

RECOLONIZATION OF THE COMMON RAVEN IN BERKSHIRE COUNTY, MASSACHUSETTS

by Timothy J. Flanagan

The sudden vocalization of the Common Raven in a clear blue sky above a Berkshire precipice could have, in retrospect, been considered an omen. The low, metallic-toned croak I heard not only commanded my attention on that April morning in 1981, but has resonated within for more than a dozen years. Even more dramatic was the realization that the raven's presence as a breeding bird had not been witnessed here for more than a century.

When I glanced up in response to the sound, I was surprised to see not one, but two ravens flying in formation at treetop level near the crest of Farnum ridge. One bird carried a stick, and as I watched in amazement, it passed the stick to the other bird in a graceful acrobatic maneuver. Could this be a nesting pair?

The raven's voice is distinctive, providing an easy and reliable attribute for identification. Carolus Linnaeus apparently would have agreed, because in 1758 he named the species *Corvus corax*, or in translation "a crow that croaks." The common name "raven" is probably derived from Anglo-Saxon "hraefn," a linguistic imitation of the call. These facts notwithstanding, my credibility was immediately challenged when I called the local ornithological cognoscente to report my observations.

The skepticism ascribed to my early reports may be forgiven in light of the records maintained for Berkshire County by members of the Hoffmann Bird Club since 1940. No sightings were formally recorded prior to April 6, 1967. Occasional sightings, mostly in the plateau region of northeast Berkshire County, were reported through the next fifteen years. By the time of my observation in 1981, the ravens could be considered regular, but uncommon, visitors occurring at any season. At no time had any observer suggested that breeding behavior had been witnessed.

Older records suggest that the raven was indeed once common, but declined and was extirpated with the arrival of an agricultural economy in the 1800s. Ravens, which have endured evil repute throughout European history, suffered the material consequences of bad will at the hands of American farmers. In the Berkshires they were perceived as a threat to crops, livestock, and especially lambs. Consequently, they were shot on sight, leading eventually to their total elimination. Faxon and Hoffmann (1923) wrote the following:

Certain local names that still survive would seem to show that the Raven used to breed in Berkshire. An inaccessible cliff on the eastern side of Ragged Mountain, a spur of Greylock, in Adams, has been pointed out as a former breeding-place of the Raven, and it is

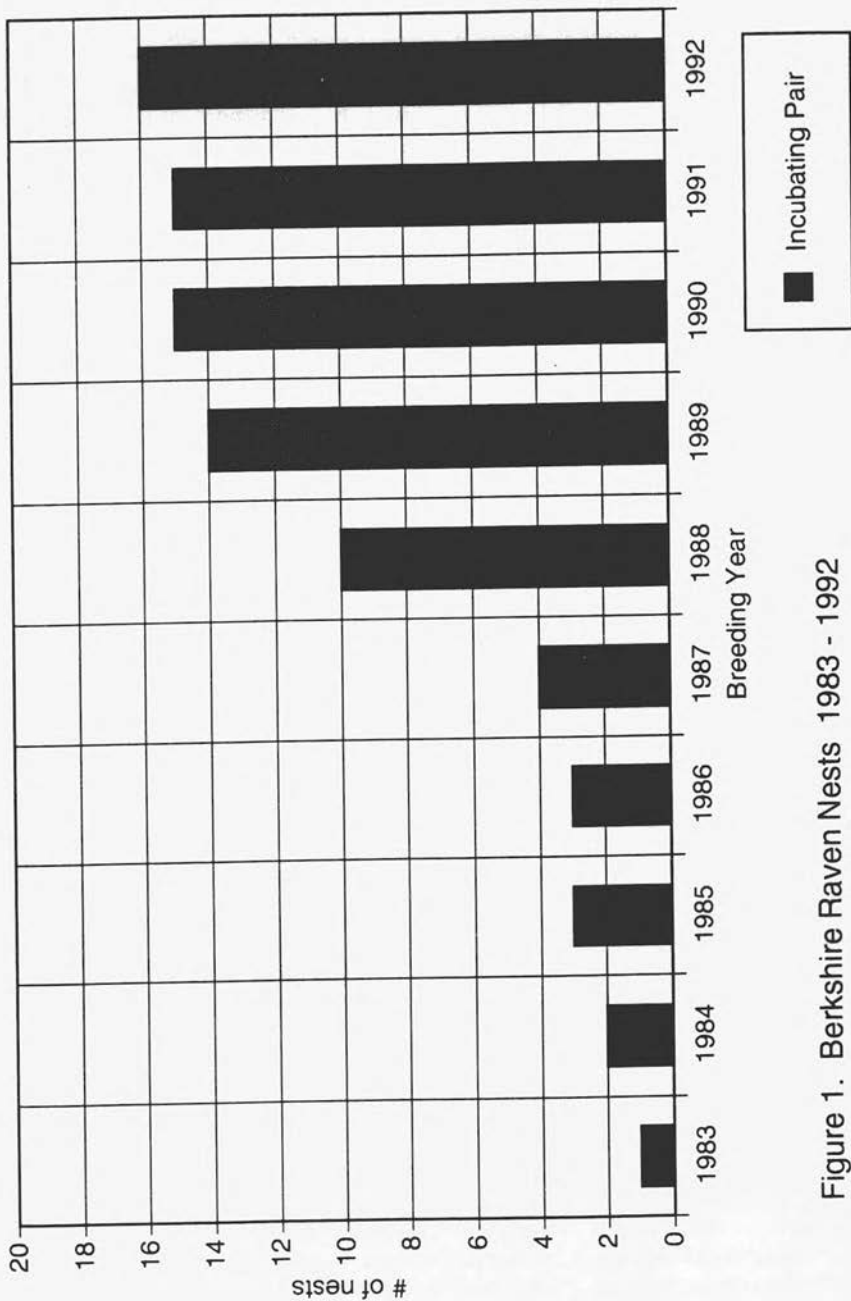


Figure 1. Berkshire Raven Nests 1983 - 1992

still called by many of the farmers in the neighborhood the "Raven Rocks." The Ravens, however, were probably exterminated long ago. They do not appear in Chadbourne's list of Williamstown birds which was published in 1858; nor in the catalogue of birds published in 1833 by Dr. Emmons, a resident of Williamstown, does the Raven figure, save dubiously, as a bird of Massachusetts.

Notably, "Raven Rocks" is once again a raven aerie.

I returned in spring 1982 to Farnum ridge and spent a few mornings hoping for a reenactment of the stick-passing episode. Instead, I was treated to a couple of hours of incredibly acrobatic flight demonstrations, consisting of snap rolls, barrel rolls, loop-to-loops, and high-speed dives, all accompanied by complex vocalizations. Although I was convinced these flights must be related to courtship, I was still lacking hard evidence of ravens breeding.

In 1983 I decided to spend some time observing at a distance. I stationed myself about one-quarter mile from the ridge and simply watched for flight activity. Within a few hours I recognized that one steep ravine was being used at least as a roost, if not as a nesting area. With map and compass in hand I bushwhacked in with fellow naturalist Tom Tying of the Massachusetts Audubon Society. The big surprise of the day was how quickly and easily we found the nest. There was a streak of whitewash that contrasted conveniently with the bedrock of dark gray schist. A bonus was the discovery of a collapsed and weathered nest at the base of the ledge, directly under the active nest. This was confirmation that the pair had at least attempted to breed in the previous season.

The ravens made several low inspection flights, called to one another, and then departed to the south. Assuming that we may be keeping the birds from incubation, we decided to leave immediately. Upon revisiting two weeks later, we heard several chicks calling from the nest.

This experience was enough to lure me into raven study. A quick review of the older literature and field guides reinforced the view expressed by Faxon and Hoffmann (1923). Forbush (1929) listed the raven as a "rare and accidental visitor" to New Hampshire, Vermont, and Massachusetts, and as a "rare resident" in Maine. Chapman (1928) gives a regional range as "locally to coast region of New Jersey and Virginia, and in the higher Alleghenies to Georgia, southeast Minnesota, uncommon in West Virginia." Bagg and Eliot (1937) gave an account that aptly describes the status of the raven in Massachusetts for the first eighty years of the twentieth century. They wrote simply "accidental visitor, southward as far as wilderness exists and man has permitted it to live."

In the first ten years of my raven ramblings in Berkshire County, the number of known nesting pairs has increased from one to sixteen (see Figure 1). Three additional sites are suspected but not confirmed nesting sites. I have discovered most of the nest sites by noting the flight patterns of the birds. That

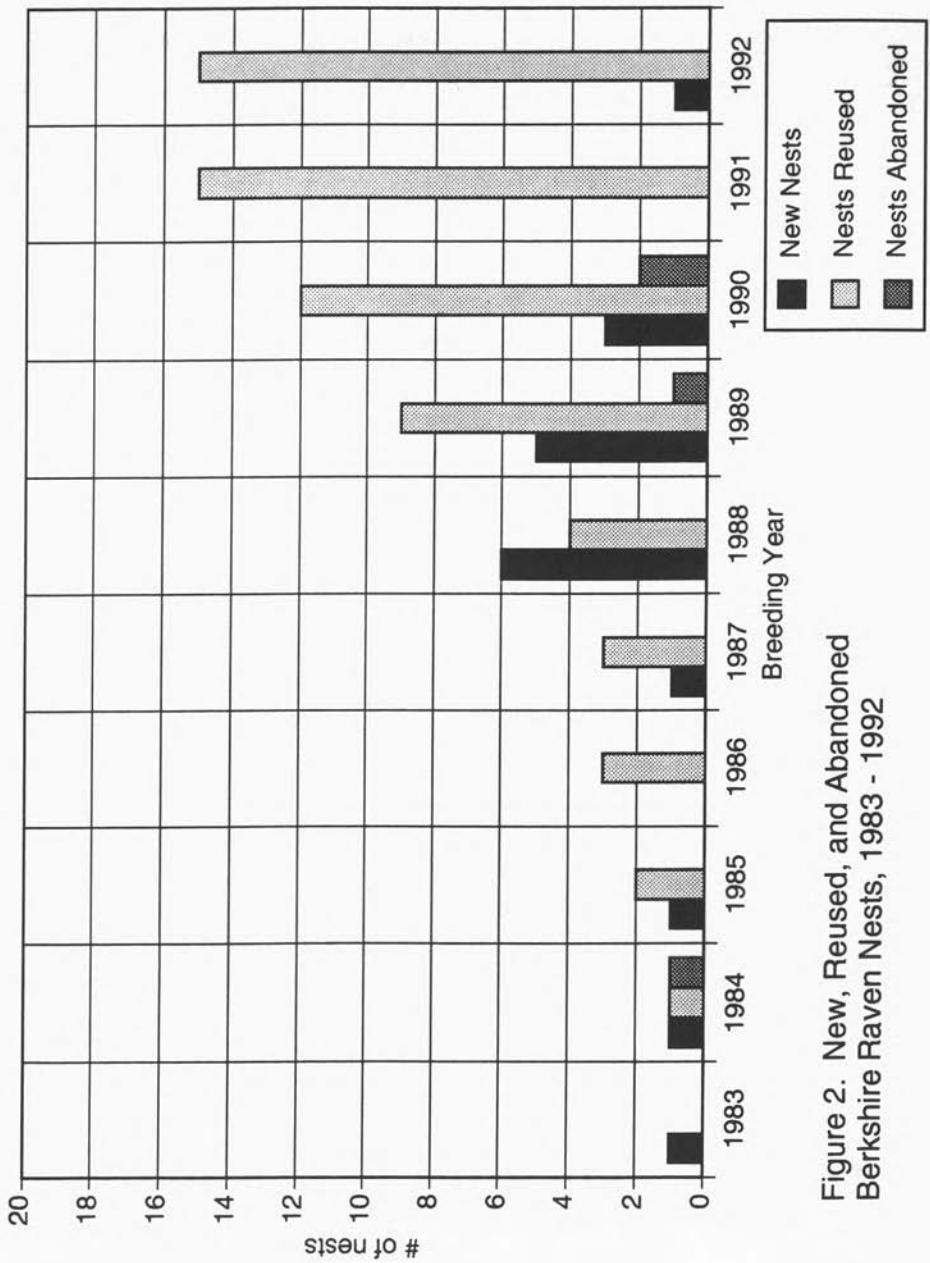


Figure 2. New, Reused, and Abandoned Berkshire Raven Nests, 1983 - 1992

is, I draw an arrow on a topographic map to represent a direction and observed length of flight path each time I see a raven. Eventually enough observations accumulate in a radial pattern which more or less surrounds the nesting area. I have discovered also that most departing flights tend to follow along a ridge, while arriving flights may approach from any direction.

I discovered new nests at a slow but steady rate from 1983 to 1987 (see Figure 2). The years 1988 through 1990 show a burst of new nesting activity. It is tempting to think that the offspring of the early colonizers were maturing and nesting later in the decade. But this interpretation must be made cautiously, accounting for the increase in observer hours and possibly an increase in observer skill, as my interest level and experience developed. Tom French of the Massachusetts Division of Fish and Wildlife, Nongame and Endangered Species Program, has been banding young ravens at some of these sites for several years now. We sincerely hope that future banding returns will help us to understand the reproductive biology of ravens.

Of twenty-five nests discovered in my period of record, most are on natural cliff faces below an overhanging ledge. A few sites are in coniferous trees, a few in abandoned quarries, and one was located on a stone foundation. The number of known nests does not correlate exactly with the number of breeding pairs because some pairs have started two or three nests in a season, some have moved back and forth between nests from season to season, and some nest sites have been abandoned altogether.

Raven nests exceed three feet in diameter and are perhaps the largest nests built by birds of the order Passeriformes. They gather construction material by breaking twigs from the crowns of poplar, maple, oak, and other trees. Often the twigs are already dead and brittle enough to snap off. Sometimes the birds will literally jump up and down on a twig until it breaks, and then grasp the twig in the bill in midair as the bird and twig fall away. The nest is most often lined with the hair of deer or raccoons. Some birds have incorporated material of anthropogenic origin, such as twine, colored yarn, cigarette filters, duct tape, and fiberglass insulation.

The old nests usually fall down during the winter. I have never seen a raven reuse old nest material, nor have I seen a bird recover a twig that was dropped during nest building.

Catastrophes have occurred on occasion when entire nests have fallen from the cliff edge. One pair, most likely in their first breeding season, constructed a very loose-looking nest with little anchorage. The entire nest slipped off the ledge while I watched in horror, as an ungainly parent belly-flopped into the cup. The would-be parent merely spread its wings and flew on with no sign of disturbance at the incident. A second loose nest in the same season lasted long enough to support a clutch of eggs before falling off. The pair did hatch two eggs in their second breeding year, but the chicks were lost to an unknown

predator. The third breeding year was more successful with three chicks fledged.

The more established nesting pairs typically lay four to seven eggs. The eggs hatch sequentially, so larger clutches often contain a dominant chick, one or more midsize chicks, and the inevitable runt. The busy parents of larger broods make food deliveries every twenty minutes or so throughout the day. Experience is likely to be a strong factor in determining reproductive success.

Breeding activities in Berkshire County usually commence in February or March, and most of the chicks will fledge in June. The more established pairs typically begin nesting two or three weeks earlier than pairs making their first attempt at a given nest site. I have seen food delivered to begging chicks as late as mid-August in the case of first-time nesters.

Observed food deliveries and pellets collected below a roost give a partial indication of food preferences. The ravens are quite opportunistic, temporarily specializing in various food sources throughout the season. In early spring I have seen ravens collecting road-killed wood frogs. As the season progresses the ravens become effective nest predators on small and medium-size songbirds. Robin and thrush eggshells are commonly seen below the nests. On one occasion I saw a raven dive from a perch and grab a passing adult robin by the neck, using the bill for capture. I have seen adult ravens carrying food items with their feet on three occasions. A snake was carried in this way, and on two other occasions the prey item appeared to be a mouse.

My pellet analysis indicates that birds and mammals occur in about equal proportion in the raven's diet. There is a predictable shift from passerine eggs to nestlings as spring changes to summer. Whole shrews and chipmunk skull fragments are common, while squirrel, rabbit, and skunk parts occur from time to time. One might presume that the larger mammal pieces are collected while feeding on carrion or roadkills. Fish scales and beetle wing covers are uncommon but regular items in the pellets of certain raven pairs. One pair regularly walks the shoreline of a reservoir in search of dead fish.

Communal roosting of up to twenty-five ravens occurs in white pine stands along the ridges of the Taconic Mountains from July through September. The birds congregate before sunset and then disperse again at first light. Heinrich (1989) describes similar behavior. In contrast, I have watched incubating adults often wait at least two hours after sunrise before foraging. During the breeding season adults invariably roost right at the nest site, either on the ledge or perched in a nearby tree.

Identification of ravens, as with any bird, is at times easy and at other times exasperatingly difficult. Brewster (1888) writes:

Despite their differences in size and habits, I must confess that I often had difficulty in distinguishing Ravens from Crows. Every one must have noticed how the apparent size of a Crow will vary under different conditions of the atmosphere; it is the same with the

Raven. At times he looks as big as an Eagle; at others scarcely larger than a Fish Crow. But when actually in company with Crows he can not be possibly mistaken, for he then appears, as he is, nearly double the size of any of them.

The ravens are indeed large, with typical wingspans between 1.15 and 1.27 meters and weights up to 1.5 kilograms. The classic field mark described in guidebooks is the wedge-shaped tail. Practically speaking, this characteristic may be obscure in first-year birds and difficult to see with adult birds in active flight. The wedge-shaped tail is most visible when the birds are soaring.

Other flight postures may help distinguish between ravens and crows. Ravens soar with very flat wings, whereas crows usually show a slight dihedral effect. Ravens tend to fly with wings tips slightly more pointed than the wing tips of the crows.

A recognizable but little known field mark is helpful in identifying a perching raven. A raven's forehead slopes much more steeply than that of a crow. This characteristic is nicely illustrated in the Fuertes' color plate and Brasher's drawing in Pearson et al. (1917). Some of the modern field guides come close but do not quite capture the effect true to life.

At close range the observer may note a brownish hue on the back and tail of young ravens. The adults have large, pointed feathers in the throat, often erected while perching to give the bird a bearded appearance. The bill, legs, and feet are all proportionally larger in the raven than in the crow. A walking raven appears more balanced and graceful, to me at least, than a walking crow. Finally, the large, massive bill of the raven has coarse bristles extending well past the nares.

I have puzzled over the raven's long-term absence followed by such a strong and steady recolonization effort. This is no doubt fine material for serious ecological study, which I have not attempted. I speculate, however, that there is substantial validity to Bagg and Eliot's (1937) statement concerning wilderness and permission to live.

The raven's recent range extension may have been aided by the abandonment of New England agriculture with a time lag long enough for the forests to mature. Judging from foraging behaviors I have observed, the human population growth, with attendant roadkills and open dumps, has provided additional opportunity for raven sustenance. Not insignificant is an increasingly tolerant attitude toward hawks, owls, and "big crows." Thankfully, in more than a dozen observation years, I have only seen two birds that had been shot. In both cases the birds apparently suffered only shattered flight feathers.

There is still very much to learn about raven biology, including reproductive ecology, energetics, and habitat use. These magnificent birds show more behavioral and vocal complexity than any other bird I know. Any bird enthusiast who will pause to observe is sure to be rewarded. As Edgar Allen Poe expressed in *The Raven*:

Then, upon the velvet sinking,
I betook myself to linking
Fancy unto fancy,
Thinking what this ominous bird of yore . . .
Meant in croaking "Nevermore"

References

- Bagg, A.C., and S.A. Eliot, Jr. 1937. *Birds of the Connecticut Valley in Massachusetts*. Northampton, MA: The Hampshire Bookshop.
- Brewster, W. 1883. *Proceedings of the Boston Society of Natural History*, XXII.
- Chapman, F.M. 1928. *Handbook of Birds of Eastern North America*. New York: D. Appleton and Company.
- Faxon, W., and R. Hoffmann. 1923. *The Birds of Berkshire County, Massachusetts*. Collection of the Berkshire Historical and Scientific Society, III.
- Forbush, E.H. 1929. *Birds of Massachusetts and other New England States*. Massachusetts Department of Agriculture.
- Heinrich, B. 1989. *Ravens in Winter*. New York: Simon and Schuster.
- Pearson, G.T., J. Burroughs, et al. 1917. *Birds of America*. New York: Garden City Publishing Company, Inc.

TIMOTHY J. FLANAGAN teaches environmental and life sciences at Berkshire Community College in Pittsfield, Massachusetts. He has formerly served as president of the Hoffmann Bird Club and director of the Natural Sciences Department at the Berkshire Museum, and worked as a naturalist with the Massachusetts Audubon Society.



**OSPREY TOURS 1994
NATURAL HISTORY TRIPS**

ESCORTED TOURS

COSTA RICA - Birding and Natural History
Jan. 22 - Feb. 2, 1994

HONDURAS - A New Destination In Birding
Feb. 11 - Feb. 22, 1994

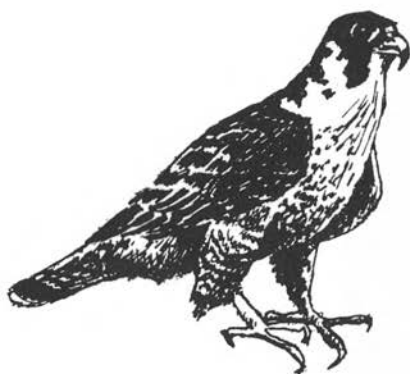
BELIZE - GUATEMALA

Birding & Mayan Ruins
Mar. 9 - Mar. 23, 1994

GUIDED TOURS

Monthly Departures For Costa Rica - 9 Days
"The Best of Costa Rica"

P.O. Box 832, W. Tisbury, MA 02575
508-645-9049 Fax 508-645-3244



**VOLUNTEERS NEEDED
FOR
FALL HAWK WATCH**

The Eastern Massachusetts Hawk Watch (EMHW) can use your help counting hawks this fall. While the Osprey, Bald Eagle, and Peregrine Falcon are increasing in numbers, recent hawkwatch data suggest that the Northern Harrier, Sharp-shinned Hawk, Broad-winged Hawk, and American Kestrel may be significantly decreasing.

Hawk migration counts are our best means of tracking population trends. We need your help, even if you may have only limited knowledge of hawk identification. You can help more experienced hawkwatchers who can, in turn, help you learn to identify hawks and experience the thrills of hawkwatching.

Coordinated hawkwatches will be held at Wachusett Mountain in Princeton from September 4-October 3, and throughout the region on all fall weekends. We also seek reports on numbers of hawks seen anywhere in eastern Massachusetts on any fall date. If you would like more information or would like to submit reports, contact Paul M. Roberts, 254 Arlington Street, Medford, MA 02155, telephone 617-483-4263.

EMHW ANNUAL MEETING, FRIDAY, SEPTEMBER 10, 1993

EMHW will hold its annual meeting on Friday, September 10, at 7:30 P.M., at the Nature Center of Drumlin Farm Sanctuary, Lincoln, MA. Julie Collier, noted raptor rehabilitator, will talk about the "Aerial Hunters of the Northeast," focusing on the unique "personality" of each hawk. The public is invited, free of charge. For more information, call 617-483-4263.

FALL 1992 EMHW REPORT

If you would like a copy of the Fall 1992 EMHW Report, complete information on the Fall 1993 hawkwatch, and a copy of "Where and When to Watch Hawks in Eastern Massachusetts," please send a check for \$2.00 (payable to EMHW) to EMHW, 254 Arlington Street, Medford, MA 02155.

Mirador[®]

CHECK THESE BIRDING FEATURES!



- Showerproof Series
- Multi coated lenses
- Over 40% off list
- Long Eye Relief
- Close Focusing
 - Bak 4 Prisms
 - 30% Smaller
 - 40% Lighter

FOR OUR CATALOG AND DISCOUNT PRICE LIST
CALL (518) 664-2011 OR WRITE TO:

BIRDING

Optics Headquarters for the Bird Watcher
A Division of Sporting Optics, Inc.
P.O. Box 440580 - Hallstead, NY 12065

BIRD NANTUCKET

Banding Workshop
in woods famous for
fall migrants.

August 28 to

October 3, weekly

Sponsored by the
Maria Mitchell Association.

Write: Bird Nantucket
Box 1182
Nantucket, MA 02554

Buying a used VW?
Complete Pre-purchase
Evaluation
Golf - Jetta - Quantum
\$50.

(617) 923-0941
GTShop
Inc.

Formerly Coop Garage

We service Nissan, Honda,
Saab, Toyota, VW, Volvo

106 Pleasant Street
Watertown Square