

# On Separating Female and Immature *Oporornis* Warblers in Fall



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Figure 1. Typical immature Connecticut Warbler, caught 12 October 1987 on Southeast Farallon Island, California. The eye ring is characteristically very full; note also the buffy throat, heavy brownish cast to the breast and upperparts, and dingy yellow underparts that enable easy separation from the other *Oporornis*, including Mourning Warblers with full eye rings. The dingy plumage of this bird, along with the measured wing length and incompletely pneumatized skull, suggests that it is an immature female.

by Peter Pyle\* and Phil Henderson\*

Southeast Farallon Island is perhaps the best place in North America to study the field separation of difficult-to-identify, passerine sibling species. Nowhere else do so many eastern and western land-bird migrants regularly mingle, and by capturing most of them for banding we are given the opportunity to study

them up close, measure them, and augment our understanding with information on their age and sex. The island's open terrain especially favors the detection and study of typically skulking species, such as the *Oporornis* warblers, which we often find foraging on the island's barren slopes. Perhaps this is the main

reason why we have recorded thirty-six Mourning Warblers (*O. philadelphia*) and thirty-two Connecticut Warblers (*O. agilis*) on Southeast Farallon, representing over 50 percent of California's records of these species.

Our understanding of the field identification of fall immature *Oporornis* warblers (i.e., birds in first basic plumage) has steadily developed since the Point Reyes Bird Observatory began daily monitoring of land-bird occurrence on the island in 1968. We have had little trouble distinguishing Connecticut Warblers by their full eye rings, duller plumage, chesty appearance, and habit of walking rather than hopping. But it was not until 17 to 26 September 1974, when we documented our first five Mourning Warblers, that our ability to separate immatures of this species from MacGillivray's Warblers (*O. tolmiei*) began to improve. As with other geographically separated sibling species, treatment of fall immatures of these two in the field

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Figure 2. Connecticut Warbler, Southeast Farallon Island, 21 September 1987. The very full eye ring, dark throat, and greenish upperparts, along with a completely pneumatized skull, indicate that this is an adult female.



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guides has been, and still is, scant or misleading.

Prompted by Allan Phillips (1947), Wesley Lanyon and John Bull (1967) published a paper in *Bird-Banding* indicating that most *Oporornis* warblers could be identified by the flat-wing length minus the tail length. They found this calculation to be 2 to 11 mm in MacGillivray's, 10 to 18 mm in Mourning, and 19 to 27 mm in Connecticut. Although these specimen-based calculations may differ slightly from those of live birds (we have found smaller ranges and less overlap on live birds measured on Southeast Farallon), this paper enabled us to identify most fall immature Mournings that we captured. These flat-wing/tail differences, however, are of little value in the field.

In documenting the first California Mourning Warbler in 1968, Guy McCaskie (pers. comm., 1970) observed that this immature bird's throat was yellow, which differed from the typical whitish or grayish-buffy throat coloration of an immature

MacGillivray's. In 1974 we confirmed this difference on Southeast Farallon, and throat color subsequently became the popular standard used in separating Mourning from MacGillivray's in first basic plumage. Recently, however, exceptions to this standard began to appear on the island: dull MacGillivray's with yellow throats and a probable fall adult female Mourning with a white throat. We had to find other indicative plumage criteria. As the records of Mournings increased, we developed a good understanding of the differences in the color, width, extent, and abruptness of the eye rings of the two species. We now feel that we can separate most birds by using just throat color and eye-ring features, and close to 100 percent of the individuals by using a combination of *all* plumage characters.

The purpose of this article is to discuss and illustrate with photographs of hand-held birds differences in the plumage of fall female and immature *Oporornis* warblers. We do not intend it to be an exhaustive treatment of the

subject. We wish only to make observations that have not been widely published in the field-identification literature, in hopes of stimulating further discussion and, hence, advancement in our understanding of this topic.

### *Aging and Sexing Fall Oporornis*

The accurate aging and sexing of birds in the field is always of value, as knowing the age and sex class will often assist with the identification. Understanding the extent and timing of molts is an important starting point. In Connecticut, Mourning, and MacGillivray's warblers, both juveniles and adults molt on the breeding grounds in July–August—juveniles into first basic plumage (a partial molt) and older birds into definitive basic plumage (a complete molt). The prealternate molt is partial (body plumage only) and takes place on the wintering grounds in February–April. In the field, the first alternate (first spring) plumage of males is similar to the definitive alternate plumage.



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Figure 3. Immature Connecticut Warbler, Southeast Farallon Island, 10 October 1982. Although the throat on this bird is atypically yellowish, note the brownish wash across the breast. Note also the small and abrupt breaks in the eye ring. The measured wing length, perhaps in combination with the brighter plumage, suggests a male.



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Figure 4. A dull immature Mourning Warbler, Southeast Farallon Island, 6 September 1989. Although almost complete, the eye ring on this bird is quite indistinct, narrow, and yellowish, as is common in immature Mournings. The break on the anterior portion is also tapered, unlike the abrupt breaks found in Connecticut and MacGillivray's warblers. Birds in this plumage may be confused with immature Common Yellowthroats (*Geothlypis trichas*), but note that the latter are typically browner above, have dingier underparts contrasting with brighter throats and undertail coverts, and have duller fleshy legs as compared with bright pink legs in the *Oporornis* warblers. The extremely dull plumage and pale gray suffusion to the head, along with the measured wing length, indicate that this bird is an immature female.

In males, the definitive basic (adult nonbreeding) plumage appears very similar to the definitive alternate (adult breeding) plumage; these birds are easily separated from the other age and sex classes in fall by their extensive dark hoods and are identified to species by the extent of their eye rings (but see Pitocchelli [1990] for recent documentation of occasional adult male Mourning Warblers with partial eye rings that are usually "weaker" than those found in MacGillivray's). The field separation of the other three age and sex classes in fall is not as easy and should not be attempted with all individuals.

The least understood plumage in *Oporornis* is that of adult females in fall (i.e., birds in definitive basic plumage). In MacGillivray's this plumage may be impossible to distinguish from that of immatures (i.e., birds in first basic plumage), although if it resembles the alternate plumage of spring, the throat might be distinctly whiter than the dingier grayish-white, buffy, or yellow-

ish throats of immatures. In Connecticut, the eye ring probably averages whiter and thicker in adult females (being often thinner and slightly buffy in immatures), the upperparts may be greener, and the throat may be darker; but these characters are yet to be fully tested. Most references and field guides indicate that adult female Mourning Warblers in alternate plumage have a pale gray or white throat (but see photo of a "breeding female" in the *Audubon Society Master Guide to Birding*, v.3, p. 173). If the definitive basic plumage is similar, the white or gray throat would distinguish them readily from the yellow-throated immatures. The extent of variation in the plumages of fall adult female *Oporornis* warblers, especially as related to throat color, has yet to be determined, however.

The sexing of immature Mourning and MacGillivray's warblers in fall is also problematic, with much overlap in plumage features. Immature males of all three species of *Oporornis*

have, on average, a more extensive and darker gray suffusion to the crown than do immature females, but there is a good deal of overlap in this character. It may be impossible to sex immature Connecticut Warblers on plumage alone. Many immature male Mourning and MacGillivray's warblers in basic plumage have a few black feathers on the upper breast and on this basis are separable from the other age and sex classes. Immatures that lack these black feathers may be of either sex; in MacGillivray's, look for grayer tones to the head, breast, and lores of immature males versus the more buffy-washed head, breast, and lores in females; and in Mourning, look for darker and more distinct grayish breast-patches on males than on females, occasionally forming a complete breast band.

In sum, there is much overlap in plumage characters useful in aging and sexing immature and female *Oporornis* warblers, and many individuals should be left uncategorized when viewed in



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Figure 5. Immature Mourning Warbler, Southeast Farallon Island, 10 October 1980. Note the continuation of the yellow from the throat to the underparts and the lack of a greenish suffusion to the sides of the breast. The fairly complete but thin and tapered eye ring is typical of Mourning Warbler. Based on the extensive gray wash to the head, the relatively large and distinct breast patches, and the measured wing length, we classified this bird as an immature male.

the field. In the hand, aging and sexing of *Oporornis* is greatly aided by wing and tail measurements, the extent of pneumatization of the skull, and the relative shape and condition of the flight feathers, which are retained by immatures but replaced by adults during the prebasic molt. When these criteria are combined with plumage characters, almost all fall birds can be aged, and up to 60 percent of fall immatures can be reliably sexed. The figure captions in this article contain further comments on the age and sex of these hand-held birds. See also Pyle et al. (1987) for more information on aging and sexing *Oporornis* warblers and passerines in general.

### Connecticut Warbler

Immature and female Connecticut Warblers are readily separated from Mourning and MacGillivray's warblers by a combination of their thicker, fuller-looking eye rings, larger bills, buffy throats that usually lack yellow, brownish cast to the upper breast and upperparts, and dingier yellow underparts (Figures 1 and 2). In the field they also usually walk when foraging; their posture is plumper than in the other two species, resembling that of the Ovenbird (*Seiurus aurocapillus*) or a *Catharus* thrush; they are longer-winged; and their call note is a slightly higher-pitched *chip* than that of Mourning Warbler and is softer than that of MacGillivray's. (All three species

of *Oporornis* also give a thin *zeet* flight call typical of most warblers.) Although the eye rings of Connecticut Warbler can occasionally be broken (Gustafson 1988), these breaks are much smaller than those found in the eye rings of MacGillivray's and more abrupt than in those of Mourning (whose eye ring is also distinctly thinner and usually yellower). The throat color in Connecticut can occasionally appear yellowish (Figure 3), but on these birds a broad, suffuse, and olive or brownish breast band separates the paler throat from the belly. Although complete breast bands are occasionally found in immature male Mourning Warblers (see Figure 7), they are typically grayer, narrower, and less suffused with pale coloration than those of Connecticut. Immature Mourning Warblers with full eye rings can be further separated from Connecticut Warblers by their smaller bills, brighter yellow throats and underparts, and lack of brownish tones to the upperparts. Mournings and MacGillivray's both usually hop in the field and look thinner and sleeker than Connecticut Warblers.

### Throat Color

On its own, the presence or absence of yellow in the throat will probably separate 90 percent of Mourning and MacGillivray's warblers in first basic plumage. Fall immature Mourning Warblers (Figures 4–7) typically have bright yellow throats that usually



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Figure 6. Immature Mourning Warbler, Southeast Farallon Island, 20 September 1989. The eye ring of this bird is fairly distinct and relatively abbreviated but does not approach that of MacGillivray's in appearance and is otherwise quite typical of immature Mourning Warbler. The plumage and measured wing length suggest that this bird might be a female, but we left it unsexed in our banding data.



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Figure 7. Immature male Mourning Warbler, Southeast Farallon Island, 8 September 1988. A small percentage of immature males show a complete breast band; in comparison with those typically found in Connecticut and MacGillivray's, however, it is grayer, narrower, and less suffuse. The eye ring of this individual is typical of Mourning and, along with a flat-wing/tail difference of 13 mm, confirms the identification.



TED EUBANKS



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*Figure 8. Suspected adult female Mourning Warbler, Southeast Farallon Island, 30 August 1988. The white throat resembles what is typically found in adult female MacGillivray's (see Figure 12), but the white eye ring is narrower and more complete. Note also the very bright yellow flanks, without a greenish suffusion. The skull was completely pneumatized and the flat-wing/tail difference was 13.5 mm. The California Bird Records Committee is currently deliberating on the identification of this bird. Any thoughts would be welcome. Send them to Don Roberson, CBRC Secretary, 282 Grove Acre Avenue, Pacific Grove, California 93950.*

continue uninterrupted to the bright yellow belly and undertail coverts. On dull birds the yellow of the throat may be tinged buffy, and small olive or grayish breast patches are often present, but only occasionally are these so extensive as to meet across the center of the breast (Figure 7). We have never caught or seen an immature Mourning on the Farallones without yellow or buffy-yellow in the throat, however, the specimen collection at the Louisiana State University (LSU) Museum of Natural Science contains two immature males and three immature females with buffy or whitish-gray throats that lack yellow (S. Cardiff and C. Marantz, pers. comm.). (These birds were considered atypical of the large series of specimens of yellow-throated immatures found at LSU.) Furthermore, on 30 August 1988, we captured what we believe was an adult female Mourning Warbler with a bright white throat (Figure 8). This character may or may not be typical of this age class in fall (see above and Figure 9). But the

*Figure 9. Mourning Warbler, probably an adult female, caught 7 October 1986 for banding on Galveston Island, Texas. The fresh flight feathers, lack of black in the breast, and whitish throat indicate an adult female. Note the throat coloration and eye ring in comparison to the probable adult female Mourning Warbler depicted in Figure 8. The definitive basic plumage of females is the least understood plumage in Oporornis.*

need is clearly demonstrated to look at other features before assuming that every white-throated bird is a MacGillivray's.

The throat of immature MacGillivray's Warblers is usually whitish or grayish-white and well defined by a suffused dusky-gray band across the breast, which contrasts distinctly with the yellow belly and undertail coverts (Figures 10 and 11). The throat of immatures is usually somewhat dingy, while that in fall adult females may be white (Figure 12). We have captured at least three MacGillivray's in the past five years, however, with dingy to moderately yellow throats, and we believe that this may be a somewhat regular attribute, possibly unique to immature females. The yellow on the throats of these individuals (Figures 13 and 14) is dingier or buffier than on most immature Mourning Warblers, and the amount of dusky or dingy-brownish across the chest seems more extensive and suffused than that found in Mourning (compare with Figure 7). We have not, for instance, seen a MacGillivray's



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Figure 10. Typical immature MacGillivray's Warbler, Southeast Farallon Island, 18 September 1983, with a dingy whitish throat, a grayish chest band contrasting with a yellow belly, and bold, abbreviated white eye crescents. The amount of grayish in the head and breast of this bird in combination with the measured wing length suggests a male.



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Figure 11. Typical immature male MacGillivray's Warbler, Southeast Farallon Island, 8 September 1988. The blackish suffusion to the upper breast in combination with the measured wing length is indicative of an immature male.

with the extent of yellow illustrated for the immature female of this species on page 371 of the *National Geographic Society Field Guide to the Birds of North America* (first edition; correctly modified in the second edition). We believe, though, that individual variation within these two species may cause there to be some overlap between them in throat color and the extent of the breast band.

### Eye-ring Features in Mourning and MacGillivray's Warblers

The combination of the width, extent, abruptness, and color of the eye ring is unquestionably the most reliable criterion for separating fall immature Mourning and MacGillivray's warblers in the field. In Mourning the eye ring varies quite considerably, but it is always thinner and more extensive and is usually duller white or yellower than that of MacGillivray's. Figures 4-7 and 15 show the range of variation in fall immature Mourning Warbler eye rings—from quite indistinct, to distinct but broken, to almost

full—but always thin and usually yellowish in color. Note also that the breaks lack the abruptness of the breaks in MacGillivray's and Connecticut (when present). In adult females, the eye ring, when present, can be whiter, but is still narrow and fairly complete (Figures 8 and 9).

In contrast to that of Mourning Warbler, the eye ring, or "eye crescents" or "eye arcs," of MacGillivray's Warbler shows little variation. Even in the duller of birds it is noticeably broader, more abbreviated, and whiter than the eye ring of Mourning (Figures 10-13). The ends of the crescents are also abrupt, unlike the tapered or indistinctly defined ends to the arcs on Mournings. Although some birds of both species may have eye marks tending toward those of the other in appearance (compare Figures 14 and 15), we



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Figure 12. Spring adult female MacGillivray's Warbler, Palomar Field Station, California, May 1972. Although the throat color resembles that of the suspected adult female Mourning Warbler (Figure 8), note the thicker and more abbreviated white eye crescents and the apparently greener sides to the underparts, typical of MacGillivray's. Look for similar plumage in fall adult female MacGillivray's as well.



FIGURE 13

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FIGURE 14

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FIGURE 15

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Figure 13. Immature MacGillivray's Warbler, Southeast Farallon Island, 23 September 1986. Although the throat is yellow, note the suffused breast band and the broad, abbreviated white eye crescents typical of this species. Note also the dingy greenish wash down the sides of the underparts in comparison with the Mournings shown in Figures 5 and 6. The flat-wing/tail difference was 7 mm.

Figure 14. Immature female MacGillivray's Warbler, Southeast Farallon Island, 9 September 1988, with buffy-yellowish throat but broad, suffused breast band. Note again the broad and abruptly abbreviated eye crescents, dingy but otherwise typical of MacGillivray's. The flat-wing/tail difference was 7 mm.

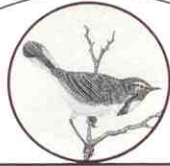
Figure 15. This suspected Mourning Warbler was caught 8 September 1984 on Southeast Farallon Island. Although the yellow throat and lack of a breast band is typical of Mourning, the eye crescents are uncharacteristically distinct and abbreviated, pointing toward MacGillivray's (compare with Figure 14). Note, however, the clear yellow sides to the underparts, indicating Mourning. The flat-wing/tail difference on this bird was 10.5 mm (indicating the possibility of a hybrid?) (Hall 1979). The California Bird Records Committee is deliberating the identity of this individual; comments are welcome. Send them to Don Roberson, CBRC Secretary, 282 Grove Acre Avenue, Pacific Grove, California 93950.

believe that there is little if any overlap in this feature.

#### *Other Criteria Used to Separate Mourning from MacGillivray's Warblers*

To the trained ear, the call notes between Mourning and MacGillivray's warblers differ. The note is usually described as a sharp *tsic* in MacGillivray's, drier and sharper than the more wren- or yellowthroat-like *chiup* of Mourning. This character may be of use, however, only when the observer is familiar with both. The relative length of the undertail coverts is also useful in the hand, as they generally extend more than half-way along the tail in Connecticut, about half-way or a little more than that in Mourning, and less than half-way in MacGillivray's. There is overlap in this feature, however, and it is usually difficult to assess this character in the field.

We have noticed a few other features that may be of use in separating Mourning from MacGillivray's warblers. The sides of the



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breast and flanks (posterior to the breast patches) seem to be a clear, bright yellow in immature and female Mournings, whereas they are often washed with olive in MacGillivray's, creating a dingier appearance. This difference is illustrated for the immatures on page 371 of the *National Geographic Society Field Guide* (both editions), but it is not discussed in the text. Immature Mournings and MacGillivray's often, but not always, have a pale supraloral stripe (Figures 8, 10, 11, 14, and 15). We have observed that this stripe occurs more often in Mourning than in MacGillivray's (and is rarely, if ever, found in Connecticut); it also tends to be yellowish in Mourning but whitish or buffy in MacGillivray's. And finally, we have noticed that MacGillivray's seem to exhibit a slightly jerkier, bouncier behavior and may have a slightly larger-headed posture than do Mournings; but these latter two characters are so subjective that they would only be noticed after extensive observation under such ideal circumstances as we have on Southeast Farallon.

### Summary

To separate fall immature and female Mourning and MacGillivray's warblers we recommend that birders first scrutinize the eye ring, then confirm the identification with the throat color and other features mentioned above. As with any tough field identification problem, a few individuals, perhaps hybrids, may be difficult to classify (Figure 15), but most will be readily identified.

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