

# An update to Wood's *Bird-Bander's Guide*

Jay M. Sheppard and M. Kathleen Klimkiewicz

The following data were compiled by biologists at the Bird Banding Laboratory based upon information from many active bird banders and ornithologists, as well as published material. Banders are encouraged to add these data directly to their copies of Merrill Wood (1969, *A Bird-Bander's Guide to Determination of Age and Sex of Selected Species*, Pa. State Univ.<sup>1</sup>). Previous changes have already been published (see Wood, 1970, *EBBA News*, 33:107-108; *Inland Bird Banding News*, 42:66-67; or *Western Bird Bander*, 45:43). Further additions, changes, and/or deletions may become necessary. All measurements are in millimeters.

The staff at the Bird Banding Laboratory constantly asks banders to report any problems. Banders should always check returning, foreign, and repeating birds to see if the criteria for aging and/or sexing still fits. A large number of the present methods of aging and sexing birds have been based upon careful study of these retrapped birds. For example, the following questions could be asked when a bander retraps a bird: Has wing chord (or other measurements) changed since first measured? Has any noticeable change occurred in eye color, plumage, skull pneumatization, brood patch, cloacal protuberance, and/or other characters since last capture? . . . since first capture? For a known-age bird, when was it no longer distinguishable from the oldest age category (i.e., ASY, ATY, or AHY, depending upon species)? These and other questions will help establish future techniques for aging and sexing birds.

In the following, "Caution" is to be interpreted as a warning that some individuals may not clearly fall under one particular character, or that exceptions have occasionally been reported (never exceeding 5 percent of a random sample).

**Sharp-shinned Hawk** — Caution with use of eye color. 1B. mixed plumage. 1C. Jan.-Sep. 10 - ASY, Sep. 10 - Dec. AHY.

**Buteos** — Do not determine sex by size, wing measurement, weight, or brood patch.

**Yellow-billed Cuckoo** — Do not use eye ring, mouth color or tail spotting alone. Plumage, etc. quite variable. Skulling possible but unlikely.

**Saw-whet Owl** — Primaries and secondaries of both lighter and darker color: Aug.-Dec. AHY, Jan. ASY. Primaries and secondaries of uniform color: Sep.-Nov. HY, Dec. U, Jan.-Aug. AHY. (See Mueller and Berger, 1967, *Bird-Banding* 38:122.) M - wing chord less than 135; F - wing chord more than 139.

**Ruby-throated Hummingbird** — M: wing chord less than 41, F: wing chord greater than 46. (See Leberman, 1972, *IBB News*, 44:197-202.)

**Yellow-shafted Flicker** — 1A . . . contrast dark yellow with pale yellow inner ones . . . Do not sex birds in juvenal plumage. Do not age by lack of contrast in remiges alone.

**Red-headed Woodpecker** — Do not sex. Inner secondaries white; head red Jan.-Aug. AHY, Sep.-Dec. U. Inner secondaries barred; head brown or red and brown or entirely red July-Dec. HY, Jan.-July SY.

**Yellow-bellied Sapsucker** — 1B . . . Jan.-Feb. ASY, Mar.-Dec. AHY.

**Downy and Hairy Woodpeckers** — Use caution with eye color as some individuals never get typical adult eye color. (See George, 1972, *Bird-Banding*, 43:128-135 and Wood, D. S. and D. L., 1973, *Bird-Banding*, 44:100-101.)

**Empidonax Flycatchers** Do not band "unidentified flycatchers." (See Phillips, et al., 1966, *Bird-Banding*, 37:15-171 for identification of eastern species and Phillips, et al., 1964, *Birds of Arizona* for western species.) Yellow-bellied and Acadian — gray legs and yellow to buff-yellow eye ring. Least and Traill's — black legs and white to buff-white eye rings.

**Flycatchers** — In general, skulls may not ossify completely until second year or later; may show small "windows" in spring (Leberman).

**Swallows** — In general, skulls may not ossify until 10-12 months of age. Do not sex males by absence of brood patch; caution in using cloacal protuberance to sex male.

**Blue Jay** — Band size 2-3. Do not age by alular or covert barring beyond ASY Jan.-Jun. Do not sex by wing length or mouth color. Mouth lining wholly or partly pink/white or mixed pink and black: May-Dec. HY, Jan.-Feb. SY. Mouth lining wholly black: Jan.-Nov. AHY, Dec. U.

**Black-capped Chickadee** — Delete 1A and 1B. Skull ossified: Jan.-Sep. AHY, Oct.-Dec. U. Do not sex by plumage.

**Tufted Titmouse** — Caution in use of mouth color to age. Use caution with wing measurements, especially with young birds.

**Nuthatches** — Some skulls may never completely ossify (Leberman). In fall, large unossified areas: HY, small unossified areas: U, completely ossified: AHY. Males do incubate but do not develop a full edematous brood patch.

**White-breasted Nuthatch** — Do not sex black-crowned birds (may include females) from Ohio R., Pa., N. J., south and eastward. Choice 2B is correct.

**Brown Creeper** — Completely ossified skull age U from Oct.-Dec. M — wing chord greater than 65; F — wing chord less than 62.

<sup>1</sup>Wood's *Guide* may be ordered from Bird Banding, Box 6000, University Park, PA 16802. Make checks (\$3.00) payable to The Pennsylvania State University.

**House Wren** — Do not age by coverts.

**Carolina Wren** — 1B Gape white . . . Postjuvinal molt may include primaries and secondaries.

**Mockingbird** — Do not age by eye color alone.

**Catbird** — 1B. Iris deep red, plum, or huckleberry. Eye color generally reliable until April to separate SY birds. Do not age ASY by mouth color or eye color.

**Brown Thrasher** — Eye color changes rapidly. U age — yellow iris after 1 Oct. Many males do not get cloacal protuberances.

**Robin** — Delete 2A, B, C; 3A, B, C; and 4, except for nesting birds north of 40° N. Lat. and east of 100° W. Long.

**Wood Thrush** — Do not age by absence of buffy-tipped greater secondary coverts. Skull may not completely ossify until 10-13 months old (Leberman).

**Swainson's Thrush** — M: wing chord greater than 98; F: wing chord less than 90.

**Eastern Bluebird** — Local and HY color of primaries: M - deep blue; F - pale gray-blue (intermediates U sex).

**Blue-gray Gnatcatcher** — Do not sex HY or AHY (except AHY in Mar.-Jun.) by plumage.

**Kinglets** — Skull ossifies early. Do not age AHY in Oct.-Dec. if skull is completely ossified.

**Cedar Waxwing** — 1B. Breast without streaks . . . Jan.-Sep. AHY, Oct.-Dec. U. With streaks . . . L/HY (Jun.-Oct.) Do not sex by plumage. Do not use wax tips for aging.

**Northern Shrike** —

1A. All greater primary coverts dull black, each narrowly tipped with pale buff or pale brown; some or all primaries dull black with dull white areas at bases; usually some brownish body plumage (head, neck, back, upper tail coverts): July-Dec. HY, Jan.-July SY (Sex U).

1B. All greater primary coverts black to glossy black with minute spots of white; white bases of primaries sharply defined; body plumage without any brownish feathers: Jul.-Dec. AHY, Jan.-Jun. ASY—2.1 (Postjuvinal molt incomplete; variable amounts of body plumage retained; primaries and most secondaries retained; all greater primary coverts retained). (See Miller, 1931, U. C. Publ. Zool., 38).

**Loggerhead Shrike** — Postjuvinal molt nearly complete in most birds. Some HY birds do replace all primaries and greater coverts.

**Vireos** — Skulls may not ossify until 10-13 months old. Some may show small "windows" in spring.

**White-eyed Vireo** — Use caution with eye color. Compare with skull.

**Red-eyed Vireo** — Use caution with eye color. Brown is HY; bright red is AHY; brownish red is U (fall). Caution with wing measurements.

**Warblers** — Note that Robbins, 1964 *EBBA News* 27:199-215 is for fall warblers. Use caution in spring or early summer.

**Black-and-white Warbler** — Adult female usually tinged with buff very much like immature female — must skull in fall.

**Prothonotary Warbler** — HY in juvenal plumage can be sexed by white in tail feathers: M - extensive white; F - restricted.

**Tennessee Warbler** — M: wing chord greater than 64; F: wing chord less than 61.

**Black-throated Green Warbler** — 2A-B. Use only for AHY's.

**Chestnut-sided Warbler** — Yellow wing bars, no black eye line - HY; white wing bars, black eye line - AHY. Do not sex HY's. AHY - female safely identified when chestnut lacking on sides and skull ossified.

**Bay-breasted Warbler** — Sex only by combination of plumage and wing chord Aug.-Oct. (See Howard, 1968, *Bird-Banding*, 39:132.)

**Blackpoll Warbler** — See Robbins, 1964, for aging and sexing techniques.

**Palm Warbler** — **Western** (Sp. No. 672.0) — Line over eye and eye ring white; under parts more or less tinged with yellow. M - red in crown, F - no red in crown.

**Yellow** (672.9) — Eye line and eye ring yellow; uniform yellow underparts washed with ashy color in fall. Do not sex by red in crown.

The warblers listed below are known to show more worn and duller (usually browner) primaries, greater coverts (most obvious), and sometimes tails in the SY Males than the ASY Males in March, April, and May. ASY can rarely be used after May; SY sometimes into mid-June. Age differentiation not usually possible on females. **Species:** Black-and-white, Parula, Yellow, Magnolia, Cape May, Black-throated Blue, Myrtle, Audubon's, Black-throated Gray, Black-throated Green, Townsend's, Hermit, Cerulean, Blackburnian, Yellow-throated, Chestnut-sided (difficult), Bay-breasted, Blackpoll, Pine (?), and Prairie (doubtful). Banders using this technique must use caution and AHY if any uncertainty arises. Experience in handling each species is required to properly see the faded, worn, dull coverts, primaries, and (sometimes) tail feathers in comparison to the brighter ASY characters.

**Ovenbird and Waterthrushes** — Do not age AHY by absence of rusty tertial edges. These edges wear away quickly.

**Waterthrushes** — Skull may not completely ossify until second year, may show some small "windows" in spring.

**Connecticut Warbler** — Wing (flat) 64-77; tail length 43-54; wing minus tail 19-24; ninth primary longer than sixth. Use "wing minus tail" to best separate from Mourning and MacGillivray's Warblers.

**Mourning Warbler** — Wing (flat) 55-67; tail length 42-53; wing minus tail 10-18; ninth primary usually shorter (never exceeds 3 mm longer) than sixth. Use "wing minus tail" to separate from all Connecticut and most MacGillivray's Warblers.

**Mourning, Connecticut, and MacGillivray's Warblers** — See Lanyon and Bull, 1967, *Bird-Banding*, 38:187-194.

**Common Yellowthroat** — HY's without some black present on face are U sex (May-Oct.).

2A-B. Do not use plumage alone. Skull.

3A-B. Males with black mask:

Black eye ring: ASY Jan.-Jul.; Aug.-Dec. - AHY

Buffy eye ring: SY Jan.-Jul.; Sep.-Dec. - HY

**Yellow-breasted Chat** — Skull may never completely ossify.

**Wilson's Warbler** —

2B. . . black cap absent or restricted to about 8 mm or less in length; M — wing chord greater than 57; F — wing chord less than 54.

2C. Crown black, more than 11 mm and with greenish feather edges Aug.-Dec. HY-M.

**American Redstart** —

2B. Jan.-Jul. 15 ASY; Jul. 15-Dec. AHY.

2C. Same as 2A plus some black feathers on head, neck, back, breast — SY-M (only Apr.-Jul.).

**Bobolink —**

- 2A. Head black, buffy nape or central tail feathers unworn with moderately acute tips and wing chord greater than 91 and tail length greater than 64, usually . . . AHY-M.
- 2B. Does not fit either of above descriptions . . . 3.
- 3A. Incubation patch (Jun.-Jul.); wing and/or tail feathers being molted (late Aug.-Sep.) and/or central tail feathers unworn with moderately acute tips (late Aug.-Oct.); wing chord less than 91; skull ossified; tail length usually less than 64 . . . AHY-F (Mar.-Oct.).
- 3B. Incubation patch absent (Jun.-Jul.); central tail feathers very acutely pointed and very worn (Aug.-Sep.); wing and tail lengths variable . . . HY — 4 (Jul.-Dec.).
- 4A. Wing chord greater than 89; tail length greater than 62: Male.
- 4B. Wing chord less than 87; tail length less than 61: Female.

**Eastern Meadowlark —** Wing chords (Mengel, 1965, *Birds of Kentucky*):

- (1) Birds west of central Ohio and central Kentucky (except Southwest): M — greater than 109; F — less than 105.
- (2) Birds of Appalachian region and east to northeast U.S.: M — greater than 118; F — less than 113.
- (3) Wintering birds of Mississippi to Georgia: M — greater than 113; F — less than 105.

**Red-winged Blackbird —** (Measurements for east of 100°W Longitude only)

- 2A. HY-M — wing chord greater than 105; HY-F — wing chord less than 104.
- 3A. Shoulder patch orange (sometimes with black feathers), yellow band bordering orange, heavily streaked underparts (becomes worn in late winter); wing chord greater than 105; Jan.-Jun. SY-M; Aug.-Dec. HY-M.
- 3B. Shoulder patch lacking or faintly pink; body streaked; lacks pink on throat; wing chord less than 104: Aug.-Dec. HY-F, Jan.-Apr. SY-F, May-Jul. AHY-F (worn flight feathers).
- 3C. Shoulder patch crimson, lacks yellow/orange border; body streaked; pink or peach throat; wing chord less than 106: Jun.-Dec. AHY-F, Jan.-May ASY-F.
- 4A. Glossy black sometimes edged with brown (wears off in early spring) Jul.-Dec. AHY, Jan.-Jun. ASY.
- 4B. Delete.

**Orchard Oriole —**

- 2A. Jan.-Jul. SY; Sep.-Dec. HY
- 2B. Jan.-Jul. ASY; Aug.-Dec. AHY
- 2C. In Aug. use molt to age males (and females).

**Baltimore Oriole —**

- 3A. Jan.-Jul. SY; Sep.-Dec. HY
- 3B. Jan.-Jul. ASY; Aug.-Dec. AHY
- 3C. In Aug. use molt to age males (and females).

**Rusty Blackbird —** 2. M — wing chord greater than 112, F — wing chord less than 111.

**Brewer's Blackbird —** 2. M — wing chord greater than 125, F — wing chord less than 125.

**Common Grackle —** Wing chords: From central La., Miss., Ala., northwestern Ga., western half of S.C., N.C., western 2/3 of Va., and coastal Md. northward, use wing measurements to sex: M — greater than 136; F — less than 134 (be certain outer primaries are full grown and bird has completed postjuvenile molt of outer primaries). South of above population (summer only), including all of Florida: M — greater than 128, F — less than 125; in winter: M — greater than 136, F — less than 125.

**Scarlet Tanager —** Skull may not completely ossify.

- 1A. Some or all secondary coverts black; wing and tail jet black or dusky brown: male — 2.
- 1B. All flight feathers without jet black: 3
- 2A. Primary coverts, wing, and tail jet black: Jan.-Jul. ASY, Aug.-Dec. AHY.
- 2B. Primary coverts (usually), wing, and tail dusky brown: Jan.-Jul. SY, Aug.-Dec. HY.
- 3A. Jan.-May AHY-F, Sep.-Dec. U-F (if skull ossified: AHY-F)
- 3B. Jun.-Aug. — 4
- 4A. Brood patch (Jun.-Jul.); underparts not streaked; worn flight feathers; body, wing and tail in molt (late Jul.-Aug.) — AHY-F.
- 4B. Brood patch absent (Jun.-Jul.); underparts streaked (until early Aug.); freshly molted flight feathers; only body feathers in molt (except fledglings still growing flight feathers) — HY-U.

**Cardinal —** 3A. should read — SY-4. Retention of juvenal primaries — SY.

**Rose-breasted Grosbeak —**

- 1A. Wing linings pink, rump white: Male — 2
- 1B. Wing linings yellow, rump brown: Female. Jan.-Jul. AHY, Aug.-Dec. U (age in Aug. by molt).
- 2A. All flight feathers black with well defined white spots in primaries and rectrices: Jan.-Jul. ASY, Aug.-Dec. AHY — M
- 2B. Some or all flight feathers brown: 3.
- 3A. Flight feathers worn; mixture of black in body plumage: Jan.-Aug. SY.
- 3B. Flight feathers fresh; no black in crown (or very limited): Jun.-Dec. HY.

**Indigo Bunting —** Skull may not completely ossify for 12 months. (See Johnson, 1967, *Bird-Banding*, 37:211-214.)

**Evening Grosbeak —** Do not age females by plumage.

**Pine Siskin —** Do not age or sex by plumage; M — wing chord greater than 76.

**American Goldfinch —** Do not age females by white in primaries or plumage color.

**Savannah Sparrow —** Do not age by eye stripe — omit 1A-B.

**Tree Sparrow —** Do not sex by wing chord.

**White-crowned Sparrow —** Do not sex by wing chord (this needs further study for criteria involving the different geographic populations).

**White-throated Sparrow —** M: wing chord greater than 73; F: wing chord less than 68.

**Swamp Sparrow —** Age by skulling likely throughout fall.

**Song Sparrow —** Do not sex by wing chord.

*Bird Banding Laboratory, U.S. Fish and Wildlife Service, Laurel, MD 20811*

