

The Breeding Biology and Distribution of Swainson's  
Warbler in Mississippi

By W. H. Turcotte

Abstract: The Swainson's warbler is recorded as fairly common and widely distributed in Mississippi. The breeding range in Mississippi is north of the three counties bordering the Gulf Coast. Typical breeding habitats are alluvial stream bottoms and the narrow valleys in wooded ravines of the deep loessial bluffs bordering the Yazoo Delta and Mississippi River. Arrival dates, on the Gulf Coast, extend from March 31 to April 19 (average date is April 6). North of the three Coast counties spring arrival dates extend from April 8-30 (average date is April 21). Dates of fall migration and departure south of Hattiesburg are from August 1 to October 7. Earliest nesting began April 20 (nest-building) and breeding dates extend to June 14 (young in nest). Of 17 egg records in the Mississippi Museum of Natural Science, 11 completed sets contained from 2 to 4 eggs, an average of 3.2. Nine of 17 recorded nests were supported by cane, 5 by low bushes or saplings and 3 by greenbrier. Nest height above ground ranged between 3 and 6 feet, averaging 4.2 feet for 15 recorded nests. Egg records occurred from May 9 to June 11. Seven were before June 1 and 10 egg record dates June 3 through 11. Territorial behavior and nesting habitat are described to aid local observers in finding and observing this little known species in Mississippi.

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The Swainson's warbler in Mississippi is typically a late spring and summer resident breeding bird of heavily timbered, alluvial stream bottoms. Sight and collection records (Fig. 1) confirm its widespread distribution and occurrence as a locally common breeding bird in Mississippi. Bent (1953, pp.30-38) describes the life habits and distribution of the species. Meanley (1971) describes in thorough detail the distribution, ecological relations, breeding biology and behavior of the species throughout the range.

My first introduction to this species was through R. M. Freeman on a field trip in May, 1939 to Richland Creek Swamp southeast of Brandon, Rankin County, Mississippi where a singing male was heard and a recently abandoned nest was found in a greenbrier tangle. Shortly thereafter, I heard and saw other singing males and searched for nests while surveying beaver colonies on Richland Creek. In 1939 and the spring of 1940, Freeman and I heard and saw other singing males while

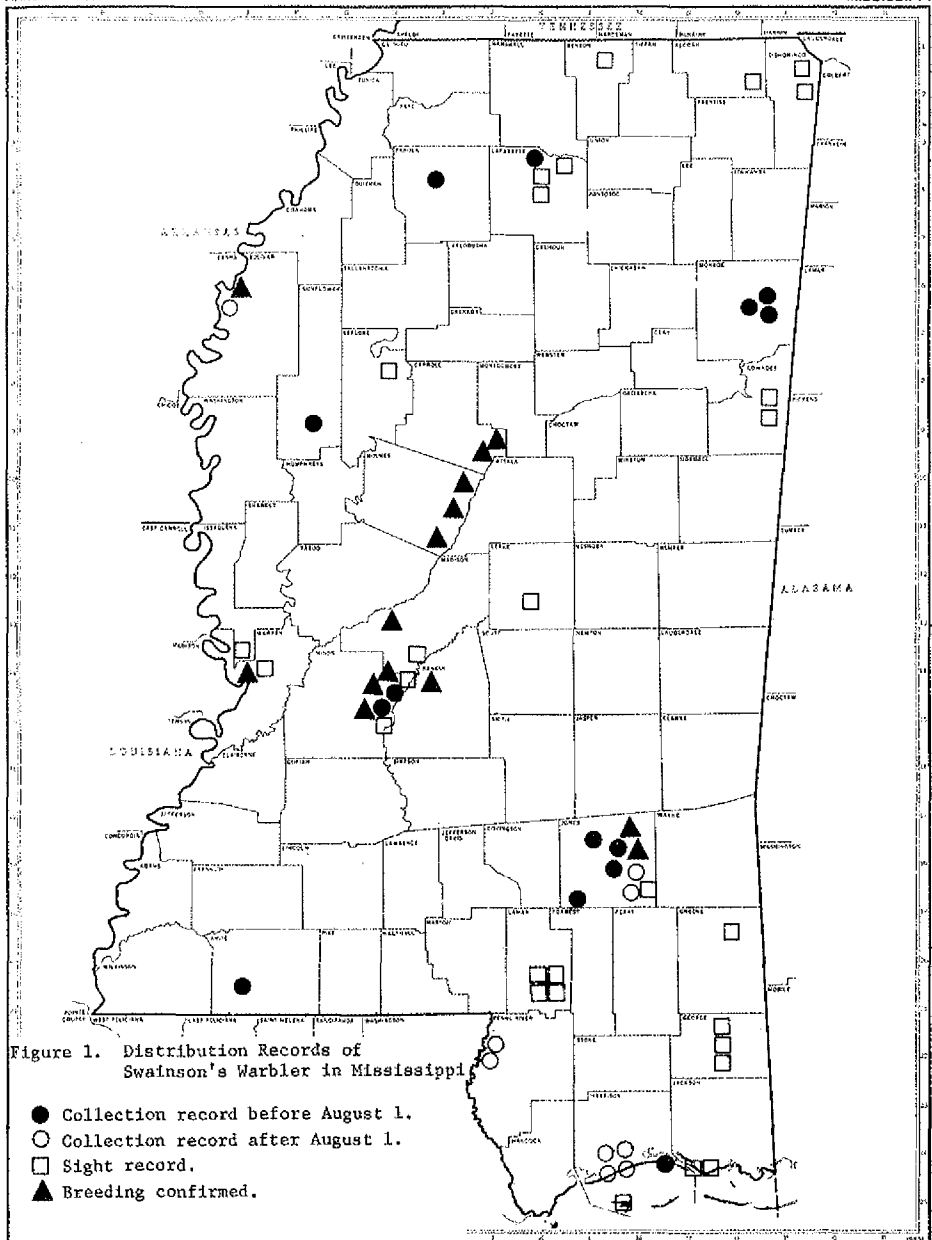


Figure 1. Distribution Records of Swainson's Warbler in Mississippi

- Collection record before August 1.
- Collection record after August 1.
- Sight record.
- ▲ Breeding confirmed.

walking streams on beaver surveys in widely separated areas of Mississippi. Systematic searches were made to locate active nests but none was found. I have found Swainson's warblers since then to be fairly common in breeding habitats along the Pearl and Big Black rivers and their tributaries, in the lower Yazoo River basin, and in the loess hills bordering the Delta region and extending southwesterly through Wilkinson County. I studied breeding habitat and behavior of the species particularly during the 1969, 1970 and 1971 breeding seasons, in an area at the headwaters of Clear Creek, five miles north of Bovina, Warren County, Mississippi.

#### Distribution and Habits

Near Ariel, in Amite County, on July 11, 1895 Andrew Allison collected what may be the first specimen record of the Swainson's warbler (Limnothlypis swainsonii) for Mississippi. The specimen (U.S. National Museum 263242♂) was probably taken from Beaver Creek Swamp which lies a few miles northeast of Ariel. Beaver Creek bottom still supports remnants of cane thickets (John H. Phares, pers. comm., 1971), the classic habitat nearly always associated with the presence of this bird. First bottom soils in this locality are of recent alluvium derived from the loessial uplands and classed by Goodman, et. al. (1917: 15-16) with the Vicksburg series. I have found breeding habitats in Mississippi to be confined to alluvial stream bottoms and to the narrow valleys in wooded ravines of the loessial bluffs bordering the Yazoo Delta and Mississippi River.

Burleigh (1945) collected three specimens of the Swainson's warbler at Gulfport, August 19, October 4 and 6, 1941, one immature, August 8, 1942 and one specimen on Deer Island, April 19, 1943. From the Yazoo Delta region Vaiden (1948, p.63) reported a Swainson's warbler found dead by G. A. Thompson, Jr. on September 7, 1947 on Old River Lake in Bolivar County. Vaiden (1940) collected a male specimen one-half mile south of Moorhead, Sunflower County, on July 17, 1939. Published sight records include those by Coffey et. al. (1941: 31) in Lowndes (June 22, 24, 1939), Leflore (May 26, 1940), and Benton County (April 27, 1941); Turcotte et. al. (1957) recorded sightings in Tishomingo County, April 26-28, and in Madison County, April 20, 1957. Phares (1958) and Turcotte et. al. (1959, 1963, 1971) reported sight records in Leake County, April 16, 1958, Greene County, April 25, 1959, Warren County, Bovina area, May 25, 1963 and Issaquena County, June 5, 1971. Haberyan (1962) recorded

the earliest spring arrival date, March 31, 1962 at Belle Fontaine Beach, Jackson County. Collection and sight records for this species in the Mississippi Museum of Natural Science further substantiate widespread distribution (Fig. 2.).

### Breeding Habits

Breeding habitat discourages penetration by other than persistent and patient birdwatchers. The basic requirements are proximity to water, understory tree, shrub and vine tangles, a scattering of dead leaves, decaying vegetation, ground cover of water and shade tolerant plants and an almost-closed canopy of hardwood or mixed pine-hardwood trees. The river flood plain swamps or bottomland forests of this region are broken up into several types, all of which may be periodically flooded. On lower, poorly-drained flats of the first bottom, overcup oak and bitter pecan are predominant. Sweetgum, sycamore, water oak and hackberry are found on first bottom ridges which are slightly higher and deeper alluvial deposits. Large sweetgum and sycamore trees, living and dying cane thickets, greenbrier tangles, rank growths of nettles, ferns, jewelweed, spice-bush and other shade tolerant plants usually found on deep, alluvial soils are indicators of breeding habitat.

Actual nesting habitat is usually found on the slightly higher, deeper alluvium bordering stream banks, old stream runs or low ridges which support cane thickets or vine and shrub tangles. Cane is usually prominent on higher swamp ridges or stream banks along with greenbrier, low bushes and saplings or their combinations that actually support the nest. Nine of 17 recorded nests were supported by cane, 5 by low bushes or saplings and 3 by greenbrier. The nest site is usually in total shade screened from sight except at close view or within 20-30 feet (Fig. 3). Finding a nest requires slow, methodical searching ahead and at both sides for the nest structure which resembles clustered leaves suspended in fall or from overflow drift lodged on vegetation. Close scrutiny of all such clusters in or close to cane thickets is likely to yield a nest.

I associate the Swainson's warbler with the Kentucky and hooded warblers because all three are commonly found with overlapping breeding territories (Fig. 4). Also, the song of the hooded warbler is most like the Swainson's and the Kentucky warbler has similar chip notes. One can expect to hear or see the Louisiana waterthrush, prothonotary warbler, Carolina wren,

Collection and sight records in Mississippi Museum of Natural Science, Jackson, Mississippi.

Specimen Records:

<u>County</u>	<u>Locality</u>	<u>Collector</u>	<u>Date</u>	<u>Cat. No.</u>
Jones	BoguehomaSwamp			
"	Laurel	R. M. Freeman	Apr. 21, 1938	Ab-594
"	Eastabuchie	" " "	May 29, 1939	Ab-2251
"	BoguehomaSwamp			
"	Laurel	B.A.Bloodsworth	May 10, 1939	Ab-2020
Hinds	Caney Creek			
"	Jackson	W. H. Turcotte	June 15, 1939	Ab-2336
"	Caney Creek			
"	Jackson	" " "	Apr. 26, 1940	Ab-3751
Monroe	GreenwoodSprings	H. L. Owens	May 23, 1940	Ab-3959
"	" " "	" " "	May 23, 1940	Ab-3960
Panola	N. Batesville	R. M. Freeman	May 26, 1939	Ab-2144
Monroe	Aberdeen Area	H. L. Owens	Apr. 14, 1941	Ab-4609
Jones	BoguehomaSwamp			
"	Laurel	B.A.Bloodsworth	Sept. 3, 1941	Ab-4679
"	BoguehomaSwamp			
"	Laurel	" " "	Aug. 19, 1941	Ab-4680
"	Indian Springs	R. M. Freeman	May 16, 1939	Mb-402
Lafayette	Tallahatchie			
"	R. bottom	Wm. Shepherd	Aug. 15, 1938	Bb-509
Pearl River	SW-Poplarville	Percy Smith	Aug. 15, 1938	Nb-129
"	" N-Poplarville	James Batson	Sept. 9, 1939	Nb-260

Sight Records:

<u>County</u>	<u>Locality</u>	<u>Observer(s)</u>	<u>Date</u>	<u>No. Seen</u>
Lafayette	Abbeville	H.M.Stevenson	May 10, 1944	1
"	" Oxford	" " "	May 16, 1944	1
"	" N. part	" " "	May 6, 1944	2
George	Upper Pasca- goula R.	Clawson & Williams	July 2, 1960	2 loca- tions
Jackson	Belle Fon- taineBeach	Clawson & Williams	Apr. 7, 1961	1
Harrison	Cat Island	Clawson & Williams	Apr. 1, 1962	3
Hinds	Mayes Lake	Frances Wills & ChristineBerry	Apr. 8, 1963	1
George	Pascagoula R.	Williams, Gee & Clawson	May 26, 1962	several

(Continued on Page 7)

<u>County</u>	<u>Locality</u>	<u>Observer(s)</u>	<u>Date</u>	<u>No. Seen</u>
Lamar	SE-Lumberton	James Batson	Aug. 1, 1940	2
"	" " "	" "	Sep. 4, 11, 1940	several
"	" " "	" "	Oct. 7, 1939	2
Alcorn	Burnsville Area	R. M. Freeman	June 17, 1939	2
Tishomingo	" " "	Ernest Smith	June 23, 1939	1
Jones	Boguehoma Area	B.A. Bloodsworth	June 25, 1940	2

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Fig. 3. Nest site of Swainson's warbler at edge of canebrake, Bovina area, Warren County.

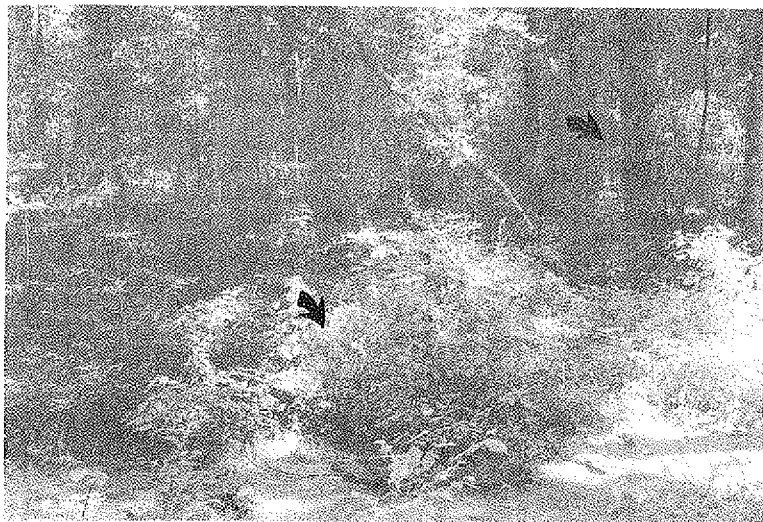


Fig. 4. Nesting habitat of Swainson's (back) and Kentucky Warbler (foreground) shown by arrows pointing to actual nests, Bovina Area, Warren County.



Fig. 5. Nest and 3 eggs, Bovina Area, Warren County, supported by cane and fallen branch.

wood thrush, white-eyed vireo, cardinal and Acadian flycatcher in Swainson's warbler breeding habitat. In the dense upper canopy the redstart, parula warbler and red-eyed vireo can be heard. In the loess ravines, near Bovina, Warren County, with bordering beech-magnolia bluffs, the worm-eating warbler frequents the upper canopy while feeding or sings from favorite perches in the lower part.

An interesting side observation is that I have found the morel mushroom growing in deep alluvium in Swainson's warbler habitat among dead cane close to cane thickets and large sweetgum trees. The morel appears between the time redbud and dogwood are in bloom and this is generally just a little before the Swainson's arrival in Mississippi.

### Nests

The nest is built of compressed, dried or skelentonized, sometimes muddy leaves forming a bulky exterior structure that may include small twigs. The loosely formed outer structure is built in clockwise, spiral-fashion to form a cup and lined with such finer materials as dead grass or weed stems, rootlets, fine strips of bark, small cypress twigs and needles, pine needles, moss fibers, vine tendrils, flower stalks or hair. The earliest nest construction I observed at the Bovina area was on April 20, 1969, with basal leaf structure complete but not lined. On April 23 the nest was complete with lining of rootlets added. Eggs were present on May 10 showing advanced incubation so the nest building process took about three days to complete.

Nest height above ground for 15 recorded nests ranged between 3 and 6 feet, averaging 4.2 feet. Frequent stooping in understory vegetation aids nest sighting.

### Nest Records

On June 3, 1940 I found and collected the first nest and 3 slightly incubated eggs in Big Black River Swamp east of Goodman in Holmes County. The incubating female was first noticed only when I almost touched the nest. She sat tightly until I deliberately moved to flush her from the nest. The nest was three feet above ground in blackberry briars in the edge of a hop-hornbeam thicket. Searches for nests were made systematically thereafter by walking parallel lines about thirty feet apart looking ahead and at both sides in territories where singing males were heard. Two more nests with three eggs each



were found and collected by Freeman and Turcotte on June 6th, 1940 in Carroll County, Big Black River Swamp east of Vaiden. I found and collected three eggs on June 10, 1940 on Mule Jail Lake, Pearl River Swamp north of Jackson, Hinds County. F. A. Cook collected three eggs, June 11, 1940, from a nest I found in Pelahatchie Creek Swamp north of Luckney, Rankin County. I collected sets of three eggs each in 1941 at Big Black Swamp, Holmes County, near Pickens, on May 20; Caney Creek, south Jackson, Hinds County, on June 6 and 8. On June 9, 1941, I collected a set of four eggs in Big Black River Swamp north of Canton, Madison County. B. A. Bloodsworth collected two sets of four eggs each in the Boguehoma Swamp area east of Laurel, Jones County on June 6 and 9, 1941. Bloodsworth (Museum Field records, Nest No. 31) recorded a nest containing four young about five days old on June 9, 1941 in the same area as above. These young left the nest on June 14. M. G. Vaiden at Rosedale, Bolivar County, (Meanley, 1971, p. 16) reported finding nests prior to 1968 on the batture along the Mississippi River.

The earliest recorded egg record is a nest in the Bovina area, May 10, 1969, containing four eggs showing advanced incubation. The basal structure was completed April 20 and the lining of rootlets completed April 23. Six May egg dates of record are: 9 - 2, fresh; 10 - 4, advanced incubation; 20-3, fresh; 22 - 1, fresh; 29 -3, fresh and 31 - 2, fresh. June egg dates are: 3 - 3, incubation begun; 6 - 3, fresh; 6-4, 6-3, incubation begun; 6 - 3, fresh; 8 - 3, fresh; 9 - 4; 9-4, fresh; 10 - 3, fresh; 11 - 3, advanced incubation. From these records it appears that early nestings occur before May 10. Most nesting occurs between May 10 and June 10.

Renesting by the same pair is indicated by two of five nest observations made in the Bovina area in 1970 and 1971. A nest containing 2 eggs on May 9, 1970, was empty on May 23. A second nest, built on the same cane stalk used for a nest the previous year, was completed and contained two eggs on May 31. Another nest found May 15, 1971, contained 1 egg that was gone on May 22. A second new nest in the same territory was found May 22 with adults nearby. On May 29 this nest contained three eggs (Fig. 5). Ten of 17 egg records occurred between June 3 and June 11 indicating a peak of nesting and renesting occurring in late May and early June. Of 16 egg records, 11 completed sets contained an average of 3.2 eggs.

#### Territorial Behavior

The Swainson's warbler arrives later than most other sum-

mer resident warblers but earlier than the transient Northern Warblers. The average date of arrival on breeding grounds is April 21 or about the time spring foliage is well out and producing shade. The singing of the male is the first and best clue to finding a breeding territory. The song (frontispiece) is a series of loud, clear whistles slurred at the ending notes of each phrase. The song resembles part of the hooded warbler song and might also be mistaken for some variations of the Louisiana waterthrush. The song and variations are distinctly different, however, due to the loud, ringing, musical quality. Both sexes have alarm notes (loud chips) and softer chip or zeep notes used for communication. The song is apparently used for territorial boundary definition and defense as well as communication since more singing is done during the period the female is incubating. Breeding territories appear to be quite small, approximately an acre or less in size. I have observed breeding territories in two connecting ravines in the Bovina area for three successive years and shifting or overlapping of territories occurs during successive nestings which is probably related to actual nest location. There are three prime cane patches in one territory within or near which all six nests have been placed. The male avoids singing near the actual nest site which I have observed to be inside but near the periphery of the male's territory. Territorial singing males respond to an imitation of their call. I have used tape recording playbacks to call up singing males and have had them sing repeatedly in close, open view, imitating or challenging their own recorded song. This behavior has been repeated ten or more times within the male's territory. I have also called up males by imitating their song myself.

The Swainson's warbler is neither a shy nor suspicious bird in its breeding haunts. With a little patience and perseverance singing males can be approached. It is just hard to see the birds because shadowy cover and their neutral colors combine to conceal them. Listen for and learn the song carefully, penetrate territory, search out nest habitat to find a nest and study territorial behavior around the nest. You will get to know well one of the species most sought after by life-listers and one least known by most birdwatchers.

Special thanks are due B. E. Gandy for duplicating museum records and helping in other phases of this work. We also thank R. M. Freeman and John H. Phares for their interest, contributions and encouragement in field work and writing of this article. The manuscript was typed by Pauline Davis and critically read by Jerome A. Jackson and John H. Phares.

Scientific Names of plants and animals mentioned in the text.

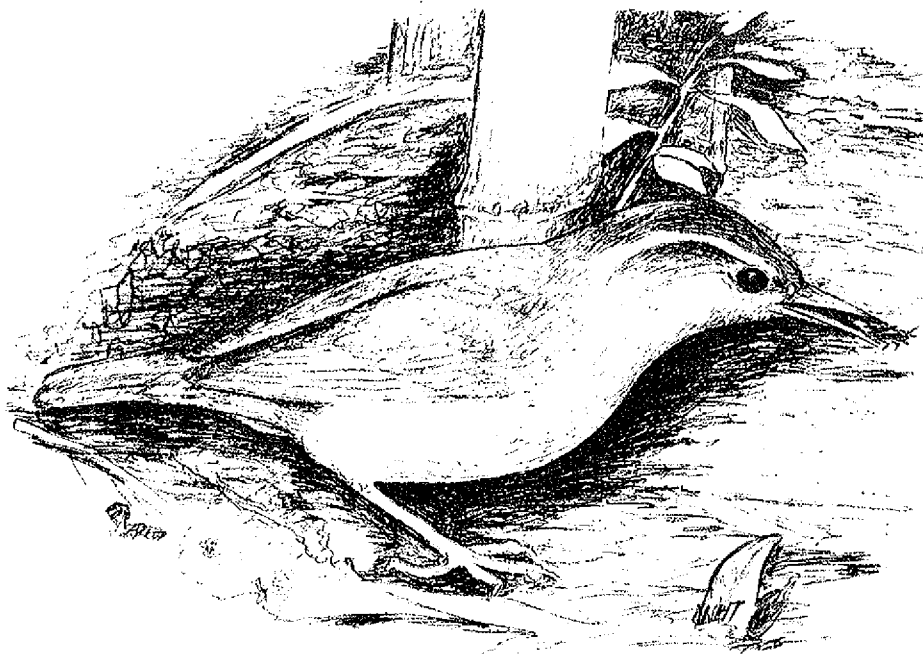
Plants (after Small, J. K., Manual of the Southeastern Flora, 1933).

Beech, Fagus grandifolia  
 Blackberry, Rubus sp.  
 Cane, Arundinaria tecta  
 Cypress, Taxodium distichum  
 Dogwood, Cynoxylon floridum  
 Greenbrier, Smilax sp.  
 Hackberry, Celtis mississippiensis  
 Hop-hornbeam, Ostrya virginiana  
 Jewel-weed, Impatiens biflora  
 Magnolia, M. grandiflora, M. macrophylla  
 Mushroom, common morel, Morchella esculenta  
 Nettle, Urtica sp.  
 Oak, Quercus lyrata, Q. nigra  
 Pecan, bitter, Hicoria texana  
 Pine, Pinus sp.  
 Redbud, Cercis canadensis  
 Spice-bush, Benzoin aestivale

Birds (after American Ornithologists' Union Check-List of North American Birds, 5th edition, 1957 and its supplements).

Cardinal, Richmondia cardinalis  
 Flycatcher, Acadian, Empidonax virescens  
 Thrush, wood, Hylocichla mustelina  
 Vireo, red-eyed, Vireo olivaceus  
 white-eyed, V. griseus  
 Warbler, American redstart, Setophago ruticilla  
 Hooded, Wilsonia citrina  
 Kentucky, Oporonis formosus  
 Louisiana waterthrush, Seiurus motacilla  
 parula, Parula americana  
 prothonotary, Protonotaria citrea  
 worm-eating, Helmitheros vermivorus  
 Wren, Carolina, Thryothorus ludovicianus

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*SWAINSON'S Warbler*

