

The Changing Seasons: Winter that Wasn't

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From north to south, from coast to coast, the regional reports tell a remarkably consistent story about the winter of 2005-2006. In the Atlantic Provinces, Brian Dalzell writes that "abnormal" is the new normal weather, it would seem, and this winter was the warmest on record." In New England, Pam Hunt notes that "winter 2005-2006 ranked in the top 15% warmest winters in 111 years of record keeping." And writing for Southern California, Guy McCaskie and Kimball Garrett again supply the title for this column: "With temperatures warmer than average and precipitation less than expected during the winter period, this seemed like the winter that wasn't in Southern California."

Overall, the meteorological winter (which includes only the months of December, January, and February) was the fifth warmest on record in the contiguous United States, according to scientists at NOAA's National Climatic Data Center in Asheville, North Carolina (Figure 1), who report that the average winter temperature in the Lower 48 States was 36.3° F, some 1.2° F above the 1895-2005 mean. In Canada, however, it was the warmest winter on record since standardized record-keeping began in 1948, according to Environment Canada, which found that the winter was overall 7° F above the average, beating out winter 1986-1987, which was a mere 5.4° F above the average (Figure 2).

These characterizations represent broad averages, and there was plenty of real "winter" early on, particularly in early to middle December in the northeastern quarter of the continent. The first half of December was bitterly cold in the Midwest, with -19° F in Cedar Rapids, Iowa on 7 December 2005 a remarkable low; temperatures in Illinois and Indiana averaged 11° F below normal for the first three-fourths of December, all the product of strong upper-level air flows that brought polar and arctic air southward. But by the third week of the month, temperatures became milder, ice melted quickly, and January was the warmest or second warmest on record in Iowa and surrounding states; Chicago saw temperatures that averaged almost 14° F above average between late



It was a memorable winter for Snowy Owls across southern Canada, the northern tiers of the United States, and even as far south as Virginia, Oklahoma, and California. Wandering southward to Osage County, Oklahoma, this Snowy became a popular local attraction 18 through (here) 27 December 2005. Photograph by Warren Williams.

December and late February. Likewise, across the Great Plains and into the Rockies, January temperatures broke records in North Dakota, Montana, and nearly in Idaho, which had its fourth-warmest January in 112 years of record keeping. Alaska had "nearly a carbon copy of the previous [record-warm] winter," according to Thede Tobish. Across Canada, very mild to moderate temperatures persisted through the same period: the Northwest Territories, Alberta, and Saskatchewan all experienced their warmest winter on record, with temperatures almost 11° F above average in each; the Atlantic Provinces' temperatures averaged almost 9° F higher than normal; and winter temperatures in Québec were at least 3.6° F above normal. It was not only the warmest winter so far recorded in Canada; it was the most overheated season of any season on record.

More typical winter weather returned in the latter part of February to northern reaches of the continent—from New York to the Midwest to British Columbia. The pattern of a warm midwinter bracketed by much cooler spells in the early and late parts of the season is surprisingly constant across most of the continent; only the Pacific Northwest recorded normal temperatures in midwinter.

Precipitation levels varied from region to region over the winter, notably in the interior West, but only a few areas received a bounty, mostly the northern Pacific coast

(from British Columbia through northern California; Seattle recorded its third rainiest January) and northern Rocky Mountains. Canada overall had precipitation just 0.4% above normal, making it the twenty-fourth wettest season of 59 on record. Very dry conditions plagued most parts of the East, particularly the mid-Atlantic region, and exceptional drought struck from southern Texas through eastern Oklahoma, western Arkansas, and southwestern Missouri. Tulsa, Oklahoma had its driest winter since record-keeping began in 1888: just 4 cm of precipitation was detected during the three-month period. Snow cover was

well below average from Alberta to the Western Great Lakes to New Hampshire's White Mountains to Prince Edward Island, where "great clouds of red dust swirled over the normally snow-covered potato fields," according to Dalzell. Southern Yukon had bountiful snowfall in late November but lost it in an early December melt and a rather dry winter otherwise—a serious problem for bird species that rely on snow for cover and water. In eastern Montana, snow amounts were normal or better, but the above-average temperatures meant that snowpack was lost to melt. A similar situation was seen in the northern mountains of Colorado, Wyoming, Utah, and Nevada, but the southern reaches of those states were contrastingly dry, and severe drought returned to New Mexico and Arizona (attributed to La Niña conditions), where snowpack was nearly nil: Flagstaff had just 4 cm of snow, compared to a normal total of 184 cm. Phoenix had a record 143 consecutive days without rain. In New Mexico, it was the driest winter ever recorded (Figure 3). The dry conditions contributed to wildfire activity that burned over one million acres since the first of November, according to data from the National Interagency Fire Center in Boise, Idaho. Most wildfire activity has been in the southern Great Plains, particularly Oklahoma and northeastern Texas, and in Florida.

In stark contrast to the dry central,

southwestern, and eastern reaches of the continent, the Northwest and parts of the West were hit by a series of powerful Pacific storms in December and January, making Washington, Oregon, Idaho, and Nevada wetter than average for the season (Figure 3). Several significant snow storms brought moisture to the Northeast, including one 11-12 February that struck New Jersey, New York, and Connecticut with more than 52 cm of snow in many areas—making it a Category 3 (“major”) snow storm according to the new Northeast Snowfall Impact Scale.

Some meteorologists noted that the season's dominant weather patterns could be linked to conditions in the western Pacific Ocean, which had abundant thunderstorms in tropical areas in the three-month period, apparently connected with a northward shift in the East Asian Jet Stream. This jet stream, which does not normally extend much past the International Dateline, reached well into western North America through much of the season, bringing almost continual low-pressure systems into the Pacific Northwest and, overall, warmer Pacific air throughout the continent. This pattern took hold roughly at the onset of astronomical winter (that is, 21 December) and was dominant well into February. Another consequence of this pattern was heavy precipitation in Hawai'i, which made birding difficult or impossible in some areas because of flooding.

Warm weather, winter extralimitals

Despite the doses of cold weather early and late in the season, signs of spring came in January and February across large areas east of the Rockies: frog choruses tuned up from the Carolinas to Nova Scotia; spring harbingers such as ground-squirrels, salamanders, and butterflies made very early appearances from Alberta to Pennsylvania; a woodcock displayed through January in Berrien County, Michigan; and typical March migrants, such as vultures, gulls, geese, Sandhill Cranes, and winter thrushes, made early northward pushes across a broad front. And despite the cold snaps, many birds we call “half-hardies” or “lingers” made it through the season, es-

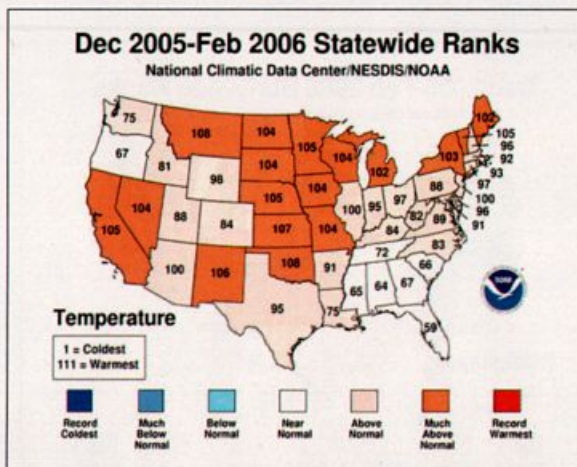


Figure 1. The Lower 48 States experienced, as a whole, their fifth warmest winter on record since 1895; only the Southeast and Pacific Northwest had winters nearer the average. The numbers indicate the season's coldness rank (out of 111 winters) for each state. Graphic courtesy of National Climatic Data Center, Asheville, North Carolina.

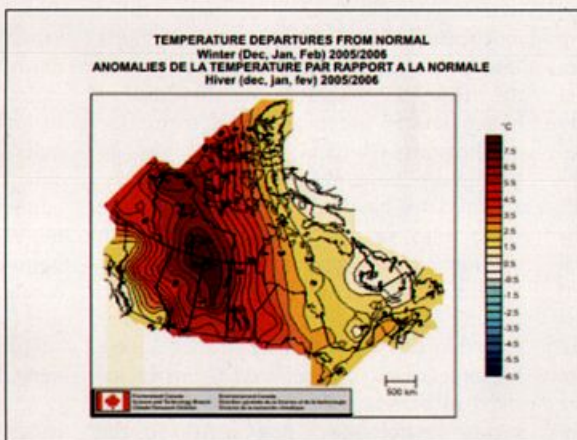


Figure 2. The winter of 2005-2006 was the warmest winter Canada has experienced since nationwide records began in 1948, 7° F above normal, based on preliminary data. With the exception of the springs of 2002 and 2004, seasonal temperatures in Canada have remained above normal for more than eight years, according to Environment Canada. Graphic courtesy of © Environment Canada.

pecially mimids, thrushes, phoebes, and warblers.

As Dalzell and Hunt suggest, we have had to adjust our expectations of winter weather, which has shown an overall tendency to follow the warming of climate around the northern hemisphere. Simultaneously, expectations about our local winter avifauna now encompass, almost invariably, more species than in the past. “From Sora to Pacific Golden-Plover to Williamson’s Sapsucker to Western Tanager,” write Steve Mlodinow, David Irons, and Bill Tweit, “species considered megararities during the winter season a decade ago are now almost greeted with yawns.” In Alaska, Tobish echoes that “many birds

previously considered rare and/or irregular a decade ago” are now annual visitors. In some regions, long-term observers of both wintering birds and winter meteorological conditions note strong correlations between warmer winters and a changing avifauna, an observation advanced in decades past (e.g., Able 1980) but also often questioned by writers of this column. “Each year, it seems as if the winter window narrows in the Region, even disappears in the southern portions of the Region,” write Joe Grzybowski and Ross Silcock; “Nebraska’s winter recalls Oklahoma’s of 25 years ago, and Oklahoma’s is now more like that of northern Texas.” They continue: “Bird distribution appears to be adjusting to the gradually warmer winters. Waterfowl stay farther north. Once crowding Oklahoma reservoirs by the thousands, few Common Mergansers now make it as far south as Oklahoma.”

Ornithologists working with models of global climate change have predicted shifts in the ranges of many bird species (e.g., Price and Root 2000), although most studies concentrate on breeding range rather than wintering range, and some focus on southern species wintering increasingly farther north, rather than northern species withdrawing northward. Over 10 years ago, Terry Root and Jason Weckstein (1994, 1996; see <<http://biology.usgs.gov/s+t/noframe/m8003.htm>>) looked at winter distribution of 58 bird species as documented by Christmas Bird Count (C.B.C.) data. They found that only four species—Northern Pintail, Common Merganser, Pied-billed Grebe, and Brown-headed Cowbird—showed large-scale evidence of range contraction or retraction. However, for the purposes of their study, the species had to disappear from an entire state to be placed into this category, so the gauge is rather crude, and it is probably the case that a more nuanced study would find more species of northerly distribution that show such northward withdrawal. Ivan Valiela and Jennifer Bowen (2003) looked at similar C.B.C. data but on a smaller scale, solely from Cape Cod, Massachusetts, and found that across all habitats (aquatic, edge, grassland, forest), the recorded number of bird species of northern affinity declined significantly after 1970, whereas the

number of bird species of southern affinity increased markedly: specifically the ratio of southern/northern species rises from 2.5 in 1970 to 5 in 2000. "This is consistent," they write, "with the notion that as the world warms, we will find a poleward shift of species' ranges." We should never be surprised that bird populations change dynamically (Floyd 2005); but if we are diligent in collecting and tending our observations of birds whose distributions appear to be changing quite rapidly, we might allow ourselves some freedom to think about the implications of our observations.

To hunt for the effects of climate change in a season's bird sightings may seem imprudent, or overeager, but we should recall that birders were among the first to suspect the severity of the warming climate. Writing this column three decades ago, P. William Smith (1976) noticed: "It is interesting that almost all range changes noted in the regional reports were *northward* expansions." Our observations may often lack a scientific framework, but that does not make them trivial; in fact, they often spur on scientific research. Since the 1980s, several studies (e.g., Root 1988) using recent C.B.C. data have shown correlation of expanding winter ranges in North American passerines with rising average minimum January temperatures. So many studies are currently underway or just being published that it will take some dedication to read through them and weigh their arguments (see Leukering and Gibbons 2005), but the message thus far seems to be consistent: "These results suggest that we might be in the midst of global-scale biological changes, changes that are not only relevant to those interested in species distributions but that could have major consequences for many other aspects, including fisheries, agriculture, and public health" (Valiela and Bowen 2003).

In addition to northward retractions and northward expansions of birds' winter ranges, changes in the phenology of short-distance migrants and facultative migrants received comment this season, as in the Eastern Highlands & Upper Ohio River Valley region, where Vic Fazio and Rick Wiltraut write of a "decade-long trend toward a compression of the migration for several non-passerines, notably Sandhill Crane and Turkey Vulture." And even the

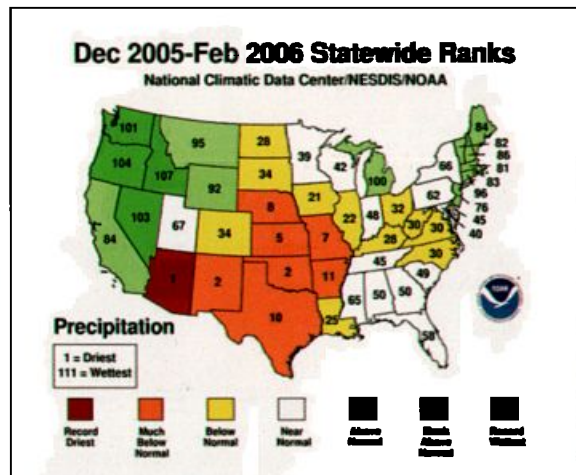


Figure 3. Ranks of dryness for the contiguous United States, winter 2005-2006. The numbers indicate the season's precipitation rank (out of 111 winters) in each state. *Graphic courtesy of National Climatic Data Center, Asheville, North Carolina.*

most casual of birders are now taking note: "Steeped in tradition and lore, the return of the 'Hinckley Buzzard' on the Ides of March was as much a sign of spring for northeastern Ohioans as the swallows of Capistrano; no more." In some areas, first-arrival dates have been recorded for quite some time, so that editors can say with confidence, for instance, that American Robins in 1999 arrived in higher-elevation nesting areas of Colorado 14 days earlier than they did in 1981 (Inouye et al. 2000). In some cases, species that formerly arrived in breeding areas in meteorological spring (March-May) now arrive in the winter season (see Mills 2005), but this journal's winter reports often focus on irruptions of northern species, so that the late-February arrivals of former March migrants, for instance, may go unmentioned in many cases.

One can argue that this winter marked a turning point, at least in the United States, for the public discussion of continental weather patterns in light of scientific evidence for climate change: for the first time, the subject was openly discussed as *scientific fact* throughout the mass media, and it continues to be a daily presence in the media through press time. Skeptics seem increasingly scarce and marginalized. Former Vice President of the United States, Al Gore, addressed the issue squarely in a widely distributed film, *An Inconvenient Truth* (see <www.climatechange.net> for expanded discussions and ideas for reducing carbon dioxide emissions). Writers of this column, too, may have reached a turn-

ing point: we need no longer treat the subject of global climate change as though it were controversial. Indeed, most of the skepticism on the subject was generated not by the scientific community but by mass media and by industrialists.

Nonetheless, we birders are still bound to struggle in attempts to account for changes in bird distribution—some of which perhaps have little to do with changes in climate per se (such as changes resulting from habitat modification, succession, destruction, or creation), and many of which continue to pose riddles. And whatever the causes of the many changes in bird distribution, we as birders struggle in winter, just as we do at other seasons, with the categories into which we often blithely place extralimital and/or unseasonable birds: "lingerer," "half-hardy" ("semi-hardy"), "irruptor," "invader" ("colonizer"), "vagrant," and more. In looking at the winter season's more remarkable bird records, I would like to consider how various regions' birders and editors apply terms such as these, how we might reflect on their implications and limitations, and how such terms might be connected to similar semantics of movement in other seasons, such as "shift" and "displacement," which have multiple meanings but have been used differentially (e.g., by Howe 1978) to denote large-scale, patterned changes in bird distribution, including those occurring during migration (a "shift") versus singular records of extralimital birds showing little or no pattern (a "displacement"). In the spring season, certainly, many of the species that might have fallen under the rubric of the "displacement"—birds we usually call vagrants—now often appear in larger numbers and show clear patterns, thus becoming "shift" species (see Brinkley 2001b, 2003; Leukering and Gibbons 2005). The same has become true in winter: we seem to be in the midst of so many distributional changes that to put a label to them has become a confusing endeavor, particularly in the context of a regional report to this journal, which is subject to dreared deadlines!

In general, birders understand the distinction between a "lingerer" and a "vagrant" to be clear-cut: the former is a bird (either locally nesting or transient) that has stayed on in autumn or winter well

past the point that its conspecifics have moved southward, while the latter is a species that does not normally nest in or migrate through the area at all. Moreover, "vagrants," to most editors, are not found annually or even nearly so: they are often called "casual" species in some columns, meaning (depending on the source) found once every few years to once every 20 years; in some regions, editors count their "vagrants" by the dozens or hundreds rather than on one hand, but they are still birds that are rare, if regular. With some extralimital birds, it is obvious that the birds have not lingered within breeding range: in this past winter, there were Ash-throated Flycatchers in the East, Long-billed Thrashers in Colorado, Tropical Kingbirds on both coasts (California, North Carolina), and widespread extralimital Cave Swallows, a few of which survived into January (in North Carolina, Virginia) and even February (Georgia, South Carolina). McCaskie and Garrett, in Southern California, are clear that some of that region's vagrants—including multiple Broad-billed Hummingbirds, Thick-billed Kingbirds, Dusky-capped Flycatchers (also noted in Baja California this season), Grace's Warblers, and Painted Redstarts—probably came from Mexico rather than Arizona. For some of these species (Cave Swallow in the East, Tropical Kingbirds in California), we now have a decade or two of solid patterns of occurrence; for other species that lack such patterns, which some would call the true (or "mega-") vagrants, there seems to be no pattern or only a weak pattern: Long-billed Thrasher, for instance, is considered mostly sedentary, with few records of vagrants anywhere. Why such birds, even those with clear, predictable patterns, disperse northward (or northeastward, northwestward) rather than migrating southward remains a puzzle: despite some correlation with weather patterns, these movements' ultimate causes are matters of speculation. For all we know, these movements indicate misorientations caused by environmental toxins.

The term "lingering" seems to imply that the bird has not budged, that it has become sedentary, stuck in an area, rather than actively engaged in some sort of migratory/wintering behavior, whether or not the behavior is a rewarding one, but that it may at some point move on. This implication deserves questioning, of course. In this season's reports, editors from California clear to the Atlantic Seaboard are quick to

point out that some birds labelled as "lingers" probably came *northward* in autumn from areas to the south of their regions. This is an idea that has been around for some time but seems to be gaining more and more currency as birders' sightings can be more easily communicated and compared over greater distances than in the past. For instance, certain Neotropical migrants found wintering at northern feeders within their breeding ranges—Indigo Buntings, Scarlet and Summer Tanagers, Rose-breasted Grosbeaks—are usually assumed to be individuals either too ill, weakened, or belated to undertake onward migration; records of such species rarely show patterns in any winter. In winter 2005-2006, most of us probably assumed that such birds, along with singular regional rarities such as New York's Veery and Wood Thrush, Virginia's Broad-winged Hawk, and Kentucky's Mourning Warbler, were ailing birds that never left—"lingers" that did not survive the season. And our intuition may be correct in these cases; but it may not be. We have no evidence that such birds did not come from areas to the south of their presumably final destinations, and, if we attend to patterns of bird migration on the coastlines (where migrants are often concentrated), we might well suspect that such "lingering" birds found within their normal breeding ranges are more likely to be mis-oriented (reverse) migrants, now tied to an artificial food source or other limited microclimate after having migrated in what we consider the wrong direction. Every winter season, even the bitterly cold ones, seems to have such "gee-whiz" birds (Kaufman 1998, Brinkley 2001a).

Tanagers and buntings frosty at Ontario feeders, Mourning Warblers in the Midwest marked for an early end: such birds represent an extreme in a spectrum of birds we often label "lingers"—these birds are usually not at all "hardy" away from artificial sources of food, at least in the given geographic context. Those winter birds called "half-hardy" are slightly north of their core winter ranges and always irregular in occurrence at the northern margins of winter range. In some reports, they are called "overwintering" rather than "wintering" birds, to mark their marginal or extralimital statuses, but often the label "lingering" is applied. In this issue's regional reports are many hundreds of records of such birds. Unlike the Mourning Warbler in Kentucky, these half-hardy birds are not boldfaced and thus eas-

ily overlooked in a skim of the reports. However, they are tracked well by most editors, particularly where human populations are dense and Christmas Bird Counts and other such efforts abound, e.g., around the southern margins of the Great Lakes and in the so-called Northeast Corridor, between the District of Columbia area and eastern Massachusetts. Here, as Pam Hunt observes, birds that typically winter farther south (largely in the Southeast) invariably "generate much excitement when they linger long enough to be tallied on New England Christmas Bird Counts." The list of such species was impressively long in winter 2005-2006: Yellow-bellied Sapsucker, Eastern Phoebe, Hermit Thrush, Gray Catbird, Brown Thrasher, Winter Wren, Eastern Towhee, and several species of warbler and sparrow. But, as Hunt rightly notes, "weather does not explain [these species'] exceptional abundance during the Christmas counts." She continues: "It is conceivable that the inclement weather of the 2005 breeding season played a role in their tardiness: perhaps early-nesting species failed on their first attempts and had to re-nest in midsummer, resulting in many late fledgings. Without detailed data on age ratios, and perhaps from banding stations, we may never know what was behind the pattern."

This essay has typically shied away from analyzing patterns of lingering/overwintering/half-hardy passerines, and one reason for this is probably the difficulty in quantifying the differences between warmer and colder winters: we countenance average meteorological conditions, over large areas, which tells us very little about how individual birds might fare during local cold spells or bouts of inclement weather. We know very little about how these birds fare in midwinter (how many could be found if we conducted Christmas counts in late January?), how many survive, or how many might be facultative migrants, those that leave the area when the conditions become too harsh. Another reason might be that such species become more difficult to track in areas where they are not quite rare enough to receive mention in print. But the main reason is that our enterprise here is not an analysis based on decades' worth of data but a limited overview of a single season. Even when we look back on multiple past seasons, we deal mostly with impressions and are rarely able to adjust even our careful tallies of extralimital birds to take into account

"observer effort." And so even careful tracking of species such as Eastern Phoebe in West Virginia and Ohio (see the thoughtful S.A. item by Victor Fazio and Rick Wiltraut) can be difficult to put into comparative context.

But speculation without shame has always been a forte of this column; we should not let a winter season pass without skating on thin ice. And so what of these northerly Gray Catbirds that were reported so widely in the eastern half of the continent? In reading the regional reports, we see that they were not evenly distributed in December–January. Over 30 catbirds were found between the Atlantic Provinces and Québec, a record; Maine had 14; and Vermont and New Hampshire had at least a dozen between the two states. Some New England Christmas Bird Counts set record highs for the species: in Rhode Island, 90 and 96 were on the Newport–Westport C.B.C. and Block Island C.B.C., respectively. Indeed, Rhode Island counts found 315 catbirds in total, almost double the previous high. To the south, 20 on the Southern Bucks County, Pennsylvania C.B.C. and 129 on Cape May's were remarkable numbers. In the Midwest, however, catbirds were more thinly distributed: just two each in Illinois and Minnesota, four each in Ohio and Michigan. To the south, in Kentucky and Tennessee, 13 catbirds was a very high winter count, and two in West Virginia was above average. Farther west, where catbirds are regular vagrants, seven were in Colorado, three in New Mexico, singles in Wyoming and Nebraska, and one made it through 8 December near Osoyoos, British Columbia.

There is a wider context for the catbird numbers: mimids made news in many areas east of the Rockies. Single Brown Thrashers out of place included singles in Newfoundland, northern New Brunswick, Prince Edward Island, and New York's Adirondacks, and there were five in Quebec, four in the Western Great Lakes, scores in New England, and 71 on Cape May's C.B.C. The eight-catbird "mimid winter" in Colorado and Wyoming also boasted 12 Northern Mockingbirds, 38 Sage Thrashers, three Brown Thrashers, and two Long-billed Thrashers. Other errant thrashers were a Sage at Port Weller, Ontario 24–27 February and three in Kenedy County, Texas 21–22 February; and a Northern Mockingbird in the Yukon 13 November–14 January.

While it is conceivable that late fledg-

ings resulted in more lingering birds in the Northeast, another set of explanations also commends itself, particularly in light of this broader context of wayward mimids. In the East, autumn 2005 was noteworthy for strong cold fronts that moved record-high numbers of mid- and late-season migrants toward the coast. In several locations in the Hudson–Delaware region, local counts of several species shattered previous high counts by a wide margin. Catbirds figured prominently in several such fallouts. Several systems also brought large numbers of birds northward as apparent reverse migrants; by the hundreds, at least, catbirds arrived across Atlantic Canada as so-called reverse migrants on 18 October. Yet another wave of birds, including catbirds, arrived in Atlantic Canada, especially Nova Scotia, in late October as exhausted entrainees of Hurricane *Wilma*, the impact of which was considerable in the Canadian Maritimes (Dinsmore and Farnsworth 2006). Some of the displaced *Wilma* birds remained into December—species as diverse as Northern Shoveler, Stilt Sandpiper, Long-billed Dowitcher, Forster's Tern, Tree and Barn Swallows, but some of these were not observed after early December (see Dalzell's column); catbirds continued in some places well into winter. To the south of Canada, *Wilma's* influence was hard to perceive after the last few Magnificent Frigatebirds and Chimney Swifts trickled through in November and late December, respectively. The "spectacular" autumn fallouts of migrants from New England through northern Delaware—in addition to the *Wilma* survivors and the waves of reverse migrants arriving on the southwesterly winds preceding frontal passages—certainly could have contributed to the record-high numbers of Gray Catbirds, Hermit Thrushes, and Winter Wrens found on Christmas Bird Counts in the Northeast. The mild weather may then have permitted them to thrive and made them more detectable—after all, humans tend to vote, and to survey birds, more readily under sunny skies. This set of observations might account for the higher overall counts of mimids in Northeast than the Midwest, which was hit harder with cold weather in December and which was farther from the autumn's fallout zones. Together with the elevated numbers of species like Eastern Phoebe and Hermit Thrush in adjacent states (Pennsylvania, Ohio) and states just to the south of the Midwest (West Virginia, Kentucky) and elevated numbers of, for in-

stance, Rusty Blackbird—both in core range and extraliminally, the first time in over a decade for such positive news about this declining species—the large numbers of mimids and of mid- and late-season migrants overall suggest a good breeding season for many species.

This familiar old formula (productive breeding season + strong autumn storms + warm winter = high diversity/numbers of half-hardy birds) may be satisfactory to explain some patterns of winter bird distribution, but what of the broader continental context? After all, the larger-than-average numbers of mimids and Hermit Thrushes in Colorado are probably not connected to the autumn weather patterns that made birding so memorable in locations such as Central Park in New York City. And birds far (1000–2000 km) out of winter range, such as Colorado's Long-billed Thrasher or Ontario's Sage Thrasher, probably have no connection to coastal storm activity, for instance. Moreover, as Pam Hunt rightly suggests, we have no way of knowing that at least some of the catbirds on the Christmas counts were not local birds just hanging out or hanging on. Analyzing birders' assumptions about fall migration, Sullivan (2004) emphasized that Atlantic coastal fallouts must certainly be comprised not only of properly oriented migrants but also of mis-oriented migrants—birds that had been moving northward through the interior in the autumn as others moved southward but are then pushed coastward (either on southwesterly or northwesterly winds). Clearly, the winter season "inherits" a great many of these late-autumn birds, so the question of birds' movements in relation to the weather in the autumn is germane to an understanding of the winter season. Certainly, most of us have come to view bird fallouts not as the product of a uniform migratory wave of birds directed by a single aspect of weather but as a cross-section of intersecting movements of birds. Although we experience fallouts as singular experiences, they are surely composed of multiple components; radar ornithology has begun to unravel some of the complexity of bird movements, especially during nocturnal migration. The Long-billed Thrashers in Colorado, like other surprising post-nesting wanderers of late (Pyrrhuloxia in Ontario, Short-tailed Hawk in Michigan), spur us to reflect on how we use comfortable, casual labels such as "lingerer" or "vagrant" for our wintering birds: if we consider these more extreme records in light of the larger

picture of a season's bird distribution (for instance, the mimid winter east of the Rockies this season), the thought may occur to us that the Long-billed Thrasher at Chico Basin Ranch, Colorado, the Brown Thrasher on Miscou Island, New Brunswick, and the Curve-billed Thrasher in Sioux County, Nebraska (a long-time resident!) might not be indicators of disparate phenomena but of a single phenomenon that is manifested in different aspects or to different degrees, depending on the individual and the species. Could it be that the warming climate is a common stimulus that links apparently disparate bird phenomena—the apparent increases in vagrants, in reverse migrants, in so-called “lingering” birds, and in spring overshoots? Could a warming climate be a goad for some individuals to remain farther north for longer periods, for some to disperse *northward* rather than southward in autumn, for some to fly well north of typical range in spring as well? (The scientific debate still rages about whether increased hurricane activity is a result of global climate change, but one could in theory add this to the list, and with it, the two Gray Catbirds on the St. Pierre C.B.C. off the Newfoundland coast.) In other words, could the terms we use to describe changes in bird distribution—whether the given term falls under the general umbrella of “shift” or “displacement”—be reducible to a single concept, such as “dispersant” or “pioneer”? The former term is neutral enough, the latter perhaps too colorful, but let's use “pioneer” anyhow, to remind ourselves that some of these wanderers can sometimes put down roots and extend their winter ranges.

We are comfortable with what we consider the established winter ranges in New England of Northern Cardinal, Tufted Titmouse, Red-bellied Woodpecker, Carolina Wren; but reading back on reports in *Bird-Lore* and *Audubon Field Notes* from many years ago, one perceives quickly that both editors and observers were very excited, even astonished by the patterns of northward dispersal in autumn, northerly overwintering, spring overshooting, and range expansion in these and other species (Glossy Ibis, Black Vulture, etc.). Perhaps we moderns are now in the position of the Vermonter of 1924, utterly bowled over to see a Northern Cardinal appear among the Pine Grosbeaks at her feeding station. Are today's nine Dusky-capped Flycatchers and nine Painted Redstarts in southern California—birds we might call vagrants or reverse migrants today—the heralds of

expanded winter ranges in these species? Carolina Wren has expanded not just to the north, of course, but also westward, and this season saw pioneers either continuing or appearing in Arizona, New Mexico, North Dakota, South Dakota, and Manitoba. Although we may perceive the wren's range expansion (or the cardinal's, etc.) as a slow, steady annexation of new areas, the reality of most such range expansions has been much sloppier, involving many wildly extralimital outliers, including many pioneers that did not survive or thrive in the new environments. For the wren, pioneering by no means produces a stable northern border of range—its fortunes rise and fall annually, depending on the severity of the winter, as do those of other species (Root 1988). In this issue's reports, we perceive weak patterns of northerly wintering in Golden-crowned Kinglet (Yukon, North Dakota, Manitoba), Blue-headed Vireo (Illinois, Kentucky), and Yellow-bellied Sapsucker (Manitoba, Minnesota, North Dakota, Vermont, Nova Scotia—and 14 in Colorado!). These patterns bear watching; they are probably more likely to indicate the beginnings of wintering range extensions than are the records of Indigo Buntings shivering at feeders in the north country (Kaufman 1998).

Other patterns of pioneering are quite strong but evolving with dizzying rapidity. We have seen the western states' and border states' hummingbirds, those seemingly fragile miniatures, storm the continent over the past several decades, and this winter spectacle shows no signs of slowing. As with Carolina Wrens, and probably like some of the more recent pioneers, there has been a pattern of jaw-dropping vagrants, thousands of kilometers from home, accompanied by a much less startling gradual expansion from core range. Broad-billed Hummingbird, still in the jaw-dropping phase, turned up this season in Arkansas, Nevada, and coastal Texas, and three were in southern California; Broad-tailed Hummingbirds represented remarkable records for Tennessee, Alabama, Georgia (three!), Arkansas, and El Salvador; an Anna's was in Ohio; single Costa's were in Rockport, Texas (Figure 4) and Montgomery, Alabama; a Violet-crowned was in northern California (the state's fifth); and in *one birder's yard* in Victoria, Texas this season, there were at minimum 124 hummers of nine species: 41 Buff-bellied, 37 Rufous, 23 Black-chinned, 8 Allen's, 5 Broad-tailed, 5 Anna's, 3 Calliope, and one Ruby-throated,

in addition to the above-noted Broad-billed, seen only on 26 February. We often imagine the hummers' range expansion to be a product of the hummingbird-feeder craze, but in southern states from Texas to Florida, even into the Carolinas, these birds are frequently seen eating insects and attending flowers away from feeding stations. Feeders and exotic plantings are certainly crucial in most areas, particularly the northerly areas, but they are not the birds' sole means of sustenance. Each species presents a different pattern of winter-season expansion, but the general dual pattern of extreme extralimital records and rather gradual expansion of new wintering ranges, mostly in the Southeast, holds true for the majority. The astonishing numbers in the Texas garden illustrate, roughly, the ratios of hummers expected farther east, with the exception of Buff-bellied—for now, at least, but how much longer until North Carolina gets a Buff-bellied, for instance?

Swallows would seem to be following the hummingbirds' daring attempts to winter well away from core range, leading one wit to opine that “swallows are the ‘new hummingbirds’.” Barn Swallows in the West and Cave Swallows in the East are scarcely the only species involved in this phenomenon. Ted Floyd (2005) noted that winter Northern Rough-winged Swallows in the Philadelphia area were perhaps without precedent but not without context, as if to underscore that understatement, 125 were found at the Northeast Water Treatment Facility, Philadelphia County, Pennsylvania through December, with 95 still there 7 January and some hanging on into March. At Pointe Mouillee State Game Area in Michigan, Tree Swallows had never been recorded wintering, but two dozen were there 29 December and three through at least 15 February. Single Tree Swallows wintered at Glacier Ridge Metropark, Ohio and at Hamlin, in upstate New York. A Bank Swallow at Huntington Beach State Park, South Carolina on 7 January was just as unexpected. Whereas Tree Swallows may eat small fruits to survive moderately cold winters, other American swallow species are not known to do this, and so these insectivorous species so far from normal wintering areas must in many cases perish. It is difficult to see such behavior as consistent with a concept of pioneering, as it would seem to us—as for the Bell's Vireo in Halifax, Nova Scotia this past December—a dead end.

And what of the strange phenomenon

this season with Townsend's Warblers this past winter? As the storms began to pound the Pacific Northwest in late December, reports of the species in coastal Oregon and Washington flooded the Internet. The C.B.C. in Eugene logged 141 on New Year's Day, and a week later, regional editor David Irons found a staggering 59 on a short walk around his Eugene neighborhood. Oregon birders found 300 in January, with some backyard feeders hosting as many as a dozen birds; and feeders in southwestern Washington recorded up to 22 birds! Although the species is regularly found wintering in small numbers in this part of the world, these counts were several orders of magnitude larger than normal. Were these birds simply out in the countryside, already locally present, but driven

toward the warmer microclimates of feeders and suburbs by the heavy weather? Or does this represent a consolidation of the winter range of the species at its northern terminus? The two disjunct winter ranges of the species provide some food for thought: partly in the mountains of Mexico, partly along the Pacific Coast. Was the latter range established gradually, over centuries, as some few birds remained on the breeding grounds later and later, others migrated toward wintering zones but reversed course at some point? Are several other species poised to make a similar movement, including warblers that currently winter south of the border, such as Hermit Warbler, three of which (plus a hybrid) were found in Oregon among the Townsend's flocks?

In other words: the winter birds we may consider foolhardy today may be just the vanguard of birds to be considered normal winter residents in the future. Indeed, even this winter's apparent kamikaze birds—Alaska's White Wagtail, Ontario's Sage Thrasher, Yukon's Northern Mockingbird—may not look all that unusual in just a few years, just as birders in Oregon and Washington now (allegedly!) almost yawn when hearing about yet another wintering Western Tanager or Williamson's Sapsucker. With long-term projects such as the Christmas Bird Count, eBird, Project Feederwatch, and others, it should be possible to document changes in wintering ranges and in turn to analyze these against meteorological data, to see if there is strong correlation between warming trends and changes in winter ranges. Our participation in such cit-



Figure 4. This male Costa's Hummingbird brightened a garden in Rockport, Texas from 19 (here 21) February through 3 March 2006. The obliging bird provided the second record for the central bend. Photograph by Susan Beree.

izen-science projects will be important for scientists seeking to fine-tune the avian data against the climatological data.

Most of this column has been devoted to landbirds thus far; of course, waterbirds, too, have been wintering north of their typical winter ranges in recent years. With the exception of waterfowl, waterbirds often take a back seat to landbirds in the winter season, a bias perhaps indicative of the great number of feeding stations set up for passerines and extremely low number of such stations for grebes, shearwaters, phalaropes, and their kind. Many extralimital/unseasonable seabirds show little or no patterns, just scattered reports, such as this winter's lost and/or late Sooty Shearwaters (Nova Scotia, Virginia), Black-capped Petrel (Virginia), Pomarine Jaegers (Ontario, Ohio, Alabama), Parasitic Jaegers (Illinois, Virginia), Common Tern (Indiana), Royal Tern (Arizona), and Sandwich Tern (New Jersey). Such records seem to offer little insight beyond documenting extreme dates/locations for these seabirds in a warm winter. Perhaps at least some of these birds, like the feeder-bound Neotropical migrants mentioned above, were mis-oriented and/or not in good health. But perhaps, like more numerous species, they are pioneers whose strategies will turn out to be productive in the long term. We have seen several examples since the 1980s of this, in both ardeids and pelicans, which were recorded north of normal areas quite frequently again this winter (and also in spring). In the East, American White Pelicans have been reported increasingly often, and farther north (and/or inland), than in

the past. Their numbers continue to increase in relatively new wintering areas in the Carolinas and Georgia—e.g., 109 in the ACE Basin of South Carolina, 80 in Camden County, Georgia, and up to 30 in Carteret County, North Carolina. Likewise in interior Alabama, where once rare in winter, large counts up to 116 were tallied. Probably related to their increasing presence in the Southeast, up to 25 were counted between New York and Maryland, and one on the Ohio River in Cabell County, West Virginia 17 February was unprecedented. Winter Brown Pelicans, no longer a winter novelty in many areas, were reported twice in Maryland, twice in New Jersey, and once in Washington state and Delaware; far-inland birds in Georgia, Arkansas, Louisiana, Mississippi, and western Texas were also unusual.

Before closing this section, we should remind ourselves that long-term winter phenomena continued this season. Many dove species, particularly Ruddy Ground-Doves in the Southwest and White-winged Doves almost everywhere but also Inca Doves, wintered farther north or attempted to do so. Geese of almost all species continued to show increases in number and in some cases in extent of winter range. Mexican birds visited new spots in the border states, notably Rufous-backed Robins (Arizona, California, Texas), Yellow Grosbeak and Green Kingfisher (New Mexico), and Red-faced Warbler (Arizona, where rare in winter). We often focus on rarities and miss important context: if you passed quickly through the Arizona report, for instance, did you see that 50 wintering Ash-throated Flycatchers received boldfaced type? (And who noticed that a single bird wintered in New Mexico?) Most Ash-throateds winter in western Mexico, but wintering birds are now found in Gulf Coast states, and one overwintered in Richmond, Virginia this season. Are the November birds we see on the East Coast each year simply outliers in a bold pioneering of new winter range as indicated by these sharply elevated Arizona numbers?

Influxes, irruptions, invasions (& wrecks, early migrants, and 'Expresses')

Some familiar winter "flights" of birds, as they are often poetically called, appear to have no obvious connection to climate change at all. The erratic influxes and wanderings of wintering owls, finches, hawks, waxwings, and other species well away

from their core ranges in the North are often the most engaging and enjoyable aspects of winter for birders, who are lately able to predict, monitor, and even map (see <www.ebird.org>) such species more efficiently than ever before. But this season saw few such events in North America, whether of altitudinal migrants in the West or latitudinal ones in the East. A few extralimital finches here and there, notably Purple Finches, and a modest "echo" flight of last year's large influx of Northern Hawk and Great Gray Owls, were confined to predictable corridors. A few Pygmy Nuthatches strayed out onto the Plains, Bohemian Waxwings made news in the Great Basin and northern New York, and Dovekies made a remarkable showing off Long Island—1675 counted on 11 February, the best count in 70 years! But, by and large, editors noted that this was an "off year" for irruptive species.

One exception was Snowy Owl. California's first Snowy since 1978, near Davis on 13-14 January, was among many indications that this flight was more a western and Midwestern phenomenon than an eastern one: Washington had 74 (best flight since 1996), Oregon 14, British Columbia "a good showing," Idaho nine, western Montana 41+ (probably record high; recent averages three per winter), eastern Montana and North Dakota "good numbers," and South Dakota up to 20. In the Midwest, at least 161 were in Minnesota (the state's second largest invasion on record), at least 118 in Wisconsin, and 30+ in Michigan. The Atlantic Provinces tallied about 25, and Québec had above-average numbers (with an excellent count of 23 on the Hébertville plain). Interestingly, southern Ontario detected no major flight of the species, and New England had a below-average flight: up to 15 in Massachusetts, three each in Connecticut, Rhode Island, and Maine, and singles in Vermont and New Hampshire. Surprisingly, the Hudson-Delaware region recorded 60 Snowy Owls, Maryland four, and Virginia one, the southernmost of the season. That's about 650 Snowy Owls reported to regional editors, certainly well above most winters, and widespread mortality (so often the case) was not reported, so perhaps at least some of these birds made it through the season.

Occasionally, an irruption of one species collides with an irruption of another. The powerful coastal storms in the Pacific Northwest 20 December through 10

January produced several winter wrecks of Red Phalaropes—a "wreck" being an irruption thought to be occasioned by harsh weather, which causes birds to become weakened and move inshore or onshore, particularly when food is scarce. In California, 1500 were at King Salmon and 2000 on Humboldt Bay, both 23 December; in Oregon, 2841 were counted on the Port Orford C.B.C. that day, and 1000 were at Coos Bay the next. Observers on these dates saw phalaropes fall prey to Snowy Owls, which were concentrated in coastal areas such as Ocean Shores, Washington, which recorded up to 10 owls. At King Salmon, phalarope numbers peaked 1 January at 2399 before falling off through the month. To the south, where safe from Snowy Owls, phalarope counts of 500-750 were made as far south as Pescadero 26 December, and counts of up to 75 as far as San Luis Obispo County, California. Singles to dozens were recorded well inland, in all manner of habitats, even east of the Cascade Crest, where one was found near Umapine, Washington 23 December. Interestingly, both the phalarope wreck and the Snowy Owl invasion made headlines in the mass media. (An unrelated sidebar: Eastern Screech-Owls, which appear to be expanding in Texas, and again recorded in eastern New Mexico this season, were found several times preying on another expanding species—White-winged Dove—in Texas.)

Another exception in the mostly irruption-free winter was the large flight of Black-capped Chickadees, which spanned eastern Canada through central Maryland, the most extensive such flight in some years (Dinsmore and Farnsworth 2006). This irruption began in mainland eastern Canada in October but by December reached well into the mid-Atlantic. Over 130 were recorded in central/eastern Maryland, one in north-central Virginia, three in southern New Jersey, and 15 in Delaware—the latter a remarkable count for the Delmarva Peninsula. As usual, a few Boreal Chickadees got into the act, with singles away from typical locations in Monroe County, New York 1 December, Greene County, New York 16 January, in southern Vermont and southern New Hampshire, plus three in Massachusetts. We tend to ascribe large irruptive flights to multiple factors—typically a productive breeding season followed by scarcity of food in the core range—and at least the latter was almost certainly to blame for the wandering Snowy Owls and Black-capped Chick-

adees. We have well over 150 years of ornithological history that suggests such irruptions predate the current era of warming; however, tundra- and taiga-nesting species may be particularly vulnerable to a warming climate, so that tracking their southward irruptions is an important endeavor. Even though these birds are more familiar than visitors from the south, the dynamics of their distribution are well worth monitoring. Black-capped Chickadee irruptions have become quite rare in recent decades as far as the shores of Chesapeake Bay, so there is at least some evidence of range retraction in this species.

In the "almost-irruptive" category, western thrushes have been found out of range rather frequently in recent winters, notably Varied Thrush and Townsend's Solitaire. While solitaires out of range were fewer this year than last (Floyd 2005)—just three in Ontario, eight in Minnesota, nine in Wisconsin, four in Québec, and singles in Michigan, Indiana, and Nova Scotia—following a strong fall, Varied Thrushes had one of the more far-reaching winter flights in recent memory: 24 in Minnesota, eight each in Ontario and Wisconsin, seven in Manitoba, six in Michigan, four each in Québec and Texas, three in Utah, two each in Nebraska, Saskatchewan, and Massachusetts, and singles in Maryland, North Carolina, Kentucky, and New Mexico. Both patterns are typical for these species, whose extralimital numbers vary from winter to winter but may be showing a long-term increase despite the irregularity of their appearances. The subject might make for an interesting paper, as these species are usually well tracked, but the reasons for their irregular dispersals out of range are not known, though food shortages very probably play a role.

While we often call birds that make erratic appearances from the north or from montane habitats "irruptive," southern birds that might appear in similar patterns usually win that label only in summer and early autumn, not in winter. Fulvous Whistling-Ducks, which historically have wandered in spring and fall, and are quite unpredictable wanderers among American waterfowl, put in winter appearances in places where unrecorded in some years. At California's Salton Sea, four were shot by hunters in about early November, and singles were in Goleta and El Monte; in Utah, three were seen at Bear River 21 January (Figure 5); in Baja California, Lagunas de Chametla had three on 23 December (and

one later in March); in Arizona, a single bird, presumably the November Scottsdale bird, reappeared nearby through January, and other singles were in Mesa and Topock Marsh—but a golf course in verdant Green Valley hit the jackpot with a flock of 18, historicallyprecedented but not in 20 years. In Texas, Fulvous Whistling-Ducks often linger into midwinter in the extreme southern part of the state, but they are extraordinarily rare elsewhere in February; 20 birds counted between Harris, Travis, and Fort Bend Counties were noteworthy, as were two in Cameron Parish, Louisiana 28 February, though these could also have been early migrants. Black-bellied Whistling-Ducks, which usually attract attention in spring and summer, were likewise found out of range this past winter. One shot at Reelfoot Lake, Tennessee 2 January was the most extralimital to the north, but one on Grenada 21 December was almost as far from home (if more likely of the nominate subspecies from South America?). Black-bellied peaked at 1160 in New Orleans's Audubon Park—with four Fulvous among them, 30 January. Were these Fulvous Whistling-Ducks simply taking cues for spring migration during midwinter—as, clearly, dozens of bird species appear to be doing lately? Should they be considered “early migrants” or, instead, belated late-autumn “irruptors” that continued to straggle northward into a mild winter?

Could we call certain gulls irruptive? Nineteen Slaty-backed Gulls away from Alaska in a season was unheard of: three different singles at St. John's, Newfoundland 28 January–12 February, 18 March–2 April, and 23 April–7 May); one at the Point Pelee Birding Area, Ontario 22–26 January; one near Rochester, New York 11 February and later; 10 at Half Moon Bay, San Mateo County, California 2 December–8 March; one at the Alviso Salt Ponds, Santa Clara County, California 14 January; one at Fremont, Alameda County, California 9 March; one at Renton, Washington (a ninth for the state); and one at a Houston, Texas landfill 22 February. Have these birds always been among us, only to be slowly discerned by patient gull-watchers like Dave Tetlow, Alvaro Jaramillo, Dan Singer, David VanderPluym, Dean Ware, Martin Reid, Bruce Mac-tavish, and Cameron Cox? Or do

the far-flung records hint at a coming invasion, the start of a winter-range extension into the Americas like that of Lesser Black-backed Gull? After all, just a solo Slaty-backed Gull at St. Louis, Missouri—well, plus a Smew, a Whooper Swan, a Siberian Accentor, a Siberian Stonechat, a Siberian Rubythroat, two Rustic Buntings, and at least a dozen Bramblings (Lehman 1984)—were responsible for the notion of the “Siberian Express” in this column back in the chilly winter of 1983–1984, and the majority of these birds had arrived in the fall season. Coming from roughly the same area as the Slaty-backed this season, an apparent *kamschatschensis* Mew Gull (sometimes called Kamchatka Gull) was carefully studied in Providence, Rhode Island 6 January–11 February. (Two other Mew Gulls, subspecies unknown, were found in Ohio.) Also from Siberia, Vega Gull—a taxon listed as the vega subspecies of Herring Gull by North American authorities—made quiet headlines alongside the Slaty-backed in California at Venice State Beach, where apparently three different first-winter birds were seen 8–15 February and a third-winter bird 21 February (<www.coastside.net/chucaogulls/Vega.htm>). Other birds that almost certainly came from eastern Eurasia or Alaska this season were late-season (rather than mid-autumn) migrants: Bramblings in British Columbia and Iowa (and more in spring), Baikal Teal in Oregon and California, a Falcated Duck (returning) in Oregon, Bewick's Swans in British Columbia and Washington (five!), and 11 Emperor Geese between coastal Ore-

gon and northern California. This may still fall short of an “Express,” but we are reminded that not all influxes are from the south or north: some are from the west, from Siberia, and a few are from the other side of Eurasia: in this season, Newfoundland's now-routine Yellow-legged Gulls (two adults through mid-February, one third-winter 28 May), a European Herring Gull in Florida (11–21 February), Pink-footed Geese in Connecticut (4–12 February), Québec (25 March), and Nebraska (30 January), and Barnacle Geese in New Brunswick, Québec, Connecticut, New York (three), New Jersey (one or two), and Maryland must have come from the direction of Greenland, Iceland, or the eastern North Atlantic—still, scarcely a European Express.

How many of us are actually scanning slowly through enormous flocks of gulls and geese to look for European Herring Gull (now split by European ornithologists from our American Herring Gull, *Larus smithsonianus*), or Vega Gull (also now split in Eurasia from Herring Gulls), or Yellow-legged Gull (split from Herring over a decade ago), or Pink-footed Goose (now increasing on the nesting grounds, as near as Greenland—and easy to overlook among thousands of Canada Geese)? And for those of us who live among scads of Great Black-backed Gulls: are we looking carefully for Slaty-backed Gulls among them? A refined understanding of the distribution of such subtle species depends entirely on our acumen and our careful field work: although there are many biologists who study geese

on the wintering grounds, few study gulls, and there are zero funded studies of vagrant gulls in North America! Although the continent's overall increase in observer effort cannot account for many of the changes in bird distribution we document, a few keen observers who regularly check local gull aggregations can rewrite the distributional maps over time.

The strong flight of Asian gulls that spanned the continent seems, oddly, almost pale next to the documentation of New York's (and the Atlantic Coast's) first Western Gull, an adult off the coast of Long Island 11 February. This bird, apparently of the nominate (northern) subspecies, could be the product of



Three Fulvous Whistling-Ducks were observed 21 January 2006 at the Bear River Migratory Bird Refuge, Box Elder County, marking just the third occurrence of the species in Utah and the first documented since 1959. These were part of a widespread invasion of the Southwest that also reached Arizona, California, Baja California, and probably Texas. Photograph by Paul Higgins.

the same meteorological anomaly that kept the Northwest so rainy and the continent so warm: the unusual extension of the East Asian Jet Stream. The term "Siberian Express" has been convincingly applied to autumn weather patterns that bring Siberian migrants across the Bering Sea and into North America—a decade or so after the phrase was coined, we are already jaded by widespread Sharp-tailed Sandpipers and Long-billed Murrelets—but has never been used to explain movements of mostly sedentary birds of the Pacific coast of North America. Could such a pattern, if it occurred in midwinter rather than autumn (the pattern did not appear in autumn 2005), account for a vagrant Western Gull off New York? Or a Glaucous-winged Gull in Newfoundland (21 March)? We tend to assume that such coastal species are sedentary, but the heavy weather that brought a Red Phalarope inland as far as Umapine, Washington might also have moved a gull over the Cascade Mountains and perhaps farther eastward. It is difficult to imagine that we could see a pattern of Western Gulls appearing in the East, but perhaps no more difficult than coming to terms with eastern records of Heermann's Gulls or Black-tailed Gulls. Because such movements (displacements—or whatever the term!) occur along an east-west axis, unlike the northward expansions of so many species, it is also difficult to grasp how they might relate, if at all, to a warming planet. However these birds came to be where they ended up, the Fulvous Whistling-Ducks and the Slaty-backed Gulls could well be considered "irruptors" if future seasons do not reveal an increasing trend, either in the long term or the short. However, if such birds do show increases, along with consolidation of regular winter range, in the long run, we may consider them "invaders" instead.

Whatever the ultimate causes of their movements, and however we choose to label them based on our deductions about these causes, we can be assured that the fast-paced changes in bird distribution in our era will leave us few dull moments. We birders are privileged to perceive concrete signs of a crisis on our planet, but unlike past crises—the wholesale destruction of habitats, the proliferation of pesticides—we often witness not the loss of species, not the canary-in-a-coalmine metaphor turned literal, but the appearance of fascinating new birds on our local patch. Those of us who have grown up in the culture of birding, a culture scarcely a half-century

old, are invariably elated on finding a Painted Bunting or a Yellow Grosbeak or a Hooded Oriole hundreds of miles north of its range. Our eyes and minds tell us: this is a marvelous discovery and a beautiful bird. But intellectually, we are coming to realize that such birds are almost certainly the harbingers of a coming wave of environmental calamities. Perhaps we birders should, without losing our deep sense of wonder at what we are witnessing, become the modern-day counterparts of the ancient Greek augurs—people who could observe flights of unusual birds and put an interpretation to them, make sense of them for people who had no understanding of bird movements. Do our friends and relatives understand the urgency of the current crisis? Would a view of the world through our eyes open theirs? Are we all working together to reduce our negative effects on the planet and all its inhabitants? In 2006, most scientists believe that it is still feasible to reduce carbon dioxide emissions and slow the warming of the planet and the rapid melting of glaciers and of polar ice. But most also believe that we have very little time in which to act effectively. I think it's high time we add augury to our arsenal, lest we, and those who follow us, lose the luxury of "birding" as we know it.

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