

THE CHANGING SEASONS

...a hurricane fall

Paul A. DeBenedictis

The Fall 1985 migration was marked by an unusually large number of Atlantic Ocean hurricanes, generally mild weather otherwise, widespread irruptive species and a fine assortment of vagrant birds. This summary, hampered by the lack of three regional reports, reflects yet another novelty for me. This is the first season I have had both a computer and a data management program of sufficient capacity to automate the processing of most records that appear in this issue. In processing them I learned several lessons that may be useful to other birders. Let us begin by examining the events of the season and end with comments on automated processing of avian records.

Hurricanes

No fewer than seven hurricanes made landfall on the North American mainland this fall, more than twice average. The Gulf Coast of the United States was especially hard hit, but much of the Eastern Seaboard also was affected. A good overview of the relationship between hurricanes and birds in North America appears in the Southern Atlantic Coast Region, so I won't repeat it here. After we review each of these hurricanes, there is another point that can be added to this summary.

I tried to associate bird records with a particular hurricane's passage by selecting those reports from the entire data set that were inside a rectangular area extending 10° north and east and 5° south and west from the storm's center, on the same day. These boundaries were chosen to reflect the usual prevalence of avian records north and west of a storm's center. Further, this area is large enough to include birds at the storm's periphery, and also gives good day-to-day overlap in coverage. To check for laggard records, I then added all reports from within a square area 20° on a side, centered on the hurricane's last position and made during the week following dissipation of that storm. Almost all bird reports from the last two or three days of that period provided unlikely associates of the hurricane. Moreover, caution should be exercised when associating records and observations with a given storm. Birds are excellent navigators and have been observed flying through or into weather severe enough to ground small aircraft. Although hurricanes have sufficient strength to carry birds far from their usual paths, it is likely that many birds associated with the passage of these storms would have passed through unseen had the weather been less severe.

Hurricane Danny entered the scene August 13, from the Yucatan Channel (Fig. 1). At 7 A.M. on the 14th, its center was 200 miles south of New Orleans, in the open Gulf of Mexico. It made landfall in south-central Louisiana on the next morning. By the morning of the 16th it had degenerated to a tropical depression centered over northeastern Louisiana. Ever weaker, it was centered near the Mississippi-Tennessee border on the following morning, and an ill-defined area of rain was east of Chesapeake Bay on the morning of the 18th.

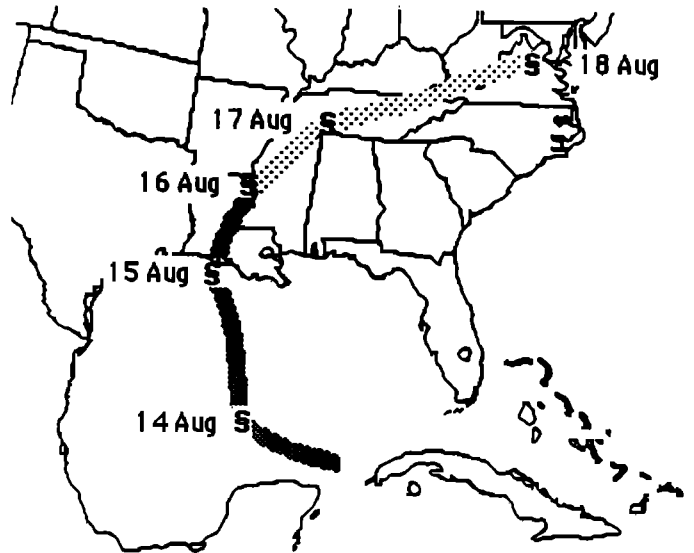


Figure 1. Hurricane Danny with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

Most birds associated with Danny were in the Central Southern Region, but records were scattered as far north as the Appalachian and Middle Atlantic Coast regions. Florida birders found a Masked Booby, and a Curlew Sandpiper, and over 2000 Silt Sandpipers were grounded by the storm's rain shield. Louisiana produced a Magnificent Frigatebird, Reddish Egrets, and many shorebirds including Ruddy Turnstones, appeared at unusual inland sites. From Mississippi came records of Wilson's Storm-Petrels, Magnificent Frigatebirds, Sooty Terns, and a Brown Noddy. Eastern Tennessee produced a Least Tern and Arkansas had a Roseate Spoonbill and an unusual concentration of Black-crowned Night-Herons at this time. Danny's rain shield over western Virginia grounded a Laughing Gull and many shorebirds, including Hudsonian Godwits, Ruddy Turnstones, Red Knots, and Buff-breasted Sandpipers. Several White Ibises on the coast may have been brought by the storm, as perhaps was a Wood Stork inland in South Carolina. Other not obviously storm associated records included Wood Storks from Oklahoma and New York, a White Ibis from Pennsylvania and an Arctic Tern on shore in North Carolina at or after the storm's passage.

Hurricane *Elena* was located over eastern Cuba on the morning of August 28 (Fig. 2). It moved east across Cuba and into the Gulf of Mexico off western Cuba during the next 24 hours. It spent the next three days intensifying and meandering north to 75 miles south of Tallahassee, Florida on the morning of September 1st, then turned northwest to come ashore in Mississippi on the morning of the 2nd. The remnant of the storm was located over the northwestern corner of Louisiana on the next morning, and its remains were over the southern Ohio River valley on the morning of the 4th.

Again most unusual bird reports associated with *Elena* came from the Central Southern Region, with a scattering of birds as far north as the Appalachian Region. Florida yielded "early" Pomarine Jaegers, Glossy Ibises, a Northern Gannet, several hundred Magnificent Frigatebirds, a Red Phalarope and several Bridled Terns. Mississippi produced records of a Sooty Shearwater, Reddish Egrets and Bridled Terns, and Louisiana had an unidentified storm-petrel and two Reddish Egrets, a Roseate Spoonbill and Ruddy Turnstones appeared inland; a Northern Gannet found dead one week after the storm may have been related. Georgia saw a Magnificent Frigatebird on the coast and Willets inland. Arkansas had its first Bridled Tern, Illinois its first Royal Tern, and South Carolina its first Sabine's Gull in the storm's aftermath, and Wood Storks appeared in West Virginia and Virginia.

We now jump in the hurricane alphabet to *Henri*, which formed on the Atlantic Ocean, well off Cape Hatteras on the night of September 22-23 (Fig. 3). It barely reached hurricane force on the next morning as it brushed Cape May, and its center degenerated rapidly as it moved north into the lower Hudson River valley that day.

Almost no records of birds were associated with *Henri* perhaps because birders were anticipating the onshore arrival of its immediate predecessor, *Gloria*. A Least Tern in Ontario and a couple of Laughing Gulls in upstate New York perhaps were its results. Shorebirds grounded on Long Island after the storm had passed included a fresh juvenile Curlew Sandpiper and a Ruff in fresh juvenal plumage.

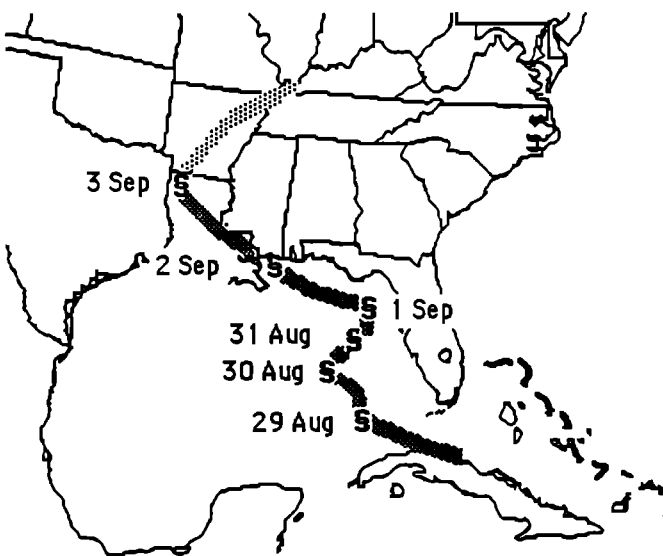


Figure 2. Hurricane *Elena* with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

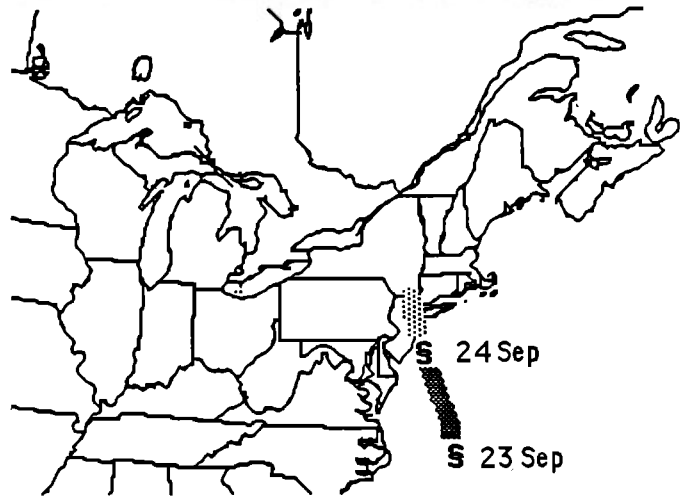


Figure 3. Hurricane *Henri* with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

Hurricane *Gloria* swept in from the tropical Atlantic Ocean, growing rapidly in strength to become one of the strongest storms in recent years by the morning of September 26, when it was 350 miles southeast of Cape Hatteras (Fig. 4). Perhaps fortunately, the storm declined rapidly as it moved north quickly to a position off Cape May the morning of the 27th and into the Gulf of St. Lawrence on the morning of the 28th.

Most bird records associated with *Gloria* came from the Hudson-Delaware and Middle Atlantic Coast regions. It is unfortunate that the Northeastern Maritime Region was too late to appear in this issue, as that Region is best suited to have intercepted birds swept in by *Gloria*. New York birders found a small black-and-white shearwater, Wilson's and Leach's storm-petrels, a Magnificent Frigatebird, and numerous southern terns of five species. In its aftermath, massive groundings of migrants, including shorebirds, Chimney Swifts, warblers and Bobolinks, were found on Long Island. Interested readers could check *The Kingbird* and the Hudson-Delaware Region for a more complete account; unusually late Golden-winged, Worm-eating, and Yellow-throated warblers are noted in these pages. Caspian and Sandwich terns are noted from New Jersey, along with a late Prothonotary Warbler. Late Purple Martins and a Golden-winged Warbler from North Carolina, numbers of Royal and Caspian terns from Virginia, and Sandwich Terns from Delaware all seemed associated with this storm.

Hurricane *Isabel* formed east of the Bahama Islands October 9 (Fig. 5), and moved east to a position 10 miles off Cape Canaveral, Florida, by the morning of October 10. The center made landfall in southeastern Georgia the following night, where it remained stalled for two days, weakening rapidly. Its remnants then moved northeast along the coast to Cape Hatteras October 14. At this time a secondary center reorganized on the open Atlantic Ocean south of Cape Hatteras. This new but short-lived center moved well offshore to a position east of Hatteras on the morning of the 15th, and dissipated during that day.

Only a few reports of birds were associated with Hurricane *Isabel*. An American White Pelican appeared in Delaware just ahead of the storm, while to the north, unusually

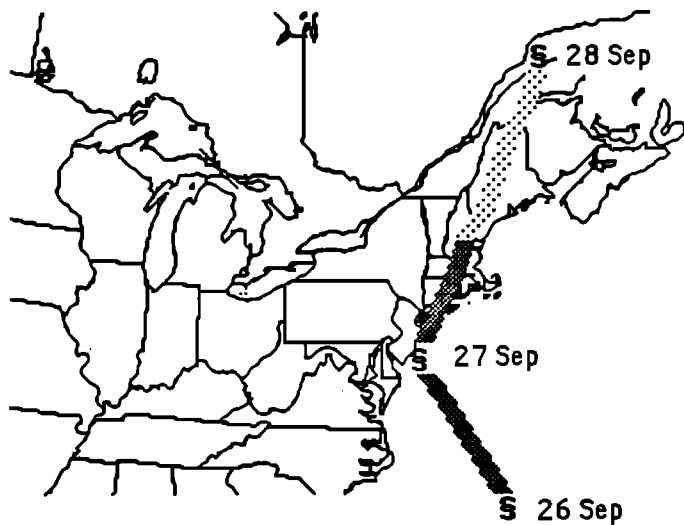


Figure 4. Hurricane Gloria with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

high numbers of Forster's Terns were in southeastern Pennsylvania. Over 1000 Royal Terns were counted in New Jersey after Isabel had weakened. Later Prothonotary and Cerulean warblers in North Carolina, and South Carolina's first Bell's Vireo also may have been storm-associated.

Hurricane Juan formed in the Caribbean and caused much damage in Puerto Rico before impacting the mainland. On the morning of October 26 its center was in the Gulf of Mexico, 400 miles south of Louisiana (Fig. 6). During the next two days it moved north to the Louisiana coast, where it remained stalled October 28-30. It then turned east and finally north to come ashore in Mississippi on the morning of the 31st. Its remnants were over eastern Tennessee on the morning of November 1st, and a swirling rain center remained over the eastern Carolinas for the next two days. Then, associated with a passing frontal system, a center reorganized in the Gulf of Mexico south of the Florida panhandle November 3. This secondary center moved north to eastern South Carolina by the morning of the 4th, to eastern West Virginia by the 5th, northeast to Cape Cod by the 6th, and north to New Brunswick on the 7th.

Juan had the longest overland path of any of these storms, and in many ways, had the biggest impact, especially in the Central Southern Region. In Louisiana, large numbers of Franklin's Gulls appeared in advance of the storm, which brought Magnificent Frigatebirds and late Common Terns with its passage. In Mississippi, the approaching storm brought high numbers of White-winged Scoters, Common Terns, and pushed Clapper Rails to high ground where they were easily counted. Juan produced inland records of American Oystercatchers, a Long-billed Curlew, a Hudsonian Godwit and Franklin's Gulls. As the storm heightened, a Wilson's Storm-Petrel, Hudsonian Godwits, and Sandwich, Sooty and Bridled terns were found in Mississippi. Florida yielded a late Magnificent Frigatebird, a moribund Pomarine Jaeger, many Franklin's Gulls, a few Sooty and Bridled terns and late Common Terns. During Juan's last stages, a Masked Booby turned up in Florida, nine American White Pelicans, a late Magnificent Frigatebird and a Hudsonian Godwit appeared in South Carolina. Laughing Gulls were inland

in Virginia and later in western New York, and late Glossy Ibises arrived almost simultaneously in North Carolina, Virginia, Pennsylvania, upstate New York and southern Ontario.

Juan had an even greater impact on migratory landbirds. I found about 80 references to grounded or late migrants that seem to be associated with Juan. Impressive numbers of Chimney Swifts were seen in Louisiana and Florida, a reverse migration of over 3000 Broad-winged Hawks was seen in Louisiana, and 200 Ospreys were counted in Tennessee after the storm. Large numbers of grounded migrants throughout the southeast left many very tardy—some unprecedentedly so—individuals during the week following Juan's passage: Acadian and Willow flycatchers, Swainson's Thrush, Yellow-throated and Red-eyed vireos, Golden-winged, Yellow, Chestnut-sided, Black-throated Green, Blackburnian, Yellow-throated, Bay-breasted, Worm-eating, and Hooded warblers, Louisiana and Northern waterthrushes and Scarlet Tanagers from Louisiana; Eastern Wood-Pewee, Northern Rough-winged and Bank swallows, Gray-cheeked and Wood thrushes, Blue-winged, Golden-winged, Tennessee, Cape May, Black-throated Blue, Blackburnian, Blackpoll, Worm-eating and Hooded warblers, and Yellow-breasted Chats from Mississippi; an Acadian Flycatcher, Northern Rough-winged Swallows, Wood Thrushes, Yellow-throated and Philadelphia vireos, Blue-winged, Golden-winged, Chestnut-sided, Bay-breasted, and Hooded warblers, and Ovenbirds from Florida; Black-billed Cuckoo and Magnolia Warbler in Georgia; Tennessee Warbler in Kentucky; Common Ground-Dove and Barn Swallow in Tennessee; Cliff Swallow and Canada Warbler in North Carolina; Yellow-throated Vireo in South Carolina; an Eastern Wood-Pewee in Maryland; a Swainson's Warbler in New Jersey; and a Tree Swallow in western Pennsylvania. Among these records were several western vagrants: Ash-throated and Scissor-tailed Flycatchers in Louisiana and in Florida, where a White-winged Dove and a Brown-crested Flycatcher also appeared; Western Kingbird in Georgia; both "Audubon's"

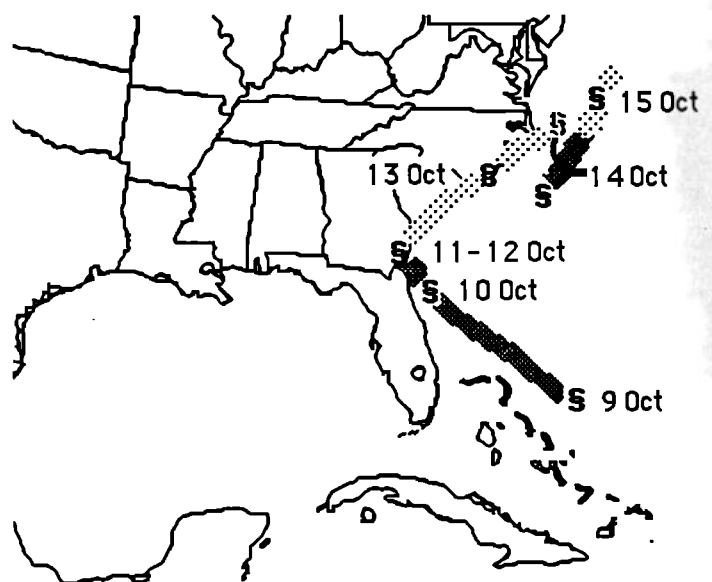


Figure 5. Hurricane Isabel with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

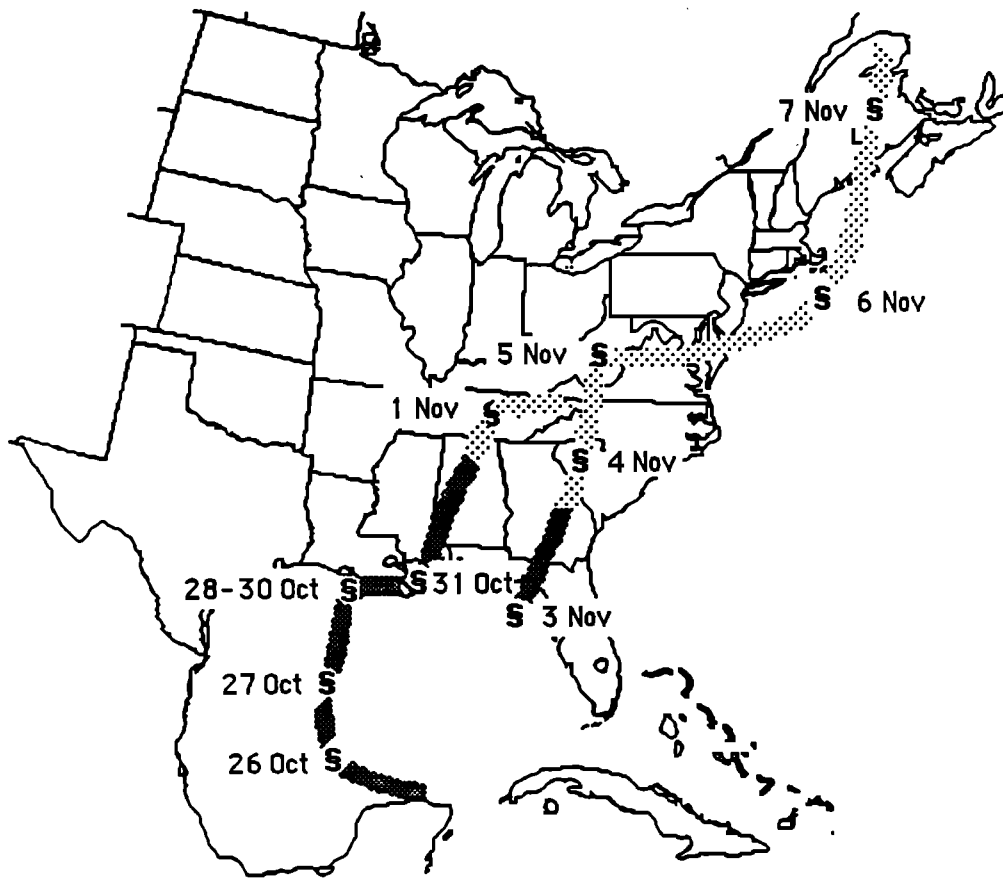


Figure 6. Hurricane Juan with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

and Black-throated Gray warblers in Mississippi; and Black-headed Grosbeaks in Louisiana and Florida.

Hurricane Kate was centered over Cuba south of Florida on the morning of November 19 [Fig. 7]. It moved northwest into the Gulf of Mexico the next morning, then turned north and later east to make landfall on the Florida Panhandle on the 21st. Its center was over Savannah, Georgia, on the morning of the 22nd, and its last remains were just south of Cape Hatteras on the morning of the 23rd.

Only a few waterbird reports could be tied to Kate: several Masked Boobys from Florida, American White Pelicans and Wilson's Plovers late, Laughing Gulls inland in North Carolina, and a White-tailed Tropicbird from New Jersey. Most other records were of late migrants: Common Nighthawks, Chimney Swifts and a Prothonotary Warbler in Florida; Black-throated Green Warbler in Georgia; a Chimney Swift in South Carolina; Tennessee and Wilson's warblers in North Carolina; Tree Swallow and Solitary Vireo in Tennessee, and Scarlet Tanager in Delaware. Perhaps related was a Fork-tailed Flycatcher seen briefly in Florida just after the storm had faded.

Both Gloria and Juan apparently grounded many birds that were attempting to fly south through the path of the storm. However, the many exceptionally late dates for migrants, notably the several records of Golden-winged Warblers associated with these storms, suggest that they also intercepted birds farther south and carried them north. Given its late dates, Hurricane Kate may have acted primarily in this way.

A few species affected by hurricanes were noted so frequently in regional reports that I also examined their reports without regard to specific storms or sites. Laughing Gulls were unusually numerous inland west of the Mississippi and north to Ontario. There are about 35 references to over 100 birds in this season's reports. They had reached the central Great Lakes and the Ohio River drainage in early August, and large numbers were on Lake Erie in Ohio before Danny formed in mid-August. Many later sightings were contemporaneous with the passage of the hurricanes. The many fewer White Ibis records showed a similar pattern, but the latest report was in early September. Wood Stork records correlated better with times and places where hurricanes were present. Forster's Terns frequently were mentioned as being both numerous and late in the Midwest and Northeast. Most records of this species came after late September, after the passage of several hurricanes, but this species often is a late migrant anyway. Records of American White Pelicans from this area had a similar range of dates, but many were far from the paths of hurricanes. In contrast, most reports of Glossy Ibises were late and associated with Hurricane Juan. Each of these species appear in this area every Fall but usually in smaller numbers. It is unclear how many in this year's reports were the result of hurricanes.

Hurricanes have become synonymous with tropical (sea) birds inland. The lesson from this Fall is clearly that their major impact can be, and likely is, quite different. Hurricanes are large, severe storms through which migra-

tory birds are reluctant to pass. Hurricanes can ground hundreds or thousands of migrating birds, that may be exhausted from fighting the storm and prevented from feeding freely by the inclement weather that accompanies them. These birds generally were covered poorly in the pages of *American Birds*. I cannot tell whether contributors or Regional Editors, or both, are at fault. However, this season shouts a simple message. In a hurricane season, most rarities are common birds.

Early and Late Migrants

August and September were hot to normally mild over most of North America, and September was generally wet. Except for the tropical storms, there was little severe weather over much of eastern North America during most of the Fall. Frosts, snow and freezes generally came late in November, and not at all in much of the Southeast. North and west of Lake Michigan, late Fall weather was more inclement. Extreme cold dominated over much of Canada and the northern Rockies in November, when a series of storms brought much rain and snow to the Pacific Northwest. The Southwest's weather remained relatively mild. The season was ripe for numerous late departures and late arrivals. Correspondingly, early dates were not much to be expected.

About 70 records were characterized as being "early." Several of these were of irruptive species and will be discussed later. Of the residue, the most extreme dates were of a Bay-breasted Warbler in Louisiana and a White-crowned Sparrow from northern Texas, both a month early in mid-August. A Winter Wren in Southern California in late August was both early and exceptionally far south.

In contrast, over 300 records were characterized as being "late." Almost one-half came from the Southeast in association with Hurricane Juan. Others were distant from tropical shores. In November birders found Gray Catbirds in Manitoba; Pine Warblers and a Le Conte's Sparrow in Minnesota; a Lesser Golden-Plover, a Red Knot, Semipalmated Sandpipers, both cuckoos, a Blue-gray Gnatcatcher, a Wood Thrush, and Cape May, Bay-breasted, Blackpoll and Wilson's warblers in Ontario; a Red-eyed Vireo, Tennessee and Black-throated Blue warblers, and an American Redstart in Quebec; a Ruddy Turnstone, a Yellow-billed Cuckoo and a Swainson's Thrush in Indiana; Sabine's Gull, Northern Parula and Cape May Warbler in Illinois; American Woodcocks in Illinois and Ohio; American Avocet, Spotted and Least sandpipers, Common Tern, Eastern Kingbird, Eastern Wood-Pewee, Wood Thrush and Mourning Warbler in Ohio; Swainson's Thrush in Iowa; and Baird's Sandpiper, Tree Swallow, Blue-gray Gnatcatcher and Orange-crowned Warbler in upstate New York.

With generally colder weather in the late Fall, western birders found fewer equivalent records. These included November Orange-crowned and Yellow-rumped warblers and a Swamp Sparrow from Alaska; Sedge Wren from Alberta; Swamp Sparrow from Saskatchewan; Greater Yellowlegs from eastern British Columbia; Cattle Egrets from Washington, Idaho and Colorado; Black-bellied Plover and Common Nighthawk from Colorado; Lesser Golden-Plover and Say's Phoebe from Utah; Forster's Tern, Ash-throated Flycatcher, Violet-green and Barn swallows, and Orange-crowned Warbler from New Mexico; Least Sandpipers (in 8 inches of snow!) in Arizona; and Baird's Sandpiper and Sabine's Gull from Southern California. In addition, there were about a dozen more November records of landbirds from the West that I classified primarily as "vagrants" rather than "late" migrants.

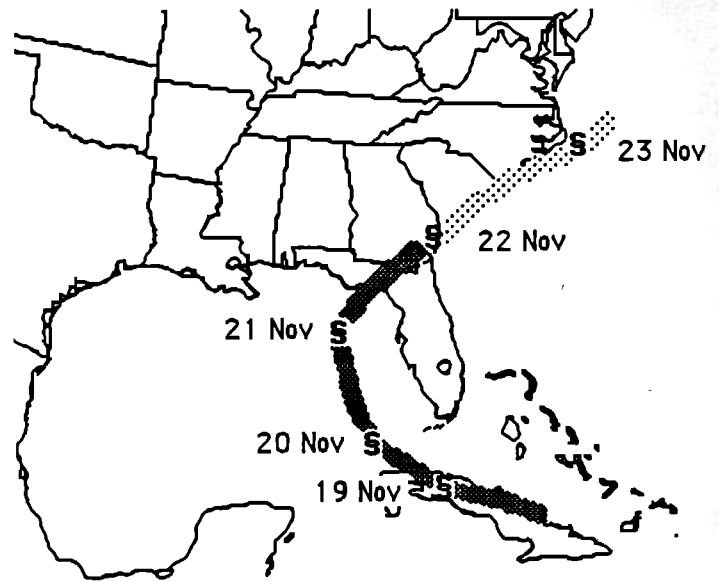


Figure 7. Hurricane Kate with storm position at 7 a.m. on date shown. Stippling density indicates intensity of storm.

Population highs and lows

A few reports on population highs and lows stand out. From the various regions spanning the Great Plains and the Rockies we read that Whooping Cranes had a good year, with the total population higher than ever. Now sufficient wintering grounds on the Texas coast are becoming increasingly important as a factor limiting the population size of this species. The cranes transplanted to Idaho, that winter in New Mexico continue to hold on, without producing young of their own. The decline in duck populations, especially in the East, was well publicized and showed up pretty well in the regional reports. However, Tundra Swans and geese seemed to have had a good season, with the best flights ever in much of the Midwest and Great Plains. Double-crested Cormorants are not so quietly making a strong comeback, probably reflecting its freedom from DDT for many years now. A Mississippi Kite far north in Saskatchewan doubtlessly reflected recovery of this species as well. Merlins and Peregrines continue to do well, but no big gains were evident this Fall. Reports of several of the rarer native Hawaiian birds continued to accumulate. A disturbing negative observation was the rapid decline of Clapper Rails in their former Southern California strongholds during the past five years.

Irruptives

Irruptive raptors were little in evidence this season. Neither Northern Goshawk nor Gyrfalcon were mentioned much. Rough-legged Hawk patterns were strange and inexplicable. Very early arrivals were reported from Oregon, Montana, South Dakota, Wisconsin, and Ontario, but, afterwards, numbers were unexceptional everywhere. No owl species were found in significant numbers south of their breeding ranges. Northern Shrikes were widely reported, but only Wisconsin observers reported substantial numbers.

There was a small incursion of Black-backed Woodpeckers near Lake Superior in Ontario and Minnesota, with one west to Saskatchewan. They were joined by Three-toed Woodpeckers in Minnesota only. Other woodpeckers got little or inconsistent mention.

Irruptive seed and berry feeding landbirds were more conspicuous. Blue Jays made a strong movement into the Great Plains but were seldom mentioned elsewhere. Gray Jays invaded the north shore of Lake Superior and also the north shore of the St. Lawrence River in Quebec. Pinyon Jays moved east and south from the Rockies in September, but did not remain long anywhere. Chickadee movements were rather localized. Boreal Chickadees stayed home, and Black-capped Chickadees were numerous only in western Ontario and western Pennsylvania. Mountain Chickadees were plentiful in the lowlands along the northern border of New Mexico and Arizona. Red-breasted Nuthatches staged a "mass exodus" from Ontario and the Prairie Provinces regions, an early Fall movement through the northeastern United States and arrived as far south as North Carolina, Alabama, and northern Texas by early November. In the West large numbers appeared in southern Alaska; they were widespread and numerous in New Mexico but little reported in Arizona or the Rocky Mountain states. Pygmy Nuthatches invaded the western Great Plains from Kansas to New Mexico in late September, when one furnished North Dakota's first record.

American Robins and Varied Thrushes got little mention. Most of the few mentions of Townsend's Solitaires and Mountain Bluebirds were of vagrants. Bohemian Waxwings were strongly incursive into Ontario and New England, with over 2400 counted in Ontario November 29. Only one report came from the Midwest (Illinois) and the Southern Great Plains (Oklahoma), and they were either not mentioned or scarce in the northern Rockies. Large numbers were present in Alaska.

Winter finch movements were mixed. In contrast to last winter, crossbills were not much in evidence anywhere, and Purple Finch populations were unexceptional. White-winged Crossbills remained numerous in Oregon only. Pine Siskins staged a moderate flight. Numbers in the Northeast seem to have been best in October, with declines during November often mentioned. Numbers in the Southeast built up at this time; the Christmas Bird Counts should reveal their early winter distribution nicely. Siskins got little mention in the West, being numerous in Alaska until October and otherwise noted as numerous only in New Mexico.

Pine Grosbeaks, Common Redpolls, and Evening Grosbeaks showed similar patterns of dispersal—early arrival followed by good flights. Pine Grosbeaks staged a strong movement southward across the entire continent. Arrivals were generally early and good numbers were present as far south as Ohio and New Jersey by the season's end. Significantly, high populations were noted in British Columbia and Alaska as well, but not in regions bordering the western montane populations. Redpolls arrived early in Nebraska, North Dakota, Montana, Wisconsin, and New York. Large numbers were present in southern Canada and the northernmost United States by the end of the season; the report farthest south was from the District of Columbia. Few redpolls were identified as Hoaries, so the movement mainly involved southern nesting populations. Evening Grosbeaks arrived quite early in Wisconsin, New Jersey, North Carolina, and New Mexico. In the northeast, numbers tended to be better in October than in November, as arrivals were being recorded in Maryland, Tennessee, and Kansas. They reached Arkansas and Oklahoma in November, when a few also appeared in southeastern Arizona.

Rarities

The full extent of vagrant Palearctic birds this Fall is

hard to assess without two of the Pacific Coast Regional Reports. This is especially unfortunate, because the other regional reports indicate another "Siberian express" winter in the making, although not on as big a scale as in the winter of 1983-1984. Alaska had proportionally little to contribute, reflecting the absence of observers in the Aleutian and Pribolof islands this Fall. The first hint of an "express" came in October, when a Ruff appeared in Arizona, a Spotted Redshank in Southern California, and Sharp-tailed Sandpipers in Arizona, Southern California, and Illinois. In early October two Red-throated Pipits arrived in Southern California and a "whitish" wagtail (juvenile White/Black-backed Wagtail, which are indistinguishable in the field and perhaps also in hand), was found in northern Arizona, to be followed by another in Southern California in late October. Then in November, Bramblings arrived, with two in Alaska and Wyoming and singles in Utah and Indiana. Other November arrivals included Nebraska's first Common Black-headed Gull, an Oklahoma Barnacle Goose (as always perhaps of dubious origin), a Texas Garganey and a Tufted Duck in Southern California. The likely Siberian origin of all of these birds is further supported by the near absence of Palearctic visitors on the East coast: Bar-tailed Godwits in New Jersey and Florida, five Ruffs (including singles from Michigan, Ohio, and Texas that probably were of Siberian origin), and just three each of Curlew Sandpiper and Northern Wheatear (all far east) were noted. The size of the flight came as something of a surprise. Did the previous flight jade birders to this year's?

The other exceptional set of vagrants came from the opposite direction. A Fork-tailed Flycatcher in Florida was the only vagrant of South American origin, and a Stripe-headed Tanager in Florida and a Gray Kingbird in Georgia may have been hurricane related. Vagrants from Mexico appeared both in great diversity and over long distances. A tie for most notable must be shared by a Broad-billed Hummingbird in South Carolina, a Green Violet-ear in Arkansas, a Gray Silky-Flycatcher in Texas, and a Short-tailed Hawk in Arizona. The rest of the list is less exceptional: Black-bellied Whistling-Duck in Tennessee; Jabiru, Northern Jacana, Green Parakeet, Red-crowned Parrot, Clay-colored Robin and Red-faced Warbler in Texas, the first Couch's Kingbird and "Yellow-green" Vireo (which seems to be a valid species after all) for New Mexico, Ruddy Ground-Doves in New Mexico, Arizona, and Southern California; Green Kingfisher, Eared Trogon, Aztec Thrush, Rufous-backed Robins in Arizona; and Broad-billed Hummingbirds in Southern California and in Nevada. Alaska's first confirmed and identified frigatebird, a Magnificent, belongs in this list as well; a push of this species into the southwest also brought one to the Grand Canyon, another to Colorado and at least eight to the Salton Sea.

I like to keep tabs on Groove-billed Ani reports. This Fall there were relatively few. Most were along the Gulf Coast, the farthest east from the Florida Panhandle. Farther afield were one in Nebraska, Tennessee's second-ever, one in New Mexico and three in Arizona. Similarly, Tropical Kingbirds were scarce in Southern California this Fall. Given the many other Mexican birds found this Fall, one might have expected more reports than normal. However, this scarcity even in a Fall like this was not surprising. Surely more than one factor is responsible for displacement of these birds.

Except for the Hawaiian Islands and the Southern Atlantic Coast regions, seabirds were poorly reported this fall. Most records were of rarities. Tropical storm-petrels continue to appear in the Gulf Stream, with no surprises this

Fall More than usual White-tailed Tropicbirds were seen off North Carolina. Red-billed Tropicbird was added to the Texas list, but was scarce off the coast of Southern California.

Check the Appalachian Regional Report for an athletically minded Northern Fulmar in Pennsylvania. Sabine's Gull is either becoming commoner inland or birders are getting better at recognizing them. There were about 30 reports of 50 birds inland this Fall, six of them in November. In contrast, Black-legged Kittiwakes were numerous inland only on Lake Ontario, but Arkansas got its first record this Fall. There were five inland reports of Long-tailed Jaegers from Ontario, New York, and California, the latest October 1. There were 24 mentions of about 50 Parasitic Jaegers inland, their numbers nowhere exceptional. There were about 13 reports of 15-20 Pomarine Jaegers. Records of both species were evenly distributed in time and space across the continent, giving little evidence of migratory patterns. The only alcid inland was an Ancient Murrelet in New Mexico.

With two Pacific Coast Regional Reports missing, it is difficult to say much about "eastern birds west." Ten Prothonotary Warblers from six states are more than usual. Early August records of Louisiana Waterthrushes from Arizona and Southern California (second state record) were in keeping with the species' early Fall migration, and Idaho's first Smith's Longspur was provided by a rare report west of the Great Plains. A Swainson's Warbler in Arizona furnished perhaps the second western record, and a Palm Warbler became well-vetted by attending the A.O.U. meetings in Tucson. Other firsts reported this Fall were: a Canada Warbler in Montana, Blackpoll Warblers in Montana and eastern Washington, Mourning and Hooded warblers in Utah and a Henslow's Sparrow (alas, poorly documented), in Colorado.

Many of the "western birds east" have already been noted under the discussion of Hurricane Juan. There were no truly exceptional reports this Fall. The several new records of Clark's Grebe (formerly classified as the light-morph of the Western Grebe), from the Great Plains and Mississippi Valley probably mean that observers just haven't looked before. A "Caribbean-like" coot from Illinois was reported with commendable caution; I have long doubted the validity of this form, other than as a color morph. A "Lesser Nighthawk" in the District of Columbia, was finally shown to be a Common from its photographs.

Louisiana birders added California Gull to their state list in grand fashion by finding five this Fall! Rufous Hummingbirds were relatively scarce in the east, but reports came from Ohio (a first), Pennsylvania, Delaware and North Carolina as well as the Gulf Coast. Six Say's Phoebes came (in chronological order) from Quebec, Ontario, Tennessee, Illinois, New York, and Vermont; these furnished first for Tennessee and Vermont, and were especially frustrating to birders in Ontario. Black-billed Magpies were found in Iowa, Wisconsin and Quebec. Sage Thrasher was added to the Delaware list and singles were found also in Ohio and Virginia. Ontario recorded its first-ever Fall Bell's Vireo. A plumbeous Solitary Vireo was in south Texas. "Audubon's" Warblers reached Mississippi and Minnesota in November. Vagrant House Finches in Minnesota, Missouri, Iowa, South Dakota and Saskatchewan are finally closing the gap between native western and introduced eastern populations; one wonders what originally kept them all west. A Lesser Goldfinch seen briefly in South Carolina was without precedent on the Atlantic Seaboard.

Grumbings about having to document their reports by some contributors, surfaced in the Niagara-Champlain

Regional Report this Fall. As a former member of New York's avian records committee, I can only comment that the committee on which I served took no pleasure in judging records unacceptable. I am sure this is true of other committees and for the Regional Editors as well. Records committees in North America are a new and valuable addition to the birding scene, and deserve support from birders everywhere. Almost all are struggling to find a balance between the traditional "polite" approach of saying as little as possible about records not accepted and trying to help contributors write better reports so that fewer good records will fail to pass their reviews. Many issues come into play. Many amateurs are not used to having their observations questioned. Professional ornithologists sometimes are even worse! Good birders know that they should be role models for others. Nonscientists may be upset by the different standards that normally apply in scientific contexts. Rather than extending the benefit of the doubt as our legal tradition does, the scientific approach begins with skepticism intended to reduce the risk of erroneously accepting a false conclusion, even though the cost is disallowing some good records. But foremost, the role that records committees play in screening records is over-emphasized. Their decisions are important only to the extent that the ornithological community is willing to accept them. The long-term importance of these committees is in providing a vehicle by which reports can be preserved for posterity, and an archives where other investigators can come, examine these reports and make an independent judgment as to their validity if they so choose.

Automated records processing

Until this Fall I have prepared the Changing Season by trying to compress each regional report onto a single sheet of paper that contains the highlights only, sometimes organized by category and sometimes by geography. The Changing Seasons was prepared primarily from these summary sheets, but with frequent reference back to the manuscripts for records I missed on the first pass and to check on my often illegible scrawlings. In a busy Fall, and all Falls seem to be busy, it is easy to lose records this way. With better software and a more capable computer in hand this Fall, I created a single data set that contained about one-half of the records that appear in this season's reports. Because of time constraints, I purposely ignored some species, notably ducks and sparrows. After noticing many mentions of geese and swans about half way through this process, I went back and added them to the data set, only to see their records thin out in subsequent regional reports. After I finished entering the bird records, I also added records giving hurricane positions to simplify further analysis.

A lot was left out. Readers with other biases will have no trouble finding these reports. I finished with a collection of over 1700 records of birds; the three missing regions would have added about 400 more records. The records of species that I ignored, probably would have doubled this total. With more time I could have tried to include everything, because the result was very satisfying. I could sort these records by a variety of categories, and, if the result didn't look interesting one way, quickly rearrange them using different categories. There were lots of surprises, perhaps the greatest being how hard it would be to show that birds fly south in the Fall from the records that appear in these pages! I also encountered a number of problems in doing this, for not all of which I found solutions.

Bird names are a bore to type. The program that I used automated this somewhat, helping to make my entries consistent. Use of the four-letter code names adopted by the Bird Banding Office would have been even easier; however, the last set of code names that I had was compromised by the Sixth Edition to the A.O.U. Check-list, in that these code names no longer correspond well with English names. A.O.U. numbers are another possibility but are harder to remember. Some standard coding for bird names ought to be adopted by and disseminated into the birding community. For reasons raised below, this code need not have anything to do with the formal classification of birds. It should simply and uniquely identify each different species. It would be desirable to make it easy to remember.

While entering records, I became aware of the looseness with which dates of records appear in this journal. They range from 'omitted' through 'vague' and 'approximate' to 'precise.' I handled approximate dates by recording them as the 0th date of the month, and vague or omitted dates by guessing or by ignoring the record. For extended stays, I entered the arrival date and used a "comments" entry to record its duration along with other tidbits, such as counts, age and sex information and special distributional notes. Unfortunately, it proved easy to corrupt this part of the data set, which I did regularly until I learned better, so I had to use these notes with care. Better reporting of dates by contributors and by Regional Editors, always desirable, is beyond my control.

It is well known that birders birdwatch primarily on weekends. How skewed was the sample of reports I entered? There were about twice as many entries for Saturdays and Sundays than for any weekday. Tuesdays appeared less often. The expected bias exists in these data, but it is not as bad as I had feared.

Locations proved to be another problem. I decided to focus at the state or provincial level from the start. Because several states occur in multiple regions I found that I also had to indicate in which region every record occurred. Again this step was automated nicely by the program that I used. I spent some time using an Atlas to determine the state or province for some localities when that information was omitted from regional reports, and I may still have had a few errors for this summary.

I wanted to be able to arrange records geographically. The obvious solution was to append the latitude and longitude to each record. Time constraints forced me to use a single value for each state or province, taken at the center of that geopolitical unit. Rodney L. Crawford reviewed grid systems used to record locality data with biological specimens (*Systematic Zoology* 32:389-402; 1983) and concluded that decimal degrees (angular measure written in fractional degrees rather than in minutes and seconds of arc) worked best. My experience overwhelmingly supports this for all avian distributional data. Accuracy to the nearest degree probably would suffice, but carrying it two digits past the decimal, which gives accuracy to within a

minute of arc, would be even better. More accuracy usually is unwarranted for birds. It would be a worthwhile project to compile a gazetteer giving coordinates of localities mentioned (or regularly used localities) in *American Birds* during recent years. Once such a list was available, Regional Editors could update the list by providing coordinates for additional localities as they appeared in the regional reports.

Still, all of this was not enough, and led to the issue that I never really resolved. I often wanted to select records by a variety of criteria which was a mix of taxonomic, distributional, ecological, behavioral and biopolitical qualities. They sometimes depended on the bird in question, sometimes on the place, sometimes on the time. My attempted solution was to append a series of terms, such as "late," "vagrant" or "irruptive," to each record in order to categorize them generically. This approach did not work well, partly because my categories were too broad. More categories might have helped, but as they become increasingly fine, their value decreases. Moreover, the same record often falls into multiple categories. I tried to work around this by starting with a category, then adding other records of the species, and/or omitting other records that seemed inappropriate, regardless of the initial category in which I had put the record. This quickly became too complex. The real issue is that most questions about the data set are *ad hoc*; e.g. . . . , what vagrant landbirds occurred in the East this Fall, and typically require appending new information (such as, bird X breeds in the West), before one can obtain an answer. Most of the information that I needed to add was not taxonomic in nature; that's why I think code names for birds need not reflect their systematics. The program I used was not quite up to this. I'm not sure if data management programs ever will be; "logic programming" comes closer. I'm still not sure which properties of birds I will need to use, nor how best to record them, to be able to explore this data set more freely. Regardless, I'm looking forward to trying other approaches next time.

I think that we are rapidly approaching a time when it will be reasonable to expect to exchange ornithological distributional data through machines as often as through publications and other written forms now. Key issues to settle in advance are standards and conventions which must be consistent, so that data from different birders really are sharable. The problems that I had in preparing my data set hint at the issues with which this set of standards must deal. The time to begin an open discussion is now.

This has been one of the few Falls in recent years when I expected this summary to be as long as it turned out to be. I have emphasized that there is much more tucked away in regional reports than appears in this *Changing Seasons*. Read and enjoy.

—Educational Communications, SUNY Health Sciences Center at Syracuse, Syracuse, NY 13210