

The Birds of Bill's Woods - A survey of species, Spring 2021

- David S. Liebl, July 2021

This report describes the results of daily observations of bird species found in a 9.5 hectare (24 acre) woodlot on the University of Wisconsin-Madison campus known as Bill's Woods. The goal of the survey was to identify the species and track the occurrence of migratory, breeding and other birds during the spring season of 2021.

Location

Bill's Woods, a part of the UW-Madison Lakeshore Nature Preserve, is located at Lat. 43.0854°, Long. -89.4306° and bounded by Picnic Point, University Bay Drive, Lake Mendota Drive, Eagle Heights Community Gardens and the BioCore Prairie. The landscape is a glacial moraine rising 20 meters (65 feet) above the adjacent Lake Mendota and the Class of 1918 Marsh. Field and prairie border the woods on the north side where the UW-Physical Plant material storage yard is located. Figure 1 shows the survey boundary (yellow), foot and bicycle paths (white) and service roads (gray).



Fig. 1 UW-Lakeshore Nature Preserve Bill's Woods

The eastern third of Bill's Woods is a mature forest of oak, cherry, maple, elm, hackberry and fir. The western two-thirds is old-field succession dominated by green ash, box elder, poplar, buckthorn and honeysuckle. The under-story of the woods is primarily dense shrubs with a few openings, including roads and trails. Removal of invasive species and restoration of native herbaceous species was begun in 1999. During 2020-2021 invasive shrub removal was curtailed due to COVID-19 pandemic restrictions. More detailed information about Bill's Woods is available <https://lakeshorepreserve.wisc.edu/> .

Due to its large population of migratory and breeding birds, the UW-Lakeshore Nature Preserve (including Bill's Woods) was named an Important Wisconsin Bird Area in 2007 by the National Audubon Society and the Wisconsin Bird Conservation Initiative (<http://www.wisconsinbirds.org/iba/>). Visitors entering Bill's Woods are provided with checklists and encouraged to record and report their observations (figure 2). The UW-Lakeshore Nature Preserve also has several designated birding "Hotspots" adjacent to Bill's Woods where species observations are recorded to Cornell University's eBird database (<https://ebird.org/hotspots>). These include the Biocore Prairie, Picnic Point, the Class of 1918 Marsh and University Bay.



Fig. 2 Entry to Bill's Woods



House Wren *Troglodytes aedon*

Survey Methods

The methods used for this report replicate those of the 2019 and 2020 surveys of Bill's Woods, see: <https://uwmadison.box.com/s/60efil80vn6sku1235cq4lm0i5tbupj1>, and <https://uwmadison.box.com/s/hgn5tyabcm9laao22hq3i86izgqym9rz>

Daily observations were made by the author from late January thru July 11, 2021. Typically, a distance of 1.2 kilometer (0.75 mile) was walked along the perimeter of the woods and the interior paths and roads. On some days conditions such as ice on the ground or recent heavy rainfall reduced this distance to 0.8 kilometer (0.5 mile). Occasionally, forays into un-pathed areas of the woods increased the distance traveled to about one mile.

The duration of the daily observations averaged 95 minutes (range 25 to 200 minutes). Factors that determined the length of the observation period included: weather conditions, numbers of individual birds observed, and effort to observe cryptic species or specific behaviors to confirm breeding activity.

Observation and identification of birds was by: naked eye, through 10X42 binoculars, using photos taken at the time of observation, by ear or by audio recording taken at the time of observation. Wisconsin Society of Ornithology-Wisconsin Breeding Bird Atlas II criteria were used to confirm breeding activity (<https://wsobirds.org/images/atlas/Breedingcodes.pdf>).

Over the course of the survey, a total of 5,208 observations were made of birds comprising 93 species. All observations were uploaded to the Cornell Lab of Ornithology *eBird* database (<https://ebird.org/home>), and are available on-line by viewing the Bill's Woods *eBird* hotspot.

The following tables and figures represent the species of birds that were observed by the author as being in Bill's Woods during Spring 2021 (birds reported by other observers, or that were observed in adjacent habitats (i.e. lake, wetlands, prairie, garden field) are not reported below). Species are grouped into three categories: Migratory Species (30) en-route to or from other habitats such as over-wintering or breeding areas (figure 3); Breeding Species (17) with confirmed breeding activities in Bill's Woods (figures 4 & 5); Incidental Species (46) that are known to inhabit Dane County but were not confirmed as breeding in Bills' Woods during Spring 2021 (figure 6).

Migratory Species (n=30)

Common Name	Scientific Name
Black-and-white Warbler	<i>Mniotilta varia</i>
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>
Black-throated Green Warbler	<i>Setophaga virens</i>
Blackpoll Warbler	<i>Setophaga striata</i>
Blue-winged Warbler	<i>Vermivora cyanoptera</i>
Brown Creeper	<i>Certhia americana</i>
Cape May Warbler	<i>Setophaga tigrina</i>
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Fox Sparrow	<i>Passerella iliaca</i>
Golden-crowned Kinglet	<i>Regulus satrapa</i>
Golden-winged Warbler	<i>Vermivora chrysoptera</i>
Hermit Thrush	<i>Catharus guttatus</i>
Lincoln's Sparrow	<i>Melospiza lincolnii</i>
Magnolia Warbler	<i>Setophaga magnolia</i>
Nashville Warbler	<i>Oreothlypis ruficapilla</i>
Northern Parula	<i>Setophaga americana</i>
Orange-crowned Warbler	<i>Leiothlypis celata</i>
Palm Warbler	<i>Setophaga palmarum</i>
Pine Siskin	<i>Spinus pinus</i>
Pine Warbler	<i>Setophaga pinus</i>
Purple Finch	<i>Haemorhous purpureus</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Tennessee Warbler	<i>Oreothlypis peregrina</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
White-throated Sparrow	<i>Zonotrichia albicollis</i>
Winter Wren	<i>Troglodytes hiemalis</i>
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>
Yellow-rumped Warbler	<i>Setophaga coronat</i>

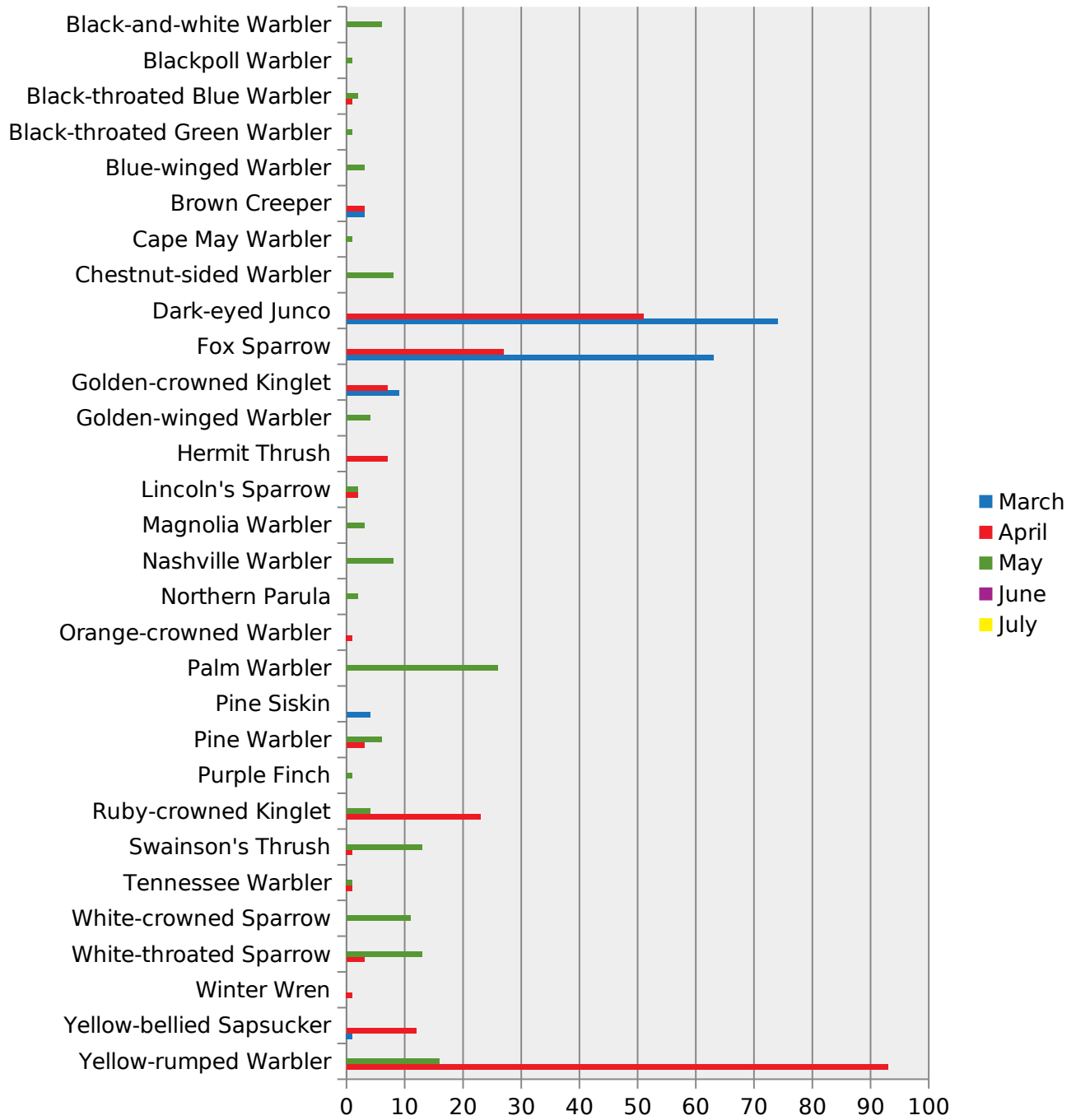


Fig. 3 Monthly observations of migratory species.

Breeding Species (n=17)

Common Name	Scientific Name	Breeding Code
American Crow	<i>Corvus brachyrhynchos</i>	FY Feeding Young
American Redstart	<i>Setophaga ruticilla</i>	FL Recently Fledged Young
American Robin	<i>Turdus migratorius</i>	FL Recently Fledged Young
Barred Owl	<i>Strix varia</i>	NY Nest with Young
Black-capped Chickadee	<i>Poecile atricapillus</i>	FL Recently Fledged Young
Blue Jay	<i>Cyanocitta cristata</i>	FL Recently Fledged Young
Downy Woodpecker	<i>Dryobates pubescens</i>	NY Nest with Young
Gray Catbird	<i>Dumetella carolinensis</i>	FL Recently Fledged Young
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	NY Nest with Young
House Finch	<i>Haemorhous mexicanus</i>	FL Recently Fledged Young
House Wren	<i>Troglodytes aedon</i>	FL Recently Fledged Young
Indigo Bunting	<i>Passerina cyanea</i>	FL Recently Fledged Young
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	FL Recently Fledged Young
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	FY Feeding Young
Tree Swallow	<i>Tachycineta bicolor</i>	NY Nest with Young
Wild Turkey	<i>Meleagris gallopavo</i>	FL Recently Fledged Young
Yellow Warbler	<i>Setophaga petechia</i>	CF* Carrying Food

*Carrying Food – Indicates an adult carrying food to hatched or recently fledged young.



Barred Owl *Strix varia*



Indigo Bunting *Passerina cyanea*



Wild Turkey *Meleagris gallopavo*



Yellow Warbler *Setophaga petechia*

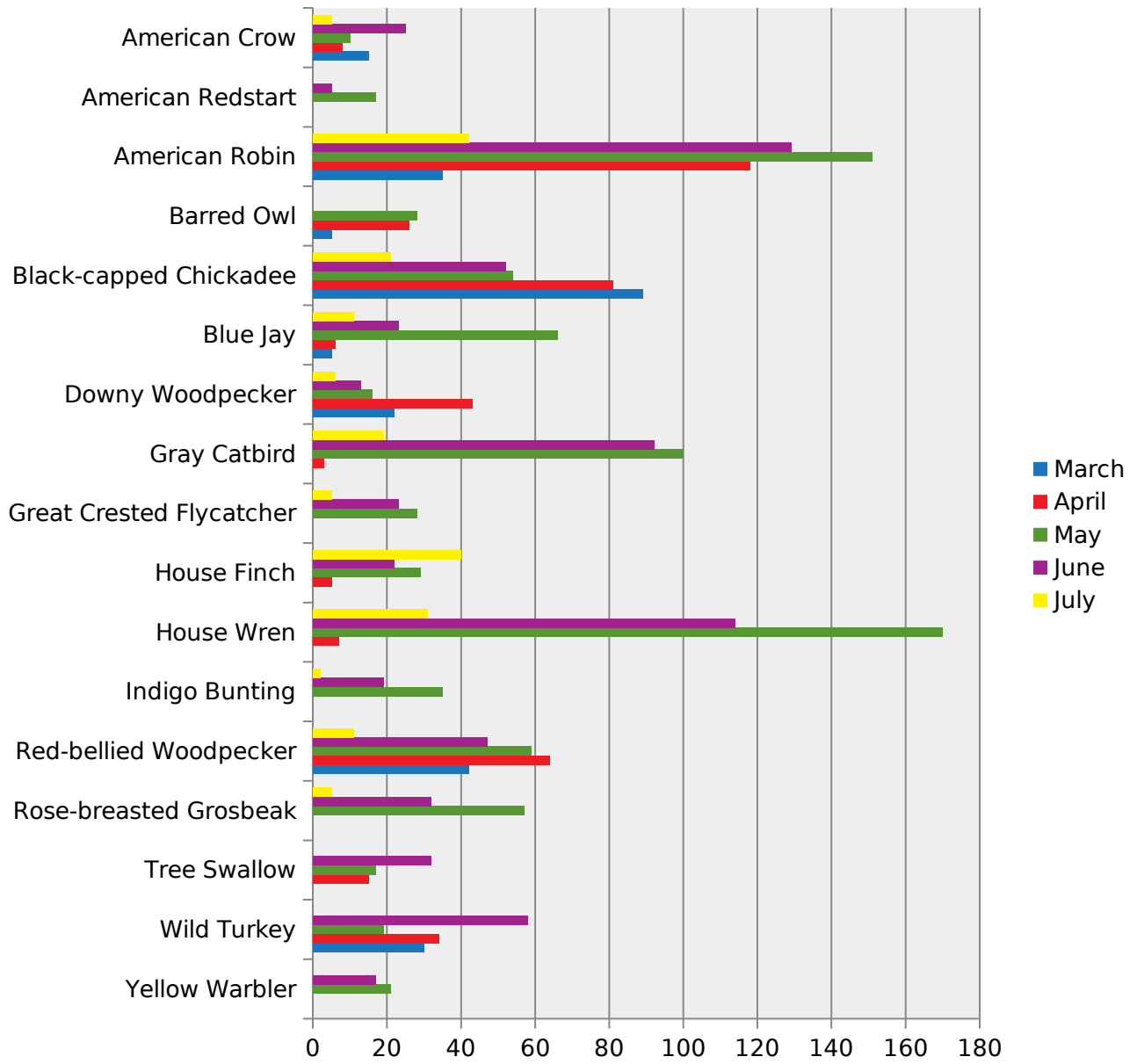


Fig. 4 Monthly observations of breeding species.



Fig.5 Location of six observed occupied nests, Spring 2020

Key to species in figure 5.

- 1 - American Robin
- 2 - Barred Owl
- 3 - Downy Woodpecker
- 4 - Great Crested Flycatcher
- 5 - Red-bellied Woodpecker
- 6 - Tree Swallow



Great Crested Flycatcher - nest



Tree Swallow - nest

Incidental Species (n=46)

Common Name

American Goldfinch
Baltimore Oriole
Barn Swallow
Black-billed Cuckoo
Blue-gray Gnatcatcher
Broad-winged Hawk
Brown Thrasher
Brown-headed Cowbird
Cedar Waxwing
Chipping Sparrow
Common Grackle
Common Yellowthroat
Cooper's Hawk
Eastern Bluebird
Eastern Kingbird
Eastern Phoebe
Eastern Wood-Pewee
European Starling
Gray-cheeked Thrush
Hairy Woodpecker
House Sparrow
Killdeer
Mallard
Merlin
Mourning Dove
Northern Cardinal
Northern Flicker
Ovenbird
Purple Martin
Red-breasted Nuthatch
Red-eyed Vireo
Red-tailed Hawk
Red-winged Blackbird
Ruby-throated Hummingbird
Sandhill Crane
Scarlet Tanager
Song Sparrow
Tufted Titmouse
Turkey Vulture
Veery
Warbling Vireo
White-breasted Nuthatch
Wood Duck
Wood Thrush
Yellow-billed Cuckoo
Yellow-throated Vireo

Scientific Name

Spinus tristis
Icterus galbula
Hirundo rustica
Coccyzus erythrophthalmus
Polioptila caerulea
Buteo platypterus
Toxostoma rufum
Molothrus ater
Bombycilla cedrorum
Spizella passerina
Quiscalus quiscula
Geothlypis trichas
Accipiter cooperii
Sialia sialis
Tyrannus tyrannus
Sayornis phoebe
Contopus virens
Phalacrocorax auritus
Catharus minimus
Catharus guttatus
Passer domesticus
Charadrius vociferus
Anas platyrhynchos
Falco columbarius
Zenaida macroura
Cardinalis cardinalis
Colaptes auratus
Seiurus aurocapilla
Progne subis
Sitta canadensis
Vireo olivaceus
Buteo jamaicensis
Agelaius phoeniceus
Archilochus colubris
Antigone canadensis
Piranga olivacea
Melospiza melodia
Baeolophus bicolor
Cathartes aura
Catharus fuscescens
Vireo gilvus
Sitta carolinensis
Aix sponsa
Hylocichla mustelina
Coccyzus americanus
Vireo flavifron

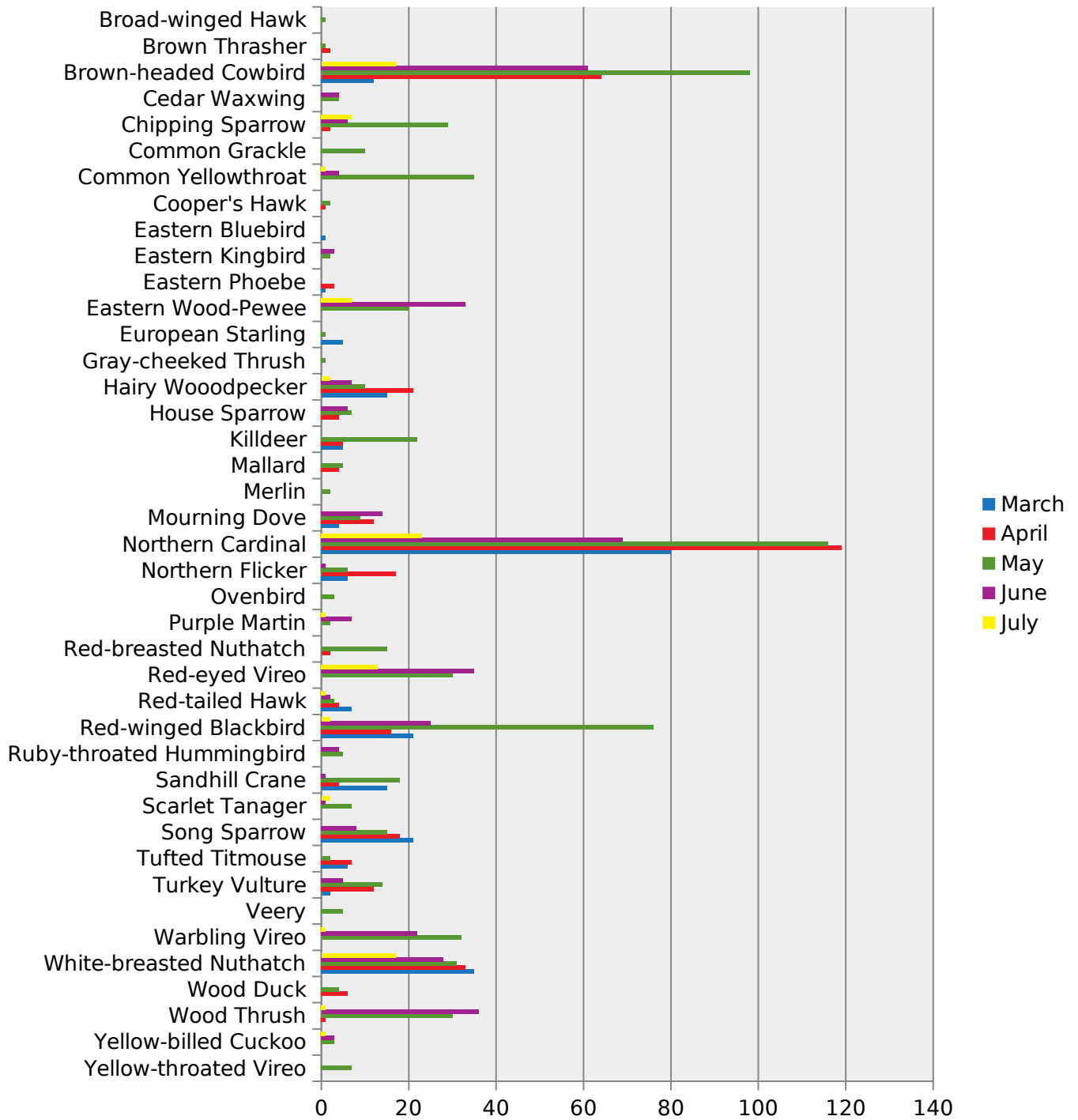


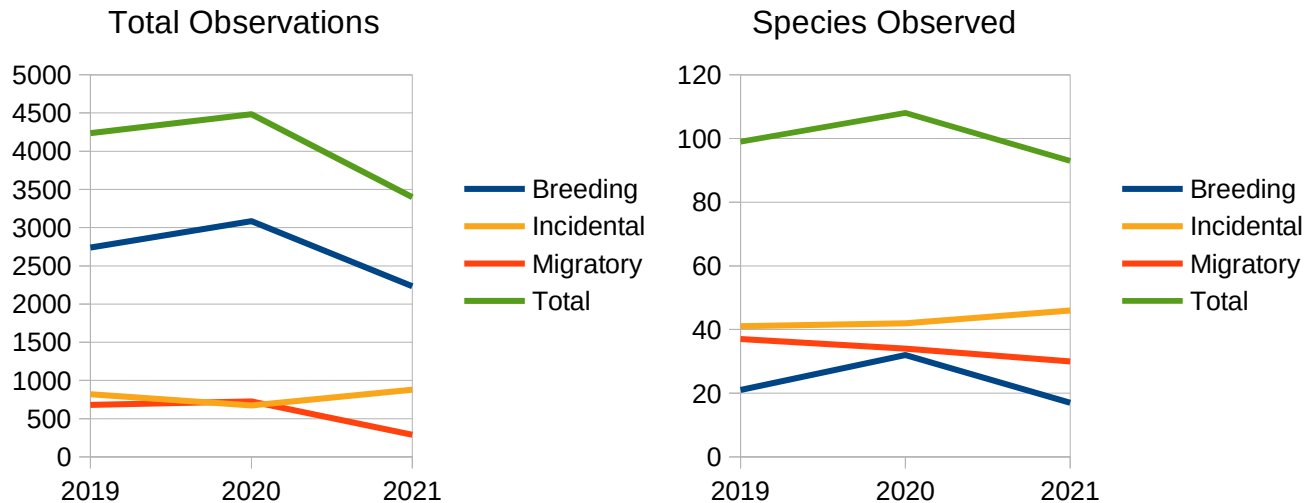
Fig.6 Monthly observation of incidental species.

Comparison with the 2019 and 2020 surveys

Comparison of the results of the 2021 survey with the average for the 2019 and 2020 surveys indicates a ~25% reduction in overall observations of birds in Bill's Woods for 2021, and a ~60% reduction in observations of migrating birds observed. The ~25% reduction in breeding birds and ~15% increase in observation of incidental species is related to a drop in the number of previously breeding species (i.e. American Goldfinch, Brown-headed Cowbird, Northern Cardinal, White-breasted Nuthatch) that were re-classified as incidental for 2021. Observations of occupied nest were also reduced for 2021 (n=6) as compared to 2020 (n=17) or 2019 (n=11).

Total Observations (March-June)				
	<u>Breeding</u>	<u>Migratory</u>	<u>Incidental</u>	<u>Total</u>
2019	2738	682	818	4238
2020	3086	726	673	4485
2021	2233	288	879	3400

Species Observed				
2019	21	37	41	99
2020	32	34	42	108
2021	17	30	46	93



While the spring of 2021 was unusually cool and dry, and the subsequent scarcity of insects as forage was observed anecdotally, the ability to infer trends in species abundance, migratory behavior or other factors from the above data is limited by the small sample size, lack of same-day replicate observations, lack of control for duplicate observation and lack observations by others. Likewise, generalizing these data to the entirety of the UW-Lakeshore Nature is not appropriate due to the differences in habitat across the Preserve.

Threats to the Birds of Bill's Woods

Bill's Woods continues to host a large number and variety of resident and migratory species of birds. While ecological restoration efforts by the UW-Lakeshore Nature Preserve staff and volunteers promises to improve bird habitat, as noted in the previous reports several factors threaten to significantly degrade bird habitat.

Human Disturbance – While occasional foot traffic through the woods does not seem to disrupt bird activity, there were abundant examples seen of disruptions that likely affect the viability of the woods as breeding habitat:

- Trail running, bicycling, skateboarding;
- Dogs, both on-leash and off leash;
- Frequent heavy truck and maintenance vehicle traffic on the interior roads, and activity in the Physical Plant material storage yard, see:
<https://uwmadison.box.com/s/fim9t65u4ngdu5yprwsfeh8ry3v1e26y>

Nest Parasitism – The adjoining fields of the community gardens and Biocore Prairie support populations of Brown-headed Cowbird and House Sparrow. Cowbird parasitism of songbird species has been observed in previous years, and house sparrow compete for nest location with Purple Martin and Eastern Bluebird.

Acknowledgments

The UW-Madison Lakeshore Nature Preserve supported this work by providing a research permit that allowing access to off-trail areas of the woods.

The Cornell University Lab of Ornithology *eBird* and *Birds of the World* were used during the survey and in the creation of this report.