

by Paul Hess

Chestnut-collared Longspur Habitat

Say it loud, so loud, ul – ee – ee. Thus did R. D. Harris render the Chestnut-collared Longspur's aerial display song 60 years ago in Manitoba (*Wilson Bulletin* 56:105–115). Each of us might hear it differently, but for everyone, the melody is a beloved earmark of the mixed-grass prairie. Unfortunately, at many places on the prairie today, the notes are mere whispers of their former abundance; at some places,



Chestnut-collared Longspur breeding success, measured as the average number of young fledged per nest, is significantly greater in native prairie than in planted monocultures. Nest-building adults do not seem to distinguish between the two habitat types, however, so that the planted monocultures are a population sink for the species. *Pawnee National Grassland, Colorado; April 2005.* © Bill Schmoker.

they are no longer heard at all. The North American Breeding Bird Survey has documented a severe decline in the Chestnut-collared Longspur throughout its range in the United States and Canada. Partners in Flight lists it as a “species of continental importance”, deserving management action to sustain its population. Reasons for the decline are problems faced by virtually all grassland species: loss, fragmentation, and degradation of habitat.

Degradation was the focus when John D. Lloyd and Thomas E. Martin studied Chestnut-collared Longspur nesting success in 2001 and 2002 at Medicine Lake National Wildlife Refuge in Montana. They compared success rates of 167 nests in native mixed-grass prairie and 134 nests in monocultures of crested wheatgrass (*Agropyron cristatum*), an exotic Asian plant. An average of 1.6 young

fledged per nest in the native habitat, but only 1.0 per nest in the wheatgrass, Lloyd and Martin reported in 2005 (*Condor* 107:363–374). These significantly different success rates resulted primarily from greater nest predation in the wheatgrass. The odds of a nest surviving a given day were 17 percent higher in the native-prairie patches than in the wheatgrass plots. Nestlings in the native habitat had two advantages: They grew faster, and they weighed an average of 9 percent more at fledging than those in the exotic habitat. Slower growth would extend the nestlings' period of vulnerability to nest predators, and smaller size has been linked in other songbird studies to a lower probability of survival, the authors said.

Unfortunately, the longspurs showed no preference for nesting in native mixed-grass habitat. They were almost as likely to choose the less-productive wheatgrass. Densities of nesting pairs in the study plots did not differ statistically at 1.8 pairs per hectare in the native habitat and 1.2 pairs in the exotic grass—a self-defeating lack of discrimination.

Lloyd and Martin pointed out that crested wheatgrass continues to be planted on lands in the Conservation Reserve Program. This federally subsidized program is meant primarily to prevent soil erosion by helping farmers and ranchers to cover marginal lands with perennial vegetation, but it is also viewed as an opportunity to improve habitat for grassland wildlife. The type of vegetation is clearly crucial. A report by the U. S. Geological Survey's Northern Prairie Wildlife Research Center in 2002 <www.npwrc.usgs.gov>

pointed in extensive detail to the importance of native grasses in Chestnut-collared Longspur habitat. The North American Landbird Conservation Plan published by Partners in Flight in 2004 <www.partnersinflight.org> recommended an increase in the use of native plants on conservation-reserve lands. The research by Lloyd and Martin adds further support. In effect, their results *say it loud*.

How Tropicbirds Behave at Sea

Few sights at sea are more sublime than those of a tropicbird in the sky. Less spectacularly, tropicbirds spend

considerable time resting on the water. In fact, during 16 years of research in the eastern Pacific Ocean, Larry B. Spear and David G. Ainley encountered tropicbirds on the water nearly as often as they saw them in flight. The birds rested more than twice as long each day than did four petrel and shearwater species that the authors had studied previously. Why the difference? Spear and Ainley suggested an answer in a two-part treatise on tropicbird ecology in 2005 (*Ibis* 147:353–366, 391–407). Tropicbirds may need more rest because their exclusive use of flapping flight and their relatively heavy bodies demand more energy than petrels' and shearwaters' wind-assisted and gliding aerial styles. When hoping to see any of the world's three tropicbird species—White-tailed, Red-billed, and Red-tailed—an observer is wise to watch both the sea and the sky.

That behavioral nugget is just a bit of the companion-papers' vast array of data and analysis involving tropicbirds' distribution, abundance, habitat use, and behavior at sea. Vast is an appropriate word as well for the time span and geographic scope of their study: 1,186 days of surveys on 26 cruises in spring and autumn from 1980 to 1995, covering more than 105,000 square kilometers in the tropical and subtropical Pacific. The effort enabled Spear and Ainley to provide maps predicting spring and autumn distribution of each species. The best places to seek Red-billed, Red-tailed, and White-tailed, respectively, are on or near the Galapagos, Hawaiian, and forested Polynesian islands when the birds are nesting there (L. B. Spear, personal communication).

A variation in behavior observed by the authors was a different response among the tropicbird species to flocks of seabirds feeding at concentrations of prey. The larger Red-billed and Red-tailed avoided flocks entirely, but many feeding White-tailed were seen in association with small, loose flocks of other pelagic birds, primarily terns. Again, why the difference? Spear and Ainley noted that, compared to the White-tailed, the two larger tropicbirds characteristically plunge from higher altitudes, are less maneuverable, and might face too much interference from a swirling flock of birds beneath them. In contrast, the smaller White-tailed typically plunges from lower altitudes, is more maneuverable, and perhaps is not hindered by small, loosely-distributed birds below. From a birding perspective, searching for flocks of feeding birds is probably not the most productive way to seek a Red-

tailed or Red-billed Tropicbird. A better strategy is to scan long distances across the surface for a white bird that is easily seen against the blue ocean (L. B. Spear, personal communication).

The authors found a remarkable species-specific association between tropicbirds and an oceanographic feature called thermocline depth—the point at which warm surface water meets cooler water below. The depth of this transition is evidently an important environmental factor for tropicbirds. They rely heavily, as do many seabirds, on schools of undersea predators that drive flying fish and other small “bait” to the surface, where the birds can capture them. Different thermoclinal habitats host different predatory fish and mammals, and each tropicbird species



A 2005 treatise by L. B. Spear and D. G. Ainley painstakingly documents behavioral and ecological differences among the world's three species of tropicbirds. For example, the three tropicbird species differ in the sorts of predatory fish with which they associate, with the **Red-tailed Tropicbird**, shown here, preferring the company of large tuna and dolphin fish. *Kauai, Hawaii; May 2004.* © E. J. Peiker.

was observed regularly with particular predators that chased different types of prey. For Red-tailed, the preferred predators were large tuna and dolphin fish (e.g., mahi mahi); for White-tailed, small yellowfin and skipjack tuna; for Red-billed, large cetaceans and small near-shore fish such as yellowtail jack and sierra mackerel. Spear and Ainley suggested that these predators' oceanographic associations with waters at various distances from islands suitable for nesting, along with the different sizes of prey they make available at the surface, are keys to understanding the three tropicbirds' distributions at sea. The distribution and abundance of Red-billed Tropicbirds off southern California have been of increasing interest to pelagic birders in recent years; for example, Walter Wehtje reported as many as 7–10 seen on multi-day trips far offshore from San Diego (*Birding*, January/February 2005, pp. 66–73).

A Junco's Assets: His Tail and Size

The white flash of a junco's tail brightens dark forests in the breeding season and backyard bird feeders on dreary winter days. It is a welcome treat for us and a valuable trait for the junco. Its importance to Dark-eyed Juncos has been clarified extensively in research spanning nearly three decades. The more white in a male's tail, the more likely he is to dominate other males, as reported by Martha Hatch Balph, David F. Balph, and H. Charles Romesburg in 1979



Overall body size and the amount of white in the tail are correlated traits in the **Dark-eyed Junco** (an adult of the Oregon subspecies-group feeds nestlings here). How come? The relationship may be due to a phenomenon known as correlational sexual selection, which simultaneously and interactively favors both traits. *Glacier National Park, Montana; June 1989.* © Tom Ulrich.

(*Auk* 96:78–93). Males with more white in that study of the *Junco hyemalis montanus* subspecies wintering in Utah were dominant in 72 percent of encounters with other males. There is a sexual advantage as well. The more white in a male's tail, the more attractive he is to females, according to Jennifer A. Hill, David A. Enstrom, Ellen D. Ketterson, Val Nolan Jr., and Charles Ziegenfus in 1997 (*Behavioral Ecology* 10:91–96). Females of the *J. h. carolinensis* subspecies studied in Virginia spent twice as much time with males whose tail-white had been experimentally increased. Females also gave three times as many pre-copulatory displays to white-enhanced males.

In both aggressive encounters and courtship displays, a male Dark-eyed Junco spreads his tail widely. The white outer rectrices evidently serve two purposes: to assert dominance over another male and to attract a female. What message might the amount of white send? Joel W. McGlothlin, Patricia G. Parker, Nolan, and Ketterson reported

a possible answer in 2005 (*Evolution* 59:658–671). Males with more tail-white tend to be relatively large birds, and Ketterson had shown in 1979 that a male's size is a strong determinant of his dominance (*Wilson Bulletin* 91:371–383). McGlothlin and his coauthors used DNA fingerprinting to generate a pedigree of hundreds of juncos captured from a *carolinensis* population in Virginia between 1989 and 1996. Using this pedigree, they showed that the association between body size (as quantified by wing length) and tail-white was due to common genetic inheritance. Thus, to a choosy female or a competitive male, the male's extent of tail-white may act as an “honest signal” of his quality—a reliable indicator of his body size, dominance, and perhaps his relative fitness for advancing his mate's genes to a new generation of offspring.

McGlothlin and his coauthors provided an evolutionary explanation for this pattern. They used the fingerprinting data along with capture records to estimate the fitness of thousands of juncos, measuring survival, mating success (the number of mates), and the number of offspring produced. When they compared these estimates of fitness to the birds' traits, the strongest pattern was that larger males with whiter tails had the highest mating success. Moreover, the authors showed that having a whiter tail is advantageous only for larger males. When two traits interact in this way to affect mating success, it is known as correlational sexual selection. The authors suggested that this type of selection arises because mating success depends on an interaction between female choice, favoring tail-white, and male-male competition, favoring both traits. Correlational selection may strengthen genetic correlations over time and may thus be responsible for the relationship between the two traits, as well as for the reliability of tail-white as a signal of quality. If so, then classic sexual selection is acting in this case on a combination of two characters. In juncos, it appears, tail-white + body size = more mates = more young. Darwin would love the equation.

Interestingly, male juncos' body size and tail-white vary concordantly not only within populations but also geographically among populations. White is more extensive in large taxa such as *aikeni* (“White-winged”) and *mearnsi* (“Pink-sided”) and more restricted in small taxa such as far-western members of the *oreganus* (“Oregon”) group. Might correlational sexual selection have a role in juncos' geographic variation? The authors did not explore this broad question, but they called for further studies of correlational selection “to allow us to evaluate its evolutionary importance”.

Checklist Change Cuts a Wagtail

Good science continually questions itself—a principle practiced fearlessly by the American Ornithologists' Union Committee on Classification and Nomenclature. A major new example appears in the 46th Supplement to the AOU *Check-list of North American Birds* published in July 2005 (*Auk* 122:1026–1031). Twenty-three years after it was classified by the AOU as a separate species, Black-backed Wagtail (*Motacilla lugens*) is “re-lumped” as a subspecies of White Wagtail (*M. alba*).

The background is a classic case of taxonomic flux. Traditionally, *lugens* had been treated as a subspecies of *alba*. The AOU split them in 1982 based on studies by Russian workers who had reported only limited hybridization between the two taxa in areas where they overlap in Russia. Doubters have been numerous. Most European authorities did not agree with the split; for example, Per Alström and Krister Mild argued in their monograph *Pipits and Wagtails* (Princeton University Press, 2003) that the amount of hybridization had been underestimated and that *lugens* should be classified as a subspecies of *alba*. Extensive genetic analyses of relationships among 10 recognized wagtail species led Gary Voelker to suggest in 2002 that *lugens* might not be a valid species (*Condor* 104:725–739). Since those studies led the AOU to reunite the two taxa, further genetic support for the merger has been published. Alexandra Pavlova and six coauthors asserted in 2005 that mitochondrial DNA sequence data from 232 specimens of various *alba* populations pointed toward subspecies status for *lugens* (*Journal of Avian Biology* 36:322–336).

By stipulation, AOU taxonomy and nomenclature are adopted for the ABA *Checklist*. Therefore, birders with both White Wagtail and Black-backed Wagtail on their ABA lists—most likely from occurrences in Alaska—will lose a species.

The following are among other changes announced in

the 46th Supplement. The entire supplement and the updated AOU *Check-list* are available online <www.aou.org/checklist/index.php3>.

ABA Area Birds

Mangrove Swallow (*Tachycineta albilinea*) was already an AOU *Check-list* species based on its range in Mexico and Central America, but the Supplement calls attention to the first documented United States record, a bird in Florida in November 2002, which has resulted in the addition of this species to the ABA list [see the ABA *Checklist Report*, pp. 22–25].

Crested Myna (*Acridotheres cristatellus*) is moved from the main AOU list to the appendix as an exotic species whose population in southwestern British Columbia was extirpated in February 2003. The ABA Checklist Committee, following its own rule for introduced and extirpated species, quickly removed it from the main ABA list in 2003 (*Birding* 36:38–41).

Outside the ABA Area

Western Marsh Harrier (*Circus aeruginosus*) is added to the *Check-list* based on a bird photographed on Guadeloupe in the West Indies in 2003. The AOU committee commented that a report in Virginia in 1998 “is still considered unsatisfactory”.

Socorro Mockingbird, endemic to Socorro Island off the west coast of Baja California, is moved from its monotypic genus *Mimodes* and is now classified as *Mimus graysoni*. Mitochondrial DNA sequence data show that this species is phylogenetically embedded within *Mimus* and closely related to Northern Mockingbird and Tropical Mockingbird.

Awaiting Action

As usual, the committee considered various taxonomic changes but took no action because information was insufficient or conflicting. Among these were several proposals concerning generic and specific limits and relationships among the Parulidae (wood warblers), for which further genetic data are needed.



The identification of black-and-white wagtails—at the official “species” level, anyhow—has just gotten a lot easier for North American birders. That’s because the **Black-backed Wagtail** (formerly *Motacilla lugens*) is now treated by the AOU as a race of the White Wagtail (*M. alba*). On this presumptive adult female *lugens*, note the white chin, a characteristic of this subspecies. Nome, Alaska; June 1997. © Doug Wechsler / VIREO.