

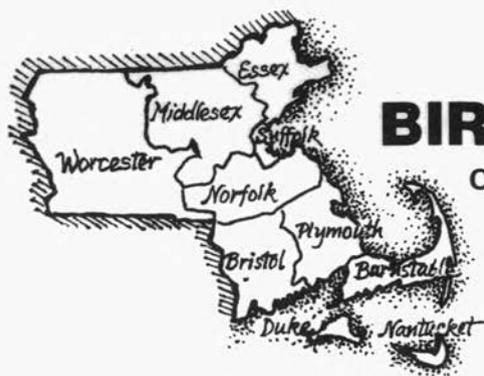
BIRD OBSERVER

OF EASTERN MASSACHUSETTS



APRIL, 1981

VOL. 9 NO. 2



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OF EASTERN MASSACHUSETTS

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LEXINGTON CHECKLIST AVAILABLE

An annotated checklist of the birds of Lexington, Massachusetts, has recently been published. The 10-page checklist, compiled by John Andrews, provides maximum counts, breeding status, and notes on historical trends in occurrence. It includes a map that locates the principal birding areas in Lexington. To obtain a copy, send \$1.00 to Citizens for Lexington Conservation, P.O. Box 521, Lexington, MA 02173

BIRDERS BEWARE!

The home of a local birder was burgled recently. Among the items stolen were two birding scopes: a Bausch & Lomb Balscope (zoom to 60X), Serial Number 7136TG; and a Bausch & Lomb 3-eyepiece turrent scope (15X, 30X, 40X), Serial Number HG6449. If you see either of these birding scopes offered for sale, please note all relevant information and call the Editor of Bird Observer at 776-8566.



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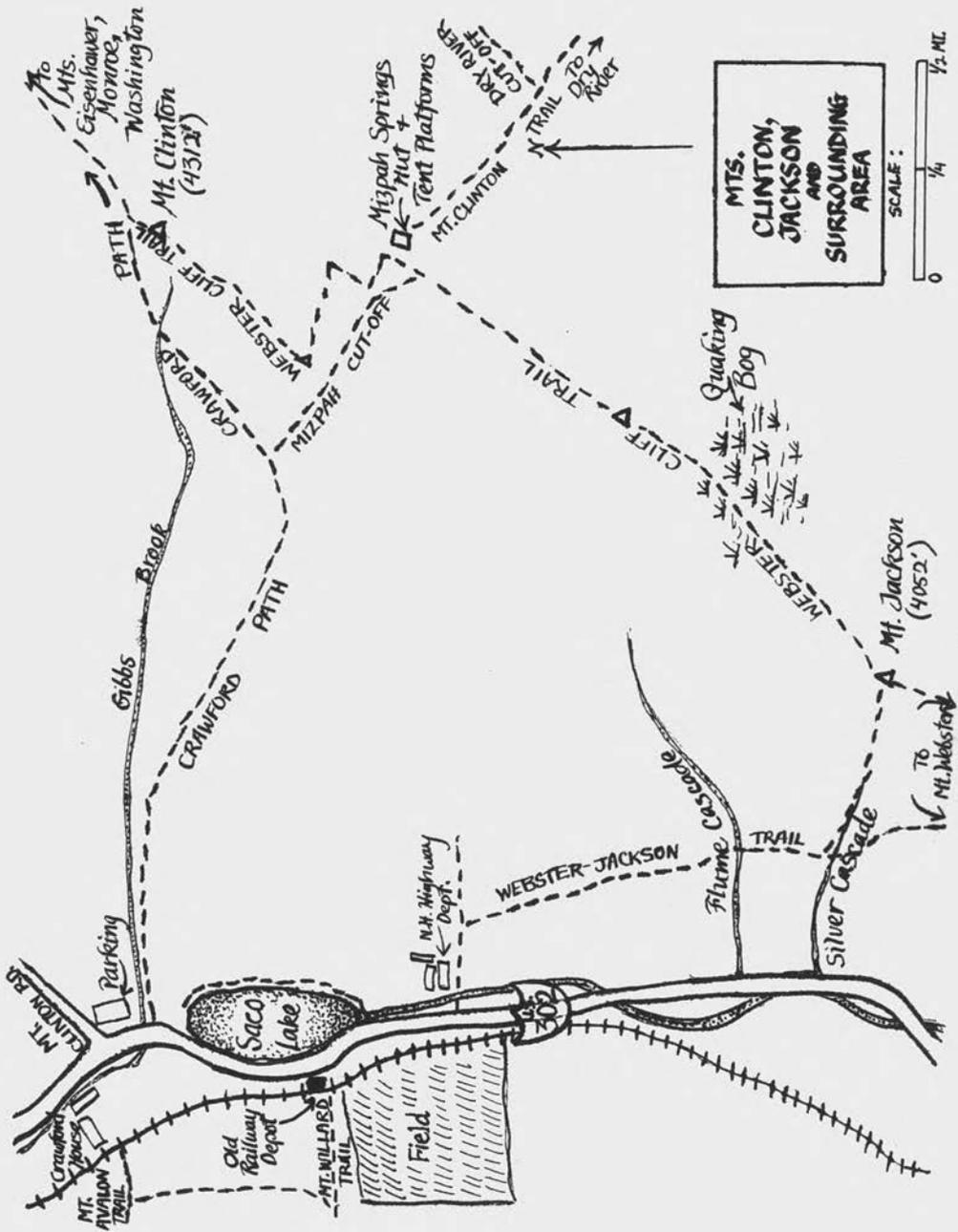
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BIRDING ON MTS. CLINTON AND JACKSON
IN THE WHITE MOUNTAINS OF NEW HAMPSHIRE

By Michael R. Greenwald, West Roxbury

Massachusetts birders who wish to observe migrants in their northern nesting territories and the boreal species which seldom or never come into Massachusetts should consider climbing in the southern Presidential Range of New Hampshire's White Mountains. Although more limited in number than those found in eastern Massachusetts, the habitats include second-growth forests of mixed hardwoods and conifers, virgin stands of Red Spruce and boreal forests of Black Spruce and Balsam Fir, alpine bogs, and arctic tundra. This article describes birds and plant life you might see on several paths in this range.

The Crawford Path is the oldest continuously used footpath in North America (see end of article for directions). Its first section was cut in 1819 by Abel Crawford and his son, Ethan Allen Crawford. It later (1840) became a bridle path, but after a few decades, reverted to its original status.

As you start up the Crawford Path, you are entering second-growth hardwoods (mostly Red Maple and beech) mixed with some Red Spruce. The spruce will become increasingly numerous as you ascend. If you can hear over the sound of Gibbs Brook on your left, you will hear Winter Wrens, Swainson's Thrushes, Solitary and Red-eyed Vireos, Black-and-white, Yellow-rumped, Black-throated Blue, and Black-throated Green Warblers, Ovenbirds, and American Redstarts. This presents the most frustrating (or interesting) element in mountain birding: you will never see 80-90% of the birds you hear. It is not only wise but essential to learn as many bird songs and calls as possible before you go.

As one ascends, the changes in the mountain flowers are as interesting as those in the birds. Among the flowers you should see along the trail at the lower elevations are Wood-sorrel or Oxalis (Oxalis montana), Painted and Red (or Wake-robin) Trillium (Trillium undulatum and T. erectum), and Moccasin-flower or Lady Slipper (Cypripedium acaule) in both the pink and white varieties.

(Note: the list of flowers given in this article is by no means complete or exclusive. Many other species grow on these trails. The list is meant merely to be representative of some of the more common and more noticeable flowers.)

About 1/2 mile up the trail, you enter the Gibbs Brook Scenic Area (marked with a sign) containing mixed Red Spruce and Balsam Fir. The Red Spruce is the climax species in the lower elevations throughout much of the White Mountains. (Heavy lumbering and forest fires at the end of the last century and the early decades of this century have left very few virgin stands.) In this area, you leave behind many of the bird species found in the deciduous growth. But some, such as the Winter Wren, the Swainson's Thrush, and the Yellow-rumped Warbler become more numerous. In addition, you begin to hear Blackburnian Warblers, Brown Creepers, and perhaps a Golden-crowned Kinglet or Yellow-bellied Flycatcher.

Flower species begin to change also. You now see large numbers of Canada Mayflower of Bead-ruby (Maianthemum canadense) and Clintonia or Blue-bead (Clintonia borealis). The latter are called Blue-bead because of the hard blue berries which appear in mid-summer (they are poisonous, so don't eat them). Note the color of the Clintonia blossoms - one of the few flowers classified as green.

At 1.75 miles from the base (allow 1-1/2 to 2 hours' walking time), you will come to the junction of the Crawford Path with the Mizpah Cut-off. Take the Mizpah Cut-off right (east) to Mizpah Springs Hut. You are now entering boreal forest - mostly Black Spruce and Balsam Fir. On the side of the trail, the small white flowers which resemble dogwoods (or, later in the season, the clusters of red berries) are Bunchberries (Cornus canadensis). In theory, the berries are edible, although reputedly quite tasteless. If you bend down close to the ground, you may find Creeping snowberries (Gaultheria hispidula) and Goldthread (Coptis groenlandica). Goldthread blossoms are white; the name is derived from the bright golden color of the roots.

In another .75 miles, you will reach the junction of the Mizpah Cut-off with the Webster Cliff Trail. Turn left (north) for Mizpah Springs Hut (about 200 yards) and Mt. Clinton, or right (south) for Mt. Jackson. The hut is a hostel run by the Appalachian Mountain Club. It accommodates 60 people for breakfast, dinner, and overnight lodging (blankets and pillows are provided). Reservations must be made well in advance (deposit required) with the AMC at Pinkham Notch Camp, Gorham, New Hampshire 03581 (tel.: 1-603-466-2727). For those who are a bit more rugged, there are tent platforms outside the hut available on a first-come-first-served basis. A fee is charged. During the day, you are always welcome inside the hut. (While serving as a naturalist-in-residence at Mizpah, I have left maps designating bird locations. Check with the hut crew to see if anyone has done this recently.) In the cleared area behind the hut, in the vicinity of the solar one-holer (a solar composting latrine), I have found Nashville and Yellow-rumped Warblers, White-throated Sparrows, and an occasional Gray Jay. The climb up Mt. Clinton looks worse than it is. Mt. Clinton has two ambiguously-defined summits, the northern being the highest (elevation: 4312'). The steep climb lasts only as far as the first (southern) summit, about 1/4 mile from the hut. About half-way up this pitch, on the right side of the trail, is a patch of Twinflower (Linnaea borealis). If the plants are in bloom (mid to late June), bend down and smell them. A little further up, also on the right and just below a ledge, is a single Pale Laurel (Kalmia polifolia). If it is in flower (mid-June), note the terminal inflorescence.

Just below the first summit, you see a number of different members of the heath family growing on both sides of the trail. These plants are all adapted to growing in areas where it is difficult to obtain or retain moisture. Look at the underside of the leaves of the Labrador Tea (Ledum groenlandicum). The fuzz helps the plant take moisture directly from the clouds. On the right, you will see Sheep Laurel (Kalmia angustifolia) and Rhodora (Rhododendron canadense) growing together. Notice the lateral inflorescence on the Sheep Laurel. Just above these plants is Bog Bilberry (Vaccinium uliginosum), a close relative of the blueberries. Fortunately, the berries do not ripen until mid-August when many of the warblers have left. If you start eating them, you might forget about the

rest of your birding schedule.

Other plants growing on the first summit are Mountain Avens (Geum pecki) which look like buttercups but are quite unrelated, Three-toothed Cinquefoil (Potentilla tridentata), Crowberry (Empetrum sp.), Mountain Sandwort (Arenaria groenlandica) which seems to grow out of solid rock, and Mountain Cranberry (Vaccinium vitis-idaea), very bitter tasting but good for making jelly (note: the Mountain Cranberry does not ripen until August when the berries are black). Keep your ears open for Yellow-bellied Flycatchers, Winter Wrens, Ruby-crowned Kinglets, Swainson's and Gray-cheeked Thrushes, and Magnolia Warblers. Ever present are Yellow-rumped and Blackpoll Warblers, White-throated Sparrows and Dark-eyed Juncos.

The walk to the main summit is a fairly easy hike of about 1/2 mile. There is no appreciable change in either the plant or the bird population. On the main summit itself, however, you break treeline and emerge onto arctic tundra. You notice large mats of Diapensia (Diapensia lapponica), one of the most prevalent alpine flowers. You may also see Lapland Rosebay (Rhododendron lapponicum), an alpine relative of the Rhodora. It is not necessary to proceed northward from the summit if your primary purpose is birding. For although the alpine flowers become increasingly varied as you ascend toward Mt. Washington, the only two birds consistently found above treeline are the White-throated Sparrow and the Dark-eyed Junco.

You should now retrace your steps and head toward Mt. Jackson. The trail to Jackson, with the exception of a small knoll mid-way between Mts. Clinton and Jackson, is mostly level (average elevation: 3800') and entirely through either boreal forest or alpine bog surrounded by boreal forest. It is on this stretch of trail that you are most likely to encounter Spruce Grouse. Indeed, after ten years in the White Mountains, I have found this to be the most reliable location for these sought-after birds.

You should also expect to find Yellow-bellied Flycatchers, Red-breasted Nuthatches, Winter Wrens, Swainson's and Gray-cheeked Thrushes, Ruby-crowned Kinglets, Tennessee, Nashville, Magnolia, Yellow-rumped, Blackburnian, and Blackpoll Warblers, White-throated Sparrows, and Dark-eyed Juncos. You may also find Common Ravens, Gray Jays, Boreal Chickadees, Cape May Warblers, Purple Finches, and Red- and White-winged Crossbills. The tall plants near the junction of Webster Cliff Trail with the Mizpah Cut-off are Indian Poke or False-hellebore (Veratrum viride). You will also see currants along the trail (three species occur in the White Mountains: Swamp Black, Skunk, and Red Currants [Ribes lacustre, R. glandulosum, and R. triste]) as well as Baked-apple Berry or Cloudberry (Rubus chamaemorus).

About 1/4 mile below the summit of Mt. Jackson, you will emerge into an open area known as the Quaking Bog. There is no free water in the bog as it has been completely filled in by natural succession. However, during wet seasons the bog becomes undermined with water which makes the ground appear to quake. The most common plants here are the Cotton Grass or Hare's Tail (Eriophorum spissum), Sundew (Drosera rotundifolia), and along the trail itself, Wren's Egg Cranberry (Vaccinium oxycoccos). Please stay on the boardwalk and do not walk on the bog. This area is extremely fragile and subject to very heavy use. If everyone were to walk into the bog, its very survival would be threatened. Comparing the trampled area on

either side of the boardwalk with the untrampled area further into the bog demonstrates this point.

In the bog, as in so much of the White Mountains, the most prevalent avian species are the Yellow-rumped Warblers, White-throated Sparrows, and Dark-eyed Juncos. However, you occasionally find Gray Jays, Nashville Warblers, and crossbills.

It might be worth while to ascend to the summit of Mt. Jackson (elevation: 4052'). In June of 1979, three Gray Jays took up residence there, apparently with the conviction that they would be able to beg an unlimited food supply from passing hikers. These jays became very tame and could be hand-fed.

From the summit, you may return to the hut, continue south toward Mt. Webster, or descend to your car via the Jackson branch of the Webster-Jackson Trail (be sure to turn right when you reach the junction with the Webster branch). However, if your primary interest is birding, it is unnecessary to continue south toward Mt. Webster. The habitat does not change appreciably and the trail, although only one mile long, is considerably rougher than the stretch between Mts. Clinton and Jackson. Also, it is unwise to ascend Mt. Webster directly from U.S. 302 via the Webster Cliff Trail (Appalachian Trail) because the trail is quite long and quite steep.

When you return to the bottom, it might be worth while to walk around Saco Lake and to check out the overgrown field at the base of Mt. Willard on the other side of the road. Reliable observers have found Mourning Warblers in the field.

Two final notes of caution are in order. The first relates to the mountains. The alpine plants that you see growing alongside the trail are especially adapted to withstand the desiccating winds, bitter cold, and deep snows of the high elevations. They grow low to the ground with leaves that are leathery or fuzzy and very small. Their root systems are adapted to anchor them in soils only a fraction of an inch thick. But in spite of all this, they are not designed to withstand human impact. The extremely rare Dwarf Cinquefoil (Potentilla robbinsiana Oakes) grows in soil so thin that even a minor disturbance will uproot the plant and kill it. A patch of Diapensia, which might be sixty years old, can be destroyed with a single footstep. In an alpine bog, there is nothing underneath the plants but spruce peat. Plants can be submerged into the peat with hand pressure. Approximately 65,000 people hike in the Presidential Range every summer. If every one of those hikers wandered uncontrolled, the very environment which brought them into the mountains in the first place would be rapidly destroyed. Please, stay on the trails! If you do stray, stay on the rocks. In the White Mountains, good birding etiquette and good hiking etiquette must be observed.

The second note of caution applies to you, the hiker. The signposts in the White Mountains caution that these mountains have the worst weather in America. This is not hyperbole. Treeline at 4000'-4500' as opposed to 9000'-11,000' in the west attests this sufficiently. Save for Antarctica, the White Mountains have the worst weather in the world. Mt. Washington, five miles to the north of Mt. Clinton, has killed more

people than any other mountain on earth. Seven people have died on the Crawford Path alone. The combination of high winds, cold temperatures (even in summer), and sudden storms is fatal to the unprepared. Be sure that you are carrying plenty of extra clothing (including hat and mittens), preferably wool. Carry sturdy wind and rain gear (the winds in the White Mountains are frequently above hurricane force). Carry a first aid kit, extra food, extra water (above Gibbs Brook, there is NO WATER on any of the trails in this article save at Mizpah Springs), a compass (and know-how to use it), a map (the Appalachian Mountain Club Mt. Washington Map #6), and an AMC White Mountain Guidebook. Always let someone else know your itinerary.

An Annotated List of the Summer Birds of the White Mountains

This list originally included only the birds of the southern Presidentials, based on my own observations. But this created a problem of what to include and what to exclude. For example, should the Mourning Warbler and the Northern Three-toed Woodpecker be excluded simply because I had not observed them and they were found on the other side of U.S. 302? I therefore decided to expand the list to include those birds seen anywhere in the White Mountains either by myself or by other observers. However, the problem still remained. Should I include the Yellow-throated Vireos which I have observed in neighboring areas in Maine? Some boundary, no matter how artificial, had to be created. Therefore, this list includes those birds observed within the outermost boundaries of the WMNF either by myself or other observers. Those species observed at least once on the southern Presidentials are marked "X."

Comments on relative abundance of species have no scientific bearing whatsoever. They are based on my impressions accumulated over ten years of hiking and birding in the White Mountains, not on actual censuses.

Anseriformes: Most of the ponds in the White Mountains are too small to support waterfowl. One exception, however, is Zeland Pond in which Black Ducks (Anas rubripes) and Wood Ducks (Aix sponsa) have been observed.

Falconiformes: Although a number of species of hawks are resident in the White Mountains, they are rarely seen, hidden as they are by the trees. I have observed, however, Goshawks (Accipiter gentilis) in the ravine between Carter Ledge and Hammond Ridge on Mt. Chocorua and a flight of Broad-winged Hawks (Buteo platypterus)^x playing in the air currents along the southern Presidentials. Bald Eagles (Haliaeetus leucocephalus) have been reported nesting in the southern Mahoosucs and a Peregrine Falcon (Falco peregrinus) was reported from the Webster Cliffs, but to my knowledge, neither of these latter two reports has been confirmed.

Galliformes: The only two members of this order generally found in the White Mountains are the Ruffed Grouse (Bonasa umbellus)^x, fairly common at lower elevations (below 3000'), and the Spruce Grouse (Canachites canadensis)^x, quite common in its proper habitat above 3500'. The Spruce Grouse seems to require flat expanses of boreal forest. Thus the broad ridges of the southern Presidentials, Bond-Guyot, Osceola, and others are ideal. The bird is best seen five to seven weeks after the last snow-melt as the young and the mother will still be traveling in a family group (usually the second or third week in July). Because this bird

reputedly tastes very bad, it does not suffer from predation, either animal or human and as a result its fear-response is quite low. If you behave like a hiker and move rather briskly down the trail, the bird will usually sit in or next to the trail and wait for you. A solitary female sitting in the trail can usually be approached quite closely. Males and females with young are usually more wary, but not much. However, if you stalk the bird, it will become suspicious and skulk away into the pucker-brush. Furthermore, although the birds are usually spotted on the ground, they do perch especially when frightened. I have observed them as high as 12'-14' in the trees.

About these birds, Pough writes, "A plentiful supply of coarse gravel is important, and the major excursions of these sedentary birds seem to be trips to stream or lakeside sources of this material."¹ There are no streams or lakesides in those areas of the White Mountains where the Spruce Grouse are usually found. However, hikers have long since worn away the soil on the trails and have ground the bedrock into gravel. This need for gravel might explain the birds' frequent appearances on the trails.

Identification should present no problem as the male Spruce Grouse is quite distinctive and the cinnamon terminal band on the tail is very prominent on both sexes. The terminal bands on the tail of the Ruffed Grouse are white-black-white.

Spotted Sandpiper (Actitis macularia): Fairly common around lakes and sluggish streams.

American Woodcock (Philohela minor): Common in and along dirt roads and those trails which were once lumber roads or railroads.

Rock Dove (Columba livia): Common in towns.

Mourning Dove (Zenaidura macroura): Common in towns and wood-margins.

Chimney Swift (Chaetura pelagica): Common in towns. Has been reliably reported from the Crawford House opposite the trailhead for the Crawford Path.

Ruby-throated Hummingbird (Archilochus colubris): Uncommon near houses.

Belted Kingfisher (Magaceryle alcyon): Common near large lakes.

Common Flicker (Colaptes auratus): Common near fields or open areas.

Pileated Woodpecker (Dryocopus pileatus): Uncommon. Has been reliably reported from Church Pond.

Yellow-bellied Sapsucker (Sphyrapicus varius): Has not been reported to me but should be found in the stands of birches along the Kancamagus Highway or in the white birch forests occasionally found in the White Mountains.

Hairy Woodpecker (Picoides villosus)^x: Common at lower elevations.

Downy Woodpecker (Picoides pubescens)^x: Common at lower elevations.

Black-backed Three-toed Woodpecker (Picoides arcticus)^x: Rare. This and the next species have been reported by reliable observers on the Nancy Pond Trail, further south on U.S. 302 and at Church Pond on the Kanca-magus Highway.

Northern Three-toed Woodpecker (Picoides tridactylus): Rare. See previous species.

Eastern Kingbird (Tyrannus tyrannus): Common along large streams at lower elevations.

Eastern Phoebe (Sayornis phoebe): Common near open areas at lower elevations.

Yellow-bellied Flycatcher (Empidonax flaviventris)^x: Uncommon in Red Spruce forests but becomes increasingly common as the spruce changes from Red Spruce to Black Spruce and as the number of Balsam Fir increases.

Least Flycatcher (Empidonax minimus)^x: Common in deciduous forests at lower elevations.

Eastern Wood Pewee (Contopus virens): Common somewhat deeper into the woods than the Least Flycatcher. Seems to tolerate more evergreens mixed in with the hardwoods than does the previous species.

Olive-sided Flycatcher (Nuttallornis borealis): Uncommon because its preferred habitat is uncommon. Has been found in the vicinity of Zealand Pond and reliably reported from the vicinity of Church Pond.



Spruce Grouse by Julie S. Roberts

Barn Swallow (Hirundo rustica): Common, especially in towns, farms, etc. Can be found in the vicinity of the Crawford House.

Cliff Swallow (Petrochelidon pyrrhonota): Uncommon. When found in the White Mountains, it is usually nesting under bridges.

Tree Swallow (Iridoprocne bicolor): Common, especially near lakes and ponds.

Rough-winged Swallow (Stelgidopteryx ruficollis): Uncommon but reliably reported.

Blue Jay (Cyanocitta cristata)^x: Common at lower elevations, especially along roads and in towns. Ventures to higher elevations during periods of air inversion.

Gray Jay (Perisoreus canadensis)^x: Uncommon and local. These birds generally travel in small flocks and seem to prefer open areas in the boreal forest. Ridge crests and summits, therefore, offer the best opportunities for observation. I have found the ridge of the southern Presidentials to be the most reliable for producing Gray Jays, but even here have observed them infrequently.

Common Raven (Corvus corax)^x: Uncommon to common. Any large, black bird observed on a ridge above treeline is probably a Common Raven. If you are below the trees, you are more likely to hear the bird croaking as it passes overhead. They are uncommon between Mts. Clinton and Jackson. If you are looking specifically for this bird, try the summit of Mt. Chocorua on a warm, moderately windy day.

Common Crow (Corvus brachyrhynchos)^x: Common along roadsides and in towns.

Black-capped Chickadee (Parus atricapillus)^x: Common at all but the highest elevations.

Boreal Chickadee (Parus hudsonicus)^x: Rare to uncommon; rare on the southern Presidentials. More common on the north slopes of the northern Presidentials. These birds seem to become more numerous in August and early autumn.

White-breasted Nuthatch (Sitta carolinensis)^x: Common in the deciduous trees at lower elevations. Not found at all in the spruce zones.

Red-breasted Nuthatch (Sitta canadensis)^x: Rare in summer below the spruce zones and extremely variable above. In June of 1979, I found one Red-breasted Nuthatch in two weeks in the spruce zone whereas in 1976, I was finding four or five per mile.

Brown Creeper (Certhia familiaris)^x: Found in the spruce zones but abundance is difficult to determine. Their song and call do not carry well and they are probably far more numerous than my observations would indicate.

House Wren (Troglodytes aedon): Uncommon in towns. Not found deep in the forest.

Winter Wren (Troglodytes troglodytes)^x: Common at all elevations but shows a slight preference for the spruce zones.

Gray Catbird (Dumetella carolinensis): Common in brush at lower elevations.

Brown Thrasher (Toxostoma rufum): Common in deciduous wood-margins.

American Robin (Turdus migratorius)^x: Common on lawns and in towns. Uncommon deep in deciduous forests. Generally not found at all in the spruce zones. However, like the Blue Jay, during periods of air inversion, robins can be found to the limit of the trees. I once observed a robin at 5100' on the Crawford Path, perched on the top of a leader in a patch of Krummholz.

Wood Thrush (Hylocichla mustelina): Common in deciduous forests. Has been observed at the base of Mt. Willard on the opposite side of U.S. 302 from the southern Presidentials.

Hermit Thrush (Catharus guttata): Common in proper habitat. Seems to prefer open conifers at elevations up to 3000'. I do not know if this "openness" relates to the distance between the trees, the species of tree, or some combination of the two. I have most regularly observed them in Red Pine (Pinus resinosa) and Eastern Hemlock (Tsuga canadensis) in "open" forests. If the Hermit Thrush is to be found on the southern Presidentials, it is most likely to be in the open stand of Balsam Fir and Red Spruce about .75 miles up the Crawford Path from U.S. 302.

Swainson's Thrush (Catharus ustulata)^x: Common at all elevations but shows a decided preference for spruce-balsam forests.

Gray-cheeked Thrush (Catharus minima)^x: Fairly common between 3500' and treeline. In recent years, a Gray-cheeked Thrush has always been found on the slope of Mt. Clinton just above Mizpah Springs Hut. This, however, is a very bad place to see Gray-cheeked Thrushes. The best place in the White Mountains to observe these birds is on the Lion's Head Trail on Mt. Washington just before the trail leaves the trees.

Veery (Catharus fuscescens): Common in deciduous brush and wood-margins.

Blue-gray Gnatcatcher (Polioptilla caerulea): Accidental. In theory, these birds should not appear in the White Mountains at all. However, in May, 1975, I observed a Blue-gray Gnatcatcher on the summit of Mt. Stanton (elevation 1748') in Glen, New Hampshire. I observed a second bird in Brownfield Bog, Brownfield, Maine, in July, 1979. Both birds exhibited peculiar behavior and I have assumed them to be accidentals.

Golden-crowned Kinglet (Regulus satrapa)^x: Found in the spruce zones. Like the Brown Creeper, their call does not carry well hence their numbers are difficult to determine. I have found them much more frequently in open spruce than in closed spruce but that may be because the spruce being open, the birds were more easily observed.

Ruby-crowned Kinglet (Regulus calendula)^x: Common in boreal forest.

Cedar Waxwing (Bombycilla cedrorum)^x: Common but irregular at lower elevations.

Solitary Vireo (Vireo solitarius)^x: Common in mixed deciduous-conifer and in Red Spruce-Balsam Fir forests.

Red-eyed Vireo (Vireo olivaceus)^x: Very common in deciduous forests but limited to that zone.

Philadelphia Vireo (Vireo philadelphicus): Rare but reliably reported in deciduous forests.

Warbling Vireo (Vireo gilvus): Rare in moist deciduous forests.

Black-and-white Warbler (Mniotilta varia)^x: Relatively common in deciduous forests at lower elevations.

Tennessee Warbler (Vermivora peregrina)^x: Uncommon to common in the spruce forests.

Nashville Warbler (Vermivora ruficapilla)^x: Common in low deciduous growth at lower elevations and in open areas in the boreal forest. On the southern Presidentials, they are best observed in the vicinity of Mizpah Springs Hut and the Quaking Bog.

Northern Parula Warbler (Parula americana): Uncommon to common near water at lower elevations.

Yellow Warbler (Dendroica petechia): Common in towns and in thickets near sluggish water at lower elevations.

Magnolia Warbler (Dendroica magnolia)^x: Common in spruce forests.

Cape May Warbler (Dendroica tigrina)^x: Uncommon in spruce forests.

Yellow-rumped (Myrtle) Warbler (Dendroica coronata)^x: Very common at lower elevations and abundant in spruce forests.

Black-throated Green Warbler (Dendroica virens)^x: Very common in all zones but the boreal (they are found in Red Spruce-Balsam Fir areas; my observations do not show them in Black Spruce-Balsam Fir growths). In the White Mountains, their commonest song is zoo-zoo-zoo-dee-zee, not zoo-zee-zoo-zoo-zee.

Black-throated Blue Warbler (Dendroica caerulescens)^x: Common in the same zones as the Black-throated Green Warbler.

Blackburnian Warbler (Dendroica fusca)^x: Common in coniferous forests but very difficult to see since it generally sits at the very tops of the evergreens.

Chestnut-sided Warbler (Dendroica pensylvanica): Common in deciduous growth and wood-margins.

Bay-breasted Warbler (Dendroica castanea): I have observed 3 Bay-breasted Warblers on the Nancy Pond Trail, and have had one report of one from Church Pond. There ought to be more. Perhaps, like the Brown Creeper and the Golden-crowned Kinglet, their song is too faint to be heard at any appreciable distance. Reliable local observers have seen them in greater numbers during migration but never during nesting season. More information would be appreciated.

Blackpoll Warbler (Dendroica striata)^x: Abundant in Red Spruce-Balsam Fir. Extremely abundant in the boreal zone. This bird is often heard but seldom seen.

Pine Warbler (Dendroica pinus). Uncommon since there are very few pine forests in the White Mountains. However, I have occasionally observed these birds in mixed deciduous-coniferous forests.

Ovenbird (Seiurus aurocapillus)^x: Common in deciduous and mixed deciduous-coniferous forests at lower elevations.

Northern Waterthrush (Seiurus noveboracensis): Uncommon to common in suitable habitat.

Louisiana Waterthrush (Seiurus noveboracensis): Rare (perhaps accidental). They have been reported from North Conway, N.H. Peter D. Vickery of Lincoln, Maine, would like reports of any Louisiana Waterthrushes observed in Maine.

Common Yellowthroat (Geothlypis trichas): Common in thickets near water.

Mourning Warbler (Oporornis philadelphia): Rare. They have been reliably reported in the overgrown field at the base of the Mt. Willard Trail.

Wilson's Warbler (Wilsonia pusilla): Rare to uncommon. Reliably reported in thickets at Church Pond.

Canada Warbler (Wilsonia canadensis)^x: Common but variable in deciduous forests at lower elevations.

American Redstart (Setophaga ruticilla)^x: Common at lower elevations.

Red-winged Blackbird (Agelaius phoeniceus): Common in suitable habitat. They can be found in the overgrown field at the base of Mt. Willard.

Common Grackle (Quiscalus quiscula)^x: Common, especially at roadside picnic areas, campgrounds, and parking lots.

Brown-headed Cowbird (Molothrus ater): Common in or near fields and lawns.

Northern (Baltimore) Oriole (Icterus galbula): Common in deciduous trees in towns.

Scarlet Tanager (Piranga olivacea): Uncommon to common in deciduous and mixed deciduous-coniferous forests. All of the reports of Scarlet Tanagers which I have heard and all of my own observations are from improved campgrounds or along the Kancamagus Highway.

Cardinal (Cardinalis cardinalis): Rare. I have seen only one--just south of the trailhead of the Piper Trail on Mt. Chocorua.

Rose-breasted Grosbeak (Pheucticus ludovicianus): Fairly common at lower elevations.

Evening Grosbeak (Hesperiphona verpertina): Although I have heard reliable reports of Evening Grosbeaks in the White Mountains in the summer, they are relatively uncommon until very late summer, after which they are locally common until mid- to late May.

Purple Finch (Carpodacus purpureus)^x: Not as common in the spruce forests as might be expected. In My Wilderness: East to Katahdin, Douglas speaks of these birds as being very common at higher elevations. Either Douglas' impressions or mine are quite inaccurate, or else something has happened to the Purple Finch population over the past two decades.

Pine Grosbeak (Pinicola enucleator): Not present during the summer but locally common during the winter.

Pine Siskin (Carduelis pinus): Uncommon in summer and highly irregular. In some years I have found them in pines, presumably nesting, and in other years I have not found them at all.

American Goldfinch (Carduelis tristis): Common in fields and lawns near woods.

Red Crossbill (Loxia curvirostra)^x: Rare in the spruce forests. Travels in small flocks. I have observed them in the Quaking Bog on Mt. Jackson.

White-winged Crossbill (Loxia leucoptera)^x: Uncommon in the spruce forests. Travels in small flocks. Also observed in the Quaking Bog on Mt. Jackson. I have seen flocks of White-winged Crossbills on the small knoll between Mizpah Springs Hut and Mt. Jackson. Upon returning the following day, I could not find a single bird. This bird is easily found by its song: a long series of very loud trills on various pitches.

Rufous-sided Towhee (Pipilo erythrophthalmus): Common in wood-margins, deciduous brush and scrub.

Dark-eyed Junco (Junco hyemalis)^x: Abundant, especially in boreal forest, alpine bog, and on the tundra. This is one of only two birds regularly found in the patches of krummholz above the treeline.

Chipping Sparrow (Spizella passerina): Common on lawns and in fields near woods. Seems to prefer conifers for nesting.

White-throated Sparrow (Zonotrichia albicollis)^x: Abundant. On the southern Presidentials, it shows a marked preference for the boreal zone. At lower elevations, look in logged areas. Together with the Dark-eyed Junco, this is one of the two birds regularly found in the patches of krummholz above treeline.

Swamp Sparrow (Melospiza georgiana): Uncommon because its preferred habitat is uncommon. Found in swampy areas such as Zealand Pond and some of the ponds in and around the Pemigewasset Wilderness.

Song Sparrow (Melospiza melodia): Common in wood-margins and overgrown fields.

DIRECTIONS:

To approach the southern Presidentials via the easiest route, take I-95 north into New Hampshire. In Portsmouth (Exit 4), exit left, following the signs for the Spaulding Turnpike and N.H. 16. Follow the Turnpike around the city of Rochester to the end and watch for signs marked "N.H. 16 North" (marked "Conway" and "White Mountains"). This exit is not numbered but veers left where Exit 17 veers right. Do NOT exit on N.H. 16 in Dover because this will take you through the cities of Dover and Rochester. Stay on N.H. 16 into North Conway taking care to take the well-marked sharp left in Conway. In North Conway, U.S. 302 enters on the right from Portland, Maine, and the two roads run together through North Conway and Intervale. In Glen, N.H., 16 takes a sharp right and continues north (sign is marked "Berlin"). Do NOT follow 16; rather, stay on 302 through Bartlett and Crawford Notch. As you come out of Crawford Notch, you will see an old railroad depot (now serving as an information booth) and the old Crawford House ahead on your left. Between the two and on the right side of the road, just before the Mt. Clinton Road bears off to the right to the Mt. Washington Cog Railway, you will see a parking area above the main road. Park here.

Head back down the road about 150 yards and on the left (the same side of the road as your car), you will see a set of railroad ties heading up the bank. This is the trailhead for the Crawford Path.

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1. Richard H. Pough, Audubon Water Bird Guide: Water, Game, and Large Land Birds: Eastern and Central North America from Southern Texas to Central Greenland, (Garden City, N.Y., Doubleday, c1951), p. 174
 2. William C. Douglas, My Wilderness: East to Katahdin, (New York: Pyramid Books, c1961)



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THE 1980 SPRING WARBLER MIGRATION STUDY:
AN EXPERIMENT IN COOPERATIVE DATA COLLECTION

John W. Andrews, Lexington, and
Lee E. Taylor, Arlington

For many Massachusetts birders the spring warbler migration is one of the high points of the birding year. Mild weather and a parade of colorful singing birds entice more observers into the field than at any other time of year. One might think that this birding enthusiasm would yield a flood of field reports which would support quantitative monitoring of the abundances of migrants. But, in reality, deficiencies in the data reporting and compilation processes usually erode the value of published records and leave us with surprisingly little birding data which is useful in the quantitative study of migration. Consider for instance a simple question such as the following: Has the number of Bay-breasted Warblers migrating through Massachusetts increased or decreased in the last 10 years? If one consults the records published in BOEM or in the Massachusetts Audubon Field Notes, one finds primarily early records, late records, and extreme high counts. Generally, the reports of high counts are difficult to evaluate since they fail to detail the time afield or the area covered in generating the count. Nor do they discuss unusual weather conditions that might have caused a peak.

The authors have long felt that the field reports of birders can be made much more useful than is currently the case. For this reason a migration monitoring study was organized in the spring of 1980. The goal of the study was to observe and record the migration of warblers in a manner that would produce migrant abundance data of long-term usefulness. The study also sought to detect site-to-site differences in the migrant counts. These differences would help to determine whether intensive coverage of one site (Mt. Auburn Cemetery, say) can be considered a substitute for more widespread coverage.

Methodology

In devising a methodology for the study, it was immediately apparent that the familiar Christmas Bird Count approach was inappropriate. The CBC is a single-day census and thus suitable only for the counting of sedentary populations. Since the numbers of migrant landbirds vary greatly from day to day, a single-day census could be quite atypical of the season as a whole. It was decided that the study must take place over several weeks during the migration. Daily coverage for such a period was out of the question for most participating observers. Hence data analysis techniques that could accommodate intermittent coverage were developed.

The study focused upon warblers for several reasons. First, warblers constitute a family containing a moderate number of species, many of

TABLE 1. SUMMARY OF WARBLER MIGRATION STUDY DATA

SITE NO.	CODE	LOCATION	NO. VISITS	NO. HOURS	TOTAL COUNT	MIGRANT COUNT	NO. SPECIES	MIGRANTS PER HR.	OBSERVER
1	PLUM	Plum Island (Hellcat Swamp)	12	12.5	316	163	18	13.0	M. Schoene
2	MTA1	Cambridge (Mt. Auburn Cemetery)	12	19.0	604	594	21	31.3	S. Zende
3	MTA2	Cambridge (Mt. Auburn Cemetery)	12	15.4	420	409	21	26.6	C. Jackson
4	WINC	Winchester/Medford ("Army Camp")	19	27.8	945	840	24	30.2	G. Gove
5	LEX	Lexington (Whipple Hill)	21	23.9	264	214	20	8.9	J. Andrews
6	WEST	Weston (Linwood Cemetery)	13	22.3	369	272	21	12.2	L. Robinson
7	CONC	Concord (GMNWR)	18	35.3	799	255	19	7.2	L. Taylor
8	WAYL	Wayland (Heard's Pond)	14	7.1	385	304	10	42.8	R. Forster
TOTALS			121	163.3	4102	3051	20.2 (ag.)	18.7 (ag.)	

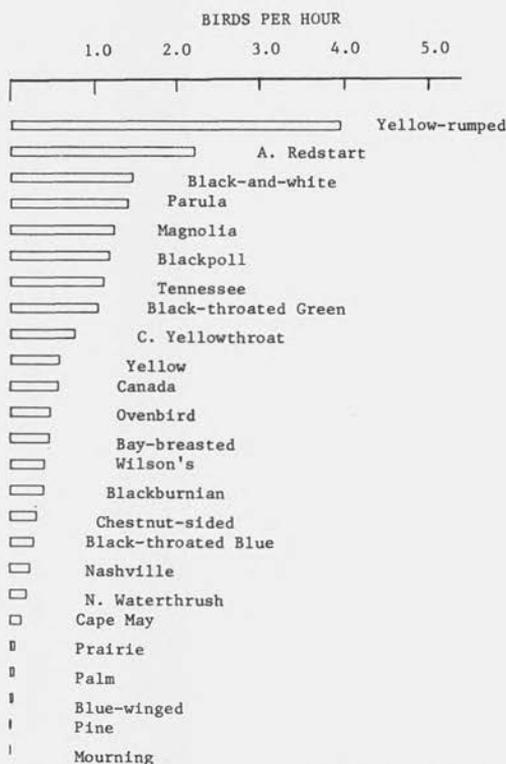


FIGURE 1. Abundance of Migrant Warblers Obtained by Combining Data from All Sites

which can be found in substantial numbers in almost any town or city in the area. Second, they present few identification problems in spring plumages (autumn is another story!). Finally, most of the warblers seen in eastern Massachusetts during May are migrants. This somewhat alleviates the problem of distinguishing migrants from resident individuals.

During the month of May, eight observers covered fixed routes at their chosen sites and recorded the numbers of all warbler species observed. Both sight and voice records were accepted. The particular dates of the visits were at the discretion of the observers, but participants were asked to conduct the census at least once every three days. Previous experience had indicated that less frequent visits could miss migration peaks for particular species and result in undercounts for the migration period.

In addition to keeping weather counts, observers filled out a daily visit log that indicated the amount of time spent on the census, the weather conditions, and the overall level of migratory activity observed. Finally, a site description form, describing the topology, vegetation, and land use at the site, was completed.

All counts were taken in terms of the number of bird-days. Thus, if one individual was seen on two consecutive days, that individual contributed two bird-days to the count. No attempt was made to convert these counts to the actual numbers of individuals visiting the site over a period of time. It is felt that bird-day counts are meaningful indicators of abundance and that any attempt to convert these counts to actual numbers of visitors could only introduce more uncertainty into the significance of the data.

Overview of Results

Table 1 provides an overview of the eight sets of data that were submitted. A total of 4102 bird-days was recorded. Of this total, 1051 bird-days were attributed to residents rather than migrants, leaving 3051 migrant records for analysis. The correction for each resident species was determined by analyzing trends in the daily counts and by having the observers submit estimates of the resident populations at their sites.

Figure 1 provides a summary of the abundances of each of the 25 warbler species recorded during the study. The abundances are expressed in terms of birds per hour (multiply by 163 hours to get the total number of birds recorded). The most abundant migrant was the Yellow-rumped Warbler, which accounted for approximately 21% of the migrant records.¹ The second most abundant migrant was the American Redstart, which

¹ The census was conducted only during the month of May. If April records had been included, certain early migrants such as Yellow-rumped, Pine, and Palm Warbler would probably increase in relation to other species.

TABLE 2. BIRDS-PER-HOUR VALUES FOR MIGRANT WARBLERS

	1	2	3	4	5	6	7	8	
	PLUM	MTA1	MTA2	WINC	LEX	WEST	CONC	WAYL	
YRMP	1.28	5.00	6.49	3.85	2.22	2.56	1.98	21.05	3.963
RDST	2.16	3.47	1.49	5.61	1.30	0.85	0.71	2.12	2.217
B&W	0.96	2.84	1.69	2.63	0.92	1.48	0.48	0.42	1.470
PARU	1.28	2.53	1.82	3.35	0.38	0.72	0.54	0.28	1.415
MAGN	1.44	2.16	1.56	2.34	0.59	1.26	0.25	0.71	1.249
BPLL	0.08	2.95	1.88	1.22	0.21	0.81	0.65	3.95	1.188
TENN	0.0	2.74	2.47	1.91	0.25	0.72	0.25	1.27	1.121
BTG	0.56	2.63	2.27	1.62	0.46	0.63	0.20	0.42	1.053
YTHR	0.80	0.16	1.17	0.97	0.25	0.49	0.54	4.66	0.778
YEL	0.72	0.89	1.43	0.07	0.04	0.09	0.62	2.82	0.582
CNDA	0.56	0.53	0.58	1.58	0.29	0.27	0.11	0.85	0.570
OVEN	0.08	0.32	0.45	1.04	0.59	0.72	0.11	0.14	0.478
BAYB	0.0	0.79	0.91	0.83	0.04	0.58	0.03	1.27	0.465
WILS	2.00	0.63	0.71	0.22	0.0	0.0	0.28	0.42	0.410
BBUR	0.08	0.95	0.32	0.79	0.17	0.31	0.06	0.99	0.404
CHES	0.08	0.74	0.32	0.79	0.29	0.09	0.03	0.0	0.318
BTBL	0.40	0.79	0.32	0.50	0.13	0.04	0.08	0.0	0.282
NASH	0.0	0.53	0.06	0.29	0.38	0.31	0.0	0.56	0.239
NHAT	0.24	0.05	0.26	0.32	0.0	0.04	0.25	0.71	0.196
CMAY	0.16	0.53	0.26	0.11	0.0	0.09	0.0	0.0	0.129
PRIE	0.0	0.05	0.0	0.07	0.25	0.0	0.0	0.0	0.055
PALM	0.16	0.0	0.0	0.04	0.13	0.0	0.0	0.28	0.049
BHNG	0.0	0.0	0.06	0.04	0.08	0.04	0.03	0.0	0.037
PINE	0.0	0.0	0.0	0.0	0.0	0.09	0.0	0.0	0.012
MOUR	0.0	0.0	0.0	0.04	0.0	0.0	0.0	0.0	0.006

NOTE: BPH abundance for each species is expressed as birds per hour afield. The final column provides the BPH values resulting from combining data from all sites.

TABLE 3. RELATIVE ABUNDANCE OF MIGRANTS

	1	2	3	4	5	6	7	8	
	PLUM	MTA1	MTA2	WINC	LEX	WEST	CONC	WAYL	
YRMP	9.82	15.99	24.45	12.74	24.77	20.96	27.45	49.01	21.206
RDST	16.56	11.11	5.62	18.57	14.49	6.99	9.80	4.93	11.865
B&W	7.36	9.09	6.36	8.69	10.28	12.13	6.67	0.99	7.866
PARU	9.82	8.08	6.85	11.07	4.21	5.88	7.45	0.66	7.571
MAGN	11.04	6.90	5.87	7.74	6.54	10.29	3.53	1.64	6.686
BPLL	0.61	9.43	7.09	4.05	2.34	6.62	9.02	9.21	6.359
TENN	0.0	8.75	9.29	6.31	2.80	5.88	3.53	2.96	5.998
BTG	4.29	8.42	8.56	5.36	5.14	5.15	2.75	0.99	5.637
YTHR	6.13	0.51	4.40	3.21	2.80	4.04	7.45	10.86	4.163
YEL	5.52	2.86	5.38	0.24	0.47	0.74	8.63	6.58	3.114
CNDA	4.29	1.68	2.20	5.24	3.27	2.21	1.57	1.97	3.048
OVEN	0.61	1.01	1.71	3.45	6.54	5.88	1.57	0.33	2.557
BAYB	0.0	2.53	3.42	2.74	0.47	4.78	0.39	2.96	2.491
WILS	15.34	2.02	2.69	0.71	0.0	0.0	3.92	0.99	2.196
BBUR	0.61	3.03	1.22	2.62	1.87	2.57	0.78	2.30	2.163
CHES	0.61	2.36	1.22	2.62	3.27	0.74	0.39	0.0	1.704
BTBL	3.07	2.53	1.22	1.67	1.40	0.37	1.18	0.0	1.508
NASH	0.0	1.68	0.24	0.95	4.21	2.57	0.0	1.32	1.278
NHAT	1.84	0.17	0.98	1.07	0.0	0.37	3.53	1.64	1.049
CMAY	1.23	1.68	0.98	0.36	0.0	0.74	0.0	0.0	0.688
PRIE	0.0	0.17	0.0	0.24	2.80	0.0	0.0	0.0	0.295
PALM	1.23	0.0	0.0	0.12	1.40	0.0	0.0	0.66	0.262
BHNG	0.0	0.0	0.24	0.12	0.93	0.37	0.39	0.0	0.197
PINE	0.0	0.0	0.0	0.0	0.0	0.74	0.0	0.0	0.066
MOUR	0.0	0.0	0.0	0.12	0.0	0.0	0.0	0.0	0.033

NOTE: The relative abundance of each species is expressed as a percentage of total migrant warblers at the site. The final column provides the relative abundance that results from combining data from all sites.

accounted for almost 12% of the migrant records. Twelve species were recorded at all sites. Two were recorded only at single sites (Pine Warbler at Weston and Mourning Warbler at Winchester). The greatest number of species at a single site was 24 in Winchester.

Nine species of warblers were recorded as breeding. They were Black-and-White (Lexington), Blue-winged (Weston), Nashville (Lexington), Yellow (3 sites), Black-throated Green (Weston), Ovenbird (Winchester and Weston), Northern Waterthrush (Winchester), Common Yellowthroat (all sites), and American Redstart (Weston).

It is worth noting that most observers visited their sites in the early morning (before the workday started). They covered their chosen routes at a rate of about one mile per hour and averaged 25.2 warblers per hour (18.7 migrant warblers per hour).

Site Differences in Birds Per Hour Values

To make a meaningful comparison of counts from different sites, the data must be normalized to remove the effect of "level of effort" factors such as the size of the area covered or the duration of the visits. A simple and often effective normalization is achieved by expressing the counts in terms of birds per hour (BPH). Robinson (Reference 1) has argued that BPH normalization is a useful tool for analyzing population trends of residents. If so, it should also be considered for the analysis of migrant data. In Table 2, BPH values for migrant warblers are presented for each site in the study. A glance at this table shows that there are wide differences in the BPH values for the same species at different sites.

Values for the two sets of Mount Auburn data vary somewhat but are generally consistent. A statistical test (chi-squared test applied pairwise) shows that these two sets are statistically more similar than any other two sets in the data base. This consistency lends some support to the view that site differences, not differences in observers, are responsible for the bulk of the variation between sites.

Site Difference in Relative Abundance

Because of the striking site-to-site variation in the BPH values, a second method of normalization was attempted. This method is called relative-abundance analysis. It expresses the abundance of each species as a fraction of the total count at the site (see Reference 2). Relative-abundance values are, in a sense, "more normalized" than the BPH values. Relative abundance is not directly affected by speed of coverage, conservatism in estimating numbers, conspicuity factors, or the overall tendency of a site to concentrate migrants.

Table 3 presents relative-abundance values in the same format as the BPH values presented earlier. The relative-abundance values seem to show somewhat less variation from site to site than the BPH values,

but significant variations nevertheless exist.² As with the BPH analysis, the relative-abundance analysis indicates that the observers at the different sites are not seeing the same population mix of warblers.

Significance of Site Characteristics

A possible explanation of site-to-site variations in relative abundance is that some sites have characteristics that attract particular species more than others. The data reveals several instances of this. For example, the Plum Island count is notable in having a very high count for Wilson's Warbler (2.0 BPH) while having no Tennessee or Bay-breasted Warblers. An obvious explanation is that the Wilson's Warbler was attracted to the wet shrubby areas it prefers, while the Tennessee and Bay-breasted Warblers shunned the site because of its lack of taller trees.

In order to investigate the significance of site characteristics quantitatively, the linear correlation coefficient between BPH and several of the principal site parameters was calculated.³ The strongest correlations that resulted are shown in Table 4.

In several instances, the abundance of the species is correlated with site characteristics most typical of the preferred breeding habitat - even though the species does not breed in the census area.

Time/Series Analysis

To examine the manner in which migrant counts varied with the time of the month, it was necessary to develop normalization criteria that could take into account both the variations in numbers between sites and the random dates of coverage at the various sites. The first step in this process was to compute for each site the average number of migrants seen per visit. The count on each particular day was then divided by the site average to give a measure of the magnitude of the count on each day. For example, if 163 warblers were recorded in 12 visits to a site, then the average count for the site would be

² As shown in Reference 2, the standard deviation of the sampling error is readily computed. For an observer who counted 400 total birds, the standard error associated with a relative abundance of 0.05 is approximately 0.011. The variations in Table 3 greatly exceed this level, hence they are not attributable to statistical fluctuation produced by the inherent randomness of the sampling process.

³ The linear correlation coefficient is a standard statistical measure of how closely changes in one quantity follow changes in another quantity. Its value may lie anywhere between -1 and +1. Positive values indicate that when one quantity increases, the other tends to increase also. Negative values indicate that when one quantity increases, the other tends to decrease.

TABLE 4. CORRELATION OF BPH ABUNDANCE WITH SELECTED SITE PARAMETERS.

SITE PARAMETER	SPECIES AND CORRELATION COEFFICIENT	
	<u>MOST POSITIVELY CORRELATED</u>	<u>MOST NEGATIVELY CORRELATED</u>
Distance from Coast	Yellow-rumped (0.608)	Black-throated Blue (-0.607)
	C.Yellowthroat (0.590)	Magnolia (-0.538)
	Yellow (0.470)	Parula (-0.512)
	Blackpoll (0.445)	Wilson's (-0.497)
		Black & White (-0.462)
Maximum Elevation Less Minimum of Elevation (A Measure of Hilliness)	Prairie Warbler (0.680)	Wilson's (-0.563)
	Ovenbird (0.604)	Yellow (-0.426)
	Blue-winged (0.495)	
	Chestnut-sided (0.351)	
% Forest Greater than 30 Feet Height	Pine (0.567)	Wilson's (-0.670)
	Nashville (0.551)	Black-throated Blue (-0.464)
	Bay-breasted (0.408)	Parula (-0.303)
% Open Vegetated Area	Parula (0.494)	Palm (-0.758)
	Black-thr. Green (0.460)	C.Yellowthroat (-0.516)
	Black & White (0.449)	Yellow-rumped (-0.445)
	Chestnut-sided (0.452)	
	Black-thr. Blue (0.410)	

NOTE: Only those species with the strongest correlations (either positive or negative) are displayed. See FF. 3 for explanation of correlation coefficient.

$163/12 = 13.6$ birds. If 19 birds were recorded on May 12 at that site, then the normalized count magnitude for that day would be $19/13.6 = 1.40$, i.e., 40% above normal.

For each day in the study, a combined migration-magnitude value was derived from the counts of all sites that reported on that day. This number was calculated as follows. First, the total number of birds observed on the date was computed by summing the totals for all reporting sites. Then the number that would have been observed if each reporting site had reported its daily average was computed (i.e., the daily averages for all reporting sites were summed). The ratio of these two numbers gives the combined migration magnitude for the day.

Figure 2 is a plot of the results of the above analysis. Fluctuations in combined migration magnitude are shown by the solid line. The general trend of this curve reveals an early peak on May 5, caused primarily by large counts of Yellow-rumped Warblers. It also reveals the main migration peak around May 14. Superimposed on this general curve are a number of "spikes" that fall with surprising regularity at intervals of three or four days. Such cyclical abundance cycles have been noted before (Reference 2), and it has been speculated that they are related to the spacing between weather fronts.

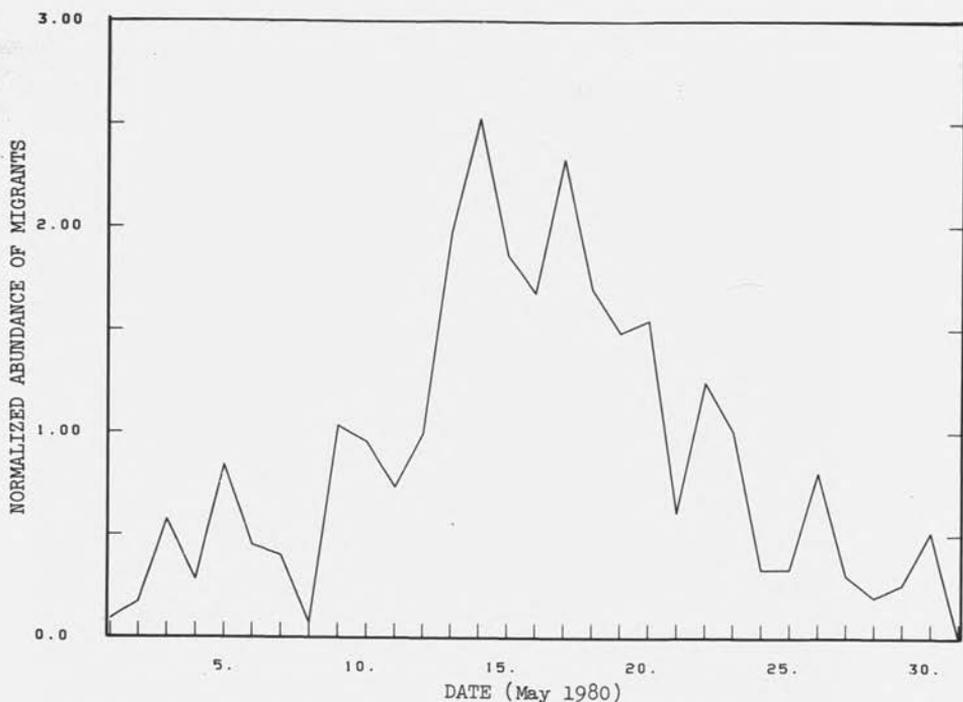


FIGURE 2. Normalized Abundance of Migrants for Each Date. (A Value of 1.00 Corresponds to an Average Count of Migrants: See Text.)

Conclusions

Analysis of the data reveals large site-to-site variations in the BPH values and in the relative abundances of the various warbler species. These variations do not resemble the variations one would expect if each site's data were a random sample from one general distribution of species abundance.

Site characteristics appear to influence the local abundance of certain species. A tendency for migrants to select their preferred breeding habitat types as migration stopovers is suggested. Explanations for other site differences may not be so obvious. For example, what site characteristic could make the cemetery in Weston so much more attractive to the Overbird than Mount Auburn? It would be very useful to determine whether the relative-abundance differences between sites are consistent year after year. If they are, then the significance of site characteristics would be established. This would certainly make the problem of interpreting migration data more complicated, and some interesting questions of broader ornithological significance would be opened.

A time/history analysis technique was developed and used to demonstrate a three-to-four-day cycle in migrant abundance. The source of this variation (weather patterns?) is yet to be determined.



Black-and-
White
Warbler

Regardless of the ultimate explanations of the results, the study has certainly made clear the difficulties an observer at a single site would have in forming conclusions about the regional abundances of migrant species. It also suggests that there may be pitfalls in relying upon one or two sites for monitoring changes in abundance. What is needed is a quantitative methodology for monitoring migration on the basis of inputs from many field observers. It is hoped this study is an initial step in that direction.

Acknowledgements

A commendation is due the group of competent field workers whose data collection efforts made this study possible.

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- Reference 1: Robinson, L.J., "Some Thoughts About Counting Birds", BOEM, Vol. 5, No. 4, July-August 1977.
- Reference 2: Andrews, J.W., "Relative Abundance Analysis: A Technique for Assessing Bird Count Data", BOEM, Vol. 6, No. 4, July 1978.
- Reference 3: Robinson, L.J., quoted in "Summary for May 1977", BOEM, Vol. 5, No. 4, July-August 1977.

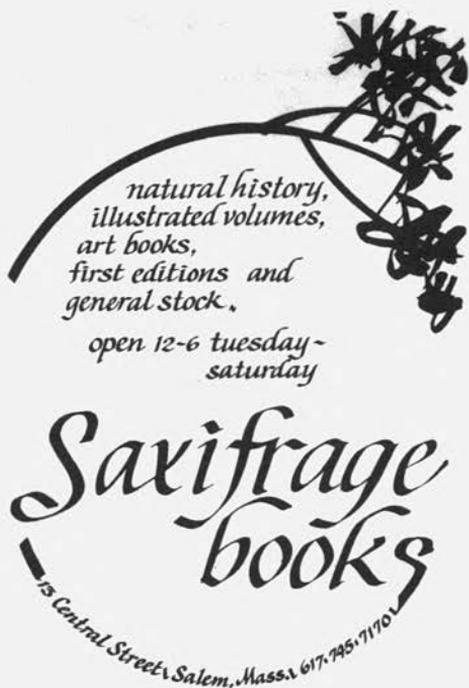
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NORTH CAROLINA GULF STREAM PELAGIC TRIP

On May 24, 1981, there will be a pelagic birding trip into the Gulf Stream off North Carolina's Outer Banks. The trip, which will leave from Hatteras, is famous lately because of Black-capped Petrel sightings as well as the expected specialties such as Audubon's Shearwater and Bridled Tern. For complete information on the trip, please contact the leaders: Robert L. Ake (615 Carolina Ave., Norfolk, VA 23508; phone 804-625-6082, evenings to 11 p.m.) or Paul G. DuMont (4114 Fessenden St., NW, Washington, D.C. 20016; phone 202-363-8994, evenings to 11 p.m.) The trip costs \$36.00 per person.

THE WINTER SEASON

DECEMBER 1980—FEBRUARY 1981



by George W. Gove, Robert H. Stymeist, Lee E. Taylor

December was cold, dry, and sunny; the temperature averaged 28.6°, 4.4° below normal and 8.1° colder than December 1979. This was the lowest since 25.9° in 1963, and this December also tied for the eighteenth coldest in 110 years. The high mark was 61° on the 9th; the low was -7° on the 25th. Who could forget Christmas Day! The -7° was the coldest in Boston since January 15, 1957 and the coldest Christmas since 1972. It was the coldest so early in the season since December 20, 1942; also this was the first December with sub-zero temperatures since 1968. The Christmas daytime high was but -2°, one of the lowest of record. Precipitation totaled only 0.97 inch, 3.27 inches under normal. This was the sixth driest December in 163 years and the third driest in 110 years of official record. Snowfall totaled 5.6 inches, 2.3 under normal but nearly three times the 2.0 inches of December 1979. Maximum snow depth was but 3 inches on December 16.

January was extremely cold and dry with lots of sunshine. The temperature averaged only 21.4°, 7.8° below normal, and the lowest for this month since 21.0° in January 1920. The low of -4° on both January 4 and 5 broke the record of -3° set in 1910. The 20 days ending January 18 made a continuous stretch of sub-normal days; it was the coldest 20 day period since Logan Airport began keeping records for January. Precipitation totaled only 0.95 inch, 2.74 inches below normal. This was the fifth driest January in 111 years of records. Snow totaled 11.9 inches. The most in any 24 hours was 3.7 inches on January 16 and 17. Snow covered the ground nearly all month, much longer than average.

February was unseasonably warm and wet and quite cloudy. The temperature averaged 36.4°, 6.0° above normal, and tied with 1954 as the third warmest February in 111 years of record. This abrupt change from previous cold averaged 15.0° higher than January's mean, the largest jump ever recorded. Daily maximum records were broken on 4 days: 62° and 57° on February 11 and 12 broke the marks of 58° and 55° set in 1925; 61° on the 17th broke the 60° of 1883, and the month's high of 66° on the 18th broke the 63° of 1880. Though mild weather dominated the month, the latter half was especially warm, averaging over 10° above normal. Precipitation totaled 6.65 inches, 3.11 inches more than normal to make this the fourth wettest February in 111 years and the wettest since the record 7.08 inches in 1969. This was the wettest month since January 1979. Measurable amounts fell on 12 days with 3.8 inches, the most in any 24 hour period, falling on February 24-25. Snow totaled 1.9 inches, 10 less than average. The ground was bare almost all month. Heavy fog came on 6 days in a row, February 19-24, a new record string. This was the most in any month since 8 days in June 1972.

LOONS THROUGH HERONS

The early winter freeze apparently displaced many of the usual winter birds as numbers and reports were down and unusual species were scarce. An Eared Grebe reported from Provincetown on January 1 was the sole rarity. Red-throated Loon reports were sparse as probably were the birds, particularly north of Boston. Reports of Pied-billed Grebes were also sparse probably reflecting the frozen condition of fresh water bodies. Red-necked Grebe numbers built up in late February along the coast. Double-crested Cormorants were sparsely reported on several CBCs and several were present in February. A Great Egret on the Nantucket CBC January 3 was extremely late. Black-crowned Night Herons seem to be able to survive and are usually found in a particular roost; e.g., those on Buzzards Bay are regularly found in a particular pine grove. G.W.G.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Common Loon: 12/7,30	Ipswich, Plymouth	16, 27	BBC, CBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>Common Loon (continued):</u>			
1/1,31	P.I., Nahant	6, 9	BBC
2/1,22	Cape Ann	7, 2	R.Forster, J.Berry
2/7,8	Nahant, Gloucester	10, 4	R.Forster, J.Berry
2/19,22	Scituate, Rockport	5, 6	W.Petersen, P.Hallowell
<u>Red-throated Loon:</u>			
12/6	Rockport	2	J.Berry
Jan.	4 locations	singles	v.o.
2/14,22	Gloucester, Nantucket	2, 2	BBC, C.Jackson
<u>Red-necked Grebe:</u>			
12/6	Gloucester, Rockport	3, 1	G.Gove#, J.Berry
12/7,13	Duxbury, Plymouth	1, 1	W.Petersen
12/27	Marshfield	10	CBC
1/1,24,31	P'town	1, 30+, 1	W.Bailey, B.Nikula, W.Petersen
1/3,4,31	Rockport; Gloucester	5; 2, 3	BBC; G.Gove, J.Kenneally
1/24,25	Salisbury	1	v.o.
2/1,7,18	Cape Ann	23, 42, 42	R.Forster, R.Heil, R.Emery#
2/14,20	Dennis	24, 140	J.Aylward, B.Nikula
2/15,28	Nahant, Manomet	51, 32	R.Forster, G.Gove
<u>Eared Grebe:</u>			
1/1	P'town	1	W.Bailey
<u>Horned Grebe:</u>			
12/6,7	Wollaston, P.I.	18, 150+	SSBC, R.Heil
1/1,24;24	P.I.; P'town	4,20; 50+	BBC; B.Nikula
2/1,16	Cape Ann, Marblehead	20, 5	R.Forster, J.Berry
2/7,28	Winthrop, Lakeville	20+, 4	BBC, W.Petersen
<u>Pied-billed Grebe:</u>			
12/6,7	Braintree, Chestnut Hill	1, 1	SSBC, R.Heil
12/24;2/11,17	Somerville	1; 1	J.Berry
1/4,31	Wareham, Plymouth	1, 1	SSBC, W.Petersen
thr.Feb.,2/15,16	Lakeville, M.V., Plymouth	1, 2, 2	W.Petersen, V.Laux, S.Higginbotham
<u>Gannet:</u>			
2/28	Nantucket	4	BBC
<u>Great Cormorant:</u>			
12/7,20	Monomoy, Quincy	125, 337	B.Nikula, CBC
12/20,21	Buzzard's Bay, Gr.Boston	38, 126	CBC
1/24	Nahant, N.Scituate	80, 100	BBC, W.Petersen
2/7,8	Cape Ann, Quincy	38, 81	N.Komar#, TASL
2/19	Hull-Scituate	175+	W.Petersen
<u>Double-crested Cormorant:</u>			
12/20	Buzzards Bay (N.Falmouth)	1	CBC (R.Veit)
12/21	Gr.Boston	7	CBC (D.Brown#)
1/3,2/16	Nantucket	4, 1 imm.	CBC, R.Veit#
<u>Great Blue Heron:</u>			
12/20,21	Buzzards Bay, Gr.Boston	51, 8	CBC
12/21	Cape Ann, Cape Cod	3, 88	CBC
12/28,30	Concord, Plymouth	5, 7	CBC
thr.Jan	7 locations	15 ind.	v.o.
2/15-25,28	4 locations, Nantucket	singles, 4	v.o., BBC
<u>Great Egret:</u>			
1/3	Nantucket	1	CBC
<u>Black-crowned Night Heron:</u>			
1/20,21	Buzzards Bay, Gr.Boston	14, 2	CBC
1/1,2	Everett, Somerville	2, 1	M.Sharpe, J.Berry
2/7,28	Eastham, Scituate	5, 1	W.Bailey, BBC
<u>American Bittern:</u>			
12/6,27	P.I., Newburyport	1, 1	BBC, CBC
12/21;1/12,23	Cape Cod; Eastham	2; 1	CBC; R.Forster, R.Scott
1/3,2/15	Nantucket, W.Harwich	1, 1	CBC, B.Goddard

WATERFOWL

Mute Swans were seen courting and nest-building on February 28 which seems to be an early date. Four Whistling Swans were observed flying between Ipswich and Plum Island in December and another was seen in Nantucket on the CBC. Strange that we do not see more of these native swans as thousands winter in the Chesapeake Bay region. Brant were present at a number of locations with a high of 3518 on the Cape Cod CBC.

Snow Geese, another species which winters in the mid-Atlantic region, were spotty. Up to 80 Pintail were found in Yarmouth through December, and a maximum of 30 were there through January and February. Two Blue-winged Teal on December 24 were extremely late. The only European Wigeon report came from Nantucket in late February. A maximum of 52 American Wigeon were seen in Belmont throughout the period. There was a scattering of Wood Duck reports with 28 being found on the Nantucket CBC. Redheads were seen in various locations with 140 seen in Nantucket in late February. There were many Canvasback reports mostly from Cape Cod and southeastern Massachusetts where 4000 were seen in late February. Greater Scaup were seen in large rafts and 5188 were found in Winthrop. A few lesser Scaup were also seen. Many reports of Barrow's Goldeneye were received with 8 found on the Nantucket CBC and 7 seen in Newburyport. There were also many reports of Harlequin Ducks from at least eight locations with a maximum of 7 birds seen on Martha's Vineyard. Large numbers of Common Eider were seen with reports of 10,000 from three different locations. King Eiders were observed in several locations with up to 4 females in Rockport and up to 3 birds seen in Marblehead. Scoter numbers were not impressive and only 2 Ruddy Ducks were reported. Hooded Mergansers wintered well and 54 were seen in Eastham in December. An inland report of a Red-breasted Merganser was unusual. G.W.G.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Mute Swan:			
thr.Dec.,12/15-24	Plymouth, Salem	max. 44, 3	v.o.
thr.Jan.-Feb.	Manchester, Westport	2, 71	v.o., G.Gove#
2/28	Plymouth	2 prs. nest building	G.Gove
Whistling Swan:			
12/27	M.V.	1	CBC
12/7	P.I., Ipswich	4	M.Argue#, B.Principe
Canada Goose:			
12/6,26	P.I., Chatham	300+, 540	BBC, F.+M.Worrell
Brant:			
12/5,6	Wollaston	500+	G.Wilson, BBC
12/13,21	Plymouth-Kingston, C.Cod	1000+, 3518	W.Petersen, CBC
1/4,8	Buzzards Bay, Newbypt	300, 5	SSBC, R.Heil
1/29;31	Cohasset; Revere, Westport	67; 55, 80	R.Emery#; BBC, G.Gove
2/8,20	Quincy, Squantum	490, 1200	TASL, R.Emery#
Snow Goose:			
12/6,14;18,20	P.I.; Marion, Millis	2, 3; 12, 9	BBC; Mrs.A.Parks, CBC
1/3,4	Nantucket, Marion	1, 1	CBC, SSBC
Black Duck:			
12/13	S.Duxbury-Plymouth	1500+	W.Petersen#
1/8,13	Newburyport, Cape Ann	2850, 920	R.Heil
Gadwall:			
12/13,30	Plymouth	37, 17	W.Petersen, CBC
1/3-17,1/4-31	Gloucester, Plymouth	max.7, max.30	v.o., v.o.
2/7,14;2/1-8	Salem, Gloucester	2, 14; max.10	R.Forster,R.Heil;v.o.
Pintail:			
thr.Dec.,12/7	Yarmouth, Braintree	max.80, 2	J.Aylward, W.Cornwell
12/30,1/1	Plymouth, Everett	7, 1	CBC, M.Sharpe
thr.Jan.-Feb.	Yarmouth	max. 30	J.Aylward
2/21,28	P.I., Bridgewater	5, 3	BBC, W.Petersen
Green-winged Teal:			
12/21	Jamaica Plain	9	CBC
2/1	Mattapoisett River	1	K.Anderson
Blue-winged Teal:			
12/21,24	Hamilton	1, 2	N.Nash, J.Berry
European Wigeon:			
2/27-28	Nantucket	1	BBC
American Wigeon:			
thr.Dec.-Feb.	Belmont	max. 52	v.o.
1/1,3	Cohasset, Gloucester	14, 3	N.+S.Osborne, BBC
1/8,18	Swampscott, Falmouth	1, 1	R.Heil, N.Komar#
2/1,28	Plymouth, Nantucket	12, 40	W.Petersen, BBC
Northern Shoveler:			
12/21	Cape Ann	1	CBC
1/4;18,24	Plymouth; Falmouth	1; 1	BBC;N.Komar#,M.Argue#
Wood Duck:			
12/6,7	Milton, Woburn	3, 3	SSBC, J.Young
12/21,28	Gr.Boston, Concord	9, 5	CBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Wood Duck, continued:			
1/1,3	Boston, Nantucket	2, 28	H.Wiggin, CBC
1/24	E.Sandwich	3.	J.Aylward
Redhead:			
12/4,13	Falmouth, Plymouth	1, 2	R.Forster, W.Petersen
1/3,4	Nantucket, Plymouth	50, 4	CBC, BBC
1/18,31	Woods Hole, Westport	1, 6	N.Komar, G.Gove
2/28	Nantucket	140	BBC
Ring-necked Duck:			
12/6,7	Braintree, Medford	2, 1	SSBC, J.Young
12/13, 1/4	Plymouth	8, 2	W.Petersen, BBC
2/1,15-18	Plymouth, Lakeville	14, max.8	W.Petersen, v.o.
2/22,28	Nantucket	4, 5	C.Jackson, BBC
Canvasback:			
12/4,6	Falmouth, Braintree	125, 9	R.Forster, SSBC
12/20,21	Quincy, Cape Cod	14, 78	CBC
12/27,30	Taunton, Plymouth	91, 4	CBC
1/4	Plymouth, Wareham	100+, 75	BBC, SSBC
1/12,18;19	Dennis; Orleans	35, 20; 40	R.Forster,N.Komar#;S.Higginbotham
1/31	Westport	100+	G.Gove#
2/7,16	Chatham, Falmouth	30, 100+	W.Petersen,S.Higginbotham#
2/22,28	Assonet, Nantucket	4000, 70	D.Emerson, BBC
Greater Scaup:			
12/20,21,28	Quincy, Boston, Concord	2462, 4064, 1	CBC
1/4,25	Marion, Marblehead	25, 50	SSBC, O.Komar#
1/31	Westport	1000+	G.Gove
2/7,8	Winthrop	max. 5188	TASL
2/10,22	Salem, Assonet	1150, 2000	R.Heil, D.Emerson
2/28	Nantucket	350	BBC
Lesser Scaup:			
12/21,30	Cape Cod, Plymouth	4, 1	CBC
1/18;31	Plymouth, Woods Hole	1, 1	O.Komar#
1/13,2/14	Lakeville	1 m., 1	G.Gove#, BBC
Common Goldeneye:			
12/20,21	Buzzards Bay, Boston	1066, 373	CBC
1/4,17	Plymouth, Cape Ann	53+, 125	BBC
1/24	Newburyport, Nahant	120, 150	BBC
2/7,8	Winthrop, Boston Harbor	200, 676	BBC, TASL
2/13,15	Newburyport, Lakeville	475, 15	R.Heil, SSBC
2/28	Nantucket	325	BBC
Barrow's Goldeneye:			
12/13	Gloucester	1 pr.	BBC
12/20,21	Buzzard's Bay, Cape Ann	1, 1	CBC
12/27	Newburyport, Taunton	2, 1	CBC
12/30	Plymouth	3	CBC
1/3;4	Nantucket; Gloucester	8; 1 m., 2 f.	CBC; G.Gove
1/7,24,25	Marblehead	1 m., 1 f.	v.o.
1/24,25,30	Newbypt, Chatham, Yarmouth	1, 2, 1	B.Nikula, v.o.
1/25	Salisbury, Cape Ann	2, 2	K.Hamilton
thr.	Dennis	1	v.o.
2/1-14	Newburyport	max. 3 m., 4 f.	G.Gove#
2/2-16	Marblehead	1 m., 1 f.	v.o.
2/1,7-18	Plymouth, Gloucester	1 f., max. 1 m., 2 f.	W.Petersen, v.o.
Bufflehead:			
12/14	Newburyport	100+	J.Berry
12/20,21	Buzzards Bay, Boston	1468, 573	CBC
1/1,24	Newburyport, Nahant	102, 300	BBC
2/7;8	Cape Ann, Winthrop; Quincy	100, 98; 428	BBC,O.Komar#; TASL
2/28	Lakeville, Halifax	50+, 25	W.Petersen
Oldsquaw:			
12/20	Buzzards Bay	1154	CBC
1/1,24	Newburyport	22, 50	BBC
2/21	Nantucket	300	C.Jackson
Harlequin Duck:			
12/7,13,21	Duxbury, Gloucester, Hull	1 f., 2 pr., 1	W.Petersen,BBC,S.Higginbotham#
1/3-31	Magnolia	1 pr.	v.o.
1/3,12	Nantucket, Gloucester	3, 2	CBC, BBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Harlequin Duck, continued:			
1/25	Cape Ann	6	K.Hamilton
2/1-28	M.V.; Magnolia, Orleans	max. 7; 2, 2	V.Laux#: v.o.
2/1;7-8	Plymouth; Gloucester	2; 1 m., 1 f.	BBC; v.o.
2/15,28	Nahant, Manomet	1, 1 m.	R.Forster#, G.Govè#
Common Eider:			
12/7	Duxbury-Plymouth	<u>10,000</u>	W.Petersen
12/20	Buzzards Bay	562	CBC
12/21	Boston Harbor, Cape Cod	5704, 1100	CBC
12/30	Plymouth	5595	CBC
1/24	Manomet, Nahant	200, 250	H.Wiggin#, BBC
2/1	Plymouth	3000+	BBC
2/7,8	Winthrop	max. <u>10,000</u>	BBC, TASL
2/19,28	Hull, Duxbury	5000+, <u>10,000</u>	W.Petersen, BBC
King Eider:			
12/21	Winthrop	1 m., 1 sub-ad.	CBC
1/13,31	Rockport	1 imm.m., max. 4 f.	BBC, R.Heil
1/17-25	Marblehead	1 m.	v.o.
1/24	Sandwich, Manomet	1 imm. m., 1	D.Briggs#, M.Argue
2/1,7	Manomet, Rockport	1, 1 f.	BBC, G.Soucy
2/7-16	Marblehead	max. 3	v.o.
White-winged Scoter:			
12/13,20	Plymouth, Buzzards Bay	300+, 1006	W.Petersen, CBC
1/3,24	Nantucket, Nahant	700, 20	S.Higginbotham, BBC
2/10,19	Marblehead, Scituate	360+, 300	R.Heil, W.Petersen
Surf Scoter:			
12/20	Buzzards Bay	619	CBC
1/13	Nantasket	150	S.Higginbotham
1/1-31	M.V.	350	V.Laux
2/7,19	Marblehead, Scituate	45, 50	R.Forster, W.Petersen
2/21	Nantucket	50+	C.Jackson
Black Scoter:			
2/7,21	P.I.	2	G.Soucy#, BBC
2/21	Nantucket	40+	C.Jackson
Ruddy Duck:			
12/7,21	Medford, Cape Cod	1, 1	J.Young, CBC
Hooded Merganser:			
12/6;14	Braintree; Lakeville, Eastham	8; 14, <u>54</u>	SBC;W.Petersen#,B.Nikula
12/20	Quincy, Buzzards Bay	8, <u>175</u>	CBC
12/21	Cape Cod, Cape Ann	39, 1	CBC
12/28,30	Concord, Plymouth	2, 11	CBC
1/1;4	Everett; Falmouth, Rochester	7; 3, 1	M.Sharpe; BBC, SBC
1/12;18	Eastham; Dennis, Falmouth	3; 2, 2	R.Forster;N.Komar#
2/2-16	Medford	1 m., 2 f.	D.Lange
2/6,14-28	Falmouth, Lakeville	10, max. 6	S.Higginbotham#,W.Petersen
2/15,19,22	Wayland,Brookline,Nantucket	1 m., 1 m., 2	R.Walton,C.Johnson,C.Jackson
2/28	Halifax, GMNWR	11, 1 m.	W.Petersen, H.Wiggin
Common Merganser:			
12/7	Medford, Chestnut Hill	6, 1	J.Young, N.Komar#
12/14	Lakeville	250	W.Petersen
12/21,27	Cape Cod, W.Newbury	950, 326	CBC
12/27,28	Taunton, Concord	72, 7	CBC
1/1-31	Newburyport	max. 150	v.o.
1/4	Buzzard's Bay	20+	SBC
1/12,24	Eastham, Falmouth	5, 5	R.Forster, M.Argue#
2/1	Lakeville	21	BBC
2/18,22	Braintree, Wayland	45, 55	R.Langley, E.Morrier
2/24	Lincoln	63	R.Forster
Red-breasted Merganser:			
12/20,21	Quincy, Cape Cod	737, 950	CBC
1/24	Newbypt, Nahant	80, 120	BBC
2/8	Winthrop, Quincy	161, 593	TASL
2/28	<u>Lakeville</u>	1 m.	W.Petersen

HAWKS THROUGH RAILS

An early Turkey Vulture was reported from Newburyport on February 28. Thirty-five

reports of Goshawks were received including 3 immatures perched in one tree. An immature Cooper's Hawk was seen pursuing a Rock Dove across the Merrimac and catching it in mid-stream. An amazing 91 Red-tailed Hawks were seen on the Concord CBC and 40 were counted in the Bridgewater area in February as were 26 American Kestrels. Rough-legged Hawks were reported from twenty-four locations with maximum numbers in the Newburyport-Salisbury area, and many were described as to light or dark phase. Wintering Bald Eagles are apparently increasing with as many as 1 adult and 6 immatures on the Merrimac and reports from at least nine locations being received. One Gyrfalcon was reported from outer Cape Cod in January. As many as 13 Merlins were reported with 4 seen on the Nantucket CBC. On the Millis CBC, 48 Ruffed Grouse were counted. The only reports of Clapper Rail were two individuals found dead as was a Sora. Many Virginia Rails were seen with 17 found on the Nantucket CBC. G.W.G.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>Turkey Vulture:</u>			
2/28	Newburyport	1	B.Horn#
<u>Goshawk:</u>			
12/1	Framingham, Lexington	1 imm., 1 imm.	E.Morrier, E.Stowe
12/5	Salisbury	1	S.Carroll#
12/6,9	Melrose, W.Boxford	1 imm., 1	C.Jackson, R.Chadwick
12/7,12	Chatham, S.Orleans	1, 1 imm.	C.Goodrich, D.Scholl
12/9,15	Littleton	1 f.	J.Baird
12/14	Wellesley, P.I.	1, 1 imm.	C.Ewer, G.Gove#
12/20	Millis, Worcester	1, 1	CBC
12/27,28	Newbypt, Concord	3, 4	CBC
1/1+13,2	Rowley, Hingham	1, 1	D.Alexander, N.+S.Osborne
1/3	Framingham, Barre	3 imm. in one tree, 1 ad.	R.Forster#, M.Lynch#
1/5,10	Concord, P.I.	1 imm., 1 imm.	J.Baird#, G.Gove
1/11	Georgetown, Newburyport	1 imm., 1	R.Stymeist#, D.Arvidson#
1/12,29	S.Peabody, Dover	1 imm., 1	R.Heil, P.Hallowell
2/15,17	Framingham, W.Concord	1 imm., 1	B.Byrne, D.Hale
2/16	Lexington, Lynn	1 imm., 1 imm.	J.Berry#, R.Heil
2/21	P.I.	1	BBC
<u>Sharp-shinned Hawk:</u>			
12/2	S.Peabody	1 imm.	R.Heil
12/14	Wellesley, Lakeville	1, 1	C.Ewer, W.Petersen
12/20	Millis, Worcester	1, 1	CBC
12/27,28	Taunton, Middleboro	3, 1	CBC, K.Anderson
12/28,30	Lancaster, Plymouth	1	S.Carroll#, CBC
1/1	Marshfield, Manchester	1, 1	N.+S.Osborne, P.Campbell
1/2,11	E.Middleboro, Scituate	1, 1	K.Anderson, SSBC
1/31	Westport	1	G.Gove
2/1,28	Pembroke, Nantucket	1, 1	E.Pearson, BBC
<u>Cooper's Hawk:</u>			
12/21,27	Boston, Taunton	1, 2	CBC
1/4,16	Sudbury, Framingham	1 imm., 1 imm.	R.Forster#, W.Petersen#
2/3,7	Manchester, Newburyport	1 imm., 1 imm.	fide J.Nove, G.Gove
<u>Red-tailed Hawk:</u>			
12/6	P.I., Belmont	1, 2	BBC
12/14	Newburyport	7	BBC
12/15,24,28	Norwell, Halifax, E.Middleboro	1, 1, 6	K.Anderson
12/20;21	Millis, Quincy; Boston	24, 12; 31	CBC
12/27,30	Taunton, Plymouth	15, 3	CBC
12/28	Concord	91	CBC
1/1	E.Middleboro-Bridgewater	11	K.Anderson
1/10,25	Essex, P.I.-Newburyport	10, 7	H.Wiggin#, P.Roberts#
2/13,15	Newburyport, Bridgewater	14, 40	R.Heil, SSBC
<u>Red-Shouldered Hawk:</u>			
12/14,19	Wellesley, E.Middleboro	1, 1	C.Ewer, G.Mock
12/21	Newburyport, Cape Ann	1, 1	CBC
12/27	Taunton, Newburyport	3, 1	CBC
12/30	Plymouth	1 ad.	CBC
Jan.-Feb., 1/1	Orleans, E.Middleboro	1 ad., 1	v.o., K.Anderson
2/15	Bridgewater	5	SSBC
2/18,27	Millis, Burlington	1, 1	B.Cassie, R.Heil
<u>Rough-legged Hawk:</u>			
12/5,6	Squantum, P.I.	1, 7	G.Wilson, M.Argue#

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Rough-legged Hawk, continued:			
12/14	P.I., Salisbury	5, 4 lt.	BBC, J.Berry
12/24,28	E.Middleboro	1, 3 lt.	K.Anderson
12/27	Newburyport, Marshfield	12, 5	CBC
12/28,30	Concord, Plymouth	4, 1	CBC
12/31	Saugus, Bridgewater	1, 2	J.Berry, W.Petersen
thr.	Salisbury	max. 12 (1/11)	D.Arvidson#+v.o.
thr.	Newbypt-P.I.	max. 9	v.o.
1/1	Middleboro,Bridgewater	5, 2	K.Anderson
Jan.	14 other locations	17 ind.	v.o.
2/15	Bridgewater, Holden	8, 3	SSBC, K.Anderson
Golden Eagle:			
12/7	Newbury	1 imm.	H.Wiggin#
Bald Eagle:			
12/8,20	Canton, Lakeville	1, 1 imm,	D.Skeels, M.Kelleher
thr.	Merrimac R.-Newbypt	max. 7(1 ad.,6 imm.)	v.o.
1/1,3	Lakeville, S.Peabody	2 imm., 1 ad.	L.Dahlberg, R.Heil
1/17,20	Middleboro, Danvers	2 imm., 1 ad.	D.Briggs, J.Nove
1/20	Squantum	1 ad.	C.Quinlan
thr. Feb.	Orleans	max. 5	v.o.
2/14,15	M.V., Lakeville	2, 2	V.Laux#, SSBC
Northern Harrier:			
12/14	Salisbury-P.I.	5-6 (1 m.)	BBC, v.o.
12/21	Boston, Cape Ann	2, 6	CBC
12/27,30	Taunton, Plymouth	5, 1	CBC
thr.	Newbypt-Salisbury	max. 6	G.Gove + v.o.
1/1	E.Middleboro, Bridgewater	2, 1	K.Anderson
1/9,31	Manomet, Westport	1, 4	K.Anderson, G.Gove#
2/28	Nantucket	3	C.Jackson
Gyr Falcon:			
1/27,30	S.Wellfleet, Eastham	1 (brown)	W.Bailey, C.Goodrich
	No other details.		
Peregrine Falcon:			
12/24,27	Boston, M.V.	1, 1	J.Grugan, CBC
1/3,25	Nantucket; M.V.	3; 1 ad., 1 imm.	V.Laux; CBC
2/1,6	Orleans, Boston	1, 1	R.Prescott, R.Heil
2/14	M.V.	2	V.Laux
Merlin:			
12/4,6	Falmouth, Boston	1, 1	R.Forster, SSBC
12/21,27	Boston, Taunton	1, 1	CBC
1/1,11	Cohasset, Salisbury	1, 1 ad.	N.+S.Osborne,R.Stymeist#
1/3	Nantucket	4	CBC
1/20	Eastham	1	S.Higginbotham
2/1,18	Salisbury, Rockport	1, 1	N.+O.Komar,S.+R.Higginbotham
American Kestrel:			
12/20,21	Quincy, Boston	9,19	CBC
12/27,28	Taunton, Concord	18, 19	CBC
12/30	Plymouth	7	CBC
1/1	Newburyport area	5	BBC
2/1,15	Bridgewater	6, 26	BBC, SSBC
Ruffed Grouse:			
12/5,30	Manomet, Plymouth	4, 14	MBO, CBC
12/20,28	Millis, Concord	48, 11	CBC
1/12	Topsfield-IRWS	4	R.Heil
Bobwhite:			
12/7,27	Abington, Taunton	1, 55	W.Cornwell,CBC
Clapper Rail:			
1/1	Squantum	1 dead	W.Petersen
2/7	Marshfield	1 dead	E.Long
Virginia Rail:			
12/6	Braintree,Plymouth	1, 1	SSBC, W.Petersen
12/13	S.Peabody	4+	R.Heil
12/20	Quincy	1	CBC
12/26,27	Ipswich, Newbypt	3, 3	J.Berry, CBC
12/27,28	Medfield, Concord	1, 2	J.Marshall, CBC
1/1-10,5	Ipswich, S.Peabody	1-2, 4	H.Wiggin+v.o.,R.Heil
1/3	Nantucket	17	CBC

SPECIES/DATE	LOCATION	NUMBER	OBSERVERS
Sora Rail:			
2/7	Marshfield	1 dead	E.Long
American Coot:			
12/6,14	Braintree, Lakeville	50, 50	SSBC, W.Petersen
12/30	Plymouth	17	CBC
1/4,5	Plymouth, Lynn	40, 20+	BBC, R.Heil
1/18	Falmouth	30	N.Komar#

SHOREBIRDS THROUGH ALCIDS

A full basic plumaged Western Sandpiper, carefully identified in Duxbury, was unique this winter; other recent late dates for this species were December 1-7, 1974, and the latest record was December 21, 1975. Other interesting shorebird records include a Willet, present through December 21 at Wollaston, a Lesser Yellowlegs on December 21 and 22, and a Marbled Godwit present through December 6 at Plum Island. Certainly our cold weather kept the numbers of Killdeer way down; only 10 were noted this winter compared with 59+ last winter.

Nantucket takes the honors this winter for the "gull show" as Dick Veit calls the concentration of gulls at Low Beach, Nantucket. Twelve species of gulls were present there with 111 Iceland, 3 Lesser Black-backed, a Tayer's, 3 Black-headed, a Mew, and a Little Gull reported as highlights on the CBC. Another "gull show" during February at Eastern Point, Gloucester, included as many as 7 Glaucous, 140+ Iceland, a Black-headed, and 170+ Bonaparte's gulls. At Provincetown, good numbers of Black-legged Kittiwakes were present throughout the winter. Other highlights included a Lesser Black-backed Gull on Martha's Vineyard and over 1800 Bonaparte's Gulls at Revere in early December. A Forster's Tern on December 14 was a late sighting. Sixty-two Razorbills, the highest concentration of alcids reported this winter, were seen from the Nantucket ferry in late February. An oiled Dovekie, found on North Beach, Chatham, was the only one reported this winter. A Common Puffin at Eastham was the only one noted. Black Guillemots were present all winter in Provincetown Harbor, Cape Ann, and 32 were seen off Marblehead. R.H.S.

Semipalmated Plover:			
12/21	Cape Cod	1	CBC
Killdeer:			
12/20,21,1/1	Buzzards Bay, C.Cod, Orleans	1, 7, 2	CBC, CBC, B.Nikula
Black-bellied Plover:			
12/1,6,7	Wollaston	15, 8, 4	W.Cornwell#
12/7;21	Duxbury; Winthrop, Cape Cod	15; 2, 18	W.Petersen; J.Grugan#, CBC
12/30,2/7	Plymouth, Eastham	1 (alt.pl.), 3	W.Petersen, W.Bailey
Ruddy Turnstone:			
12/1,6	Wollaston	5, 1	W.Cornwell#
12/7, 1/3	Duxbury, Rockport	8, 1	W.Petersen, BBC
American Woodcock:			
12/8,19	Sudbury, Wayland	1, 1	S.Fennell, D.Long
12/20,21	Buzzards Bay, Brookline	5, 2	CBC, M.Greenwald#
12/21	Cape Cod	4	CBC
Common Snipe:			
12/20;21	Buzzards Bay; Gr.Boston, C.Cod	13; 4, 4	CBC
12/26,28	Ipswich, Concord	2, 3	J.Berry#, CBC
1/1,3	Newburyport, Ipswich	2, 1	E.Bolton#, W.Drummond#
1/3,4	Bridgewater, Buzzards Bay	2, 1	K.Anderson#, SSBC
1/5,11	S.Peabody, Scituate	7, 1	R.Heil, SSBC
thr.Feb.,2/17	S.Peabody, Wayland	2, 2	R.Heil, R.Walton
Willet:			
12/1-21	Wollaston	1	R.Emery#+v.o.
Greater Yellowlegs:			
12/2,21	Wollaston, Cape Cod	2, 9	D.Brown#, CBC
2/6-19	Orleans	1	W.Bailey#+v.o.
Lesser Yellowlegs:			
12/21-22	Chatham	1	C.Cod CBC (B.Nikula, J.Aylward)
Red Knot:			
12/7	Duxbury Beach	100	W.Petersen
Purple Sandpiper:			
12/6,13	Gloucester (E.P.)	35, 39	G.Gove#, C.Corley#

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Purple Sandpiper, continued:			
1/3	Nahant, Rockport	100, 12	G.Gove, BBC
1/7,13	Marblehead, Gloucester	32+, 45+	R.Heil
1/24,25	N.Scituate, Marblehead	350, 80+	H.Wiggin#,O.+N.Komar#
1/31,thr.Feb.	Rockport, Cape Ann	100, max. 55(2/1)	BBC, v.o.
2/7,8	Marblehead, Winthrop	200, 75	R.Forster, TASL
Dunlin:			
12/1,7	Wollaston, Duxbury	225, 500+	W.Cornwell#,W.Petersen
12/21	Gr.Boston, Cape Cod	87, 924	CBC
1/31	Westport, Orleans	170, 75	G.Gove#,W.Petersen#
2/7,15	P'town, Lynn	100, 60	W.Bailey,R.Forster
Long-billed Dowitcher:			
12/21	Cape Cod	1	CBC
Western Sandpiper:			
12/7	Duxbury	1 full basic pl.	W.Petersen
	Full details on file.		
Marbled Godwit:			
12/6	P.I.	1	G.d'Entremont#
Sanderling:			
12/7;21	Ipswich; Revere, C.Cod	17; 185, 130	J.Nove#; CBC
1/31,2/8	P'town	40, 100	W.Petersen#,W.Bailey#
2/15;28	Lynn, Swampscott; Nant.	85, 20; 30	R.Forster; BBC
Great Skua:			
2/1	Eastern Point, Gloucester	1	J.Barton
	Full details on file.		
Glaucous Gull:			
12/6,22	Newburyport	1, 3	H.Wiggin#, R.Heil
12/13,21	Gloucester, Gr.Boston	1, 1	BBC, CBC
thr.Jan.	Gloucester	max. 5 (1/13)	v.o.
1/1,18	P'town, Millis	1, 1	W.Bailey, B.Cassie
thr.Feb.	Gloucester (Brace's Cove)	1-3	v.o.
2/1	Chatham, Quincy	1, 1	B.Nikula#,L.Taylor
2/14	Salem, Newburyport	1, 1	R.Heil#, H.Wiggin#
2/22	Barnstable(S.N.), Gloucester(E.P.)	1, 7	J.Aylward,R.Heil#
Iceland Gull:			
12/13,30	Gloucester, Concord	8, 1	BBC, CBC
1/1,3	P'town, Nantucket	6, 111	W.Bailey, CBC
1/4,8	Gloucester, Newburyport	12, 10	G.Gove#, R.Heil#
1/17,31	Cape Ann	57, 118	BBC, SSBC
thr.Feb.	Gloucester(E.P.)	max. 140+	R.Heil# + v.o.
2/21	P.I., Nantucket	32, 7	BBC, C.Jackson
Herring Gull:			
12/21,30	Gr. Boston, Concord	16305, 1621	CBC
Thayer's Gull:			
Jan.	Nantucket	1	R.Veit#
Lesser Black-backed Gull:			
1/3,2/16	Nantucket, M.V.	3, 1	CBC, V.Laux
Ring-billed Gull:			
12/13,21	Plymouth, Gr.Boston	500+, 657	W.Petersen, CBC
1/5,8	Lynn, Newburyport	120+, 25+	R.Heil
2/13	Newburyport	175+	R.Heil
Black-headed Gull:			
12/7,21	Ipswich, Winthrop	1, 1	BBC(J.Nove),CBC(J.Grugan)
1/3	Nantucket	3	CBC
1/11,17	Chatham	1 ad.	B.Nikula
1/13,2/22	Gloucester (Brace's Cove)	1 ad.	R.Heil#+v.o.
2/14	Newburyport	1	G.Gove
Mew Gull:			
1/3	Nantucket	1	CBC (R.Veit)
Bonaparte's Gull:			
12/3,4	Revere, Falmouth	1800, 175	D.Brown#,R.Forster
12/5,20	Nahant, Buzzards Bay	300+, 4	R.Heil, CBC
12/21,1/1	Gr.Boston, P'town	200, 100	CBC, W.Bailey
1/4,13,17	Gloucester	8, 7, 44	G.Gove,R.Heil,BBC
2/1-7	Gloucester	max. 170+	v.o.
Little Gull:			
1/3,4	Nantucket, Chatham	1, 1	CBC, B.Nikula

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Black-legged Kittiwake:			
12/21	Cape Ann, Cape Cod	13, 2412	CBC
1/1,20,31	P'town	500+, 600+, 250+	W.Bailey,S.Higginbotham,W.Petersen
1/11,13	P.I., Gloucester	3, 80+	J.O'Regan,R.Heil#
2/7,8	Rockport, P'town	450, 1000	G.Soucy#, W.Bailey#
2/15,18	Nauset, Gloucester (Niles P.)	250+, 1	J.Aylward,S.Higginbotham#
Forster's Tern:			
12/14	Dennis	1	J.Aylward
Razorbill:			
thr.Jan.,2/1	P'town	1-2, 8+	v.o.,B.Nikula#
2/28	Nantucket Sound	62	BBC (C.Jackson)
Thick-billed Murre:			
Dec.	M.V.	1	CBC
Dovekie:			
1/29	Chatham (North Beach)	1 oiled	R.Prescott
Black Guillemot:			
12/6	Rockport	9+	J.Berry
thr.Jan.-Feb.	Rockport	max. 10	v.o.
1/20,31,2/1,8	P'town	20, 4, 2, 4	S.Higginbotham#+v.o.
2/7,10	Gloucester, Marblehead	9, 32	R.Heil#
2/19	Scituate	2	W.Petersen
Common Puffin:			
12/4	Eastham (F.E.)	1	W.Bailey

OWLS THROUGH WRENS

Snowy Owls were very much in evidence all winter in their traditional locations in the Newburyport-Salisbury and Squantum areas as were Short-eared Owls in the same places. The highlight of the winter was the roost of Long-eared Owls at Dunback Meadow in Lexington where a maximum of 22 were found. Several studies of this roost were going on and we hope to have a more detailed report of this phenomenon in a later issue of BOEM.

A Red-bellied Woodpecker continued at a feeder in Westminster and a late Yellow-bellied Sapsucker was present throughout January on Martha's Vineyard. Other highlights included a late Western Kingbird, as many as 9 Boreal Chickadees, a House Wren, and a Short-billed Marsh Wren (Sedge Wren) continued throughout December into early January on Nantucket. R.H.S.

Barn Owl:			
12/5,6	Harwich, Boston (Long I.)	1, 1	J.Aylward, SSEC
12/27	<u>Newburyport</u>	1	CBC
Jan.	Middleboro	1 dead	G.Flaherty
2/15,18	Monomoy, Centerville	1, 1 dead	fide R.Prescott
Screech Owl:			
12/6,8	Saugus, Scituate	3, 2	C.Jackson,W.Petersen
12/21,30	Gr.Boston, Concord	22, 10	CBC
2/15	Middleboro	7	W.Petersen
Great Horned Owl:			
12/21,30	Gr.Boston, Concord	9, 8	CBC
1/1	Bolton Flats area	4	S.Carroll, M.Lynch
Feb.	4 loc.	5 ind.	v.o.
Snowy Owl:			
thr.Dec.-Feb.	P.I.-Salisbury	1-4 (max. 2/13)	v.o.
thr.Dec.-Feb.	Squantum	1-5 (max. 12/21)	v.o.
thr.Dec.-Feb.	E.Boston-Revere	1-2	v.o.
12/6,7	Rockport, Duxbury	1, 1	G.Gove#,W.Petersen#
12/7,8	Monomoy, Hingham	1, 1	B.Nikula, R.Lamond
12/29	Plymouth	1	T.Lloyd-Evans
2/21,22	Orleans, S.N.	1, 1	R.Comeau
Barred Owl:			
12/21-1/3	Hamilton	2	J.Berry + v.o.
12/21,1/24-2/28	Waltham, Nahant	1, 1	W.Drummond,W.Foley#+v.o.
1/1,1/26	Rutland, Sudbury	2, 1	S.Carroll#,R.Forster
Feb.	3 loc.	singles	v.o.
Long-eared Owl:			
12/14-2/28	E.Lexington	max.22 (1/10)	J.Andrews + v.o.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Long-eared Owl, continued:			
12/5,21	Nahant, Melrose	1, 1	R.Heil, J.Andrews
1/10,16	P.I., Chatham	1, 1	J.Gavin, B.Nikula
2/13	M.V.	4	V.Laux
Short-eared Owl:			
thr.Dec.-Feb.	Squantum area	max. 9 (1/23)	v.o.
thr.Dec.-Feb.	P.I.-Salisbury	max. 4+	v.o.
thr.Dec.-Feb.	Bridgewater	max. 2+	v.o.
12/7,20	Duxbury, Millis	1, 1	W.Petersen, CBC
12/21,2/28	Revere, N.Scituate	1, 1	J.Grugan, BBC
Saw-whet Owl:			
12/14,20	P.I., Athol	1, 1	BBC, CBC
12/21,28	Orleans, Concord	1, 1	CBC
1/10-20	P.I. (Hellcat)	1-2	W.VanCor# + v.o.
2/16	E.Lexington	1	J.Berry, I.Giriunas
Belted Kingfisher:			
12/20,21	Buzzards Bay, Gr.Boston	22, 5	CBC
Common Flicker:			
12/20	Millis, Buzzards Bay	6, 46	CBC
12/21	Gr.Boston, Cape Cod	13, 73	CBC
thr.Jan.	4 loc.	6 ind.	v.o.
2/1	Newburyport	1	J.Berry
Pileated Woodpecker:			
12/5,15	Lincoln, Beverly	1, 1	F.Bouchard, F.Burnett
12/20	Millis, Norton	1, 1	CBC,P.Joyce
12/28	Concord	3	CBC
thr.Jan.	4 loc.	singles	v.o.
thr.Feb.	2 loc.	singles	v.o.
Red-bellied Woodpecker:			
Dec.	Westminster (from Nov.)	1	CBC
Red-headed Woodpecker:			
12/21	Cape Ann	1	CBC
Yellow-bellied Sapsucker:			
thr.Jan.	M.V.	1	V.Laux
Hairy Woodpecker:			
12/28	Concord	161	CBC
Downy Woodpecker:			
12/28	Concord	458	CBC
Western Kingbird:			
1/2	Chatham	1 (well described)	E.Fuller, fide B.Nikula
Horned Lark:			
12/6,14	P.I.	10, 21	BBC
12/20,21	Buzzards Bay, Gr.Boston	69, 39	CBC
12/28	Concord	61	CBC
1/1,10,25	P.I.	15, 30, 13	BBC,H.Wiggin#,P.Roberts#
Blue Jay:			
12/20	Millis, Buzzards Bay	826, 785	CBC
12/21;28	Gr.Boston,C.Cod; Concord	544, 3560; 2042	CBC
2/15	Whitman-Bridgewater	200+	SSBC
Common Crow:			
12/20	Millis, Buzzards Bay	1255, 493	CBC
12/21,28	Gr.Boston, Concord	661, 1705	CBC
2/15	Bridgewater	300+	SSBC
Fish Crow:			
12/7,14	Newton, Wellesley	2, 5	N.+O.Komar,C.Ever
12/28	Concord	12	CBC
2/19	Scituate	1	W.Petersen
Black-capped Chickadee:			
12/2,1/3	Belmont	50+, 100+	BBC
12/20	Millis, Buzzards Bay, C.Cod	1036, 795, 1107	CBC
12/21;28	Gr.Boston, Cape Ann;Concord	1007, 600; 3220	CBC
Boreal Chickadee:			
Dec.	Worcester, Westminster	1, 1	CBC
12/6,13	Wellesley	1	K.Winkler
12/27-1/1	W.Newbury (Cherry Hill)	1	R.Stymeist#+v.o.
1/1-2/22	Newburyport (Pump station)	1	R.Stymeist#+v.o.
thr.Jan.	Framingham	1	K.Hamilton#

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Boreal Chickadee, continued:			
1/1,6-31	P.I., Littleton	1, 1	BBC, C.Roth
1/27	Billierica	1	R.McLay
Tufted Titmouse:			
12/20	Millis, Buzzards Bay	269, 60	CBC
12/21,28	Gr.Boston, Concord	196, 604	CBC
White-breasted Nuthatch:			
12/20	Millis, Buzzards Bay	119, 35	CBC
12/21,28	Gr.Boston, Concord	129, 408	CBC
Red-breasted Nuthatch:			
12/20	Millis, Buzzards Bay	12, 13	CBC
12/21,28	Gr.Boston, Cape Ann; Concord	78, 75; 68	CBC
1/2,3	Cohasset, Ipswich	9, 3	N.+S.Osborne, J.Berry
1/9,25	Lynn, Newypt	15, 3	R.Heil, O.Komar#
thr.Feb.	6 loc.	22 ind.	v.o.
Brown Creeper:			
12/20	Millis, Buzzards Bay	5, 13	CBC
12/21,28	Gr.Boston, Concord	47, 44	CBC
House Wren:			
12/20	N.Falmouth	1	CBC (M.Litchfield)
Winter Wren:			
12/2,8	Newton, Salem	1, 1	N.+O.Komar, R.Heil
12/13,17	Plymouth, Dunstable	1, 1	W.Petersen, L.Horton
12/20	Cohasset, Millis, Buzz.Bay, Worc.	1, 1, 2, 1	CBC
12/29	Manomet (MBO)	1	MBO
Carolina Wren:			
12/1,6	Gloucester, Canton	1, 1	C.Leahy#, D.Brown
12/4,13	Falmouth, Plymouth	2, 4	R.Forster, W.Petersen
12/20	Buzzards Bay	21	CBC
1/5,15	Framingham, Bridgewater	1, 1	K.Hamilton, J.Flaherty
Long-billed Marsh Wren (Marsh Wren):			
12/13 on; 20	Plymouth; Millis, Buzz.Bay	2; 1, 2	W.Petersen; CBC
Short-billed Marsh Wren (Sedge Wren):			
thr.Dec.-1/3	Nantucket (from 11/17)	1	R.Veit + v.o.

MIMIDS THROUGH BUNTINGS

Unlike last winter's unseasonably warm weather, this winter was extremely cold: the net result was far fewer passerine species recorded. By mid-January it was hard to find any sparrows and it seemed as if all the birders were feeling unhappy with the season. There were some bright spots, however, with the return of Pine Grosbeaks and redpolls, two species that for the last few years were virtually absent from our area. The golf course at Nine Acre Corner in Concord was the spot to hit: Bohemian Waxwing, good numbers of American Robins, Cedar Waxwings, and Pine Grosbeaks were present all winter. A Varied Thrush was reported from Marlboro, and Bohemian Waxwings were noted in Nahant, Lexington, and Truro. Yellow-rumped Warblers were well reported on coastal CBCs but were nearly absent after the deep freeze. Other warbler highlights were Cape May, Prairie, 2 Ovenbirds, and a Northern Waterthrush.

A Black-headed Grosbeak was reported from a feeder in Walpole, and Evening Grosbeaks were wished-away from other feeders this winter. A Hoary Redpoll was discovered in a large flock of redpolls at Plum Island on the last day of February. Only 15 Red Crossbills and a single White-winged Crossbill were noted all season. A Lark Sparrow, 10 White-crowned, 6 Chipping, and 2 Grasshopper sparrows as well as a late Lincoln's Sparrow were among the highlights. R.H.S.

Mockingbird:			
12/20,21,28	Buzz.Bay, Gr.Boston, Concord	187, 130, 314	CBC
Gray Catbird:			
12/20,1/8	Buzz.Bay, Falmouth	2, 1	CBC, N.Komar#
2/9	Mattapoisett	1	G.Mock
Brown Thrasher:			
thr.	9 loc.	10 singles	v.o.
Varied Thrush:			
12/21-22	Marlboro	1	M.Purcell

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Hermit Thrush: thr.	7 loc.	8 singles	v.o.
Ruby-crowned Kinglet: 12/20,30	Millis, Plymouth	1, 1	CBC
Bohemian Waxwing: 12/1-2,12/23-1/4	Nahant, Concord	1, 1	R.Heil#, R.Forster#
1/7, 1/20	Lexington, Truro	1, 3	W.Morris, S.Higginbotham
Cedar Waxwing: 12/28, thr. Jan.-Feb.	Concord, Middleboro	153, 31 max.	CBC, D.Briggs#
1/12, 2/7	IRWS, Bridgewater	15, 60	R.Heil, W.Petersen
Northern Shrike: 12/28, thr.	Concord, 8 loc.	4, 8 singles	CBC, v.o.
2/27	Yarmouth	1	R.Scott
Starling: 12/20, 21	Quincy, Boston	80000, 100000	CBC
Cape May Warbler: 12/1	S.Wellfleet	1	W.Bailey
Yellow-rumped Warbler: 12/21, 2/22	Cape Cod, Nantucket	800+, 200+	CBC, C.Jackson
Pine Warbler: 12/15-31, 20	Chatham, Falmouth	2, 1	V.Saunders#, CBC
12/26-1/31, 1/3-11	Acton, Harwich	1, 1	D.Verger, R.Comeau
Prairie Warbler: 12/9	Manomet	1	T.Lloyd-Evans#
Palm Warbler: 12/7	Ipswich, Braintree	2, 1	R.Heil#, R.Cornwell#
12/21, 27	Cape Cod, Marshfield	3, 2	CBC
Ovenbird: 12/21, 12/28	Cape Ann, Concord	1, 1	CBC
Northern Waterthrush: 12/7	Ipswich	1	R.Heil, B.Shockey
Common Yellowthroat: 12/8, 13	Salem, S.Peabody	1, 1	R.Heil
12/21	Cape Cod, Revere	9, 1	CBC
2/5	Gloucester	1	F.Bouchard
Yellow-breasted Chat: 12/1-7, 8	Wollaston, Salem	1, 1	W.Cornwell#, R.Heil
12/15, 21	MBO, Cape Cod	1, 4	MBO staff, CBC
Eastern Meadowlark: 12/21, 27, 28	C.Cod, Taunton, Concord	87, 29, 9	CBC
1/6, 25	Halifax, E.Orleans	4, 10	W.Perkins, B.Nikula
2/1	Bridgewater	1	BBC
Red-winged Blackbird: 12/21, 1/1	Gr.Boston, Marshfield	40, 5	CBC, N.+S.Osborne
1/26	Rockland	100 (both sexes)	W.Petersen
2/17, 18	Middleboro, Halifax	35+, 200+	D.Briggs, K.Anderson
2/18, 19	Concord, Scituate	31, 40	R.Walton, W.Petersen
2/22, 28	Halifax, Sudbury Valley	400+, 500+	K.Anderson, H.Wiggin#
Northern Oriole: 12/1-25, 2-24	Ipswich, S.Peabody	1, 1	J.Nove, R.Heil
12/5-31, 17	Cape Cod, Melrose	12, 1 f.	B.Nikula, D.Lavo
12/20, 30	Worcester, Danvers	1, 1	CBC, W.Gabbeiff
Rusty Blackbird: thr. Dec.	4 loc.	5 singles	v.o.
12/27, 1/19	Taunton, Sandwich	5, 2	CBC, S.Higginbotham
thr. Jan.-Feb.	Middleboro	14	D.Briggs#
2/13, 14	Braintree, M.V.	1, 1	R.Campbell, V.Laux#
Common Grackle: 1/5, 13	Medford, Halifax	1, 1 m.	G.Gove, K.Anderson
2/15, 17	Wayland, Concord	2, 50	R.Walton, R.Forster
2/22, 28	Halifax, Marshfield	100+, 12	K.Anderson, BBC
Brown-headed Cowbird: 1/1, 7	Woburn, Hanover	5, 10	G.Gove, W.Petersen
1/31-2/1, 2/1	Ipswich, Cape Ann	2, 8	J.Berry, O.Komar#
Dickcissel: 12/20, 27	Worcester, Marshfield	1, 1	CBC
1/4	Buzz. Bay	1	SSBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>Black-headed Grosbeak:</u>			
from Dec.-2/27	Walpole	1 m.	Mrs.Colburn, fide R.Langley
<u>Evening Grosbeak:</u>			
12/2,7	S.Peabody, Abington	30+, 25	R.Heil, W.Cornwell#
12/20,21,28	Worcester, C.Cod, Concord	619, 394, 915	CBC
thr.Jan.,1/23	Middleboro, Baldwinville	75 max., 50+	D.Briggs, J.O'Regan
2/1,22	Pembroke, Wayland	29, 30	E.Pearson, E.Morrier
<u>Purple Finch:</u>			
12/5;27,28	Newton; Taunton, Concord	5; 56, 123	N.+O.Komar; CBC
1/4,24	Marion, DFWS	2, 2	SSBC, N.Komar
<u>House Finch:</u>			
1/5,2/28	S.Peabody, Nantucket	32, 55	R.Heil, BBC
<u>Pine Grosbeak:</u>			
12/7,14-23	Boxford, MBO	2, 1 imm. f.	A.Palmer, MBO staff
12/20,27,28	Worcester, Newbypt, Concord	28, 35, 33	CBC
1/1,16-31	Boxford, Lincoln	15, 11 max.	M.Argue#, R.Forster
2/9,2/28	WBWS, Concord	1, 6	W.Bailey#, H.Wiggin#
<u>Hoary Redpoll:</u>			
2/28	P.I.	1	v.o.
<u>Common Redpoll:</u>			
12/7, 14	Braintree, P.I.	15, 35	D.Brown#, BBC+v.o.
12/20,21,28	Worcester, Gr.Boston, Concord	150, 51, 95	CBC
thr.Jan.	P.I., Sudbury	50+, 70	v.o., R.Forster
1/9,2/1	Cambridge, P'town	35, 11	J.Paputseanos, B.Nikula
2/14,28	W.Newbury, P.I.	30+, 100	R.Heil, v.o.
<u>Pine Siskin:</u>			
12/18	Westwood, Wayland	35, 24	Mrs.Wicks, D.Long
12/20,27,28	Worcester, Taunton, Concord	45, 75, 74	CBC
1/4,27	Westwood, Needham	50, 30+	B.Wicks, C.Woodruff
thr.Feb.	6 loc.	27 ind.	v.o.
<u>Red Crossbill:</u>			
12/7,2/14	Ipswich, M.V.	5, 10	R.Heil, V.Laux#
<u>White-winged Crossbill:</u>			
1/24-30	M.V.	1	V.Laux#
<u>Rufous-sided Towhee:</u>			
12/10,18	Weston, Wakefield	1, 1 m.	E.Randle, J.Morse
12/31-2/1,1/2	Manchester, Cohasset	1 m., 2	F.Campbell, N.+S.Osborne
2/5,2/7+15	Gloucester, Nahant	1, 1	F.Bouchard, R.Forster
2/9	Mattapoisett	1	G.Mock
<u>Savannah Sparrow:</u>			
12/21,1/18	Cape Cod, <u>Whitman</u>	26, 1	CBC, W.Petersen
2/28	Nantucket	1	BBC
<u>"Ipswich Sparrow":</u>			
12/7	Duxbury Beach	1	W.Petersen
<u>Grasshopper Sparrow:</u>			
12/7	Ipswich	2	R.Heil + B.Shockey
<u>Sharp-tailed Sparrow:</u>			
12/3,21	Quincy, Cape Cod	1, 7	W.Cornwell, CBC
<u>Seaside Sparrow:</u>			
12/6,7	P.I., Newbypt	1, 1	BBC, K.Able
12/21	Cape Cod	4	CBC
<u>Vesper Sparrow:</u>			
12/27,2/28	M.V., Nantucket	5, 1	CBC, BBC
<u>Lark Sparrow:</u>			
12/20	Marion	1	R.Harlow + K.Anderson
<u>Dark-eyed Junco:</u>			
12/20,28	Quincy, Concord	167, 1200	CBC
<u>Tree Sparrow:</u>			
12/7;20,28	Ipswich; Quincy, Concord	90+; 275, 1486	R.Heil; CBC
1/16,24	Sudbury, Concord	100, 50	W.Petersen#, N.+O.Komar
<u>Chipping Sparrow:</u>			
thr.Jan.,1/4	M.V., Marshfield	5, 1	V.Laux, J.Kricher
<u>Field Sparrow:</u>			
12/7,28	Braintree, E.Middleboro	12, 10	D.Brown#, K.Anderson
12/21,27,28	C.Cod, Taunton, Concord	24, 50, 25	CBC
1/5,18	Salem, Sandwich	2, 5	R.Heil, N.Komar#
2/7	Beverly	3	G.Soucy

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
White-crowned Sparrow:			
12/4-7,7	Yarmouth, Duxbury Beach	1, 1	J.Aylward, W.Petersen
12/7	Ipswich	4 (1 <u>gambelii</u>)	R.Heil#
12/8,20	Quincy, Millis	1, 1	D.Skeels, CBC
thr.Jan.,2/22	DFWS, Nantucket	1, 1	P.Swift#, BBC
White-throated Sparrow:			
thr.Dec.,12/28	Brookline, Concord	11, 263	B.Reilly#, CBC
1/4,24	Milton, Yarmouthport	15, 2	BBC, F.+M.Worrell
2/5,9	Gloucester, WBWS	5, 5	F.Bouchard, W.Bailey#
Fox Sparrow:			
thr.Dec.	15 loc.	31	v.o.
1/2,1/4	E.Middleboro, Westwood	3, 4	K.Anderson, B.Wicks
thr.Jan.-Feb.,2/28	S.Peabody, Marshfield	3, 5	R.Heil, BBC
Lincoln's Sparrow:			
12/7	Ipswich	1	R.Heil
	Good details submitted.		
Swamp Sparrow:			
12/2,thr.Dec.	S.Peabody, 3 loc.	8, 3 singles	R.Heil, v.o.
1/2	Medfield	12	J.Marshall
Song Sparrow:			
12/7,20	Ipswich, Quincy	70, 115	R.Heil#, CBC
2/28	Nantucket	10	C.Jackson
Lapland Longspur:			
12/7	Monomoy	100	B.Nikula
1/1,thr.Jan.	P.I., Salisbury	20, 22 max.	M.Argue#, v.o.
2/9	Orleans	1	W.Bailey#
Snow Bunting:			
12/7,28	N.Scituate, E.Middleboro	6, 100	A.Dickinson, K.Anderson
12/21,29	Cape Ann, Millis	101, 4	CBC, J.Marshall
1/18,19	Falmouth, Hudson	50, 45	N.Komar#, J.Gildea
thr.Feb.,2/21	Lanesville, P.I.	20 max., 17	v.o., BBC

List of Abbreviations

ad.	adult	F.M.	Fowl Meadow, Milton
alt.	alternate (plumage)	Gr.	greater as in Gr. Boston area
br.	breeding	I.	Island
dk.	dark phase	M.V.	Martha's Vineyard
f.	female	Mt.A.	Mt. Auburn Cemetery, Cambridge
fl.	fledge	Nant.	Nantucket
imm.	immature	Newbypt	Newburyport
ind.	individuals	ONWR	Oxbow National Wildlife Refuge
loc.	locations	P.I.	Plum Island
lt.	light phase	P'town	Provincetown
m.	male	R.P.	Race Point, Provincetown
max.	maximum	S.N.	Sandy Neck, Barnstable
migr.	migrating	Stellw.	B. Stellwagen Bank
ph.	photographed	ABC	Allen Bird Club
pl.	plumage	BBC	Brookline Bird Club
pr.	pair	BOEM	Bird Observer of Eastern Mass.
thr.	throughout	CBC	Christmas Bird Count
v.o.	various observers	DFWS	Drumlin Farm Wildlife Sanctuary
W	winter (e.g., 2W = second winter)	FBC	Forbush Bird Club
w/	with	GBBCC	Gr.Boston Breeding Bird Census
yg.	young	GMNWR	Great Meadows National Wildlife Ref.
#	additional observers	IRWS	Ipswich River Wildlife Sanctuary
A.A.	Arnold Arboretum	MAS	Massachusetts Audubon Society
A.P.	Andrews Point, Rockport	MBO	Manomet Bird Observatory
Buzz.	Buzzards (Bay)	MNWS	Marblehead Neck Wildlife Sanctuary
C.Cod	Cape Cod	NBBC	Newburyport Breeding Bird Census
E.P.	Eastern Point, Gloucester	SSEC	South Shore Bird Club
F.E.	First Encounter Beach, Eastham	*TASL	Take a Second Look
F.H.	Fort Hill, Eastham	WBWS	Wellfleet Bay Wildlife Sanctuary
b.	banded	WMWS	Wachusett Meadows Wildlife Sanctuary

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