

The Changing Seasons

Winter 1978-79 . . . the year of the Great Gray Owl

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AS ONE OBSERVER SO APTLY commented, "It was a bearcat of a winter." It marked, in fact, the third consecutive abnormally cold winter for most of the continent east of the Rockies. "Such a succession of cold seasons with large departures from normal had not been experienced since nationwide . . . records became available in the early 1820s." (*Weatherwise* 32:89). Records also indicated that, for the period December to February, fully 98% of the United States shared below-average temperatures, a unique situation for so broad and physiogeographically complex area.

Cold arctic air that first blanketed the American Northwest and Prairie Provinces in November merely hinted of things to come. By the end of December this frigid air mass had expanded to include all of the United States west of the Mississippi Valley. The remainder of the continent, however, still enjoyed mild to near-normal temperatures. Cold further permeated the continent in January and reached the Atlantic seaboard by mid-month. Only Alaska, the Canadian Arctic, the Atlantic Provinces, New England and parts of California showed above-average January mean monthly temperatures. A frigid February, however, dispelled all hope for a reversal of the chilling trend, as virtually the entire continent was enveloped in lung-clutching arctic air, intensifying to the east by mid-month and shattering weather records left and right in its wake. The last of February, however, did provide much needed relief to the East with temperatures finally rising above normal.

A sampling of record temperatures gives an idea of what birds and birders had to cope with: the February mean temperature at Dawson and Old Crow in the Yukon was -40°F (-40°C); Fairbanks, Alaska, had February minimum temps. of -40°F or colder on 14 con-

secutive days with Northway, Alaska, setting an all-time record for the month of -71°F (-57°C); intense cold in February sent the mercury plummeting to -52°F (-47°C) at Old Forge, New York, equalling the all-time low not only for that state, but for the entire East. Records were not restricted either to February or to expectedly bleak northern areas as Kalispell, Montana, which averaged 14.9°F below normal for January. Santa Maria, California, set a new record low (since 1885) of 20°F (-7°C) in December.

TO ADD INSULT TO INJURY storms lashed many areas during the winter period piling up record-breaking snowfalls, most notably around the Great Lakes. Chicago received 20.7 in. (53 cm) of snow in a 30-hour period in mid-January and by January 31 had established its second successive snowfall record. In areas of only moderate snowfall, snow failed to thaw and remained on the ground interminably. Even in snowless areas, vegetation suffered from the cold as far south as southern Texas.

The severity of local conditions at their worst was well illustrated at Squaw Rapids, Saskatchewan, where on February 13 more than one foot of snow fell accompanied by winds of up to 30 mph. This combined with a temperature of -44° gave a chill factor of -260°F ! On the scale of birder enthusiasm, the season also provided some record lows, as "No one can remember when morale among Minnesota birders had been so low." I'm sure the most hardy birders among us will find little solace in reading that Hawaii too experienced record low temperatures in January with daily highs only reaching $67-69^{\circ}\text{F}$!

The "cold" hard facts listed above sometimes mask the true nature of this devilish weather. The consensus among several northern regions was that birder

time afield was seriously curtailed by these weather conditions. This understandable truancy by birders was seemingly matched by birds, with ten regional editors mentioning a scarcity of birds this season, especially passerines.

SOME SOBERING FACTS: in Florida, censuses made over standard routes provided frequencies (birds/hour) that documented observers' impressions of a paucity of birds. Fully 64 species had subnormal frequencies in at least 75% of the "months of record" and 24 were low in every month. (See p. 274). Party-hour analysis of common birds from Christmas Bird Counts (hereafter, CBC) in the Mountain West showed all but hawks down from 7-year averages. (See p. 300). Also using CBC data, Hudson-Delaware Editor, P. William Smith, computed a "perception index" based on 20 species of the typical garden birds found wintering each year in New Jersey. This year's index (total individuals divided by total party hours) was the lowest of any of the 16 years for which data were available. (See p. 267). Moreover, these data were not skewed by certain species being especially low this winter.

NEVERTHELESS THE SEASON provided many notable events. Perhaps foremost among these was what was likely the Northeast's most massive invasion ever of the magnificent Great Gray Owl, spiced by above-average numbers of its diminutive northern relatives. Also in the Northeast, striking a more bizarre note, was an inexplicable influx of Purple Gallinules. To the south and to the west many neotropical migrants lingered or remained far north of their normal wintering ranges; in southern California, for example, several species were recorded that if reported in any season 20 years ago would have left a continent-wide credibility gap in even the most respected birder's reputation. In contrast, the irruptive winter finches were almost universally absent. Rounding out the scene were several notable pelagic sightings including the first record for the entire Pacific Ocean of Greater Shearwater. Although the above are some of the winter's most unusual happenings, readers are urged to delve into the regional reports that follow, since they are sprinkled with many regional

and local firsts, revealing that this season was hardly lackluster by any standards. Most importantly, the regional reports detail the rising and waning fortunes of various segments of the continent's avifauna and shed ever-brighter light on its population dynamics; such information should not be passed over in the rush to read of the latest extralimital sightings.

Distribution, Abundance and Survival

BEFORE SCRUTINIZING the various taxonomic and ecological groupings of birds in search of enlightening trends, let us look at factors that influence the distribution and abundance of birds, selecting evidence from among the regional reports that might elucidate the issue. Population levels of each species of bird are affected by numerous ecological factors that express themselves in terms of the individual bird's survival. As environmental parameters are notoriously variable, it is normal that survivorship fluctuates over time and that species' population levels rise and fall, and species' ranges expand and contract.

Winter is surely one of the most important factors affecting survival and the other side of that coin, death. The past winter's severe conditions tested the hardiest of birds. Being adaptable and mobile creatures, some are able to respond to difficult conditions by local movements or longer migrations even in the dead of winter. Waterbirds, perhaps owing to their greater visibility and localized habitat requirements, were more often than landbirds noted departing before, or with the advent of, the February freeze. Birds may also stay put and seek shelter as did a flock of Bush-tits that moved into a garage at night in Newberry, Oregon, to ward off the cold during early January. Meadowlarks that sought shelter in the cracks between bales of hay in Oklahoma were not always successful; frozen meadowlarks fell at farmers' feet as they dismantled the haystacks to feed cattle.

Several other limiting factors may also be important, since the demands of cold on the already high metabolic rate of most birds can theoretically be met with adequate food. Even if ample food appears to exist in an area, it may be patchily distributed or be otherwise unavailable to the birds. This seemingly was the factor governing the distribution of Snow Bunting flocks in the Middle-western Prairie Region as "most were

found in areas that didn't have an icy ground covering underneath the snow." A switch to alternative and perhaps abnormal food sources in the face of starvation is further evidence of birds' adaptability. An example of this is the Orange-crowned Warbler at a Ft. Worth, Texas, feeder eating wild bird seed and even attempting to devour the sunflower seeds. Equally incredible was a meadowlark, again observed in Oklahoma, lying on its side holding a Tree Sparrow while other meadowlarks dispatched and made off with the victim!

COMPETITION BETWEEN INDIVIDUALS of the same species for limited food resources in times of stress must affect survival. Interspecific competition, although less often documented, must also be of importance; consider, for example, the Golden Eagle seen sitting on a frozen lake in Colorado disputing with two coyotes over a prized tidbit. Predation itself can never be neglected as a significant source of bird mortality, nor can food resource or cover availability factors be ignored when thinking of predation-caused mortality.

When the immediate local conditions seem quite suitable for a certain species of birds and it is puzzlingly scarce or absent, one only need remember that long-term or cumulative phenomena and conditions in distant places can profoundly affect local distribution and abundance. An instance of the former is the continuing low population levels of many passerine species initially reduced by the first of three hard winters in 1976-77. Despite intense cold this winter, northern finches, did not irrupt and thus never had the chance to find available food in southern climes. Thus, weather *per se* does not play a direct controlling role with irruptive passerines. Bock and Lepthien (1976 *Amer. Nat.* 110:559-571) using CBC data and regional reports from *American Birds* (proof indeed that such information is of significant scientific merit) showed that eight irruptive species of seed-eaters have a synchronous pattern to their invasions, usually occurring on a 1-2 year cycle. The information available indicates that there is a circumboreal synchrony to the seed crops of spruce and birch trees. It is suggested that the synchrony of the seed crops of a variety of plants could have evolved as a response to seed predation. Such synchrony would swamp the seed predators with food during good years preventing

them from adversely affecting tree reproduction by depleting the seed supply. In years of poor crops the seed-eaters would be forced south giving what seeds that were produced some chance to survive. Many enigmas need to be solved, however, such as the apparent lack of synchrony in irruptions of those populations of seed-eaters whose winter ranges include western mountains with those populations occupying boreal forests to the north and east. It would appear probable, then, that irruptives were enjoying a bumper seed crop in the north this past winter and will be more likely to grace southern outposts next year.

Late Fall Migrants and Northerly Overwintering Birds

WITH GENERALLY MILD CONDITIONS prevailing in many regions into December and even later along parts of the Atlantic Coast, notable numbers of stragglers were found north of their expected wintering ranges. Although many areas had more than the usual number of lingering waterbirds, intense cold eventually forced them in droves to the south.

A sampling of the more notable waterbird records includes 1-3 Common Loons until Dec. 11 at Teslin Lake in the Yukon, four White Pelicans wintering in southern Minnesota, a Louisiana Heron on the New Haven, Conn., CBC, two wintering Redheads at LaSalle, Qué., and a Sharp-tailed Sandpiper at Kodiak, Alaska, on December 19, for the state's latest record.

Exceptional raptor sightings were the first winter sighting of a Mississippi Kite this century for central Texas (at Austin on Feb. 12), a dark-phase Swainson's Hawk at Webb, Sask., Dec. 3 - Jan. 10, and exceptional numbers of Broad-winged Hawks in late December in both Connecticut and Maine.

The mild fall, especially along the Atlantic Coast, produced only modest numbers of laggard landbirds. Notable exceptions did occur to the South in the Rio Grande Delta and to the West in southern California where unprecedented numbers of late migrant landbirds were recorded.

A tally of unusual northerly wintering landbirds, however, would rival most birders' lists for the entire year. Perhaps indicative of the diversity of this host are the (at least) 12 species of flycatchers, six vireos, 27 warblers, four orioles, and four tanagers found north

of their usual winter haunts. Exceptional finds were a Black-billed Cuckoo Dec. 24 on Nantucket I., a Common Nighthawk seen and heard over Alpine, Texas, on several warm afternoons in January, a Ruby-crowned Kinglet providing a first winter record at Atlin in far northern British Columbia, and Alaska's third winter record of Lincoln's Sparrow which, like the first two, was again recorded from Kodiak and again found by the same observer!

Population Trends and Range Expansions

CONSIDERING THE VAGARIES of climate and man's continued alteration of habitats on a global scale, populations of birds are bound to fluctuate, often dramatically. One *raison d'être* of *American Birds* is to document such population fluctuations and alert people to serious downward trends; therefore, this section of the Changing Seasons takes on an added importance.

Loons were considered scarce in South Texas but, conversely, both Common and Red-throated loons were especially numerous on the Nantucket Island, CBC. Concern over a possible decline of Yellow-billed Loons disappeared in the Pacific Northwest as nine were counted from Prince Rupert south to Puget Sound. A "flurry of grounded divers apparently fleeing ice-choked lakes" occurred in western New York in mid-February; included were one Red-throated Loon and three Red-necked Grebes. The effect of man on bird distribution is illustrated by the 16 Red-necked Grebes found in the warm waters off the Toronto Hearn power plant when most of the lake was frozen. Coastally Red-necked Grebes were reported in above-average numbers off southern Oregon and along the Long Island/New Jersey Coast. Perhaps the best inland locality in the United States to see large numbers of Horned Grebes is in South Carolina, where two lakes hosted 1000 and 580 respectively. Unfortunately for this species, literally hundreds were forced down by a sleet storm over much of southwestern Pennsylvania and western Maryland. More positively, Horned Grebe numbers were up in southern Texas where they are normally scarce. Eared Grebe numbers, however, were down along both the Texas and Pacific coasts. The only comments about cormorants indicated that Double-crested Cormorants are increasing in southern

Texas and the Gulf states region.

Geese and duck reports generally indicated normal numbers across the continent. Barrow's Goldeneyes, however, occurred in record numbers throughout California, in above-average numbers in New England, and in increased numbers in the Mountain West. Northerly areas did, however, comment on the large numbers of waterfowl forced south by the extreme cold.

WHITE-TAILED KITE reports were mixed with a continuing decline in northern California but a continuing increase on the upper coast of southern Texas. Encouraging were reports of above-normal numbers for both Sharp-shinned and Cooper's hawks nearly across the board. Caution is warranted though since increases owing to concentrations at feeders may only be apparent and not reflect true overall population trends. Red-tailed Hawks seem to be doing well, especially in the East. Red-shouldered Hawk records indicate that the eastern population is expanding its winter range northward. Golden Eagle populations, where reported, seem healthy. Many state- or region-wide surveys produced large counts of Bald Eagles. Although pushed south from northerly locations in mid-continent by the cold, this endangered raptor seems to be doing very well. The only exception was a decrease in a narrow strip from Minnesota to Oklahoma. Thirty-nine Peregrines were reported, excluding the 34 from their stronghold in the Pacific Northwest. This species would still seem to be in trouble.

Another species that remains in serious trouble is the California Condor — it was not mentioned in the Southern Pacific Coast Regional Report. The October 1978 census produced a population estimate of only 30 birds. However, at a recent presentation to the Northern California Chapter of the Cooper Ornithological Society, Dr. Carl Koford of the Museum of Vertebrate Zoology, University of California at Berkeley, indicated that this may be a high estimate and that the population may be as low as 20 birds — in fact, only 13 individuals were sighted on the census!

The Aransas N.W.R., winter Whooping Crane count resulted in 68 adults and six first year birds; transplanted birds also fared well in the Southwest with eight in New Mexico and one in northwestern Chihuahua. At both coastal and interior sites in northern Califor-

nia, American Coots were down 90% from pre-drought numbers. Black-necked Stilts were booming in the San Francisco Bay area; in the South, Long-billed Dowitchers are now being found in small numbers inland in the winter.

Thayer's Gulls were reported in the East as far south as Florida and Texas, but identification problems and renewed interest in gull watching in recent years makes it difficult to ascertain true changes in its status. Great Black-backed Gulls showed population increases around the Great Lakes. In the Hudson-Delaware Region, Lesser Black-backed Gulls were deemed "almost a trash bird," a term to be used judiciously when speaking of gulls. They do, however, seem to be undergoing a population explosion all along the Atlantic coast, with an astounding 12 in Florida and inland sightings west to Cleveland. Black-headed Gulls are also showing a slow but steady population increase in the Northeast. In northern Newfoundland a heavy flight of Ivory Gulls was witnessed in mid-winter, with 800-1000 observed; at least several thousand were estimated to have been included in the movement.

Although California Gulls were very common on the Portland, Oregon, CBC, elsewhere things looked bleak for this species. Almost all individuals sighted this winter at Las Vegas were adults, a trend noticed last year also. Undoubtedly, this is a result of the spraying of their eggs with diesel fuel under the auspices of a predator control program at the Bear River Refuge, the stronghold of this species' breeding range on Great Salt Lake. Meanwhile, at California's Mono Lake, the world's second largest breeding population of California Gulls is also in eminent jeopardy. The level of the lake has dropped more than 44 feet since 1941. As a result, the gulls' breeding island is now connected to the mainland by a land bridge, and coyotes and other predators are already making the crossing. Furthermore, as the lake shrinks, its salinity and alkalinity will rise to the point where it will be unable to support brine shrimp and brine flies, the primary sustenance for over one million Eared Grebes and 100,000 Wilson's Phalaropes that annually visit the lake. The solution is simple, straightforward and economically favorable: water conservation! Can we act in time to share one of our precious natural resources, water, with the non-human living beings that share our planet?

AS PREVIOUSLY MENTIONED most Regional Editors were in agreement that numbers of wintering landbirds were far lower than normal. In many Regions and for many species this winter continued the population decline that began in 1976-77, the first of three successive severe winters. The hardest hit Regions were, in general, the northerly (but not extreme northerly) ones extending from the Atlantic coast west across the Rockies to the Pacific. Several Editors from these Regions suggested that numbers of landbirds may have moved south, out of their Regions. An influx of landbirds during the winter into more southerly areas, however, was not documented. In fact, with few exceptions, southerly Regions also experienced reduced numbers of wintering landbirds. The major exceptions appeared to be southern California, where good numbers of neotropical landbirds wintered, and the Rio Grande Delta of Texas, where Tropical Kingbirds, Kiskadee Flycatchers and several warblers were more common than usual.

The obvious conclusion, therefore, is that heavier-than-normal winter mortality occurred throughout the continent. Except in a few instances, however, actual documentation of this mortality was not forthcoming. Exceptions included Mourning Doves, Barn, Screech and Long-eared owls, Eastern Bluebirds and Western Meadowlarks, all of which were shown to have suffered at least local high mortality. In addition, 19 of 23 seed eaters decreased in the Middle Atlantic Coast Region between mid- and late February and numerous mortalities were found. Many hummingbirds also disappeared from Arizona feeders during the winter, but actual mortality was not documented.

A number of species seemed especially hard-hit over a rather wide area (at least three Regions). Populations, therefore, should be closely monitored in succeeding winters of Common Flicker, Winter and Carolina wrens, Mockingbird, Eastern Bluebird, Golden-crowned and Ruby-crowned kinglets, Cardinal, Vesper and Tree sparrows and Dark-eyed Junco. More local but still serious declines were recorded for a host of other species including Mourning Dove, White-throated Swift, Red-headed Woodpecker, Yellow-bellied Sapsucker, Eastern and Say's phoebes, Tree Swallow, Blue Jay, Brown Creeper, House, Bewick's and Rock wrens, Hermit Thrush, Western Bluebird, Blue-gray

Gnatcatcher, Water Pipit, Orange-crowned, Yellow-rumped, Townsend's and Palm warblers, Eastern and Western meadowlarks, Brown-headed Cowbird, House Finch, Lark Bunting and Sage Sparrow.

A number of species were considered to have undergone at least local increases, especially when compared to the previous two winters. A surprising number of these increases occurred in the northern part of the continent and were often coupled with observations indicating good winter survival of many "half-hardy" species. We wonder how much of these data are based on feeder observations! Species with locally good or increased numbers in the north included Mourning Dove*, Common Flicker*, woodpeckers in general, White-breasted Nuthatch, Brown Creeper*, Long-billed Marsh Wren, Eastern Bluebird*, Golden-crowned Kinglet*, Yellow-rumped Warbler*, Rufous-sided Towhee, Tree*, White-crowned, White-throated and Swamp sparrow. (Species marked with an asterisk suffered local population declines elsewhere.) Species showing local population increases in the southern part of their winter ranges included Red-headed Woodpecker*, Tree Swallow* (would you believe eight million at a single spot in Everglades Nat'l Park?), Winter Wren*, Eastern Bluebird*, Brown Thrasher, Black-and-white and Wilson's warblers, Rusty Blackbird, Common Grackle, Brown-headed Cowbird*, Cardinal*, Rufous-sided Towhee and Savannah, Chipping and Lincoln's sparrows. Other local increases or local concentrations included Fox Sparrow in the Pacific Northwest, Mountain Bluebird in the Northern Rockies, Scrub Jay and Bushtit in the Mountain West, Cassin's and Black-throated sparrows in southern Texas, Gray-headed Junco in western Texas and Seaside and Sharp-tailed sparrows in coastal New Jersey. The interior race of Sharp-tailed Sparrow must have had a good breeding season as an unprecedented seven individuals were also found in coastal central California this winter.

AN ENCOURAGING NOTE was of excellent numbers of Red-cockaded Woodpeckers in both Texas and Arkansas. Very discouraging was the news of ever increasing numbers of Starlings in the Middle Pacific Coast Region.

As might be expected in such a severe winter, northward range expansions were much less in evidence than in many

previous winters (e.g. 1975-76). Nevertheless, a number of southern species held their own or actually increased locally at the northern limits of their newly expanded ranges. Foremost among them were Red-bellied Woodpeckers which held their own in southwestern Ontario, expanded northeastward in Pennsylvania, New York (where they now outnumber Hairy Woodpeckers in some areas) and New England, northward in both South and North Dakota and westward in New Mexico, and Tufted Titmice which were locally abundant in the Northeast. Anna's Hummingbirds also continued their expansion in the Pacific Northwest, surprisingly both east and west of the Cascades. The westward expansion of the last few years of Barred Owls and Blue Jays was somewhat checked this winter with only three reports of Barred Owls in the Northern Rocky Mountain/Intermountain Region (one apparently starving) and increases in Blue Jays, noted only in Colorado and western Texas.

Great-tailed Grackles continued their virtually explosive expansion north through Oklahoma and Kansas and north and west in California. House Finches continued their steady increase throughout the East although they appear to be ecologically avoiding the South Atlantic Coastal Plain while remaining abundant in the Piedmont. But the "Expanding Species of the Season Award" must go to the Common Raven which showed notable increases in the Northern Rocky Mountain/Intermountain, Northern Great Plains, Appalachian and Niagara-Champlain Regions.

Other noteworthy range expansions included northward moving Black Phoebes and northward and eastward moving Wrentits in Oregon, Acorn Woodpeckers on the eastern side of the Sierra in California (did they arrive from the north, south or west?), Ladder-backed Woodpeckers north into Zion National Park, an Inca Dove north into Oklahoma, Ground Doves north in North Carolina, unprecedented numbers of Groove-billed Anis in Arizona, Alabama and Louisiana, and Lark Sparrows "too numerous to detail" in Florida. Earlier this century Gray Jays were considered fairly common in the Mt. Shasta, California, area, but have been rarely reported in recent years. This winter they were abundant at the 5-6000 ft elevation all winter.

Irruptive Species

This winter was most notable for its lack of widespread incursions. Birders felt vaguely cheated that there were few birds attracted to their copious hand-outs. The saving grace for otherwise bleak birding in several northern regions was the much heralded arrival of highly sought northern owls.

Raptors — For the most part diurnal birds of prey did not show outstanding influxes. Goshawks appeared in only moderate numbers throughout the north except for above-normal numbers in Western Pennsylvania and a significant influx into the Northern Great Plains Region where an impressive 43 were recorded in forested areas of Prince Albert and Squaw Rapids, Sask. Rough-legged Hawks were noticeably down compared with last year's heavy flight, especially in the West. The only extensive influx was into the Appalachian Region but moderate numbers occurred in mid-continent and individuals reached as far south as Louisiana and South Carolina. Although Gyrfalcons were only mentioned as showing "good totals" in Ontario, the 54 Gyrfalcons reported (37 from Canada, 17 from northern United States) is nearly double the total for each of the last two years. One individual was found south to Nebraska.

Snowy Owl numbers were generally depressed with concentrations only in the Prairie Provinces and Great Lakes states. A single bird south to North Carolina (for one of the few Regional records in recent decades) was possibly part of the same movement supplying above average numbers to the Hudson-Delaware Region. Hawk Owls were definitely on the move virtually all across the north with a total of 52 being a rather impressive count. Although not generally considered an irruptive, Pygmy Owls did just that this winter moving into southeastern Alaska, apparently from Canada.

Words to describe this winter's invasion of Great Gray Owls are hard to find. (See p. 242). It was without question the ornithological event of the season, and in retrospect the data from regional reports strongly suggest that the total influx into the Northeast was the greatest-ever in recorded North American ornithological history, apparently eclipsing the oft-quoted invasion of the years 1889-90. There seems to have been two segments to the invasion

if not actually two separate invasions. The segment or one to the west was centered in southeastern Manitoba where 46 birds were banded and a bare minimum of ten others was sighted; an additional 13 were seen in Minnesota. Reports trickled in of another ten individuals scattered as far to the west as British Columbia and south to Idaho. There is little doubt that the latter illustrates an "echo invasion", this being the third successive intrusion in that region.

The invasion into the Northeast, however, was of a much larger magnitude. The following breakdown by state and province gives a good picture of the densities and geographical extent involved: S. Ontario (112+), Mich. (12+), Qué. (55+), N.Y. (60), Vt. (2), N.B. (1), Maine (67), N.H. (7), Mass. (15), R.I. (1), Conn. (2). The 60 in New York is especially impressive as there are less than 30 prior confirmed records for the state. The southern limit of the push was Long Island where two (possibly three) birds were seen. The total Northeast count, using conservative estimates, is a startling 334+ and the continent wide tally is a mind-boggling 413+!

The origin of the Northeast invasion was most likely different than that of last year's Great Lake states' influx. Documentation of the movement into eastern Ontario, then south and west, apparently a "traditional" path, suggests Québec as the origin of birds in Ontario and Michigan. However, *Birds of Canada* (Godfrey, 1966) depicts the known Canadian breeding range as only extending east to Ontario. He shows no confirmed breeding records for Québec. As suggested in the Niagara-Champlain report, it seems unlikely for western populations "to stage a unidirectional movement to the east-southeast." Furthermore, the immediate proximity of Québec to the whole of the Northeastern Maritime Region, where the greatest concentration of birds existed (93), further suggests a suspected Québec breeding population as the source of invading birds.

The cause of any particular Great Gray Owl incursion is hard to get at and relatively neat cyclical patterns, as have been found for other irruptive species such as Snowy Owls and northern seed eaters, don't seem to occur. Höglund and Langsgren (Viltrevy 1968, 5:363-421.) think such movements are starvation migrations owing to extreme crashes in their major prey items, voles and shrews. Unavailability of prey

owing to deep snow cover, and/or particularly good reproductive success of owls prior to movements may accentuate the magnitude of their invasions. The owls were generally found to be fairly widely spaced; but concentrations, such as six in one field in Skowhegan, Maine, perhaps reflect dense prey populations or possibly pre-emptive local movements out of the area (Nero, 1969, *Blue Jay* 27:191-209). Most birds had left invaded areas by mid-March but at least one was still residing in Maine as of April 15. This year's data provided no contrary evidence to the starvation migration theory as several owls that died of natural causes were found to be emaciated. Mortality was further inflicted by road kills and by "sportsmen".

Short-eared Owls were in low numbers in most regions with but very few exceptions. Boreal Owl reports across the north totaled a respectable 20, but paled in comparison to the 65 in Minnesota alone last year. Saw-whet Owls seemed up in modest numbers through much of their range. The Northern Shrike also seems best treated as an irruptive raptor. This species was scarce on the West Coast and in normal numbers when mentioned in mid-continent, but was an impressive invader in the New York, New Jersey, and Pennsylvania areas.

Bark Gleaners and Generalists — We need not totally cast aside theories about the direct impact of weather on irruptions, since "Red-breasted" Sapsuckers made a serious downslope movement in the Pacific Northwest after several unusually cold January days, only to disappear after a warming trend. Yellow-eyed Juncos also occurred in the lowlands of southern Arizona "as never before." Lewis' Woodpeckers were also noticeable in California and Three-toed Woodpeckers were reported as doing well in Montana and the Northeast. Steller's and Scrub jays moved well out onto the prairie in the Southern Great Plains. Piñon Jays and Clark's Nutcrackers made only minor movements at best. Although Gray Jays were slightly invasive in the Québec/New York area and in Northwestern Canada, they were largely unreported in between.

In New York Black-capped Chickadees made a local incursion for the second consecutive year that, interestingly was comprised of 50% adults. Banding

studies there have shown that such incursions normally occur every other year and that the individuals involved are usually immatures. Mountain Chickadees made an impressive movement downslope into the lowlands in the Southern Great Plains. Also accompanying them into the lowlands of the Guadalupe Mountains were White-breasted and Pygmy nuthatches where, to our amazement, they were seen feeding on cactus and yucca plants. Red-breasted Nuthatches were almost universally reported as scarce this season.

Frugivores — A bumper berry crop in the East, centered in the provinces and states of the Great Lakes Region, supported unusual numbers of American Robins. In the West, however, this species was largely unreported, although it was considered scarce throughout California. The main Varied Thrush population also remained well to the north; still, a number of extralimital sightings occurred. Townsend's Solitaires and Mountain Bluebirds, as with several species already mentioned, were widely dispersed in the lowlands of the Southern Great Plains. Cedar Waxwings in the East enjoyed a distribution and abundance quite similar to robins while more southerly areas reported influxes late in the season. In the West this species was up in the Rockies and Pacific Northwest and, again like the robin, was scarce in California. Bohemian Waxwings had a ho-hum year throughout their range except for two concentrations: 10,000 in Spokane, Washington, and a two-day increase from 100 to 20,000 in one small area in northwestern Wyoming.

Granivores — Almost across the board, editors exclaimed over the scarcity or complete absence of northern finches. A blow-by-blow account for each species would do little to elucidate the matter, since exceptions were few. Clearly, Evening Grosbeaks, Purple Finches, Pine Grosbeaks, rosy finches, redpolls, Pine Siskins, Red and White-winged crossbills, longspurs, and Snow Buntings were markedly down on a continent-wide scale. An apparent all-time high of an irruptive species (such as this year's Great Gray Owls) is relatively easy to prove, but absence is harder to document. Could it be that this was the worst finch year in North American history? We'll probably never know. In one region the season was so dull that many observers did not submit reports! Surely

it's much more gratifying to report abundances of birds, but negative data, any scientist will tell you, are very important, too . . . sometimes, in fact, crucial to prove a point.

Where were all the finches this year? The hypothesis that they remained in the far north is bolstered by the Alaskan report which lists several of these species as common there this winter. Need we say more? (However, read the Middle Pacific Coast Region report to see what can be found at 10,000 feet in the Sierra Nevada in mid-winter.)

Certain exceptions were noteworthy. The estimated one million Pine Siskins in Douglas Fir stands in southern British Columbia could have provided how many regions with 10,000? Twenty-thousand Lapland Longspurs in two counties in the Texas Panhandle in January is surely more than most of us will ever see. Without heavy flights on either coast, the southernmost California Snow Bunting ever and another in Florida is most remarkable.

Pelagics

DESPITE ROUGH SEA CONDITIONS at this time of year on both coasts, increased interest in winter pelagics seems to be continuing.

East — Considered unusual so far south was a Northern Fulmar on the Isle of Shoals, New Hampshire CBC. More than 1000 were on Georges Bank in late February. Good finds were two Audubon's Shearwaters off Port Aransas, Texas in late February and one in the Florida Keys in January. One of the highlights of the season was the large number of Manx Shearwater reports. Two off the Hudson Canyon area of New Jersey were at a now-regular spot and one off Ocean City, Maryland was bold-faced, but a total of six on two December trips from Oregon Inlet, N.C., were first winter regional records. Also attaining boldface status were six (spanning December to February) off Florida, where they are exceedingly rare. Lone Sooty Shearwaters off Massachusetts on December 12 and 17 were extremely late.

Good coverage of the Gulf Coast provided sightings of three Masked Boobies, but more exciting were eight Brown Boobies, providing the first Alabama winter records. A Masked Booby flying over dry land in South Texas was obviously displaced. Gannets were much in the news with a notable 11,845 on the

Cape Cod CBC, and one unexpectedly in the heart of winter in the Gulf of Maine on January 25. Meanwhile, Gannets were being reported in excellent winter numbers south all along the Atlantic Coast, and an extraordinary 250 off Alabama in January and two off Port Aransas, Texas, in February were dandy Gulf finds. Coastal Red Phalarope reports were few and not especially noteworthy but singles in Michigan, Pennsylvania, and the New York area in early December were decidedly out of place. Four Parasitic Jaegers off the Atlantic Coast and 17 in the Gulf, all in December, would seem to be normal numbers, although the northernmost off Cape Cod December 10 was rather late. Eighteen Pomarines from the North Atlantic coast in early December also seem regular; however, three in the Gulf in December and January were much less expected. The report of single Long-tailed Jaegers off Florida in December and January is simply astounding although details were lacking. Skua reports included eleven Greats on the Mid-to-North Atlantic coasts and five skua sp. off Massachusetts. A peak of 48,000 Black-legged Kittiwakes was seen passing out of the Bay of Fundy; three singles were on the Great Lakes.

Alcids were generally scarce on the Atlantic but interior sightings of separate Black Guillemots in New England, perhaps part of a fall inland wreck, and a Common Puffin in Maine raised eyebrows. Additionally, 759 Dovekies off Ocean City on December 30 were noteworthy.

West — The regular low numbers of Black-footed Albatrosses were seen off Northern California, Oregon, and Washington. An impressive five Laysan Albatrosses were sighted off Oregon and Washington. Several of these were seen well offshore where perhaps they might prove more regular with greater coverage. A minor movement of Northern Fulmars occurred south to central California but had largely evaporated by late January. Small numbers of Pink-footed Shearwaters were seen off Central California as has been customary the past few years, but a single Flesh-footed Shearwater was a good find. With sightings in recent years of such unbelievables as Galapagos Storm-Petrel and Streaked Shearwater off California, seagoing birders have come to expect, and see, almost anything. This winter was no exception as a Greater Shearwater was well-described from (where else?) Monterey Bay for the

first record for the entire Pacific Ocean. A New Zealand Shearwater off Point Reyes was certainly less exotic, but would have been unheard of at this season just a few years ago. Small numbers of Short-tailed Shearwaters were seen south to Morro Bay, California. This species now appears to be regular in midwinter in California, no doubt a result of increased coverage and increased awareness of how to separate this species from the very similar Sooty. Manx Shearwaters were well represented north to Central California for the second year in a row. Ainley (1976, *Western Birds* 7: 33-68.) has shown that northward occurrences of this species are to be expected in years of above-average ocean temperatures. In fact, he has shown for the entire Eastern Pacific that a combination of temperature and salinity accounts surprisingly well for the distribution of pelagic birds. Despite the obvious importance of such data, not a single region, East or West, reported one bit of oceanographic data!

The mysterious Mottled Petrel (*Pterodroma inexpectata*) was sighted from a small sailboat 350 miles west of southern Oregon in mid-December. Although non-breeders are apparently regular in winter in small numbers in the Gulf of Alaska and well offshore from British Columbia, few indeed are reported off the lower 48; perhaps this again is due to the lack of birding so far offshore. Most records of Mottled Petrel for California and Washington are for February and March at a time when adults are migrating north in the Pacific. There is a strong correlation between Mottled Petrel records and Northern Fulmar flight years and Ainley has surmised (*Western Birds*, in press) that, since both species prefer cold waters of high salinity, Mottled Petrels moving north in February and March are brought closer to shore in good Northern Fulmar years when these conditions prevail. Birders might well be advised to plan additional boat trips as the next good Northern Fulmar year unfolds. Two Fork-tailed Storm-Petrels off the Pacific Northwest is not especially surprising, but one Ashy off central California is noteworthy. Black-legged Kittiwakes were in low numbers but a single in Montana was a standout. Three Sabine's Gulls for December and January were also well above average. The only mention of jaegers was of seven Parasitics deemed above-normal for northern California.

Marbled Murrelets were in higher-

than-normal numbers off northern California, perhaps explaining why two were seen in southern California where records are few. Ten Marbled Murrelets were seen flying inland over Big Basin State Park on three dates in January. Do individuals of this species roost inland throughout the year or do the initial stages of nesting begin at this early date? A few Xantus' Murrelets were seen along the California coast. The status of this alcid in winter needs clarification but records for recent years might suggest it is more common in winter than formerly believed. However, since this species also likes warmer waters its occurrence farther north than usual is to be expected in Manx Shearwater flight years, as the last two have been. Concentrations of other alcids included hundreds of Ancient Murrelets off Vancouver Island, and flocks of 5000 each of Cassin's and Rhinoceros auklets off central California. Nine Tufted Puffins from northern California to Washington were exceptional for winter, as were two separate reports of Horned Puffins for Washington.

Hawaii — Reports of just fledged young on Kauai is very encouraging news for the endangered Dark-rumped Petrel since it had only been known to breed in very small numbers on Maui and Hawaii. Also of interest was a winter sighting of a Blue-footed Booby at Oahu.

Displacements

THE INCREDIBLE NUMBER of extralimital sightings being reported each year continues unabated. The swelling of birders' ranks, however, also continues as does the general level of knowledge of how, when, and where to find rare birds. Are there actually more extralimital birds or just increased sightings? Continued habitat destruction, pesticide contamination, other environmental disturbances, or even changing climates might possibly cause an increase in displacements, but little information exists to assess this situation. Censuses of well known "vagrant traps" over a number of years is one way to get at the problem, as are long-term banding studies. Intensive daily coverage of the Farallon Islands since 1968 by the Point Reyes Bird Observatory seems to indicate that, vagrant numbers there are actually increasing (DeSante, in prep.). Perhaps this is only a short-term trend; the situation warrants study.

Below are a few of the highlights for

this winter gleaned from the many published in regional reports

Western Birds East — It was not a good season for western birds in the East. Waterbird species making it all the way to the East Coast included the Arctic Loon, Western Grebe, White Pelican and Sandhill Crane. The landbirds most deserving of note in this respect were a Rufous Hummingbird in Georgia, a Wied's Crested Flycatcher in Florida, an Ash-throated Flycatcher in Virginia, single Townsend's Solitaires in Rhode Island and Nova Scotia, and a Green-tailed Towhee in New Hampshire.

Eastern Birds West — Hawaii had two exceptional waterbirds: a Red-breasted Merganser, the first recorded since 1893, and a Caspian Tern which toured the islands for a state first.

A Black-throated Blue Warbler which wintered in northern California was also an exceptional find but southern California stole the show with several unprecedented records. The most impressive of many were Least Flycatcher, Philadelphia Vireo, Prothonotary Warbler, and Black-throated Green Warbler! A Broad-winged Hawk and a Cape May Warbler in Arizona were good finds for the Southwest Region.

Northern Birds South — A Great Cormorant in Florida was far south as was a Harlequin Duck at the extreme southern end of California in San Diego. Two McKay's Buntings at Kodiak were the first east of the Bering Sea coast in Alaska, but two at Ocean Shores, Washington, were true gypsies, being the first of their kind to visit the lower 48.

Southern Birds North — The occurrence of seven Purple Gallinules in the Northeastern Maritime Region was categorized as "mind-boggling" by that region's editor . . . perhaps that is too mild a term. Involved were two flights of four and three birds on December 27 and January 22, respectively. Also "out to lunch" was a Sooty Tern that appeared in Florida after a nor'easter. And finally I hope the Hooded Oriole in Eugene, Oregon, found the fan palm it was looking for.

Neotropical Birds to the Nearctic — An Olivaceous Cormorant in Las Vegas provided a first state record. They were also recorded in exceptional numbers in the Southwest. The White-cheeked Pin-



♂ Masked Duck, Mar. 20, 1979, Loxahatchee N.W.R., Fla. Photo/P. W. Sykes, Jr.

tail found in the fall at Laguna Atascosa, N.W.R., Texas, was still there in March. Four Masked Ducks were seen in Florida. Hook-billed Kites were at two locations along the Rio Grande where they seem to be "regular" as of late. Gray Hawks at two spots in South Texas were good birds, but a possible Roadside Hawk seen by several competent observers at Rancho Santa Margarita was far out of the ordinary, since the only United States record is of a specimen in Cameron County, Texas. An apparently "good" immature Aplomado Falcon in Hidalgo County, New Mexico, was an excellent find, since recent records for the United States are very few indeed. However, the most spectacular bird in the continent had to be the Paint-billed Crake picked up injured, but alive, in western Henrico County, Virginia, on December 15. The species, a native of South America, normally extends as far north as eastern Panama. A report of a Caribbean Coot from Florida again raises the issue of its taxonomic status. Pigeon and dove lovers had something to coo about with a Key West Quail-Dove in Florida, for apparently only the third record this century and with a Ruddy Ground Dove in south Texas. Brown and Green jays were again reported from south Texas. Finally, a bird described as a male Aztec Thrush was seen on a lawn in Port Aransas, clearly well out of habitat.

Palaearctic Birds to the Nearctic — Three young Whooper Swans on Lake Ontario stirred up lots of excitement, but the question of their origin arose immediately. If in fact they were wild vagrants

they would constitute the second record for eastern North America. Lobbying should be intensified to get more stringent laws enacted, and enforced, to ensure adequate records are kept on *all* captive birds, and that a hotline be set up to immediately report any escapees. A probable Bewick's Swan was seen near Klamath Falls, Oregon, along with three possible hybrid Whistling X Bewick's Swans. The Garganey in Hawaii remained through the season. Six "Eurasian" Green-winged Teal on the West Coast were complemented by two on the East Coast. Much rarer, a male Falcatel Teal was shot from a pair on Willapa Bay for the first Washington State record, pending review of escape status. European Wigeon were in their usual large numbers in the Pacific Northwest. It would appear that sightings in northern California of this species have increased in recent years to the point they are no longer considered newsworthy, as none were reported this winter. A watch was kept in southern California where numbers seemed up with eight coastal and two to three inland sightings. A total of nine was seen on the East Coast. More noteworthy were singles in Hawaii, Fort Collins, Colorado, Phoenix and near El Paso, Texas. Where is (are) the breeding population(s) that supply all these wigeon? Tufted Ducks were only found on the West Coast but the total of eight was widely distributed from Alaska to southern California. Close scrutiny of Common Snipe in Hawaii turned up a racial rarity as the Asian form, *Capella g. gallinago*, graced Kauai. Two Ruffs were found in California and one was found on Long Island where a hardy bird persisted until at least January 28.

Palaearctic landbirds were, as usual, less numerous than waterbirds but proved more thought-provoking. A bird found in a cattle pasture on the Point Reyes National Seashore in late December, a spot that also hosted several outstanding rarities this fall, turned out to be perhaps the most controversial bird in California's birding history. Flitting restlessly among the "cow pies" with Horned Larks and occasional Lapland or Chestnut-collared longspurs, the bird in question was identified for several days by a legion of birders as a Smith's Longspur. Eventually, it proved to be a species of lark! Comparison of photos and written descriptions with museum specimens have convinced many that the trickster was a Common Skylark (*Alauda arvensis*); but some birders still feel that the

Oriental Skylark (*A. gulgula*) has not been properly eliminated, although its unaided arrival in California seems virtually impossible. If indeed the bird was *A. arvensis* the question of race and origin need to be looked at. Concern centers around whether the bird could have been *A. a. arvensis*, the race introduced and established on islands in the Pacific Northwest. The available information has been sent to various authorities for opinions, although racial identity, under any circumstances, can be exceedingly difficult to determine away from the breeding grounds. In this case, racial identity seems hopeless considering the difficulty of identifying this bird, to family, in the field! Whatever the outcome, even if the bird's status remains in limbo or is classified as hypothetical, the bird's presence made for a heavy learning experience for all concerned. (See also p. 310).

The only confirmed Wheatear report was one on Staten Island. Although a Brambling near Anchorage, Alaska, was exciting, the one remaining in Montana to early December must have "blown the socks off" the lucky observer who found it. Equally amazing was a Chaffinch on the Venice, Louisiana, CBC. Could these birds be escapees?

Parting Shots

THE SERIOUS BUSINESS of monitoring bird populations always has its lighter moments. Consider the Greentailed Towhee in Glenwood Springs, Colorado, December 14-25 that got into the house of the local Audubon chairperson and roosted in her Christmas tree; the bird was gone after the 25th presumably because it was no longer needed as a Christmas tree ornament. *The Adaptable Critter of the Year Award* goes to the Belted Kingfisher in Westcreek, Colorado, that was seen three times in January despite the fact that all lakes and streams were frozen the entire month. We suggest that the alcedine bill must be preadapted as an ice pick!

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