits.
Ruby-throated Hummingbird	16	3	3	PR 6/9,S. Male hummingbird seen at least twice in same place two weeks apart. 7/28, female hummer with two additional female or fledgling hummers. None was chasing another away, so it seemed possible the two additional birds were fledglings. 8/10, Male
Cedar Waxwing	14	3	2	PR 7/14, C. Male feeding female, upper woods.
American Redstart	13	3	3	PR 6/10, P. Pair of redstarts in riparian area. Female seen singing. 8/10, Male and female together, riparian area.
Blue Jay	13	3	3	PR many dates, S. One of the most-frequently seen and heard species.
Rose-breasted Grosbeak	11	3	2	PR 5/20, P. Two pairs along road near creek.
Yellow-billed Cuckoo	11	3	2	PR 7/28, S. Heard two or three dates making low "koop, Koop" call toward late summer.
Veery	11	3	4	throughout park. PR 7/13, T, one chasing the other at edge of upper woods.
Yellow-throated Vireo	6	3	2	PR 6/22, P. Two together in riparian area. PR 7/13 P. Two together in upper woods.
Pileated Woodpecker	5	3	1	PR 6/23, S. Pileateds heard several times in one area around lower curve of main road, and female seen once during summer.
Wilson's Snipe	4	3	1	PR 5/18, C. Courtship display in upper meadow near pond at edge of park.
Sedge Wren	4	3	2	PR 7/15, S. Seen singing in upper meadow on south trail from horse camp in June and July.
Upland Sandpiper	4	3	2	PR 6/22, P. Pair singing in upper meadow.
Red-tailed Hawk	15	2	0	PO several dates, ?.
Field Sparrow	14	2	3	PO, many dates, ?.
Chestnut-sided Warbler	13	2	0	breeding habitat.
Turkey Vulture	13	2	0	PO several dates, ?.
American Crow	13	2	3	Newton Hills.
Downy Woodpecker	11	2	2	PO many dates, ?. Species seen numerous times.
Brown-headed Cowbird	9	2	2	PO 7/12, ?. Seen only three times during summer.
Mourning Dove	9	2	3	PO, several dates, ?.
Black-billed Cuckoo	8	2	2	PO 6/23, X. Singing male in in suitable habitat.
Warbling Vireo	7	2	0	PO 5/19, ?.
Great-crested Flycatcher	5	2	2	PO 6/8, ?
Bobolink	4	2	0	PO 6/23, X. Singing male in in suitable habitat.
Brown Thrasher	4	2	0	PO 7/13, ? Seen only once, may have heard one singing once also, but too briefly to call..
Vesper Sparrow	4	2	0	PO 4/19 ?. Seen once in park
Eastern Kingbird	4	2	2	PO 7/13 ?.
Northern Harrier	4	2	2	PO 6/22, ?. Seen several times in upper meadow.
Northern Flicker	2	2	2	PO 6/8, ?. Interior woods, two or three together.

Species	Greatest range of occurrence	Highest level of breeding status	Abundance estimates	Notes on breeding evidence
Yellow-bellied Sapsucker	1	2	0	PO 7/27, ?. Saw only once in park. Wonder if negative relationship w/newly arrived Pileated Woodpecker.
Orchard Oriole	1	2	2	PO 5/18 and 7/13 ?. Seen twice in riparian area.
Great Blue Heron	15	1	0	O. Nests in region, but not in park
Peregrine Falcon	15	1	0	O. Observed once overhead.
Prairie Falcon	15	1	0	O. Observed once overhead.
Ring-billed Gull	15	1	0	O. Probably nests nearby park but not in it.
Swainson's Hawk	15	1	0	O. Seen once flying over park
Common Nighthawk	7	1	0	O. This species probably nests in the area. No breeding evidence in park.
Red-winged Blackbird	7	1	0	O. Probably nests nearby park but not in it.
Blackpoll Warbler	5	1	0	O, Migrant
Blue-headed Vireo	5	1	0	O, Seen only in May. May have been migrating through.
Magnolia Warbler	5	1	0	O, Migrant
Northern Parula	5	1	0	O, Migrant
Tennessee Warbler	5	1	0	O, Migrant
American Kestrel	4	1	0	O. Only one sighting. No evidence of breeding.
Eastern Bluebird	4	1	0	O. Seen at edge of field at east entrance to park.
Golden-winged Warbler	2	1	0	O, Migrant
Ruby-crowned Kinglet	2	1	0	O, Migrant
Barn Swallow	1	1	0	O, several dates. This species probably nests in the area. No breeding evidence in park.
Black-throated Green Warbler	1	1	0	O, Migrant
Blackburnian Warbler	1	1	0	O, Migrant
Gray-cheeked Thrush	1	1	0	O, Migrant
Hooded Warbler	1	1	0	O, Migrant
Mourning Warbler	1	1	0	O, Migrant
Philadelphia Vireo	1	1	0	O. Observed once in park.
Summer Tanager	1	1	0	O. Female seen only once in park
Wilson's Warbler	1	1	0	O May 20, ?. Two males chasing each other but probably migrating.
Yellow-bellied Flycatcher	1	1	0	O. Observed once in park.
zzAmerican Robin	0	0	0	Not observed in park.
zzBarred Owl	0	0	0	Not observed in park.
zzBlue Grosbeak	0	0	0	Not observed in park.
zzCerulean Warbler	0	0	0	Not observed in park.
zzEastern Screech-Owl	0	0	0	Not observed in park.
zzEastern Towhee	0	0	0	Not observed in park.
zzGrasshopper Sparrow	0	0	0	Not observed in park.
zzGreat Horned Owl	0	0	0	Not observed in park.
zzHermit Thrush	0	0	0	Not observed in park.
zzNashville Warbler	0	0	0	Not observed in park.
zzNorthern Cardinal	0	0	0	Not observed in park.
Swallow	0	0	0	Not observed in park.
zzOlive-sided Flycatcher	0	0	0	Not observed in park.
zzOrange-crowned Warbler	0	0	0	Not observed in park.
zzSwainson's Thrush	0	0	0	Not observed in park.
zzWhip-poor-will	0	0	0	Not observed in park.
zzWhite-crowned Sparrow	0	0	0	Not observed in park.
zzWhite-throated Sparrow	0	0	0	Not observed in park.
zzWillow Flycatcher	0	0	0	Not observed in park.
zzWood Duck	0	0	0	Not observed in park.
zzWood Thrush	0	0	0	Not observed in park.
zzYellow-rumped Warbler	0	0	0	Not observed in park.