

Understanding Daytime Bird Migration in the Gulf of Maine: Raptors



Raptors (also known as birds of prey), like the adult Peregrine Falcon pictured above, migrate along the Atlantic coast in the fall to tropical regions for the winter. Photo © Ken Wright

What We Studied

In Fall 2010, BRI researchers studied the raptor migration on Monhegan Island to determine the general abundance, species composition, and timing of daytime migrants. Researchers also assessed birds' flight direction, height and other information by observing individuals departing the island, and tracked the migration routes of several captured individuals using satellite telemetry. Few studies exist documenting the raptor migration at offshore islands like Monhegan (10 miles offshore in midcoast Maine). This information is increasingly needed to help inform siting decisions for marine-based wind power facilities and other developments in Maine.

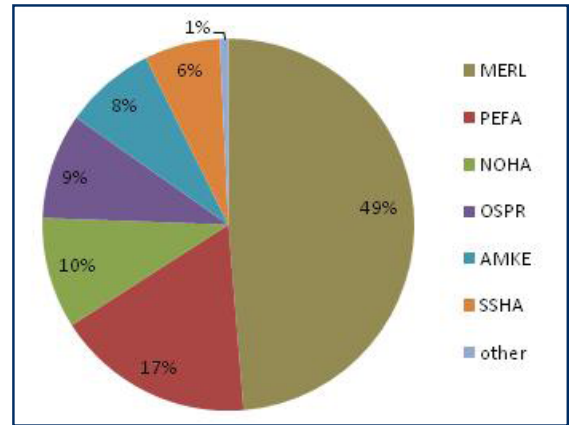


Figure 1. Species composition of migrant raptors observed at Monhegan Island, fall 2010. Species codes: MERL (Merlin), PEFA (Peregrine Falcon), NOHA (Northern Harrier), OSPR (Osprey), AMKE (American Kestrel), SSHA (Sharp-shinned Hawk), Other (1 Bald Eagle, 1 Northern Goshawk, 1 unidentified Buteo, 1 unidentified Falcon).

What We Found—Highlights

- **Counts:** We recorded 807 raptors passing by Monhegan Island over approximately a one-month period in the fall. This was the first intensive standardized raptor count conducted at this famous bird stopover site.
- **Species:** The species composition of the raptor flight at Monhegan was largely comprised of falcons (74%)—this differs significantly from counts conducted at many near shore or inland sites, where a substantial proportion of migrants tend to be open habitat and forest-dwelling hawks (accipiters and buteos) (Figure 1).
- **Timing:** The timing of the migration varied by species and in response to weather patterns. In general, migrating merlins (small dark falcons) were more abundant in late September, while migrating peregrine falcons were increasingly observed into early- and mid-October.
- **Direction:** Eighty-eight percent (of 791 individuals) of raptors departed the island in directions between west and southwest. Very few or no raptors were visible departing in other directions (Figure 2).
- **Height:** Eighty-eight percent of raptors were documented flying at or below approximately 60 m (200 ft).
- We observed 78 migrant northern harriers (10% of all migrants), a poorly studied, species of special concern in Maine. At least 60% of these individuals were immatures.



A juvenile female Peregrine Falcon fitted with a solar GPS satellite transmitter. This transmitter enabled biologists to record information on this bird's daily movements between Monhegan Island and Colombia. Photo © Al Hinde

What We Found (continued)

- Two juvenile female peregrines were fitted with satellite transmitters and released to better understand their fall and spring migration routes, roosting locations, and wintering areas. The map (left) shows their movements through December 12, 2010. These birds followed the Atlantic Coast until approximately Cape Hatteras, North Carolina, where they veered out over open water towards Turks and Caicos in the Caribbean. These two falcons travelled more than 6,400 combined miles during the first two months. They overwintered in Cuba and Columbia.
- Twenty-five raptors (17 peregrines, 6 merlins, and 2 American kestrels) were captured at the site and released after birds were measured, sampled, and banded. One Peregrine Falcon was recaptured six days later by another researcher on Assateague Island, MD, close to 500 miles away.



Migration paths of two juvenile female Peregrine Falcons travelling south from Monhegan Island, Maine.

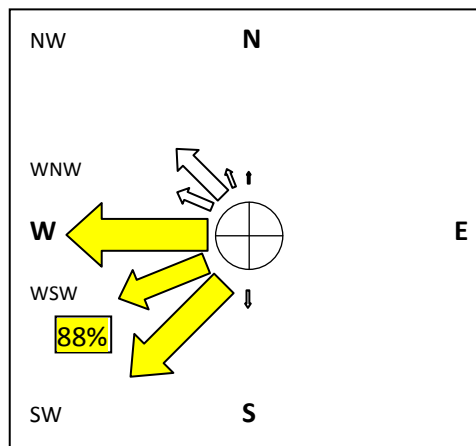


Figure 2. Flight direction recorded for diurnal (daytime) migrant raptors observed from the Monhegan Island vicinity, Fall 2010. Size of arrows is proportional to the number of raptors observed departing in each direction. Eighty-eight percent of raptors were observed departing in directions between West and Southwest.

More Information

Additional information about this study, including the full report, media coverage, downloadable materials, and other BRI studies can be found at www.briloon.org.

