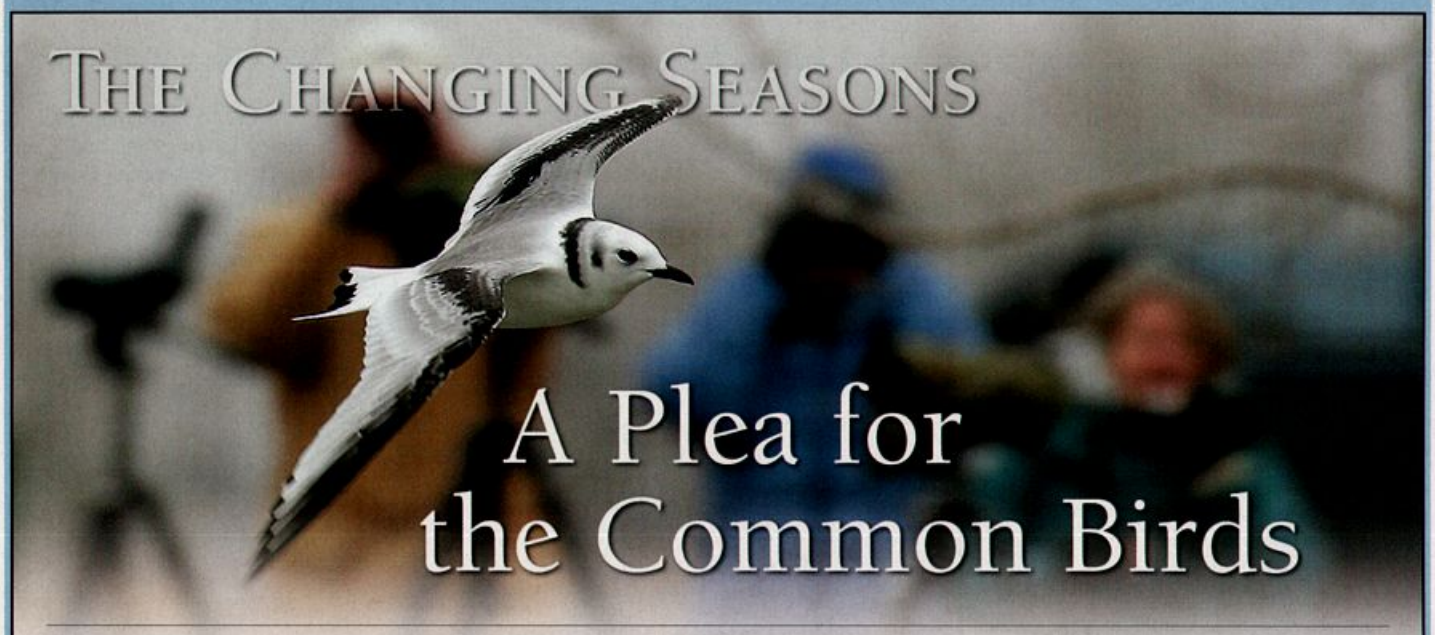

A Plea for the Common Birds

This juvenile Black-legged Kittiwake delighted observers 13–24 (here 14) November 2004 at Lon Hagler Reservoir, Larimer County, Colorado; most kittiwakes in the continent's center have shorter stays. When venturing out to our favorite fall birding spots, even just for quick chase, we can make the most of our field time by making counts of all the birds we see and logging those counts into eBird at <www.ebird.org>. Counts of common species, which rarely make it into print in the ornithological literature, will thereby be preserved and in their aggregation begin to give us a better sense of these species' status and distribution on greater scales. *Photograph by Tony Leukering.*

In the blink of an eye, it's gone. The forests once rich with autumn color have been stripped bare by the wind and rain, their gaudy leaves now wrapped over the frosted hillsides. Gone also are the migrant birds, the masses of raptors, warblers, and blackbirds. The days we anticipated when those same trees would be alive with migrants have also come and gone. We'll wait it out again through a fickle spring and cloudburst summer days, until the first breath of northern air enters our lungs. When that August night comes again, we'll not sleep but lie awake and listen to the streaming night chorus overhead, safe under the blanket of fall migration—knowing again that anything is possible at our smallest local patches, knowing the next day might reward us with a bird we've never before seen, a flight to remember for a lifetime, or a chance meeting with old friends. This is fall birding, the creation of memory, the sense of community, the electric expectation of the unknown. For now though, we stand at a wood's edge and breathe in the earthy, dry winter air, remembering the virtues of last autumn and secretly beginning the next long wait.

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Thinking back to this past autumn, recalling our broad enjoyment of bird migration and our lives that have become "birding," the question may fall, "What endures after all these years? What remains of all my expectations, my amazing birding days, my lifetime in the field?" For most of us, the answer is our field notes—our personal records of these events. Our notes are variously housed in forms ranging from notes written on scraps of paper, on napkins, and in notebooks, to extensive files created with software programs that allow us to keep track of our observations. One thing is consistent across methods—our observations reside largely in our homes, unknown to others and unusable for the greater good of birds and birding. When like the leaves we see the end of our last season, what becomes of all that we've recorded?

While our most unusual or noteworthy observations appear in the pages of this journal each year, what of our observations of the commoner species? What about the flights of thousands of Tree Swallows, American Robins, or Red-winged Blackbirds that were astounding in volume yet escaped print because of word limits or other priorities? As birders, we don't filter out these observations and enjoy only the rarities; indeed, these very events are what make hosts of birders stand with eyes wide open and mouths agape each fall.

Reading the summer issue of *North American Birds*, it occurs to us that birders represent a massive potential resource for bird conservation. Birders have their collective finger on the pulse of North America's birdlife. Often it is not a team of scientists that makes the first mention of a species' decline or range expansion—as scientific experiments are conducted on a relatively small scale—but instead the "amateur" ornithologists who do so, people whose combined efforts help paint the true picture of bird distribution and abundance in our ever-changing landscape. If one steps back and thinks for a moment about the astounding number of people out there observing birds every day, it seems inevitable in our technological age that a device, an application must come into being to harness this force.

Enter eBird (<www.ebird.org>). eBird was created by the Cornell Lab of Ornithology and National Audubon Society with the purpose of doing just that—harnessing the power of birders' myriad observations in a effort to better understand birds, their habitats, and the conservation issues that confront North America's avifauna. As a centralized archive of North American bird observations, eBird serves both the birding community and the scientific community by gathering and making available to the public the countless observations of today's birding community. The overarching aim is to provide birders with a repository for their observations—a way to let birders keep track of their own observations while also giving

scientists and planners the ability to use those data for research and conservation. For too long, the valuable observations of thousands of North American birders have been stored in notebooks, on home computers, or in the painfully inaccessible archives of listserves. The time has come to bring these observations to bear in a relational database where they can be used as a powerful tool for applied conservation. When made synoptic, the seemingly small contributions of each North American birder will create a veritable symphony of data on bird distribution and abundance. The capacity to track bird populations on a continental scale coupled with the ability to correlate those observations to geospatial data brings birders and recreational birding to the very crossroads of science and bird conservation. The possibilities take one's breath away.

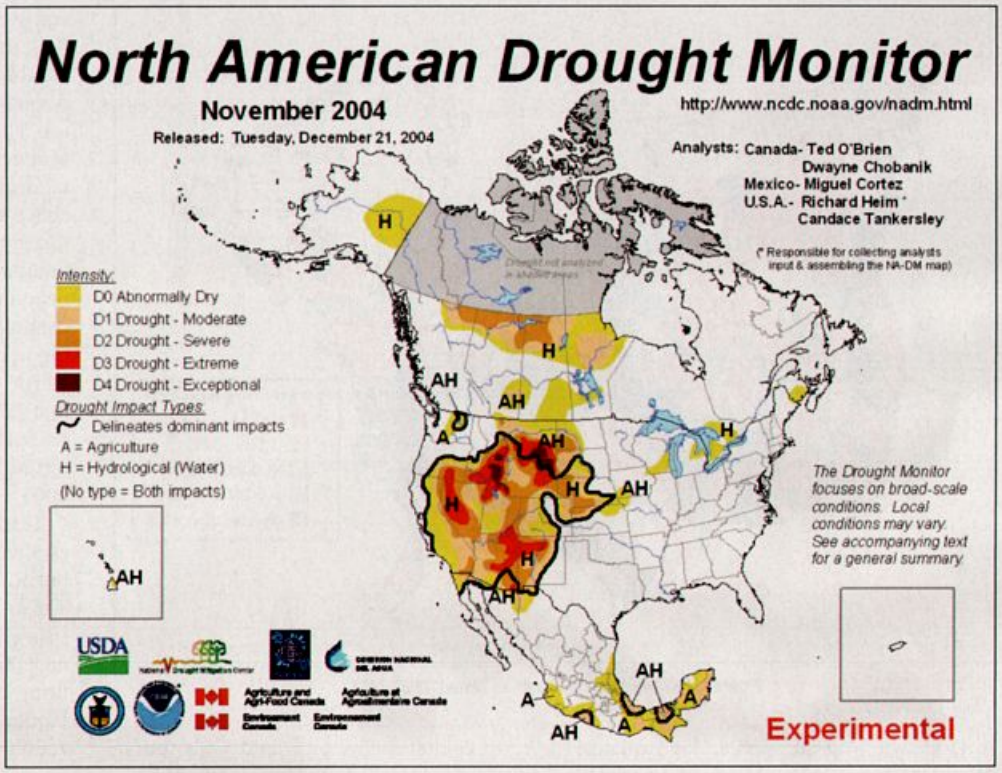

Figure 1. This graphic shows the persistence of relatively severe drought across large areas of the West, from the Great Basin, across the Rockies, to the western Great Plains; central Canada is also indicated as being under "severe drought" conditions. Source: <http://www.ncdc.noaa.gov/img/climate/monitoring/drought/nadm/nadm-200411.jpg>.
Graphic courtesy of the National Climactic Data Center, Asheville, North Carolina.

While we fully support the publication of *North American Birds* and regional ornithological journals, too often there is no room (or budget) for the reporting of common species, the observations of which are often simply lost to posterity. eBird has the capacity to store data on the common species as well as the rarities and can provide output for those species in a format that is easily accessible to interested parties. Might we have prevented the loss of the Passenger Pigeon had we had the foresight and capability to track this species' numbers on a continental scale when it was once considered the most abundant bird on the planet? We dare say so. One may rightly ask: Is the plight of many of North America's bird species all that different today?

With eBird, there is the ability to develop a baseline data set that is of value for storing information on all North American bird species, a data set that is not limited to those species already in trouble but inclusive of species that might not even be on conservationists' radar screens at the moment. Scientists are now using the long-term citizen-science-based data sets more than ever to determine trend analyses (Christmas Bird Counts, Breeding Bird Surveys), and eBird is the ultimate citizen-science project, having the potential to augment these data sets both in scope and utility.

eBird is a remarkable tool that allows users to submit checklists from any bird location in North America and now Mexico (<www.ebird.org/aVerAves>), with expansion planned into Central and South America and the Caribbean. It has the ability to allow users to plot a location and to record their birding effort, and then enter numbers of species into a checklist that is specifically designed for that geographic area. Filters are built in to the system to prevent the entry of anomalous data, and a network of regional editors is in place to vet any unusual reports. What results is a centralized archive of bird observations, flexible enough to provide the birders with the information they require while making those same data available to researchers.

The gap between the scientific community and the birding community—the interstice marked by this very journal—needs to be narrowed still more, an example of which is the stark lack of communication that led to the Cozumel Thrasher's "rediscovery" last year—when it had in fact been reported in these very pages several times during the period of its supposed absence. The Cornell Lab and its citizen-science-based programs are attempting to narrow this gap gradually. Simple data entry into eBird by birders traveling abroad will begin a warehouse of bird observations that lay the foundations for the study of real distribution and abundance of

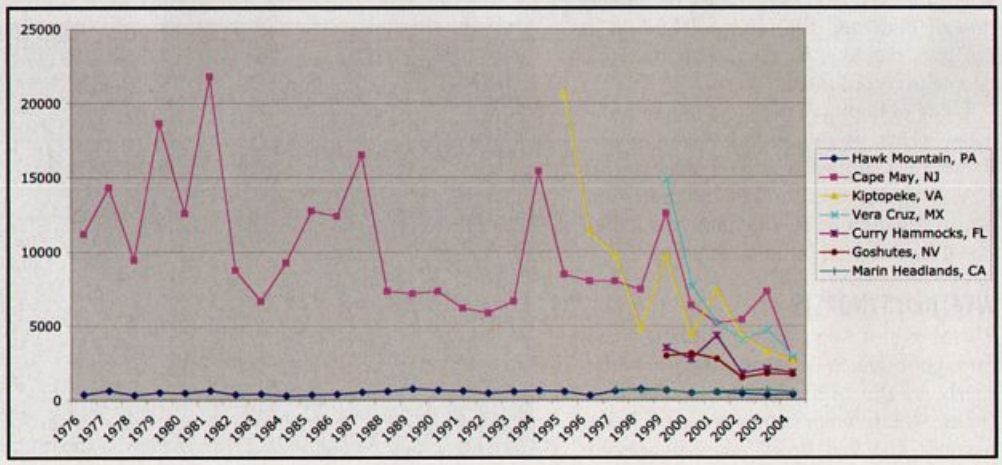

Figure 2. Fall seasonal totals of American Kestrel from selected hawkwatch sites since 1976.

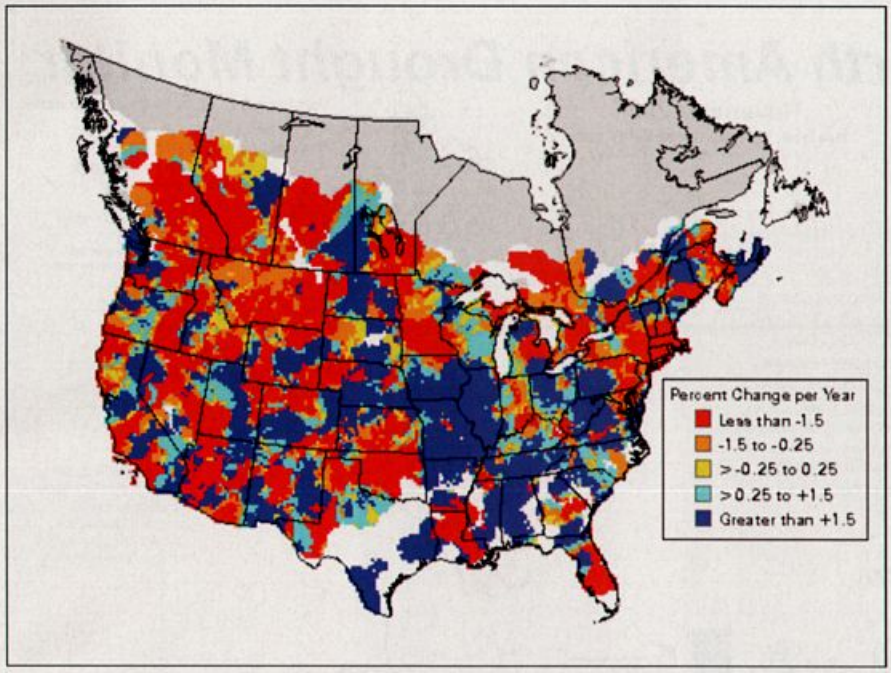

Figure 3. BBS Trend Map for American Kestrel, 1966–2003.

little-known tropical species, for instance. Moreover, it will allow scientists to review information about North America's long-distance migrants wintering in the Neotropics. By partnering with local conservation organizations and university programs in Central and South American countries, eBird can become the clearinghouse for the observations of those regions' nascent birding and bird-conservation communities.

With the participation of this journal's readership, along with thousands of other observers in this hemisphere, eBird can put bird observations to use for the good of the birds themselves—and readers can help eBird become a program that rewards users with the kind of information that is most important to them, to regional editors, to land managers, to conservation organizations, and to scientists who work on bird distribution and ecology. The potential for eBird seems limitless, and as a tool for the protection of birds and the future of birding its horizons extend as far as there are birds and people to record them.

Using examples drawn from last autumn's avian events, we outline below several ways in which a unified relational database can elucidate patterns of bird distribution—and how it will become an important tool in illuminating trends in bird populations.

WEATHER SYNOPSIS

The month of August was refreshingly cool throughout much of North America, particularly in the Midwest and Great Plains states, where temperatures were far below normal. The Red River Valley in western Minnesota and eastern North Dakota recorded its coldest August on record. Only the far western states had temperatures much above normal, including the warmest August on record for coastal Washington and Oregon and western Nevada. The pattern reversed itself as the season progressed, with unseasonably warm temperatures from September through November in much of North America. The Mississippi Valley, Gulf Coast and Midwest, and much of eastern Canada recorded temperatures that were much above average, with the warmest September through November on record for southern Louisiana. From Washington to Texas, temperatures were generally near normal. Warm conditions were reflected globally. According to the National Climatic Data Center in North Carolina, preliminary data suggest that the global average combined land and sea surface temperature was the warmest on record for the period September–November 2004.

The Atlantic experienced an active hurricane season, with 15 tropical storms and nine hurricanes (including six major hurricanes). The average storm season (1944–1996) consists of 10 named storms and six hurricanes, including two or three major hurricanes. An unprecedented four hurricanes affected Florida this year, marking the first time since 1886 that a single state was affected by four hurricanes in a single season. Six named storms made landfall on Caribbean islands this season. So devastating were these storms that we have little in the way to report of storm-blown birds: the affected areas were too damaged and inaccessible to permit birding, and many beloved birding and banding areas along the Gulf of Mexico coast were altered beyond recognition.

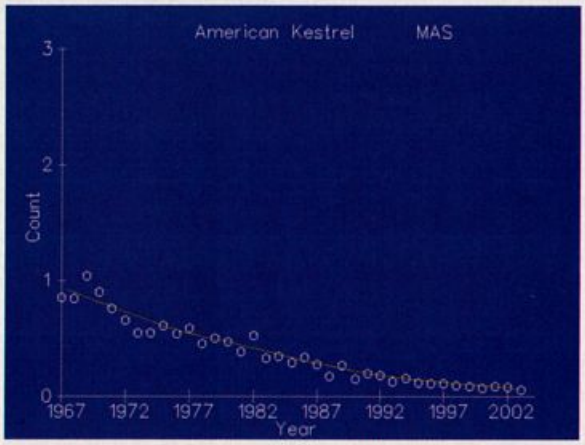

Figure 4. BBS Trend Graph for American Kestrel in Massachusetts, 1966–2003.

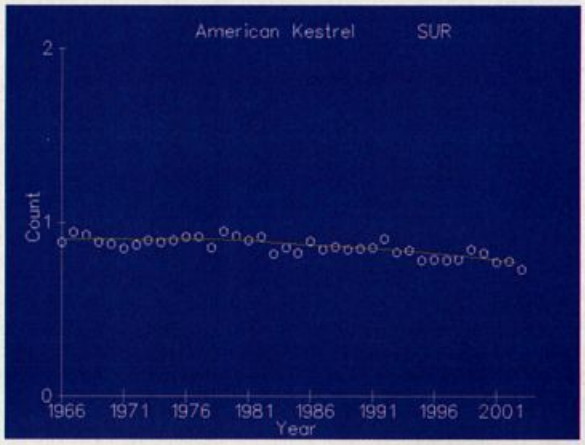

Figure 5. BBS Survey-wide Trend Graph for American Kestrel, 1966–2003.

These storms helped contribute to the second wettest August–November period on record for the contiguous United States. Also involved were a series of winter storms from September through November that brought moisture to the Southwest. California, Nevada, and Utah all received abundant precipitation in October. Portions of southern California were deluged with more than 1000% of a typical October's precipitation. By the end of November, snowpack ranged from near normal in Colorado to twice normal in Arizona. Snowpacks in the Pacific Northwest, northern Rockies, and east slopes of the Rockies were well below normal. Generally moist conditions in the West this season improved drought conditions. Preliminary data suggest that

for this first time since February of 1999, the percentage of the contiguous United States affected by moderate to extreme drought fell below 10% to 7.9%. Similarly, the percentage of the contiguous United States affected by severe to extreme drought fell to 4.4%, the first time it has dropped below 5% since October 1999 (NCDC 2004).

Despite the improving drought conditions, at the end of November, severe drought stretched from the Peace River region of British Columbia across northern Alberta and Saskatchewan. Long-term severe drought also affected southern Montana, eastern Wyoming and portions of Oregon, Nevada, Arizona and New Mexico. The *August 2004 North American Drought Monitor* (Figure 1) commented on the lack of data and even drought definitions for the northern Territories but still suggested that precipitation amounts for the Yukon Territory, Northwest Territories, and Nunavut were below 70% of average. The next summer may bring yet more devastating fires to northern Canada and Alaska unless the drought eases.

IS AMERICAN KESTREL A VANISHING SPECIES?

We have few more beautiful Hawks in the United States than this active little species, and I am sure, none half so abundant. It is found in every district from Louisiana to Maine, as well as from the Atlantic shores to the western regions.
— John James Audubon

A once-common bird may be disappearing under our noses. The fall migration of American Kestrels along the Atlantic Coast is legendary. Blustery golden September afternoons at Cape May Point, New Jersey and Kiptopeke, Virginia are dotted with their acrobatic silhouettes as they charge southward through clouds of dragonflies. A recent visit to Cape May last fall on an afternoon such as this produced none—not a single American Kestrel. An integral part of our collective memory of this place now seems to be vanishing.

Ernest Choate once estimated 25,000 American Kestrels in a single autumn day at Cape May Point: October 16, 1970 (Choate 1972). There are some who view this count with skepticism, as it can be exceptionally difficult to arrive at an accurate estimate on big flight days at this location. Even if the flight were just a quarter of what Choate estimated, it still would have been the largest single-day flight of this species ever recorded. Immense American Kestrel flights are not just a thing of decades past, however, as the official high count from the Cape May Hawkwatch of 5038 was recorded relatively recently: September 30, 1999.

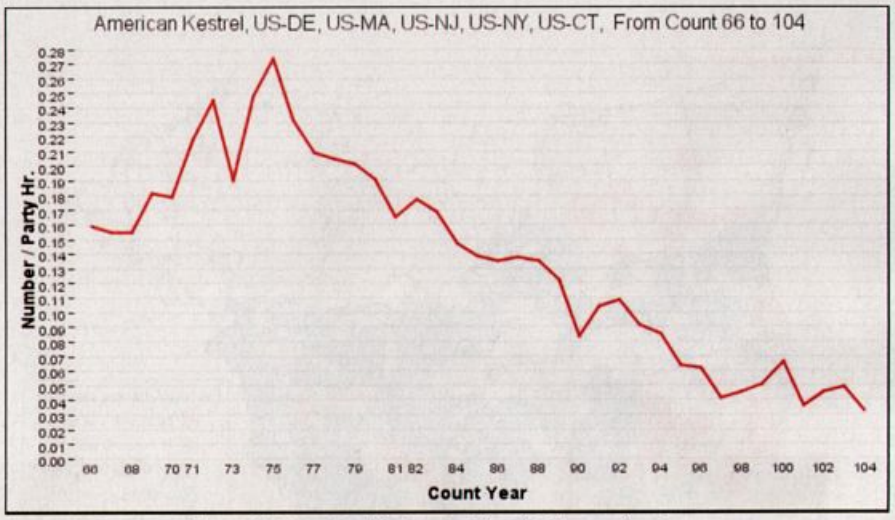

Figure 6. CBC Trend Graph for American Kestrel in Delaware, New Jersey, New York, Connecticut, and Massachusetts, 1966–2003.

In recent years, this species has drastically declined at East Coast hawkwatch sites, but the reasons for its decline are a matter of some debate. Hawkwatch data are fraught with many biases, and it typically takes many years to detect a long-term decline with confidence for a given species. With American Kestrel, however, the decline has been precipitous over the past five years, and the warning flags have been raised at many sites. Perhaps due in large part to the repeated concerns raised by the regional editors of this journal, American Kestrels are now included on many regional lists outlining species of concern in the Northeast. The continental bird conservation community, however, prioritizes species of special concern based on a variety of factors that includes global population size, the extent of breeding and wintering distributions, overall population trend, and threats to survival. Many species exhibit overall negative trends or negative trends regionally, but because of their large breeding distributions and relatively large populations, they fall just below the level at which they would be included on lists of the species of greatest conservation concern. This does not diminish their importance, but precious conservation dollars must be spent wisely, on behalf of species that are most in need of protection. Though declining, species such as American Kestrel are still widely distributed, and eBird users have the chance to contribute to our collective knowledge of their distribution and abundance by helping to forge a baseline data set from which scientists might extract important information regarding what may become the newest additions to conservation priority lists. This situation illustrates perfectly the role that recreational birders may play in support of real conservation science.

EVIDENCE OF A DECLINE

The decline of American Kestrel is apparent when looking at the migration counts from selected hawk migration sites (Figure 2). Those in coastal localities show particularly drastic changes (e.g., Cape May and Kiptopeke), whereas inland sites in the East show either a stable or slightly decreasing trend. While there is clearly a real decline in eastern coastal counts of this species, hawkwatch sites in the West—and at Hawk Mountain, Pennsylvania—have not registered such a sharp decline. American Kestrel trends in the West are mixed, showing both small local increases and decreases (White 1994, Kirk and Hyslop 1998, Hoffman and Smith 2003). Hoffman and Smith (2003) documented a significant increase in numbers at the Goshute Mountains, Nevada through 1997, but since that time, numbers at this site have trended steadily downward (Figure 2). Kirk and Hyslop (1998) suggested that this species has been decreasing in eastern Canada but that populations are largely stable in the western areas, apart from a notable decline in the Mixed-woods Plains ecoregion. In the Southeast, breeding populations of American Kestrel (subspecies *paulus*) have relied historically on the open-mosaic Longleaf Pine–Turkey Oak community of the sandhills (Smallwood and Bird 2002; C. Hunter, pers. comm.). Much of this habitat is gone (over 97% of the Longleaf Pine forest has been lost to logging and development), but the species has adapted well to nesting in oak-dominated savannas. While its population in the Southeast may be relatively stable, there is little doubt that numbers are greatly reduced from historic populations (C. Hunter, pers. comm.).

As is it true for most widespread species, the dynamics of American Kestrel's populations are complex. Several causes have been

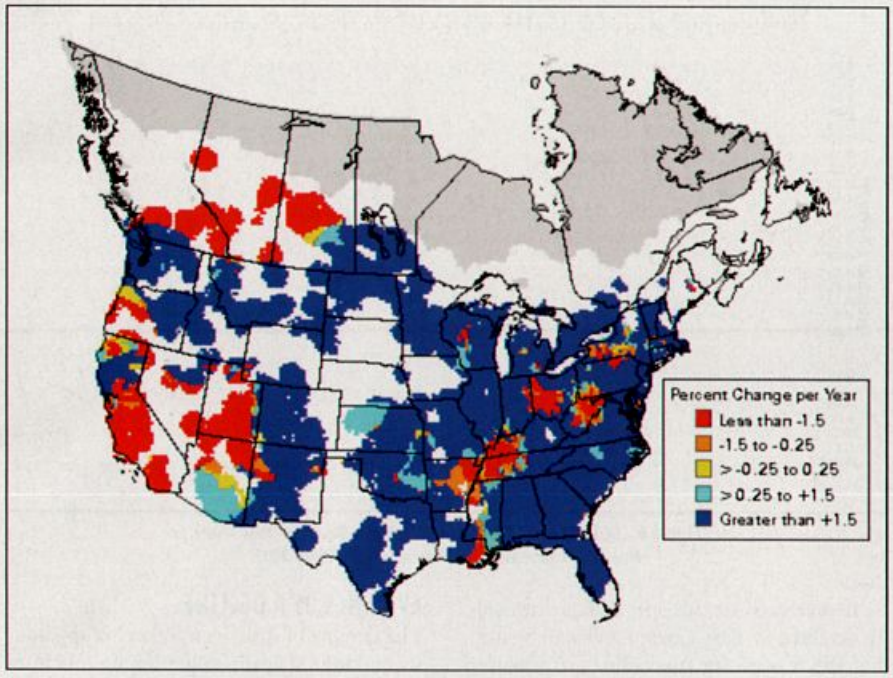

Figure 7. BBS Trend Map for Cooper's Hawk, 1966–2003.

suggested to explain its decline in the Northeast, scenarios that range from habitat loss to direct predation by Cooper's Hawks. The long-term data sets indicating population trends (Breeding Bird Surveys [BBS], Christmas Bird Counts [CBC]) are telling and quite distinct when viewed regionally. BBS trend data from 1966–2003 (Sauer et al. 2004) show that this species in indeed declining over much of the Northeast, but in other core areas it appears to be increasing (e.g., the Midwest and southern Texas) (Figure 3). Looking at trends for specific Northeastern states generally produces the same result among both data sets: while American Kestrel was never abundant on BBS routes (typically an index value of <1 per route), it has subsequently all but disappeared from this region (see Massachusetts, Figure 4). This graph might look insignificant, but what it is ultimately telling us is that a species once present on these routes no longer is. Looking at the species on a continental level, however, the trend appears stable, with little change in overall numbers from year to year (Figure 5; see the BBS website at <www.mbr-pwrc.usgs.gov/bbs/bbs.html> for caveats and a disclaimer regarding these data). Christmas Bird Count data, however, show a steady decline since the late 1970s from Massachusetts to Delaware (Figure 6). Given the evidence of a decline in the Northeast available in a variety of data sets, one must wonder what factors might be causing this species to disappear so rapidly.

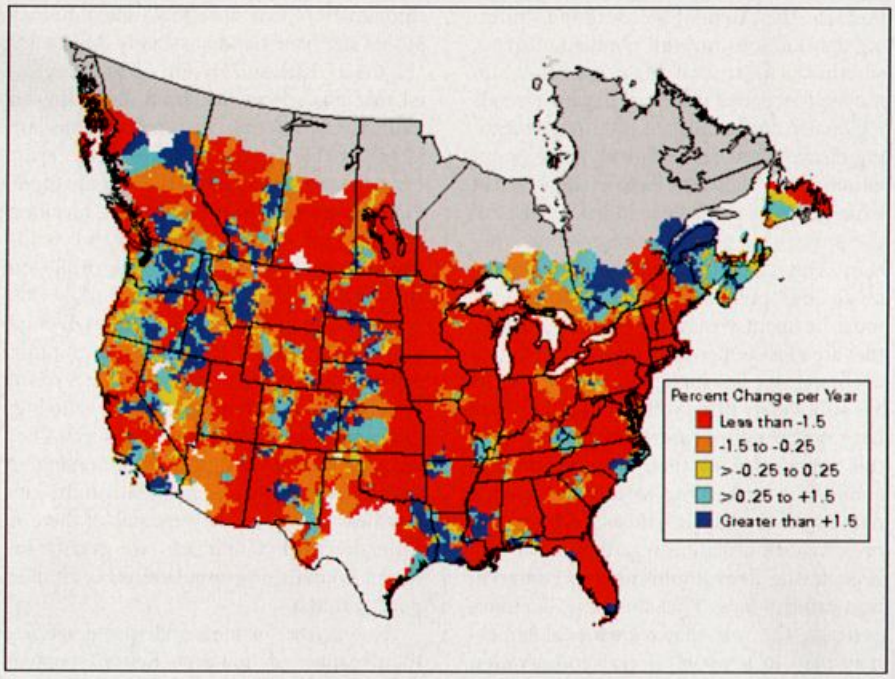

Figure 8. BBS Trend Map for Northern Flicker, 1966–2003.

HABITAT ALTERATION

Habitat alteration has been suggested as a cause of this species' decline in the Northeast, where what was once farmland and fallow agricultural fields have for some time been reverting back to mature deciduous forest—not a process that we always associate with habitat "loss" or alteration. While the conservation community has paid much attention to species using mature deciduous woodlands, open-country species declining rapidly in the East have often fallen by the wayside (Litvaitis et al. 1999, Askins 2000). The general perception that unbroken woodlands once stretched from the Atlantic Coast to the Great Plains has often been used to justify the low priority given to the preservation of eastern agricultural and other field habitats and their associated avifaunas. Askins (2000) and Day (1953) do an excellent job of challenging the assumption of unbroken woodlands in the pre-colonial East and detail how genuine grassland communities have existed to varying extents in eastern North America since the last ice age.

American Kestrel populations have undoubtedly been pushed and pulled in many directions with alteration of the North American landscape: from the ample grassland meadows interspersed throughout woodland systems created by large beaver populations; to alteration of habitat by Native Americans for agricultural interests; to European settlement and subsequent clearing of forests; and now by conversion of small family farms to modern agricultural and industrial complexes and to suburban housing. Thus it is difficult to determine the actual "historical" status of this species in the East, and its abundance probably varied with the amount of suitable habitat present.

American Kestrel is an adaptable species, breeding in a variety of open and semi-open habitats as long as suitable cavities, perches, and foraging habitat (open areas with short ground vegetation) are present (Smallwood and Bird 2002). With the introduction of nest boxes, it can occupy otherwise marginal habitat (e.g., marshlands). Several species of grassland birds in fact expanded into the East or increased there during the period of European settlement, among them Loggerhead Shrike, Horned Lark, Lark Sparrow,

and Dickcissel (Brooks 1938, Hurley and Franks 1976, Askins 2000). With an increase in nesting and foraging habitat available, American Kestrels surely also expanded into new areas, as the species clearly benefits from increases in suitable habitat (Sullivan et al. 2004). As a secondary cavity nester, American Kestrel relies on woodpeckers to excavate cavities or nests in natural tree cavities, recesses in cliffs, or in artificial structures. The initial conversion of native woodlands to a patchwork of small family farms likely influenced the population of this species positively in the Northeast. Small family farms typically created fallow fields set in a mosaic of woodlands and shelterbelts. Kestrels found many suitable nesting cavities in the homes and barns of these small farms. Thus as woodlands decreased in extent across the Northeast and some species were negatively affected (e.g., Wood Thrush), kestrels likely proliferated with the increase in breeding habitat.

As the economy has changed in the Northeast, so has the viability of the small farm. In many cases, farms have been simply abandoned, and what was once suitable nesting habitat for American Kestrels has reverted to deciduous woodland. Many old stone walls dividing the fields of historic farmsteads can still be found as one wanders through the now mature eastern forests in places like Massachusetts. Small farms were pulled in another direction as well. Big agriculture has replaced small agriculture, and the system of rotating fields and crops has become a thing of the past. Habitat changes clearly figure in the decline of American Kestrel in the East. But why the steep drop in numbers over the past five years? These habitat changes have been taking place for a century, and the decline of this species should appear gradual as habitat changes. There are other factors that must be considered.

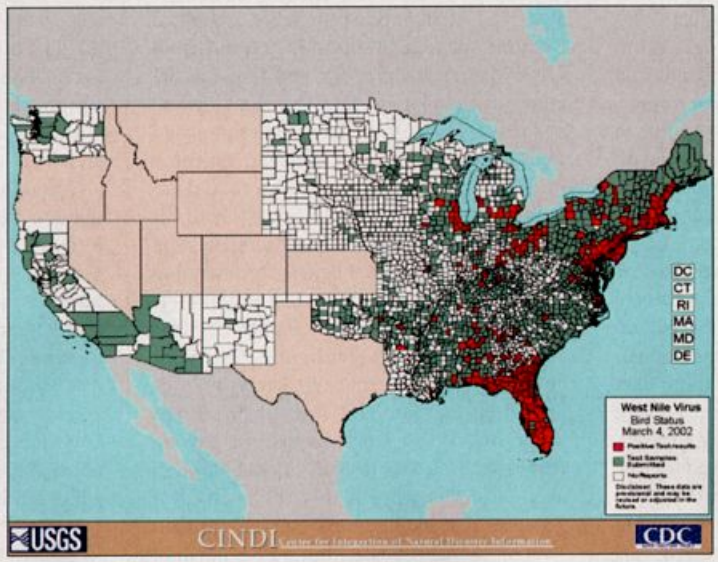

Figure 9. West Nile Virus prevalence map, 2002.

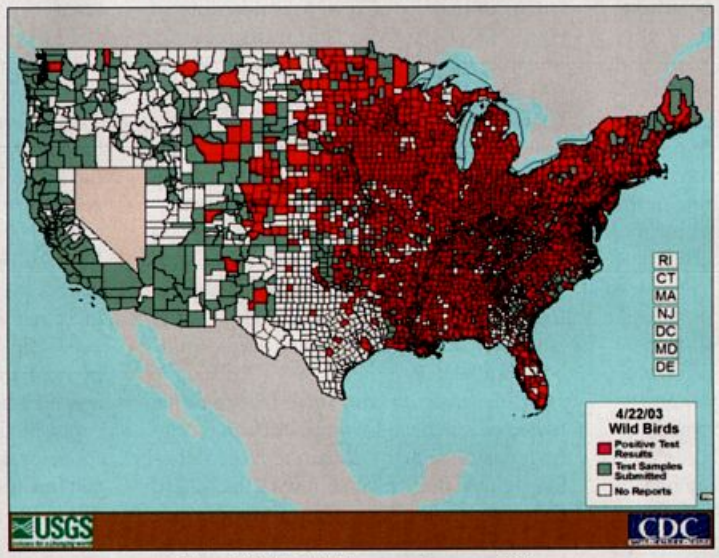

Figure 10. West Nile Virus prevalence map, 2003.

COOPER'S HAWK PREDATION

It has been suggested that predation by Cooper's Hawks may be influencing this species' decline in the Northeast (K. Bildstein, pers. comm.). Through the late 1970s, Cooper's Hawks were persecuted directly and indirectly by humans—first through shooting and later through the effects of DDT (Rosenfield and Bielefeldt 1993). Since this species has been protected, it has increased its foothold as a breeder throughout the Northeast, spreading especially into urban and suburban areas, where it now nests successfully. Cooper's Hawks are currently on a significant *upward* population trend across most of their range (Figure 7), their resurgence owing both to the lack of persecution and poisoning by humans and to their adaptation to human-modified environments.

A clear predator-prey relationship has been demonstrated between Cooper's Hawks and American Kestrels in Pennsylvania (K. Bildstein, pers. comm.), and it seems likely that predation pressure is affecting populations elsewhere where the two species are now breeding in close proximity to one another. One can imagine the easy targets that noisy fledgling kestrels make after exiting the nesting cavities. These birds flutter to the ground, where they beg for food over several weeks as their flight skills develop; some return to the nest cavity to roost (Balgooyen 1979, Smallwood and Bird 2003). Poorly placed nest boxes may be nothing more than lunch boxes to increasing numbers of Cooper's Hawks. Indeed, Keith Bildstein (pers. comm.) reports a severe decline in American Kestrel nest box populations in recent years in Pennsylvania—a reduction by 55% in the past five years alone! Much the same thing appears to be happening in parts of Massachusetts, where kestrel productivity has been monitored carefully for decades. But there are inconsistencies in this line of thinking. Both species appear to be increasing in the Midwest, for instance. If Cooper's Hawks were indeed responsible for the decline in kestrels, shouldn't American Kestrels be decreasing in all areas where Cooper's Hawks are becoming more abundant? (Or are there fewer nest box programs in the Midwest?) It is certainly likely that Cooper's Hawks are not helping matters with this species in the Northeast; however, direct predation is perhaps only part of the problem.

DECLINE OF NORTHERN FLICKER

American Kestrels rely on woodpeckers as the primary excavators of its nesting sites; in other words, kestrels are near-obligate secondary cavity nesters. Northern Flicker populations show strong declines over a large portion of the species' range, including in the Northeast (Figure 8). In addition to habitat loss, it is possible that the reduced numbers of Northern Flickers have left kestrels with fewer suitable nest sites in otherwise appropriate habitat.

WEST NILE VIRUS

Another culprit in kestrels' decline may be the advent of West Nile virus. In the same Pennsylvania nest box population of kestrels mentioned above, Keith Bildstein (pers. comm.) reports a 95% saturation level with West Nile antigens. This indicates a high level of contact with the disease but also suggests that at least in the Pennsylvania subpopulation, kestrels are becoming infected but are surviving the disease.

Since the summer of 1999, when West Nile virus (WNV) was introduced to North America in New York City, many people and countless birds have apparently died from its effects. Up to 138 species of birds appear to have been affected by illness associated with the virus, and American Kestrel is on nearly every state's list of WNV-affected species. Reinforcing the case for West Nile as a major killer of the species is the fact that the kestrel declines reflected over the last five years are drastic, not the gradual changes one would expect to see as habitat is lost and population dynamics change. It is likely more than a coincidence that the precipitous decline of kestrels in states neighboring New York appears to correspond to the spread of the virus in its first half-decade (Figures 9, 10). As the only North American falcon that nests in cavities, it may be particularly susceptible to the effects of WNV: according to Ringia et al. (2004), birds that sit in one place for long periods of time (e.g., captive birds) are more susceptible than those that are free flying. Might this be related to cavity-nesting species in some way? There are no data available about how WNV impacts different subpopulations of American Kestrels, but there may be something in the Northeastern subpopulation that is making the disease more deadly for the species there than elsewhere.

THE COAST VS. THE INTERIOR

While it is tempting to associate WNV with the decline in eastern kestrels, this connection is by no means a clear one. Some long-term datasets (as at Hawk Mountain, Pennsylvania) reflect little change in numbers of migrant kestrels. This site typically sees 300–400 kestrels per year, which would represent a lackluster single-day total for several Atlantic coast sites, at least historically. If habitat loss or WNV were the prevailing factor in the decline, then it stands to reason that all monitoring sites in the Northeast should show some decline. The data from Hawk Mountain are relatively stable interannually, whereas those from coastal locations all indicate a clear recent decline.

It has been often observed that a large proportion of raptors that migrate southward along the coast are juveniles, whereas the more experienced adults move southward along interior ridges. Is the discrepancy between coastal vs. inland trends the result of differential migration, with the coastal sites' recent decreases indicative of poor productivity? The BBS data suggest that at least some adults are disappearing from the Northeast, as routes that formerly detected American Kestrels no longer report the species.

We suggest that the large numbers of American Kestrels historically recorded along the Atlantic coast probably originated from the subpopulations to the north/east of Cape May and Kiptopeke and that the declines in numbers of migrants documented at these locales are perhaps directly related to the rather sudden reduction of these breeding populations. The fact that these populations have been particularly hard hit by a variety of factors (declining nesting habitat and Northern Flickers; proliferating Cooper's Hawks and West Nile virus) in recent years correlates well with the declines at coastal sites to the south. Importantly, inland sites in New Jersey (e.g., Raccoon Ridge and Montclair) are also reporting declines, suggesting that fewer kestrels are passing through all of New Jersey but not through areas farther west, such as Pennsylvania. It is possible that populations passing through Pennsylvania originate from points north of the Appalachian ridges and that those populations have suffered less severe declines in recent years than the Northeast's kestrels, thus the relatively stable trend observed at sites such as Hawk Mountain. There are likely many other regional and local factors that influence population trends, perhaps including increasing predation by Raccoons and other small mammals. More study is certainly needed to explore these topics, and all North American birders' observations of this species will become increasingly valuable resources for scientists investigating the population dynamics and ecological needs of this beautiful falcon.

While we have outlined the complex trends of American Kestrel using three long-term data sets, many species of birds suffering regional declines do not have the benefit of being regularly monitored during migration. eBird has the capacity to allow us to monitor the movements of populations on a continental scale, and helps provide important information where it is currently lacking—when birds are moving between breeding and wintering areas. Each time a checklist is submitted, eBird uses the power of contributors' observations to link the abundance and frequency of many species of birds to geographic areas, in effect providing a snapshot of bird distribution and abundance in space and time.

IRRUPTIVE SPECIES

The phenology of bird migration is wonderfully predictable—at least in crude terms. Each season we know, on some level, where most species will show up, when they will show up, and roughly how many there will be. To be sure, we are still frequently surprised by nonconformists (which are often the subject of the regional reports in this journal), but for all the imperfections in our knowledge, it is nonetheless astounding how well we can predict the whens, wheres, and whats of bird migration. Even those individual birds we like to call "vagrants"—the Pacific Loons on the East Coast and Tropical Kingbirds on the West Coast in recent decades—might be called *relatively* predictable.

Thankfully, there are some groups of birds that are much less predictable: Pine Siskins, Red-breasted Nuthatches, Bohemian Waxwings, Red and White-winged Crossbills, Evening Grosbeaks, Common and Hoary Redpolls, and the northern owls come to mind. To be sure, we have learned a great deal about the irruptions of even these species. Boreal populations of Great Gray Owls are generally believed to come south when their rodent prey base crashes (Nero 1980, Mikkola 1983, Duncan 1992, Bull and Duncan 1993); Common Redpolls generally irrupt in odd-numbered winters (e.g., 1999–2000, 2003–2004) (Bock and Lepthien 1976, Hochachka et al. 1999, Knox and Lowther 2000).

In the current issue's regional reports, Ken Brock writes that data from Indiana show a strong odd-year pattern for Red-breasted Nuthatch irruptions. Since 1974, the average total of Red-breasted Nuthatches seen in the Hoosier state during odd-numbered years is 109, whereas the mean for even-year flights is only 28. And, then, just as we start feel as if we can forecast these movements, there is a season like fall 2004. Red-breasted Nuthatches were reported from almost every region. And it wasn't just Red-breasted Nuthatches; the cornucopia of fall irruptives included corvids, chickadees, nuthatches, waxwings, owls, and finches—at least in portions of the West and Great Plains. While the winter issue will no doubt focus more on these movements, we will briefly consider four species that made impressive irruptions in fall, at least regionally: Red-breasted Nuthatch, Bohemian Waxwing, Pine Grosbeak, and Blue Jay.

There are very few instances when a single species is mentioned in more than four fifths of the regional reports, but that was the case for Red-breasted Nuthatch this season. The few areas where the species was not mentioned were along the U.S./Canada border, where the species is common (and space limitations thus generally persuade regional editors to focus on other species). They were reported "in droves" from the Southern Atlantic, in "all corners" of New Mexico, and even on Bering Sea islands—including 6 on St. Paul and 10 on St. Lawrence. Two counts from Cape May, New Jersey exceeded *120 individuals* in early October, while counts of 50–60 were noted north of Juneau, Alaska and in the Columbia Basin. Five were found on the Baja California peninsula. A pioneer made it to Fort Scaur, Bermuda.

So where were all these birds coming from? How many birds remained in breeding areas? Given the breadth of this year's irruption, it seems that breeders from the high-latitude boreal forests constituted much of the flight. And given the paucity of reports from the Northeast, it may be tempting to conclude that there was not as pronounced a movement of northeastern breeders. But to what extent were breeders from western populations involved? The presence of the species out of its breeding range in California, for instance, is generally attributed to irruptions in the western breeding populations. And where do these birds end up? Most regions mention that by November or earlier, Red-breasted Nuthatch numbers had returned to normal or near normal. Certainly, a few drift farther south: Texas's southernmost was at Pearsall (80 km southwest of San Antonio) on 26 November, while Florida's four were found 22 October–27 November. But, as is true of many finches, especially Purple Finch and Pine Siskin, most birds seem to disappear after the migration. Data from the Christmas Bird Counts should illuminate at least partly where these birds ended up in December and early January; the data were not yet ready as of press time.

It was also a fine season for Bohemian Waxwings in a more restricted area, mostly in the southern Rockies and portions of the Great Plains. Colorado experienced its best flight since 1989–1990, and Utah and Wyoming had a similarly strong flight. Small flocks of up to 21 were found in Kansas and Nebraska, where the last irruption had taken place in the early 1960s. Seven made it to northwestern Iowa, where very rare. Bohemians even ventured onto the Texas panhandle, where several were found 21–22 November, marking the first time the species had been observed in Texas in 30 years. The situation was very different in eastern North America, where Bohemian Waxwings were scarce. Bruce Mactavish noted that it was the "poorest autumn [...] in at least a decade" in the Atlantic Provinces. Mostly single birds appeared in the northern portion of the Hudson-Delaware region; one at Point Pelee, Ontario was the first there since 1995. Given the poor movement elsewhere in southern Ontario (and Pelee's geographic position, propitious for collecting western vagrants), one wonders if this bird wasn't part of the Great Plains phenomenon. The same could be proposed of one at Clinton Lake, Illinois, which established the first autumn record in a decade for Illinois.

The situation for Pine Grosbeak was generally similar to that of Bohemian Waxwing but on a smaller scale. In New England and most of the East, there were few reports. Out on the Great Plains, the Dakotas each hosted three, and eastern Montana had birds at two locales. A few were found on the Colorado Plains for the first time in at least a decade. Kansas also had nearly a *dozen* Pine Grosbeaks—accurately described as a once-in-a-lifetime event for Kansas birders (Oklahoma birders would be sent into orbit later in the year, when their first state record arrived at Guymon—but we're poaching on the Winter Season). Pine Grosbeaks were also found at several locations in northern Arizona, after having become very difficult to find there in recent years. Perhaps most surprising of all was a female-plumaged individual at Galileo Hill Park, a desert oasis in southern California, in early November. To speculate on the source of these birds is probably futile, but if call-types do differ consistently between subspecies, then at least some of the Great Plains birds were tentatively identified as *montanus*, the Rocky Mountain race.

Blue Jay received more attention than usual, even in much of the East, despite its status as a relatively common species that usually misses mention in the regional reports. In part, this may result from the widespread attention the species has received as a result of West Nile virus, but it also likely reflects the magnitude of the Blue Jay flight in fall 2004. Several counts of 400–600 migrants were made in southern New England. A four-week stationary count at Kiptopeke, Virginia logged over 15,300 in four weeks, the best in the past six seasons but still below historical highs. Blue Jay numbers near St. Louis were described as "back to normal." While some could interpret this as a rebound in the local population, it seems more likely that this was the result of an exodus from the north, apparently of the widespread northern race *bromia*. In Kentucky and Tennessee, the species had "an extremely heavy and noticeable migration," but then largely departed. Palmer-Ball and Sloan attribute this largely to the dearth of hickory nuts, beechnuts, and acorns.

The real Blue Jay story was in the West. Observations of even small flocks of migrating Blue Jays are still very unusual in Colorado, and a flock of 200 moving southward was unprecedented for the state. A mind-blowing 319 Blue Jays were found in Idaho and 132 in western Montana. Consider that that entire area had only *seven* reported last year. At least eight were found in Utah, and two were in Nevada. Eastern Washington hosted 47 Blue Jays, including 15 in Dayton, while 37 were reported from eastern Oregon. Three made it to western Washington and one to northern California, the first since 1997–1998. The last widespread Blue Jay invasion into the West was in 1990–1991; prior to that, it was 1976–1977.

Blue Jays have gradually spread westward across the Great Plains in response to changes in habitat (Smith 1978, Tarvin and Woolfenden 1999). Consider that Blue Jays were unrecorded in Colorado until 1905 and were still considered uncommon well into the 1950s (Bailey and Niedrach 1965). Expansion increased dramatically in the West during the 1970s, with nesting reports for New Mexico, Wyoming, Montana, Oregon, and British Columbia (Godfrey 1986, Campbell et. al. 1997). Many of these nesting attempts followed the invasion of 1976–1977. Westerners should be watchful for nesting attempts by Blue Jays after this year's invasion. Appropriate breeding habitat for the species exists in many towns and cities in the West that lie outside the regular breeding range of Steller's Jay, with which hybridization would also seem likely following strong autumn flights in the West. Blue Jays may well try to consolidate range extensions or colonize new areas, as they have in parts of Colorado, Wyoming, Montana, New Mexico, and Idaho.

Now consider what we would be able to say about these irruptive species if thousands of birders throughout North America were already contributing their observations of Red-breasted Nuthatch, Pine Grosbeak, Bohemian Waxwing, and Blue Jay to eBird on a regular basis: with sufficient coverage, we could literally watch the irruption as it unfolds.

CAVE SWALLOWS RIDE AGAIN!

The late fall push of Cave Swallows into the Northeast may not generate the same excitement that it once did. But Cave Swallows are rare enough that birders still submit each observation to state, regional, and national publications. We know with some degree of confidence where, when, and how many Cave Swallows were seen in eastern North America for the season. This allows us to analyze their movements in great detail. It's fair to say, oddly enough, that we know more about the push of Cave Swallows into the Northeast than we do of widespread species like Red-breasted Nuthatch and many other irruptive species!

When looking at an eBird-generated map of the distribution of extralimital Cave Swallows for autumn 2004, between 30 October and 30 November (Figure 11), we should ask ourselves why the birds might be distributed in this way. Because every record in eBird has embedded geospatial component, we can start to look at the movements of birds in relation to any number of factors, from synoptic-scale weather patterns to habitat changes or pesticide prevalence levels. The Geographic Information System (GIS) component of eBird's ca-

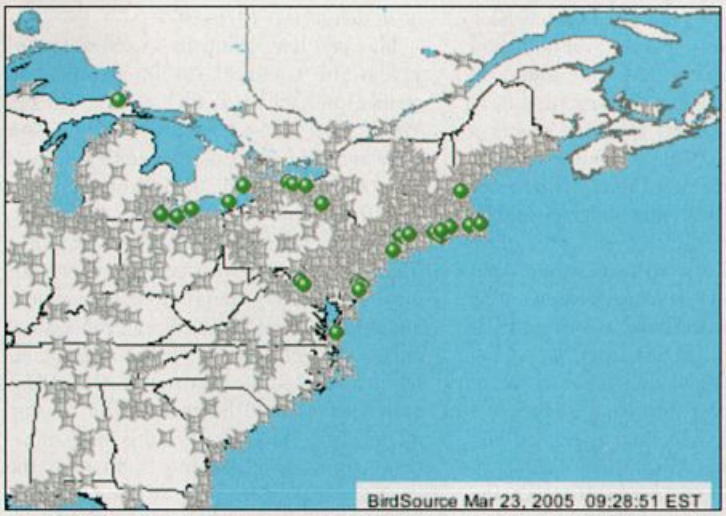

Figure 11. Reports of Cave Swallows in the East 30 October through 30 November 2004. Green dots indicate positive observations; gray stars indicate negative observations. The scale of eBird maps can be adjusted when viewing data in map form, right down to the level of neighborhood streets, so that it is possible to see exactly where individual birds were seen with a few clicks of the computer mouse. Figures 11, 12, 14, and 15 are just as one would see them on eBird.

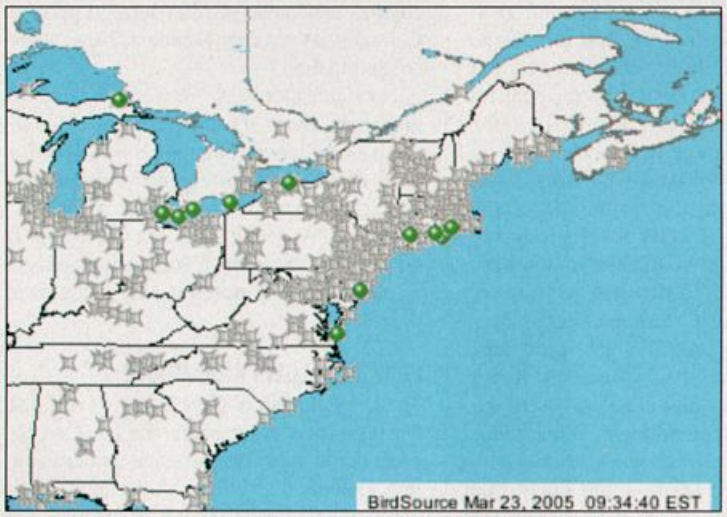

Figure 12. Reports of Cave Swallows in the East 30 October through 10 November 2004.

pability will surely be brought to bear in decisions about habitat preservation. With increased user participation, the buffers around these sightings can be reduced from being relatively large as they are now, to incredibly small, thus allowing the discrimination of more specific migratory routes, and even the potential for determining the connections and "flow" of habitat remaining for these birds on their routes. With that in mind—and with apologies to those for whom Cave Swallow is not (or not yet) a top-shelf vagrant—let's explore yet again the sprawl of Cave Swallow distribution in North America.

In 2004, the Cave Swallow explosion started in earnest with two back-to-back, fast-moving low-pressure systems originating in Texas, both of which swept quickly off toward the Northeast from 2 through 5 November (Figure 12). Cave Swallows were obviously entrained by these systems and were scattered at inland locations during the passage of the low; however, as the low moved off to the north and winds turned westerly after 5 November, many birds appeared in coastal localities.

Again in late (23–28) November, two fast-moving low-pressure systems charged northeastward from Texas and the central United States in late November (Figures 13a–c), scattering Cave Swallows across the Mid-Atlantic in unprecedented numbers (Figures 14, 15): the species was reported from eight states and provinces across the Northeast and Mid-Atlantic in the pe-

Figure 13a

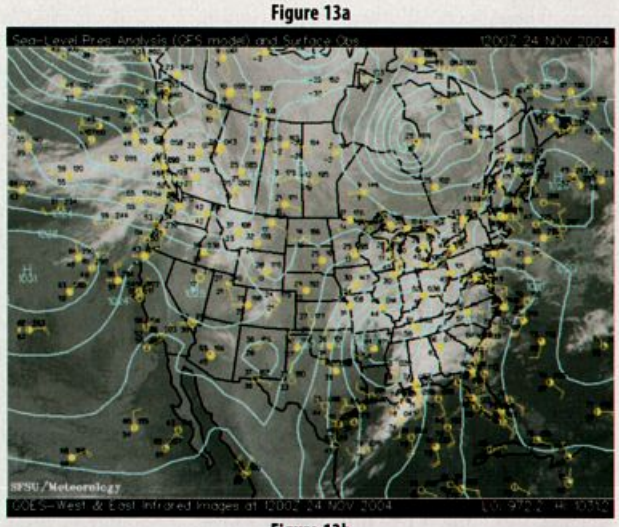

Figure 13b

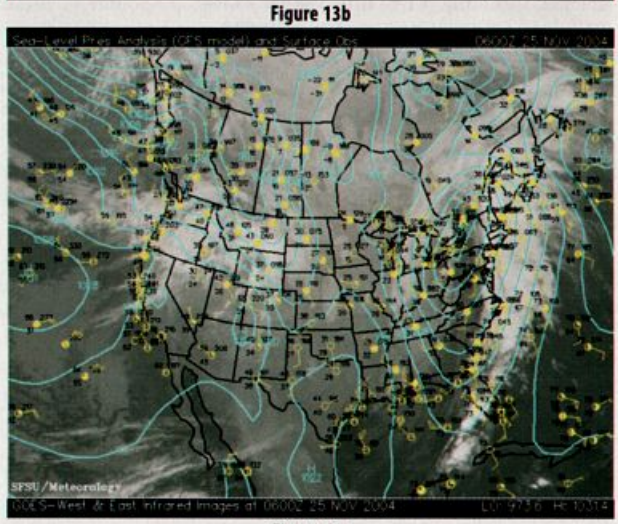

Figure 13c

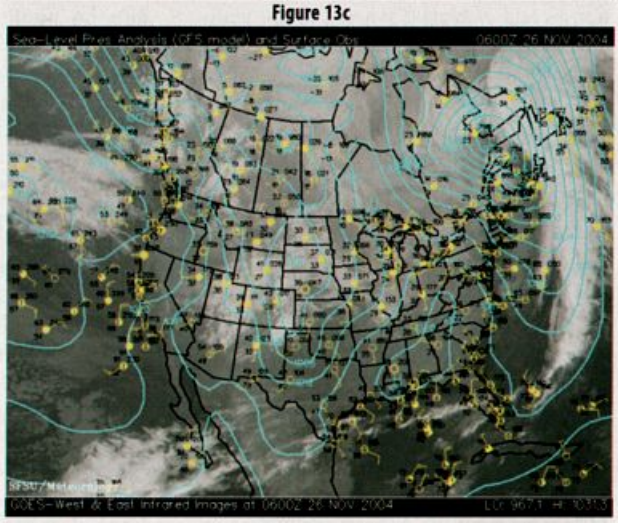

Figure 13. These weather maps show the progression of a low-pressure system that moved from Texas northeastward toward the Ohio River Valley (Fig. 13a), into the Northeast around Lake Ontario (Fig. 13b), and exited North America in Labrador (Fig. 13c) 24–26 November 2004. In the first map (Fig. 13a), note the strong southerly airflow from the Gulf of Mexico to the eastern Great Lakes; this flow is believed to be responsible for the initial displacement of Cave Swallows from the south toward the eastern Midwest and East Coast states. In the second map (Fig. 13b), with the movement of the system toward the northeast, the winds begin to shift to the northwest in those areas early on 25 November, finally becoming powerfully northwest by the next day (Fig. 13c). *Maps from the GOES satellite courtesy of the California Regional Weather Server at* <ftp://virga.sfsu.edu/pub/composites/>.

riod 23–28 November. At least 75 birds were near Kiptopeke State Park on 28 November, eclipsing anything previously seen in the state.

Looking at the data more closely, we can see that the distribution of Cave Swallows in the East is closely linked with the predominant flow of surface winds. When a warm southwesterly flow prevailed over the region (Figure 13a), Cave Swallows were distributed in a variety of locations regionwide, presumably being detected as they spread northward throughout the area (Figure 14). When the winds moved around to the west (Figures 13b, 13c), these birds were detected almost entirely coastally, with incredible concentrations in the Mid-Atlantic (Figure 15). The current thinking suggests that strong low-pressure systems moving northeastward in late autumn, followed by relatively weak high-pressure systems, typically bring Cave Swallows toward the Great Lakes and East Coast. However, it would appear to be the strong flow of southerly winds—which precedes the passage of the system as a cold front—that is responsible for the swallows' northward dispersal. It is interesting that observers in New England, New York, New Jersey, and Pennsylvania found Cave Swallows only in the typical corridor (24 October through mid-December), whereas observers at Kiptopeke, farther south, found five or more Cave Swallows on 19 *September*, all apparently entrained by the remnants of Hurricane *Ivan*, whose pathway and windfields did resemble these later nontropical low-pressure events. Observers should be on the lookout for Cave Swallows at times earlier than the "expected" November season, particularly when systems move northward from the Southeast and Texas in this fashion.

Another useful output available in eBird is the frequency of observations. In the graph below (Figure 16), there are clearly pulses of Cave Swallow activity in the East over the course of four weeks: we see three distinct peaks that show the average number of birds on each checklist submitted with a positive sighting for Cave Swallow. These peaks correspond roughly to the passage of cold fronts, as westerly winds concentrate the previously more widely dispersed Cave Swallows at coastal sites. The graph shows nicely the dramatic peak associated with the large groups of Cave Swallows reported in coastal Virginia after the late November system.

The fall flight of Cave Swallows in the East and Midwest offers a relatively clear example of how birds might be affected by synoptic-scale weather events. The reason we are able to draw so many inferences about the relationship of this species' movements and weather systems is that birders have been aware of, and diligently recording, each extralimital individual that is found, for about the past 10 years. This gives us the ability to map vagrants and draw correlations to weather events—and to see potentially similar patterns in even scarcer vagrants such as Ash-throated Flycatcher (Figure 17). Such a procedure would seem impossibly difficult to follow with more widespread species; however, if birders were to record (and register) the numbers of more common species on a regular basis, scientists could also look at their distribution, and perhaps movements, in relation to patterns of both climate and weather. Using eBird as a tool for recording your bird sightings permits each of your observations to be pegged to a specific location, thereby providing scientists with georeferenced data that can then be compared with a suite of other variables. And scientists aren't the only ones who might put eBird's map-

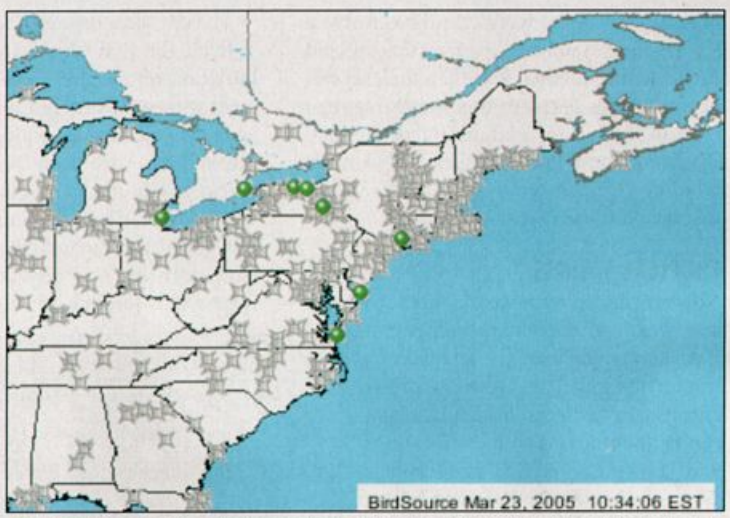

Figure 14. Reports of Cave Swallows in the East 20–25 November 2004, during a period of strong southerly and southwesterly winds over most of the eastern Midwest and the East ahead of a large low-pressure system (Figures 13a, 13b).

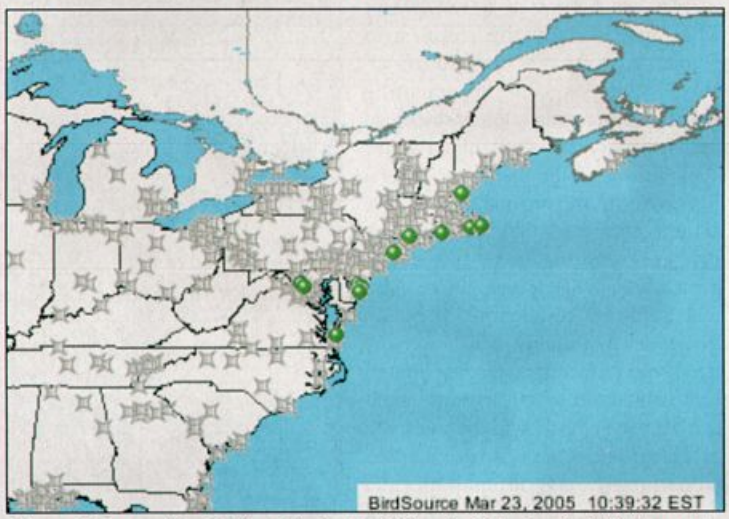

Figure 15. Reports of Cave Swallows in the East 26–30 November 2004, after winds shifted westerly and northwesterly during and after the passage of a large low-pressure system (Figure 13c).

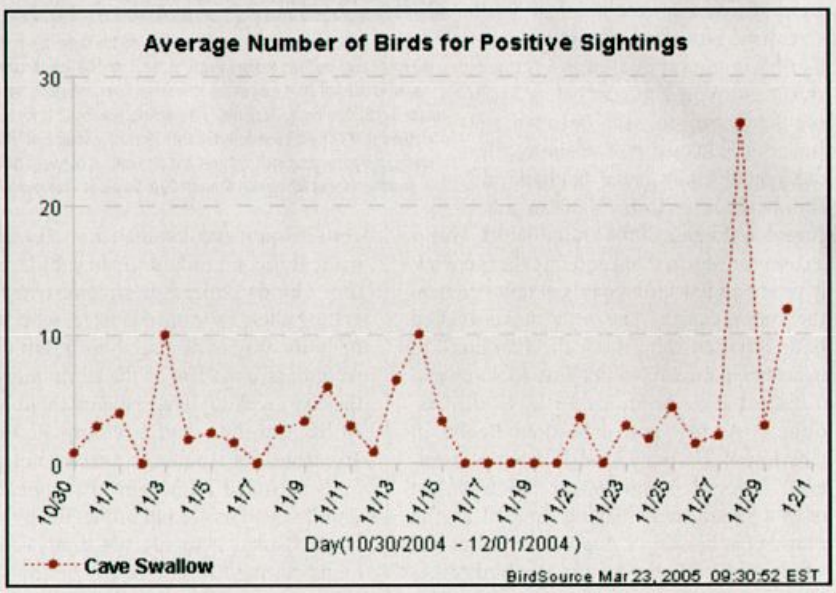

Figure 16. Reports of Cave Swallows in the East and eastern Midwest 30 October through 30 November 2004. This graphic was made quickly and easily on the eBird website.

ping capabilities to work: word has it that a few eBirders watched the maps this fall and used them to predict, and then *find*, several of the rarities listed in this issue's regional reports, including extralimital Bohemian Waxwings and Pine Grosbeaks. No more weeding through tedious listserve reports: just watch those maps!

TROPICAL STORMS

Nowhere is the connection between birds and weather more starkly apparent than during and after the landfall of a tropical cyclone. Nevertheless, different species' patterns of displacement can be flummoxing to interpret: terns and shorebirds, jaegers and Sabine's Gulls are frequently entrained by (or grounded by) these storms, but strictly pelagic birds tend to be rather rare, especially away from the coast—scarce in number but often quite diverse when one looks at the season as a whole. We'll give a brief storm-by-storm synopsis here, commenting mostly on the pelagic birds displaced and leaving reports of inland terns, shorebirds, and the like to the several S.A. Boxes in the regional reports. We should repeat here that hurricanes are dangerous storms to be feared and avoided: the 2004 season, the costliest in U.S. history, resulted in $42 billion in damaged property, 3150 or more dead, and tremendous damage to natural habitats in seven or more countries. If you go birding in the aftermath of a tropical storm or hurricane, heed all warnings from local authorities and don't take risks that endanger yourself or others.

August. *Alex*, the season's first storm, formed off the coast of South Carolina and grazed easternmost North Carolina at Buxton as a Category 1/2 storm on 3 August before heading back out to sea. Because the storm's eye stayed just offshore, *Alex* did not officially make landfall, and the heaviest winds (100 m.p.h.) stayed to the east of the Outer Banks. This is a common storm track and one that generally produces few bird records of note, even on the outer coasts. The only storm-related birds reported came from the Carolinas, as expected: a Brown Noddy plus 36 Sooty and 3 Bridled Terns at Emerald Isle, North Carolina 3 August and a Masked Booby in Charleston Harbor, South Carolina 1 August. Tropical Storm *Bonnie* followed just over a week later, making landfall in the Florida Panhandle 12 August; the storm had winds of just 55 m.p.h., and few birds other than terns were reported in association with that relatively weak storm.

The day after *Bonnie*, *Charley* was awful.

It hit the Fort Myers area as Category 4 hurricane on the afternoon of Friday, 13 August, with winds of 145 m.p.h., and ripped across the peninsula, exiting the next morning, still a hurricane, at Daytona Beach. The storm again made landfall the next day around McClellanville, South Carolina as a Category 1 and ran up the coast to New England, with heavy rains and tropical-storm-force winds through 15 August. The storm's costs to property, estimated at $14 billion, make it second only to *Andrew* in U. S. history. Florida birders, mostly prevented from getting afield by storm damage, reported little in the way of displaced birds, but Carolina birders saw a few, as the storm moved up the coast and out to sea. Figure Eight Island, North Carolina had a young Red-billed Tropicbird 14 August, a species not previously recorded onshore in that state. South Carolina had its second Brown Booby, at Deveaux Bank 18 August (its third would be found during *Frances*, at Charleston 7 September and its fourth well ahead of *Ivan* 14 September, at Folly Island). As noted in last autumn's essay (Sullivan 2004), tropical pelecaniforms are probably rarely observed in the context of hurricanes because they are relatively scarce in adjacent pelagic waters.

Figure 17. Perhaps brought northeastward by the same low-pressure systems that brought Cave Swallows to the Atlantic states, some 18 Ash-throated Flycatchers were found in late fall 2004 east of the Mississippi River, including this one on the Chesapeake Bay Bridge-Tunnel, Virginia 23 November, species #342 for the facility. In general, western species have been detected with increasing frequently in recent autumn following the passage of such systems, but correlations between their appearances and weather events are weaker than for Cave Swallow. *Photograph by Robert Simpson.*

September. *Frances*, though born in August, did its damage in September, passing over the Turks and Caicos Islands 1 September as a Category 4 hurricane, moving very slowly through the central Bahamas over the next two days, and making landfall as a Category 2 hurricane near Stuart, Florida early on 5 September, with winds of 105 m.p.h. The storm tracked out into the Gulf of Mexico near Hudson, then looped out, striking the state *again* at St. Marks 6 September with 65-m.p.h. winds. Finally, it moved northeastward toward Georgia and the Appalachians, where some locations saw over a foot of rain and damaging floods.

Though its path was rather unusual, *Frances* was a typical hurricane in its observed avian fallout. Sooty Terns, almost all adults, turned up in a wide arc from the Gulf Coast to New Jersey (Table 1), and there were a few Bridled Terns along the Carolina coast, with the rarest of the tropical terns, Brown Noddy, found four times as singles 7–11 September (Georgia, North Carolina, two in South Carolina). As far north as Lake Champlain, Vermont, the storm's remnants were credited with downing 21 Black-legged Kittiwakes 10 September.

On 7 September, Category 4 Hurricane *Ivan*, a classic Cape Verde storm, struck a direct blow to Grenada in the Lesser Antilles, destroying most dwellings there and damaging habitats from coast to mountaintops. As a Category 5, *Ivan* moved to southwestern Jamaica and the Cayman Islands on 11 September and the western tip of Cuba 13 September. In the United States, this terrible storm hit the Gulf of Mexico coast near Pensacola, Florida and Gulf Shores, Alabama 16 September, a Category 3 storm packing 130-m.p.h. winds. From there, it moved inland, gradually weakening to an extratropical low on the Delmarva Peninsula, but then looped around to the southwest and back into the Gulf of Mexico off Florida 21 September; its last landfall was over southwestern Louisiana 24 September. Damages from *Ivan* were estimated at $13 billion, just slightly less than those associated with *Charley*.

In addition to Sooty and other terns discovered after landfall on the Gulf coast (Table 1), an exhausted Brown Noddy was found Big Lagoon State Park, Florida 16 September, and another was in Wilcox County,

Alabama the same day. Black Skimmers were reported far inland after the storm: 15 in Alabama, two in Mississippi, from five locations in Georgia 17 September, and even in Charles County, Maryland 19 September. Tubenoses, almost nonexistent in the annals of this autumn's hurricanes, were also not anticipated, given the relative dearth of shearwaters and petrels in Gulf of Mexico waters. Storm-petrels, though little detected, were doubtlessly affected: single Band-rumped Storm-Petrels were recovered 17 September in Barbour County, Alabama and 19 September in mountainous Nelson County, Virginia. Dozens must surely have been driven inland; Band-rumped is probably the most numerous species of tubenose in the Gulf of Mexico, and the detection rate for this species in the lake-rich Southeast and in southern Appalachia, where very little storm-birding was done, must be very, very low.

As a tropical storm, *Jeanne* was already deadly, bringing tremendous rainfall to the Virgin Islands and Puerto Rico 15 September and then to Hispaniola, where over 3000 people were killed in mudslides, mostly in Haïti 16–17 September. Strengthening into a Category 3 storm, *Jeanne* hit the Bahamian islands of Abaco and Grand Bahama on 25 September, islands that had already been battered by *Frances*. It lingered off the Florida coast until early on 26 September, coming ashore there near Stuart—some 5 km from the landfall center of *Frances*. The storm hit as a Category 3, winds 120 m.p.h., just 20 days after *Frances*. *Jeanne* then traced the peninsula's coast to the northwest, moved into Georgia the following day, and finally exited the Atlantic coast at New Jersey on the 29th. Damages totaled nearly $7 billion. Notorious in this storm's apparent cargo, which was mostly limited to terns and shorebirds, were several Caribbean (American) Flamingos in Florida, probably individuals driven there from Greater Antillean colonies. Magnificent Frigatebird, strikingly absent in the season's roster of hurricane birds (with the exception of ca. 1500 in southern Louisiana, west of the track of *Ivan*, 15 September) was reported extralimitally, a single bird at Cape May 26 September, probably related to the storm. Surely *not* related to *Jeanne*, but perhaps related to an earlier storm, Black Skimmers turned up far inland just before *Jeanne* made U.S. landfall. One was at Riverlands Environmental Demonstration Area, Missouri on the afternoon of 25 September, with another not far away in Madison County, Illinois the same day. Miller Beach, Indiana next had one 29 September, and it or others were at Wolf Lake and Morse Reservoir 10 and 16 October, in the same state. Distances of over 250 km separate some of these sites, and it is not clear how many individuals were involved. A Black Skimmer on the Delaware River south of Philadelphia 24 *November* may well have been a late-departing displaced bird, but, as with wayward Royal Terns, this species is sometimes found inland outside the context of tropical storms.

The observational data available after the passage of tropical storms and hurricanes can be voluminous, and in so many cases, it can seem a hopeless task to organize these data and make sense of the patterns that emerge. Though there are many biases to consider, eBird represents, currently, the very best tool available for plotting reports of hurricane-driven birds and comparing those reports to meteorological data. We should save this exercise for a future column—meanwhile, eBird welcomes all such reports, and their timely inclusion in the database will permit others to investigate patterns of seabird dispersal in storms many months before *North American Birds* arrives in the mailbox!

RED-THROATED PIPIT REDUX

Some may ask, "*what* Red-throated Pipits!?" And the truth of the matter is that few Red-throated Pipits were recorded on the Pacific Coast and in Alaska in fall 2004. But the age composition of this year's birds was of real interest. During the fall of 2003, a large-scale invasion of Red-throated Pipits and of *japonicus* American Pipits was detected along the Pacific Coast from Alaska to Baja California Sur (Sullivan 2004). Although there were well over 300 Red-throated Pipits seen that year, none were specifically reported as adults in 2003 south of Alaska. During the fall of 2004, however, at least three adults were noted in California and Baja, in a year when there were as few as 13 individuals reported south of Alaska.

Following 2003's phenomenal flight across the region, the first spring migrant Red-throated Pipits were noted in Oregon and Washington (Mlodinow et al. 2004). This suggests that a number of individuals successfully wintered in the Americas and moved back northward to the western Alaskan breeding areas during the spring of 2004. As noted by Erickson, Iliff, Palacios, and Carmona, the number of adults reported this fall suggests that these could have been individuals from the invasion of 2003, possibly returning on the same migratory route that was taken successfully in 2003.

This raises the larger question of how weather events influence the distribution of birds in both long and short terms. Perhaps some Red-throated Pipits initially displaced by storms will develop new migratory pathways that take them to wintering areas in Central America instead of to typical wintering areas in Asia and Africa. Such changes in bird distribution can occur rather quickly or inexorably slowly, in human terms: a population of birds might take the span of a lifetime to colonize an area. Gradual changes such as these can only be documented through the help of the birding community and projects such as eBird, the Breeding Bird Survey, and the Christmas Bird Count. And of course, it doesn't hurt to have *North American Birds*—a journal that in a multitude of ways has permitted amateurs and professionals a much-needed sounding board for speculation on how and why birds' distributions are changing. We appreciate the opportunity to make a case for eBird in this forum—this journal's readers, we hope, will lead the way in your local communities for the eBird revolution. We need to join all our communities, and the observational power they represent, into a common continental community of observers who report what they see, so that our time in the field and the notes that preserve that time do not brown, wither, and fall away like so many autumn leaves.

Table 1. Selected reports of Sooty Terns displaced by landfalling hurricanes, 2004.

Count	Location	Date	Storm
7	Tybee I., GA	7 Sep	*Frances*
7	L. Lanier, GA	7 Sep	*Frances*
1	S. Holston L., TN/VA	8–11 Sep	*Frances*
1*	Letcher Co., KY	9 Sep	*Frances*
1	Assateague I., MD	9 Sep	*Frances*
1	Cape May Pt., NJ	9 Sep	*Frances*
2	Jefferson Co., TN	17 Sep	*Ivan*
1	Orleans Parish, LA	16 Sep	*Ivan*
1	Wilcox Co., AL	16 Sep	*Ivan*
1	Marion Co., TN	17 Sep	*Ivan*
8	West Point L., GA	17 Sep	*Ivan*
1	Birmingham, AL	17 Sep	*Ivan*
6	Clay Co., AL	17 Sep	*Ivan*
1	Sardis L., MS	3 Oct	*Ivan*

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