

Juvenal-plumaged Le Conte's Sparrows on Migration

Are they being overlooked?

by Peter Pyle * and David Sibley *

Juvenile passerines receive little or no attention in the body of literature that concerns itself with field identification. Birders generally assume that these are short-tailed youngsters found only on the breeding grounds and that, although they often appear different from older birds of their species, their identification is easily secured via the company of their parents. Certainly, most North American passerines undergo their first prebasic (post-juvenal) molt before leaving the breeding grounds, and in most of the roughly thirty North American species that migrate regularly before completing this molt (e.g., some tyrannid flycatchers, swallows, and western Chipping Sparrows [*Spizella passerina arizonae*]), the juveniles sufficiently resemble adults (or are distinct on their own) that identification is not a problem. The situation may not be so clear, however, among juvenile sparrows of the genus *Ammodramus*.

Molt patterns are not revised—birds still do what they have al-

ways done, but our understanding of these molts has changed. Since Dwight (1900) first described molt patterns in six North American species of *Ammodramus* sparrows, there have been revisions by several authors (Sutton 1935, 1936; Cartwright et al. 1937; Tordoff and Mengel 1951; Murray 1968). There remains uncertainty, especially concerning the timing and geographic location of the first prebasic molts (Pyle et al. 1987). This literature indicates that Henslow's (*A. henslowii*), Sharp-tailed (*A. caudacutus*), and Seaside (*A. maritimus*) sparrows complete this molt on or near the breeding grounds, as do most passerines, but that many juvenile Baird's (*A. bairdii*) and some juvenile Grasshopper (*A. savannarum*) sparrows undertake the fall migration before they have begun or finished molting. There has been little information published as to where Le Conte's Sparrows (*A. leconteii*) complete their first prebasic molt, although it has generally been assumed (e.g., National Geographic Society 1987) that juveniles are found only on the breeding grounds. During the

past five years, however, we have captured four vagrant Le Conte's Sparrows in full juvenal plumage on Southeast Farallon Island (SEFI), California, and three other juveniles have recently been recorded in California and Connecticut, suggesting that they regularly leave the breeding grounds in this plumage. Because field observers are less familiar with the juvenal plumages of *Ammodramus* sparrows than with the definitive plumages, the occurrence of at least three species in juvenal plumage away from the breeding grounds could result in identification uncertainties. In addition to documenting juvenal-plumaged Le Conte's Sparrows on migration, we here discuss the first prebasic molt in this species and point out identification tips useful in separating juvenile Le Conte's Sparrow from its congeners.

Juvenile Le Conte's Sparrows on Migration

On 11 September 1986, Pyle, Phil Henderson, Steve N.G. Howell, and Sophie Webb observed a juvenal-plumaged *Ammodramus* sparrow in a dead-twig thicket of

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Figure 1. Note the short, triangular eyeline and small gray auricular patch of a juvenile Le Conte's Sparrow, diagnostic of this species among the *Ammodramus* sparrows. Photographed 11 September 1986 on Southeast Farallon Island, California.

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a fallen Monterey Cypress on SEFI. We tentatively identified the bird as a Grasshopper Sparrow but were uncertain, so we opened a nearby mist net and, with considerable orchestration, persuaded the bird to fly from the sticks into the net. In the banding lab, the bird was carefully measured and found to have a wing chord of 51 millimeters, tail length of 47 millimeters, tarsus length of 17.8 millimeters, and exposed culmen of 9.6 millimeters—measurements that, surprisingly, could pertain only to Le Conte's Sparrow among the *Ammodramus* (Pyle et al. 1987). It had an incompletely pneumatized skull, confirming that it was a first-year bird. After the bird was banded, described, and photographed in the hand (Figures 1 and 2), it was released and further studied in the field during 11 and 12 September. It was not seen on the 13th, presumably having migrated during the previous night. Subsequently, three more juvenal-plumaged Le Conte's Sparrows have been similarly documented on SEFI—on 18–19



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Figure 2. Note the prominently buffy nape and the bold buff streaks on the upperparts, as well as the long, pointed rectrices on this juvenile Le Conte's Sparrow. Photographed 11 September 1986 on Southeast Farallon Island.

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Figure 3. Note that this juvenile Le Conte's Sparrow is less buffy in plumage than the bird of 11 September 1986, reflecting the fact that the feathers are more worn. Photographed 18 September 1987 on Southeast Farallon Island. Another individual that closely resembled this one was caught on 21 September 1987.



LOUIS BEVIER

Figure 4. The slim appearance, distinct triangular eyeline, and grayish auricular patch of this juvenile Le Conte's Sparrow confirm the identity. Note the more worn and faded appearance of this juvenile, perhaps reflecting the later date. Photographed 18 October 1989 at Furnace Creek Ranch, California.

September 1987 (Figure 3), 20–24 September 1987, and 7 October 1989. Other juvenal-plumaged birds have subsequently been found by Jon Dunn, Louis Bevier, and Bruce Broadbrooks at Furnace Creek Ranch (FCR), Death Valley National Monument, California, on 18 October 1989 (Figure 4); by Frank W. Mantlik in Westport, Connecticut, on 18–22 October 1989 (Figure 5); and by Randy J. Moore in Ventura, California, on 23–24 September 1990. (This is undoubtedly only a partial list of such records.)

The SEFI juveniles represent four of the six records of Le Conte's Sparrows from the island, the others being an individual collected on 13 October 1970 (McCaskie 1975) and one captured and banded on 11–12 October 1986 (Figure 6). Interestingly, both of these were also first-year birds, as confirmed by incomplete skull pneumatization, but both had already molted into first basic plumage, which is essentially indistinguishable from the definitive basic (winter) plumage of adults. Five other fall records in California, between 17 October and 27 November (McCaskie 1975, 1989, 1990; Roberson 1986), were of basic-plumaged birds. Although none of them could be positively aged, it is likely that some or most of these were immatures in first basic plumage.

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nal-plumaged birds in those states may represent an anomaly related to that which caused their misorientation. To further investigate whether or not Le Conte's Sparrows regularly migrate in juvenal plumage, we examined specimens at the California Academy of Sciences (CAS) in San Francisco and the Museum of Vertebrate Zoology (MVZ) at the University of California Berkeley. Among four immature fall migrants in the collections were birds in juvenal plumage from Lake County, Illinois, 8 October 1927 (MVZ 64489), and from Lincoln, Nebraska, 27 September 1902 (MVZ 31235), and birds labeled as "immatures" in basic plumage from Lawrence, Kansas, 26 October 1907 (CAS 81519) and 9 November 1907 (CAS 81520). The collections also contained birds in full juvenal plumage from within the breeding range at Shoal Lake, Manitoba, 17 September 1918 (MVZ 105895), and from Lake Koshkonong, Wisconsin, 7 September 1894 (CAS 49032). Finally, Sutton (1967) noted that of nineteen first-year specimens from Oklahoma collected between 2 October and 13 December, the first two, on 2 and 8 October, were in juvenal plumage whereas the remaining seventeen were in first basic plumage. It is clear that the first prebasic molt of the Le Conte's Sparrow, like that of the Baird's and Grasshopper sparrows, can occur either on the breeding grounds or on the wintering grounds.

Locality and Timing of the First Prebasic Molt

Because of energy constraints, passerines typically do not molt and migrate at the same time; among healthy juveniles of most species, one event almost always precedes the other. A similar pat-



FRANK W. MANTLIK / AVOCET IMAGES, 1989

Figure 5. Note the distinctive and diagnostic face pattern on this juvenile Le Conte's Sparrow. Unlike the birds in Figures 3 and 4, this juvenile has retained its fresh appearance well into October. Photographed 22 October 1989 at Sherwood Island State Park, Westport, Connecticut.

tern seems to prevail among juveniles of the few species that are capable of either strategy, molting before migrating or migrating before molting, this life-history choice perhaps depending on whether fledging occurred from an early or a late brood, respectively. The evidence supports this pattern in Le Conte's Sparrow. All six of the California juveniles and the four specimens of juveniles at CAS and MVZ appeared to be in full juvenal plumage (although a few pin feathers that were noted on the two 1987 SEFI juveniles suggested that molt had just begun), whereas the two SEFI birds and two specimens in first basic plumage displayed no juvenal feathers.

Regarding the timing of the first prebasic molt, the dates of the specimens and of the California birds suggest that juveniles occur on migration in September through mid-October, whereas birds in first basic plumage have been recorded on migration as early as 11 October and through

November. This fact indicates that the first prebasic molt, which does not include the primaries, secondaries, or rectrices (Murray 1968), occurs either mostly during September on the breeding grounds, or during October and November on the winter grounds, a pattern that results in a protracted fall migration in this species (Murray 1969). The evidence further suggests that the majority of juvenile Le Conte's Sparrows molt before migrating, although it is interesting that juveniles outnumber basic-plumaged birds on SEFI, where censusing is complete and objective. More study is needed on the dynamics of this molt; the possibility exists that the proportion of birds that do migrate in juvenal plumage varies annually in response to the timing and success of the breeding season.

Identifying Juvenile Le Conte's Sparrows

The casual observer could easily misidentify a juvenile Le Conte's Sparrow as a Grasshopper Sparrow, as we almost did with the first of the SEFI birds. Although they are superficially similar, several field marks, when scrutinized carefully, readily separate juvenile Le Conte's from juveniles of Grasshopper and the other *Ammodramus* sparrows.

The combination of the facial features and upperpart plumage is unique to each species. The contrastingly buffy nape, short triangular or anchor-shaped eyeline, small auricular patch, and prominent buffy and dark stripes on the upperparts will easily separate juvenile Le Conte's from juvenile Sharp-tailed on the breeding grounds, and from the other *Ammodramus* on migration or the wintering grounds. Juvenile Savannah Sparrows (*Passerculus sandwichensis*) might also be con-



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fused with juvenile Le Conte's. Like Henslow's Sparrows, however, Savannahs molt very quickly into first basic plumage, usually before the tail is fully grown, and thus should be seen only on the breeding grounds for a short period after fledging. Both juvenile and adult Savannah Sparrows have broad, dark malar streaks, which juvenile Le Conte's Sparrows lack.

In addition to plumage, several other field criteria may help observers distinguish juvenile Le Conte's Sparrows on migration. As supported by measurements (Murray 1969), the posture of Le Conte's Sparrows is slimmer than that of the other *Ammodramus* and Savannah sparrows, giving individuals an almost reptilian appearance in the field. The SEFI birds often cocked their relatively long tails over their backs as they foraged, a behavior we also noted with Sharp-tailed Sparrows. (In most cases, however, Le Conte's and the other *Ammodramus* sparrows will be seen flying straight away and diving into tall grass.) The only calls known from wintering or migrant *Ammodra-*

mus sparrows are a very high, thin *sisst* and a soft *chip* from Le Conte's Sparrow and, rarely, a sharp *tsip-tsip* from Grasshopper. Vocalizations are so infrequent that they are probably of little use in identification; in any case, calls should be listened for and carefully noted if a migrant juvenile *Ammodramus* sparrow is encountered. As with any field identification challenge, we recommend that observers combine these clues with the less subjective plumage criteria before concluding the identification process.

Most of the regional references (e.g., Lowery 1974, Mengel 1965, Sutton 1967, Walkinshaw 1968, Murray 1969, Oberholser 1974, Imhof 1976, Dinsmore et al. 1984), and recent regional reports in *American Birds* indicate that Le Conte's Sparrows are not typically observed on migration before mid-to-late September or on the wintering grounds before mid-October, although Dinsmore et al. (1984) listed records in Iowa for 5 and 14 September, Sutton (1967) mentioned an early sight record from Oklahoma on 8 September, and Imhof (1976) re-

Figure 6. This Le Conte's Sparrow in first basic plumage had an incompletely pneumatized skull, indicating that it was in first basic plumage. Note the lack of any remaining juvenal plumage in this individual in contrast to the lack of first-basic plumage in the juveniles of Figures 1 to 5. Photographed 11 October 1986 on Southeast Farallon Island.

corded one from the Tennessee Valley, Alabama, on 23 September; plumage information was not given for any of these records. The CAS and MVZ specimen evidence, along with the records from SEFI (where eastern vagrants typically arrive two to three weeks later than at similar latitudes within normal migratory routes), suggest that juveniles are being overlooked on migration in early to mid-September and on the wintering grounds from late September to mid-October. As a "skulker," Le Conte's Sparrow is notorious for its ability to escape detection; this fact may make identification of juveniles especially difficult because of their resemblance to other *Ammodramus* sparrows. We hope that this article will encourage further observations and documentation of juvenal-plumaged Le Conte's and other *Ammodramus* sparrows south of the breeding grounds.

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FIGURE 7. JUVENILE LE CONTE'S AND THE OTHER JUVENILE AMMODRAMUS SPARROWS

a. *Le Conte's Sparrow* in juvenal plumage. Many individuals migrate in this plumage, with records as late as 22 October. Note the prominently buffy nape-collar with subdued grayish streaking, prominent buffy median-stripe and supercilium, short triangular (anchor-shaped) eyeline, small gray auricular patch, lack of malar streaks, fine streaking across the breast, and boldly streaked pattern to the upperparts.

b. *Sharp-tailed Sparrow* in juvenal plumage. Birds in this plumage should be found only on the breeding grounds, which, in the inland races (*Ammodramus caudacuta nelsoni* and *A. c. altera*), overlap in both range and habitat with those of *Le Conte's Sparrow*. In comparison to *Le Conte's*, note the more subdued median stripe, duller nape without streaks, less contrasting upperparts, thicker eyeline, and larger and browner auricular patch. Beware of hybrids between these two species (Murray 1968). See Dickerman (1962) for more information on the separation of juvenile *Sharp-tailed* and *Le Conte's* sparrows on the breeding grounds.

c. *Grasshopper Sparrow* in juvenal plumage (see also Figure 8). Juveniles can migrate in this plumage, although reports of juveniles south of the breeding grounds are rare. The median stripe, hind collar, and upperparts are generally much more subdued than in *Le Conte's Sparrows*, with less buffy tones. Note also the scaled rather than streaked appearance to the upperparts and the less distinct facial features, without a prominent supercilium or eyeline and with a large blotchy patch at the rear of the auriculars. Adults are generally buffier in coloration and thus might resemble juvenile *Le Conte's Sparrows* more closely, but the upperparts and face pattern are the same as in juvenile *Grasshopper*, and the breast is unstreaked.

d. *Henslow's Sparrow* in juvenal plumage. This plumage is very similar to basic plumage. Birds in this plumage are found from June to August on the breeding grounds and therefore should not overlap in timing and range with juvenile *Le Conte's Sparrows*. Both juvenal and basic-plumaged *Henslow's Sparrows* show olive rather than buffy tones to the plumage. Note the diagnostic face pattern; birds in first basic dress also have distinct malar streaks which juvenile *Le Conte's* lack.

e. *Baird's Sparrow* in juvenal plumage (see also Figure 9). Again, note that the median stripe, hind collar, and upperparts are poorly defined in relation to those of *Le Conte's Sparrow*. An eyeline is lacking in juvenal *Baird's*, but note the distinct malar streaks and the characteristics of the auricular patch, with a well-defined lower edge and prominent spots at the rear corners. As with *Grasshopper Sparrow*, the upperparts are scaled in appearance rather than boldly streaked as in juvenile *Le Conte's*. Many but not all juvenile *Baird's Sparrows* migrate in this plumage.

Seaside Sparrow (not illustrated). Juveniles occur only on the breeding grounds from June to August and therefore should not overlap in timing and range with juvenile *Le Conte's Sparrows*. They are larger overall, larger-billed, and darker above, and thus do not resemble juvenile *Le Conte's Sparrows*.



DAVID SIBLEY



PETER PYLE

Figure 8. Migrant Grasshopper Sparrow in juvenal plumage, photographed 16 August 1987 on Southeast Farallon Island. In comparison to juvenile Le Conte's Sparrows, note the paler and less buffy tones overall, a scaled appearance to the back, proportionally shorter tail, and a larger head and bill. More information is needed on the occurrence and timing of juvenal-plumaged Grasshopper Sparrows on migration.



HERBERT CLARKE

Figure 9. The warmer brown scapulars near the shoulder on this Baird's Sparrow in juvenal plumage may indicate that the molt into first basic has begun. A juvenile in very similar but fresher (buffier) plumage and lacking the warmer brown scapulars was observed on Southeast Farallon Island on 7 September 1991. Another Baird's Sparrow in first basic plumage was collected on the island on 28 September 1969 (CAS 68476), indicating that some birds complete the first prebasic molt before migrating. Note the scaled back and the two isolated spots at the back of the auriculars. Adult Baird's Sparrows have streaked upperparts and, hence, may more closely resemble juvenile Le Conte's, but the well-defined auriculars and prominent malar streaks are retained. Photographed 6 October 1981 at Point Loma, San Diego.

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