

Age and Molt Limit & Plumage data for Figures included in:
Ageing North American Landbirds by Molt Limits and Plumage Criteria
A Photographic Companion to the Identification Guide to North American Birds, Part I
 by Dan Froehlich
 2003, Slate Creek Press

Figure	SPECIES NAME	SPECIES ALPHA CODE	AGE	HOW AGED	SEX	HOW SEXED	MOLT LIMITS & PLUMAGE Leave blank if you didn't look at that feather tract.								MONTH	STATE	NOTE	NUMBER
							PRI. COVS	SEC. COVS	PRIMARIES	SECONDS	TERTIALS	RECTRICES	BODY PLUM	NON-FEATH				
2	House Wren	H O W R				U									June	MI		
3	House Wren	H O W R				U									August	CA		
4	Gray Catbird	G R C A				U									March	NA		
5	Hermit Thrush	H E T H				U									October	CA		
7	Acadian Flycatcher	A C F L				U									May	VA		
8	Audubon's Warbler left	A U W A				M	P								March	CA		
8	Audubon's Warbler right	A U W A				M	P								March	CA		
9	Audubon's Warbler left	A U W A				F	P								July	CA		
9	Audubon's Warbler right	A U W A				M	P								July	CA		
10	Prothonotary Warbler, top	P R O W				F	P								July	?		
10	Prothonotary Warbler, bottom	P R O W				M	P								May	NC		
11	Philadelphia Vireo	P H V I				U									Sept.	CA		
12	Audubon's Warbler, left	A U W A				M	P								April	CA		
12	Audubon's Warbler, right	A U W A				M	P								April	CA		
13	Wood Thrush	W O T H				U									Sept.	NC		
14	Yellow Warbler	Y W A R				U									Sept.	CA		
15	Vesper Sparrow	V E S P				U									July	CA		
16	Rose-breasted Grosbeak	R B G R				M	P								April	?		
17	Indigo Bunting	I N B U				M	P								June	NC		
18	Northern Cardinal	N O C A				M	P								May	VA		
19	Summer Tanager	S U T A				M	P								May	VA		
20	Prothonotary Warbler	P R O W				M	P								May	VA		
21	White-eyed Vireo	W E V I				U									April	NC		
22	"Trail's" Flycatcher	T R F L				U									May	VA		
23	Song Sparrow, left	S O S P				U									June	CA		
23	Song Sparrow, right	S O S P				U									June	CA		
24	Black-and-white Warbler, left	B A W W				M	P								October	Cuba		
24	Black-and-white Warbler, right	B A W W				F	P								October	Cuba		
25	Red-breasted Sapsucker	R B S A				U									August	CA		
26	Downy Woodpecker	D O W O				M	P								April	NC		
27	Downy Woodpecker	D O W O				F	P								May	VA		
28	Carolina Chickadee	C A C H				U									May	VA		
29	Red-eyed Vireo, left	R E V I				U									May	VA		
29	Red-eyed Vireo, right	R E V I				U									May	VA		
30	Chipping Sparrow	C H S P				U									April	NC		
31	Indigo Bunting	I N B U				M	P								April	NC		
32	Indigo Bunting	I N B U				M	P								May	VA		
33	Myrtle Warbler	M Y W A				F	P								April	NC		
34	Blue Grosbeak	B L G R													May	VA		

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NOTE: ONLY THE PLUMAGE CRITERIA MARKED ON THE PHOTO WITH WHITE ARROWS AND TEXT ARE CODED IN THE DATA SHEET BELOW. ADDITIONAL VISIBLE CHARACTERISTICS AND FURTHER INFORMATION ABOUT AGEING ARE INCLUDED IN THE NOTES FOR EACH EXAMPLE.

Figure	SPECIES NAME	SPECIES ALPHA CODE	AGE	HOW AGED	SEX	HOW SEXED	MOLT LIMITS & PLUMAGE Leave blank if you didn't look at that feather tract.								MONTH	STATE	NOTE	NUMBER
							PRI COVS	SEC COVS	PRIMARIES	SECONDS	TERTIALS	RECTRICES	BODY PLUM	NON-FEATH				
2	House Wren	H O W R	2	P	U		J	J	J					June	MI		1	
3	House Wren	H O W R	2	P	U			J	J	J	J			August	CA		1	
4	Gray Catbird	G R C A	5	L	U		L							March	NA		2	
5	Hermit Thrush	H E T H	2	L	U		L							October	CA		3	
7	Acadian Flycatcher	A C F L	5	L	U		J	L	J	L				May	VA		4	
8	Audubon's Warbler left	A U W A	6	P	M	P	A	B	B	B				March	CA		5	
8	Audubon's Warbler right	A U W A	5	P	M	P	F	J	J	J				March	CA		5	
9	Audubon's Warbler left	A U W A	6	P	F	P	B							July	CA			
9	Audubon's Warbler right	A U W A	5	P	M	P	J							July	CA			
10	Prothonotary Warbler, top	P R O W	6	P	F	P	B	B	B					July	?		6	
10	Prothonotary Warbler, bottom	P R O W	5	L	M	P	J	F	J					May	NC		6	
11	Philadelphia Vireo	P H V I	2	L	P	U	J	F			J			Sept.	CA		7	
12	Audubon's Warbler, left	A U W A	5	L	M	P	J	F						April	CA		8	
12	Audubon's Warbler, right	A U W A	5	L	M	P	J	F						April	CA		8	
13	Wood Thrush	W O T H	2	L	U		L							Sept.	NC		9	
14	Yellow Warbler	Y W A R	2	L	U		J	L						Sept.	CA			
15	Vesper Sparrow	V E S P	2	L	U		J	F		J				July	CA	1	0	
16	Rose-breasted Grosbeak	R B G R	5	L	M	P	J	L	J	J	L	L		April	?	1	1	
17	Indigo Bunting	I N B U	5	L	M	P	J	F	L	J	F			June	NC			
18	Northern Cardinal	N O C A	5	L	M	P	L	L	L					May	VA	1	2	
19	Summer Tanager	S U T A	6	P	M	P	B	B						May	VA	1	3	
20	Prothonotary Warbler	P R O W	6	P	M	P	B	B	B	B				May	VA			
21	White-eyed Vireo	W E V I	5	L	U		J	F	L	J	L			April	NC			
22	"Traill's" Flycatcher	T R F L	5	L	U			L						May	VA	1	4	
23	Song Sparrow, left	S O S P	2	P	U		J	J	J					June	CA	1	5	
23	Song Sparrow, right	S O S P	5	P	U		J	J	J					June	CA	1	5	
24	Black-and-white Warbler, left	B A W W	1	P	M	P	B	B	B	B				October	Cuba	1	6	
24	Black-and-white Warbler, right	B A W W	2	L	F	P	J	F	J	J	U			October	Cuba			
25	Red-breasted Sapsucker	R B S A	7	L	U		R							August	CA	1	7	
26	Downy Woodpecker	D O W O	7	L	M	P	R							April	NC	1	8	
27	Downy Woodpecker	D O W O	8	L	F	P	M							May	VA	1	9	
28	Carolina Chickadee	C A C H	5	M	L	U	L							May	VA	2	0	
29	Red-eyed Vireo, left	R E V I	6	P	U		B	B						May	VA			
29	Red-eyed Vireo, right	R E V I	5	L	U		J	L						May	VA	1	2	
30	Chipping Sparrow	C H S P	5	L	U				J	L				April	NC	2	1	
31	Indigo Bunting	I N B U	6	P	M	P	B	A	B	B	A			April	NC			
32	Indigo Bunting	I N B U	6	P	M	P	B		B	B				May	VA	2	2	
33	Myrtle Warbler	M Y W A	5	L	P	F	J	F			J			April	NC	2	3	
34	Blue Grosbeak	B L G R	6	P	F	P	B	B	U	U				May	VA	2	4	

Notes:

- 1 Figures 2 and 3. Because they are pointed out with arrows and text on the photo, most of the feather tract fields are filled with 'J'. However, since it is normally better to use other characters to age juvenal birds (assuming they have bodies), such as juvenal body plumage, skull, etc., there is no need to fill out the wing tract information until after the pre-formative molt.
- 2 Figure 4. The secondaries are not pointed out with arrows nor mentioned in the Pyle ID Guide, but enough of this tract is visible in the photo and is distinctively brownish and juvenal, so additionally we could score SECONDS=J.
- 3 Figure 5. The primary coverts are not pointed out with arrows, but this tract is visible in the photo and the feathers are distinctly tapered juvenal feathers for a thrush. So additionally we could score PRI. COVS=J. These coverts are fairly fresh for juvenal coverts as it is only October.
- 4 Figure 7. Since the new terminology has been defined, the question has arisen as to whether feathers replaced in the spring that were not also replaced in the previous fall should be considered part of an extended preformative molt or as a separate prealternate molt. Note that the arrows and text for Figure 7 are inconsistent with each other, with the arrows indicating that the replaced feathers are "first basic" (now considered "formative"), but with the caption indicating these as alternate feathers. Further research will probably show that these should be considered formative feathers, so we have considered them such here. For that reason, we score the greater coverts and tertials for this ACFL with 'L', a molt limit between juvenal and formative feathers, rather than 'J'. For a molt limit between juvenal and alternate feathers (a situation that is rare at best) we would use 'J' - see MAPS Manual/addendum for definition.
- 5 Figure 8. The tertials are not pointed out with arrows or text, but this tract is visible in both birds in the photo. For the left bird the feathers are basic feathers, so additionally we could score TERTIALS=B. For the right bird the feathers are juvenal feathers, so additionally we could score TERTIALS=J.
- 6 Figure 10. The tertials are not pointed out with arrows or text, but this tract is visible in both birds in the photo. However, for neither bird is the tract particularly distinct so we scored TERTIALS=U for both birds.
- 7 Figure 11. The replaced feather in the primary coverts is not typical for this species. Even though a molt limit does exist, we code PRI. COVS= J because this replacement was adventitious, not part of a regular molt. However, the juxtaposition of the replaced feather, which is more like an adult feather, allows us to more easily identify the other feathers as juvenal feathers.
- 8 Figure 12. On both birds, the primaries, secondaries, and tertials are not pointed out with arrows nor mentioned in the Pyle ID Guide, but these tracts are visible and brownish and distinctively juvenal, so additionally we could score PRIMARIES=J, SECONDS=J, and TERTIALS=J .
- 9 Figure 13. This bird is only molting some of the greater coverts. When feathers in the greater coverts molt, they do so as a block (or in very rapid succession), not in gradual succession like the primaries, primary coverts, or secondaries. Therefore, we know that the currently molting greater coverts will be the only greater coverts replaced during this molt. If only some of the greater coverts are molting then this must be a partial molt - characteristic of a HY bird not an AHY bird. Therefore, additionally we could score HOW AGED=M indicating this is a HY bird by molt.
- 10 Figure 15. This bird is only molting greater coverts. In a complete molt, primaries and secondaries would be molting at the same time as the greater coverts. Therefore, we know this bird must be going through a partial molt - characteristic of a juvenal, not an adult. So additionally we could score HOW AGED=M indicating this is a HY bird by molt.
- 11 Figure 16. You may be tempted to score the 'SEC. COVS' feather tract 'F' because the greater coverts are all formative feathers. But, according to MAPS protocol, the alula feathers and alula covert are also to be included as part of the "SEC. COVS". The lesser alula is a juvenal feather (between the replaced greater alula and alula covert), and so a molt limit exists in the tract. Hence, the score for this field must be 'L'.
- 12 Figures 18, and 29 (right). See note 11. The greater alula feather is juvenal while the remainder of the SEC. COVS are formative so the score for this field must be 'L' (if scored).

13 Figure 19. The secondary coverts, secondaries, tertials, and body plumage are not pointed out with arrows or text, but these tracts are visible in this photo and are distinctly basic feathers. So, additionally we could score SEC. COVS=B, SECONDS=B, TERTIALS=B, and BODY PLUM.=B.

14 Figure 22. The caption notes a molt limit in the primary coverts which may be very difficult to see, if visible at all. If you can see this molt limit, you could additionally score PRI. COVS=L.

The secondary coverts are also visible in the photo, and match the description in the Pyle ID Guide as being non-juvinal feathers. As with the ACFL (Figure 7, note #4), there is question as to whether these replaced feathers are the result of a protracted preformative or a prealternate molt. As with the ACFL, we consider these to be formative feathers and so could have additionally scored them SEC.COVS=F.

15 Figure 23, left bird. See note #1 filling out the feather tracts with J for birds in complete juvenal plumage.

Figure 23, right bird. The secondary coverts, tertials, and rectrices are also visible in the photo, though not marked with arrows and text. The secondary coverts match the description in the Pyle ID Guide as being formative feathers, the tertials are not very clear, and you can see a single tapered rectrix.

Therefore, you could additionally score SEC. COVS=F, TERTIALS=U, and RECTRICIES=J. It also appears that there may be a molt limit in the primaries and secondaries, with the outer four primaries and inner five secondaries being formative feathers and the medial feathers being juvenal. This would indicate an eccentric molt pattern during the preformative molt. If the molt limit was real you would score PRIMARIES=L (not J), TERTIALS=F, and SECONDARIES=L.

16 Figure 24, left bird. The tertials, and rectrices are also visible in the photo and, though not marked with arrows and text, are basic feathers. Therefore, you could additionally score TERTIALS=B, and RECTRICIES=B

17 Figure 25. The secondary coverts and body plumage are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score SEC. COVS=B and BODY PLUM=B.

18 Figure 26. The secondary coverts are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score SEC. COVS=B (because these must have been replaced to be so black) .

19 Figure 27. The secondary coverts, primaries, and secondaries are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score SEC. COVS=U (because this tract isn't quite visible for us to tell there are mixed generations of feathers), PRIMARIES=B (because this tract is always completely replaced and are uniformly as black as the darkest primary coverts), and SECONDS=U (because this tract could have mixed generations of feathers and we can't tell from the photo).

20 Figure 28. The primary coverts are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score these narrow brownish juvenal feathers, PRI. COVS=J. Since the bird is going through prebasic molt you ignore the new basic feathers and score the tract simply on the retained feathers from the previous generation. You could also score HOW AGED=M for a criteria to indicate the bird was at least an AHY bird. Flight feather molt in this species is a characteristic of the complete adult pre-basic molt but not the HY partial pre-formative molt.

21 Figure 30. The secondary coverts are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score these dusky formative feathers, SEC. COVS=F.

22 Figure 32. The primary coverts and primaries are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score these bright blue edged feathers, PRI. COVS=B and PRIMARIES=B.

23 Figure 33. The primaries and secondaries are also visible in the photo, though not marked with arrows and text. Therefore, you could additionally score these dull brown feathers, PRIMARIES=J and SECONDS=J.

24 Figure 34. This bird has caused much discussion because of the description of the head plumage in the caption. The clean primary coverts, lacking a visible molt limit within the tract and lacking a strong contrast to the secondary coverts, strongly suggests this is an ASY bird. However, the caption describes this bird with a "strong blue wash over the head", which is more blue than expected for a female and much less blue than would be expected in an ASY male according to the Pyle ID Guide. Subsequent specimen examination has indicated that a small proportion of ASY females can have a moderately strong blue wash to the head. Furthermore, our trust in our wing determinations was strong enough that our final decision was ASY female. We expect that with the bird in the hand, being able to use other cues such as cloacal protuberance, brood patch, wing length, etc, it would be more straightforward to age and sex this individual. Because the information on this bird is ambiguous, ageing the bird simply as AHY with sex unknown is also a very good conclusion based on the information available to us.