

by Paul Hess

Eskimo Curlew Revisited

Photographs of a supposed Eskimo Curlew in The Netherlands in July 2008 aroused no headline-making hoopla of the Ivory-billed Woodpecker sort. The report, posted on the Frontiers of Field Identification e-mail list, created only a flurry of 15 replies that began to deflate the claim. Posted again in August 2008, the images attracted two dozen more responses. Without Eskimo Curlew field marks such as cinnamon wing linings, the bird was generally judged to be a Whimbrel. (See the online postings <listserv.arizona.edu/archives/birdwg01.html> for July Week 1 and August Week 4.)

A question broader than that particular bird's identity is whether any Eskimo Curlew is alive to identify. Photographs of two at Galveston Island, Texas, in 1962 <texasbirds.org/tbrc/eskimo.html> and a specimen from Barbados shot by a hunter in 1963 represent the last physical evidence against extinction. More than 30 sight reports have come from the ABA Area since then—at least eight in Texas, eight in the Northwest Territories, five in Ontario, three in Massachusetts, and one each in Alaska, Labrador, Manitoba, Nebraska, New Jersey, North Carolina, Nova Scotia, and Saskatchewan—as well as several on the wintering grounds in Argentina and one in Guatemala.

In all but one case, one to six birds were seen. The exception was a group of 23 reported at Atkinson Island, Texas, on 7 May 1981, which prompted a remark by Robert Arbib, editor of *American Birds* (35:841): “Could it have been the entire world population of the species?”

Many of the sightings have never been submitted for expert evaluation. Others have been documented in varying degrees of detail. Lacking a photograph or a specimen, none has sufficed for a records committee's acceptance.

The absence of proof thwarts conservation. U.S. and Canadian governments classify the Eskimo Curlew as Endangered, and the Western Hemisphere Shorebird Reserve Network considers it a species of “high conservation concern.” The U.S. and Canadian Shorebird Conservation Plans rate it “highly imperiled.” BirdLife International ranks it “critically endangered (possibly extinct)” but adds, “It cannot yet be presumed to be extinct until all potential breeding areas have been surveyed and the series of unconfirmed reports ceases.”

Potential breeding areas span hundreds of thousands of

square miles in northwestern Canada and possibly northern Alaska. Suitable wintering grounds on the Argentine Pampas are similarly vast. Prime traditional stopover sites are not birded daily. The chance of stumbling upon a bird is minimal. A multinational advisory group developed an informal conservation strategy in 1991 (*American Birds* 45:237–239), but the first step—finding a population to conserve—has been unsuccessful.

Questioned for this article, government and nonprofit agencies in the U.S. and Canada say that no recovery plan is possible until the species is shown to survive and plan-



Reports of **Eskimo Curlew** continue to surface since the last physical documentation of the species nearly half a century ago. However, no subsequent report has been accepted as sufficient evidence that the species still exists. *Galveston Island, Texas; March 1962. Photograph by Don Bleitz, courtesy of © Western Foundation of Vertebrate Zoology.*

ners know where recovery should be targeted. Survival, as defined by the U.S. Endangered Species Act, is “the condition in which a species continues to exist into the future while retaining the potential for recovery.” Meanwhile, a finding of extinction under the Act requires formal review, along with “a sufficient period of time...before delisting to indicate clearly that the species is extinct.” Thus, the Eskimo Curlew languishes in a legal limbo.

“Like the persistence of memory, hopeful sightings continue,” Walter Ellison and Nancy Martin commented when discussing a 2002 report in Massachusetts (*North American Birds* 57:29). The report was on Martha's Vineyard, a scene of market-hunters' slaughter long ago, and the occurrence prompted an eloquent speculation by the authors: “Perhaps it was a ghost haunting the century-old killing grounds.”

Finding Worthen's Sparrow

Charles H. Marsh left no notes about the “Field Sparrow” he collected near Silver City, New Mexico, on 16 June 1884—nothing about the location, habitat, numbers present, or evidence of breeding. That is unfortunate because Robert Ridgway described the specimen as a new species, *Spizella wortheni*, and it remains the only Worthen's Sparrow ever documented convincingly outside of Mexico.

Was it a vagrant from the south or a resident in the northern Chihuahuan Desert? In 1993 the ABA Checklist Committee added Worthen's as a Code 6 species (“cannot be found”), while noting, “Whether there was once an established New Mexican population is a matter of conjecture” (*Birding*, October 1994, pp. 320–326). The seventh edition of the ABA Checklist, published in late 2008, speculates that a small population was extirpated by overgrazing of its shrubby grassland breeding habitat.

The Worthen's Sparrow's distribution has contracted even within its stronghold on the Mexican Plateau. Historical records compiled in 1993 by David C. Wege, Steve N. G. Howell, and Andrés M. Sada include the states of Chihuahua, Coahuila, Nuevo León, Puebla, San Luis Potosí, Tamaulipas, Veracruz, and Zacatecas (*Bird Conservation International* 3:211–220). Breeding has since been confirmed only where the habitat has escaped conversion to agriculture in southeastern Coahuila and adjacent western Nuevo León. Greg Lasley and Chuck Sexton discovered a breeding site in Nuevo León in 1994, and details are in a 1997 paper coauthored with Robert A. Behrstock, Ted L. Eubanks, and John P. Gee (*Cotinga* 8:27–33). Lasley recalls the site as “not very attractive to look at...not the sort of area where your average birdwatcher would stop to look for anything.”

In 2008, Laura Scott-Morales and three colleagues described diverse habitats at three new locations where they found Worthen's Sparrows during the 2002–2005 breeding seasons: Los Angeles in Coahuila, plus La Soledad and El Guerro in Nuevo León (*Southwestern Naturalist* 53:91–95). They saw the species additionally at a previously known location near Tanque de Emergencia in Coahuila. All of those sites are within colonies of the endangered Mexican prairie dog (*Cynomys mexicanus*).

Also in 2008, Julio C. Canales-Delgado and three coauthors discussed winter flocks in Coahuila (*Wilson Journal of Ornithology* 120:569–574). They found monospecific groups of as many as 30 Worthen's and mixed flocks in-



Worthen's Sparrow is uniquely mysterious among sparrows on the ABA Checklist. The only ABA Area record is a specimen collected in 1884 in New Mexico. Did Worthen's breed there, or was the bird an accidental vagrant from Mexico? No one knows. *Las Esperanzas, Nuevo León; June 1994.* © Greg Lasley.

cluding Horned Lark, Western Bluebird, Vesper Sparrow, and Black-throated Sparrow. Commenting to *Birding*, Lasley, Michael Retter, and Michael Carmody add Yellow-rumped (“Audubon's”) Warbler and Rufous-crowned, Chipping, Clay-colored, Savannah, and Grasshopper Sparrows to the list. Retter and Carmody have led birding tours to Worthen's wintering grounds.

BirdLife International classifies Worthen's Sparrow as endangered, estimating the total population at 100–120 individuals <www.birdlife.org/datazone/species/index.html>. That is conservative. Carmody has seen as many as 150 and Retter has seen more than 100 in single flocks. In any case, the species is rare and extremely restricted in distribution. Alicia Craig of the American Bird Conservancy considers Worthen's Sparrow a symbol of the need to preserve natural habitats on the Mexican Plateau (*Birding*, May/June 2006, pp. 20–22).

Birders seeking Worthen's in the U.S. should carry a camera. The Texas Bird Records Committee rejected sight reports in Hidalgo County in 1987 and Starr County in 1990 because “its similarity to ‘western’ Field Sparrow makes sight records extremely difficult to judge” <texasbirds.org/tbrc/AR1991.htm>. Unlike the eastern Field Sparrow, the western subspecies (*arenacea*) and Worthen's have a gray face with reduced rufous and no postocular stripe.

Interestingly, Ridgway did not name the sparrow for its collector but for Charles Worthen, a naturalist and taxidermist who procured the bird from Marsh and forwarded it to Ridgway—perhaps suspecting that it was more special than a mere “Field Sparrow.”

Evening Grosbeak Decline

Feeder watchers across much of North America enjoyed an almost-annual spectacle of black, white, olive, and yellow between the late 1960s and the late 1980s. Those were the Evening Grosbeak's boom years, and many of us thought the show might go on forever. The past two decades have proven us wrong. Evening Grosbeak numbers have declined severely range-wide, and the range has contracted significantly in most regions.

David N. Bonter and Michael G. Harvey quantify the severity in a survey of data obtained from Project Feeder-Watch, the popular citizen-science effort conducted by the Cornell Lab of Ornithology and Bird Studies Canada. The authors had an immense database to work with: 58,773 of 1,169,935 checklists submitted from November 1988 to April 2006 included Evening Grosbeaks.

Results announced by Bonter and Harvey in 2008 are dramatic (*Condor* 110:376–381). Comparing the periods 1989–1994 and 2001–2006, two telltale statistics emerge: a 27% decrease in Evening Grosbeaks' average flock size at sites where the species was reported and a 50% decrease in the proportion of sites reporting the species. The geography of the latter decrease reflects a widespread range contraction in the Rocky Mountain, Great Lakes, Atlantic Canada, and Appalachian regions.

Until the mid-1800s, Evening Grosbeaks were associated primarily with western mountains and were considered rare east of the Mississippi River. In the 1850s, the species began one of avian history's great range advances across North America, an expansion eastward through boreal forests that reached the Atlantic provinces and northeastern states by the 1930s, perhaps spurred by increasing seed and fruit resources.

A Christmas Bird Count analysis by Nicholas C. Bolgiano in 2004 (*American Birds* 58:26–33) shows that overall numbers remained low in the East until the mid-1940s, when a gradual increase began in the proportion of counts reporting Evening Grosbeaks. That rise culminated in a period of sustained high values from 1968 until 1985 in the Great Lakes, mid-Atlantic, and southern New England states, and until 1991 in eastern Canada. Then numbers began a plunge that persists not only in the East but throughout the range.

What factors might be causing the decline? Studies in Saskatchewan and Oregon associate high Evening Grosbeak abundance with mature, diverse boreal forests—habitats that are fast disappearing due to clear-cut logging practices. Oil and gas development, mining, agriculture, and hydropower development are diminishing habitat further. Diseases and parasites could also be involved; for example, West Nile Virus, *Mycoplasma*, salmonellosis, and a parasitic mite have been found in Evening Grosbeaks.

Bolgiano's study points to another factor in the East, where the highest Evening Grosbeak numbers during the 1970s and 1980s tracked a widespread spruce budworm outbreak that provided extraordinarily abundant food. The steep downtrend began shortly after the outbreak ended, evidently because dwindling numbers of caterpillars could no longer support a large grosbeak population.



In many portions of its breeding and wintering ranges, the **Evening Grosbeak** has recently declined or disappeared. Reports submitted to Project FeederWatch are documenting both a severe population decrease and a substantial range contraction. *Rio Grande, New Jersey; September 1993; © Kevin T. Karlson.*

Bonter and Harvey warn of a potential new danger. Climate-change models predict a retreat of balsam fir northward into Canada, which could drive Evening Grosbeaks toward extirpation in the northeastern states. Whatever mechanisms are involved, data from vigilant feeder watchers will continue to be an important tool for determining the factors responsible for the Evening Grosbeak's decline.

Song Sparrow Varieties

Song Sparrows are so morphologically diverse that as many as 52 subspecies have been named since 1850, almost half of them during the micro-splitting era of 1880–1910. Many are no longer considered valid; 24 to 29 subspecies are currently recognized north of Mexico based on plumage, measurements, and geographic distribution.

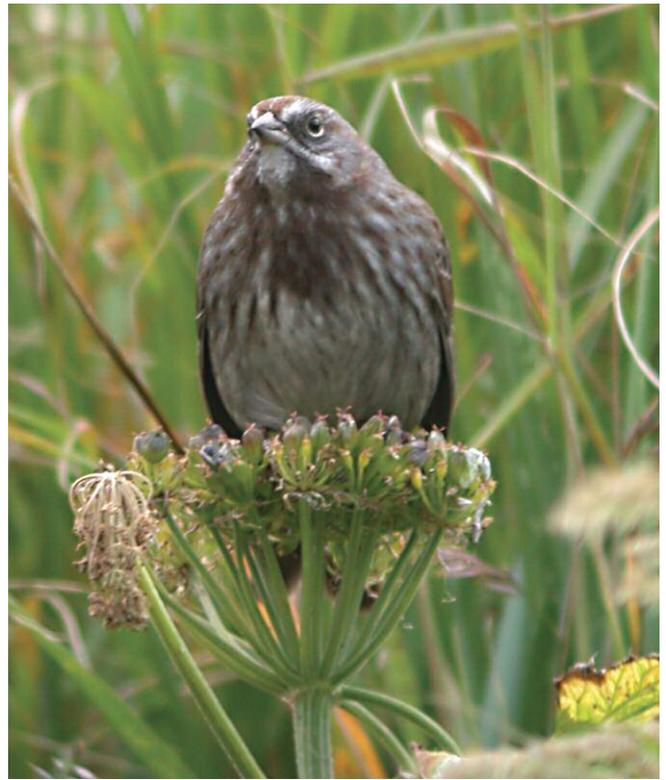
Extremes are especially conspicuous among far-western populations. Ira N. Gabrielson and Frederick C. Lincoln remarked in 1951 (*Condor* 53:250–255), “[It] is probably true that if all the resident Song Sparrows between Kodiak Island and the Imperial Valley in California were suddenly destroyed, there are few observers who would believe that there was any close relationship between the large, dusky Aleutian birds and the small pale form about the Salton Sea.”

In fact, many such relationships have been questioned during two decades of genetic research. At least eight investigations shed new light (or new confusion) on Song Sparrow taxonomy. The studies differ in particular results but share a general conclusion: Morphological distinctions do not always correspond to genetic patterns that reflect evolutionary history. Four studies, the most recent in 2008, are exemplary.

Matthew P. Hare and Gerald F. Shields focused on five morphologically distinct Alaskan subspecies in 1992 (*Auk* 109:126–132). Restriction-fragment variation in mitochondrial DNA (mtDNA) shows slight geographic differences among some populations, indicating limited gene flow between mainland and island birds. But no strong genetic divergence separates even the most morphologically distinct subspecies.

Robert M. Zink and Donna L. Dittmann reported similar results in 1993 after analyzing mtDNA restriction fragments in much larger samples representing 19 subspecies across the continental range (*Evolution* 47:717–729). No geographic structure in mtDNA differentiation corresponds to size and plumage variations among 29 populations as distant from one another as the Aleutian Islands, Newfoundland, and Mexico. Zink and Dittmann concluded that the subspecies are not identifiable by mtDNA analysis.

Yvonne Chan and Peter Arcese evaluated microsatellite variations in nuclear DNA among five San Francisco Bay area subspecies that are geographically close but ecologically diverse. They reported in 2002 (*Auk* 119:641–657) that low levels of genetic divergence “challenge the current subspecies designations.” Nevertheless, slight genetic differences among some subspecies were found to be statistically significant, and Chan and Arcese recommended that these



The **Song Sparrow** is extremely variable throughout its vast range, and taxonomists have named many of its populations as subspecies. Recent studies show that the described morphological differences do not always reflect genetic differentiation. Adak, Alaska; August 2003. © Christopher L. Wood.

retain their federal and state status as taxa of special concern.

In 2008 Christin Pruett and six coauthors assessed microsatellite variation among 23 populations representing 13 far-western subspecies from Attu in the Aleutian Islands south to the Salton Sea in California (*Condor* 110:359–364). Genetic variation was “strongly” or “somewhat” concordant with 10 of the subspecies, but the other three were not genetically diagnosable. In contrast, “genetically unique” populations not recognized as subspecies were identified on Attu Island in the Aleutians and on Mandarte Island in British Columbia.

Why would morphological and genetic differences not always match up? One reason the authors suggest is that genetic divergence occurs relatively slowly, whereas traits such as size and plumage may evolve rapidly in response to local ecological conditions. All four of those studies demonstrate that distinct populations are not static biological entities; rather, they continually differentiate at various rates and in diverse evolutionary directions. Charles Darwin would be pleased by what the Song Sparrow researchers are discovering.