

Raptor Migration at the Detroit Rivermouth: What has been Counted?

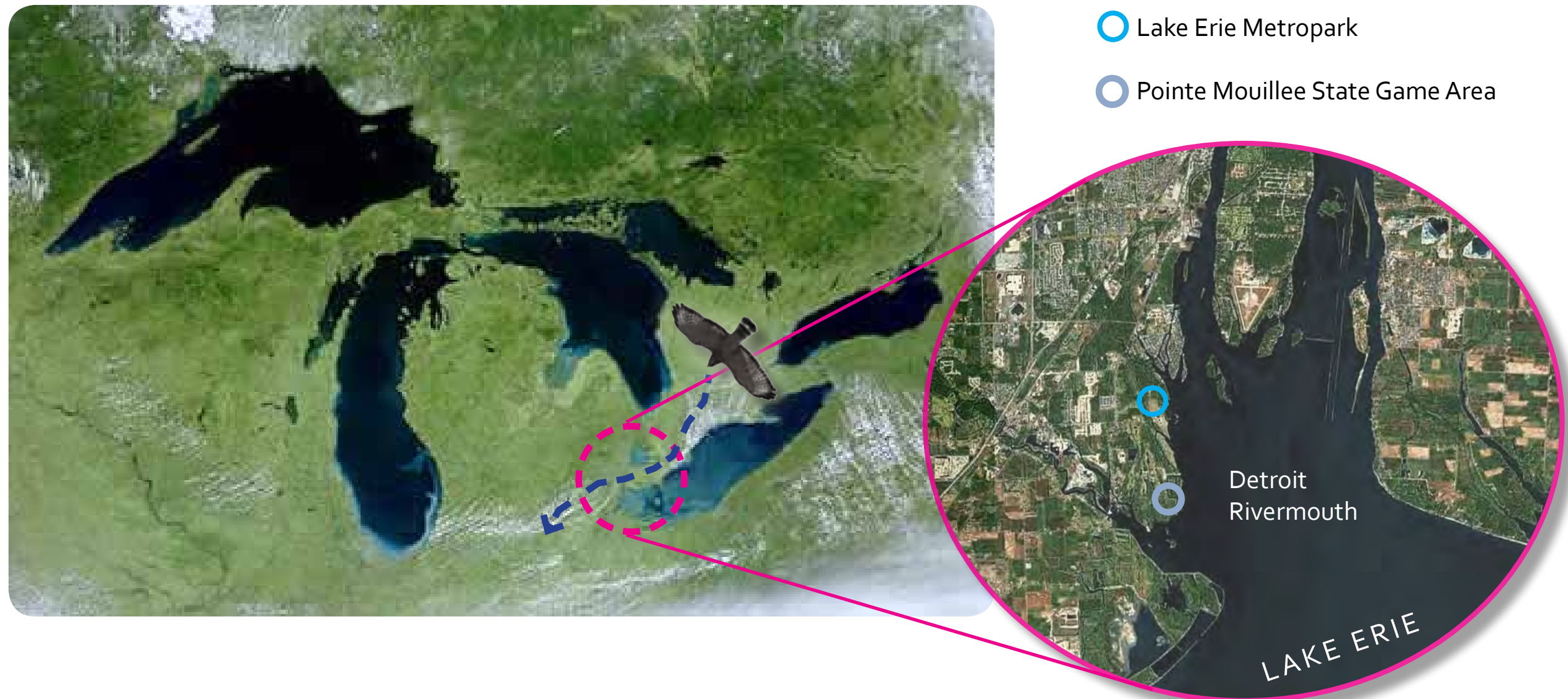
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SHARP-SHINNED HAWK



INTRODUCTION

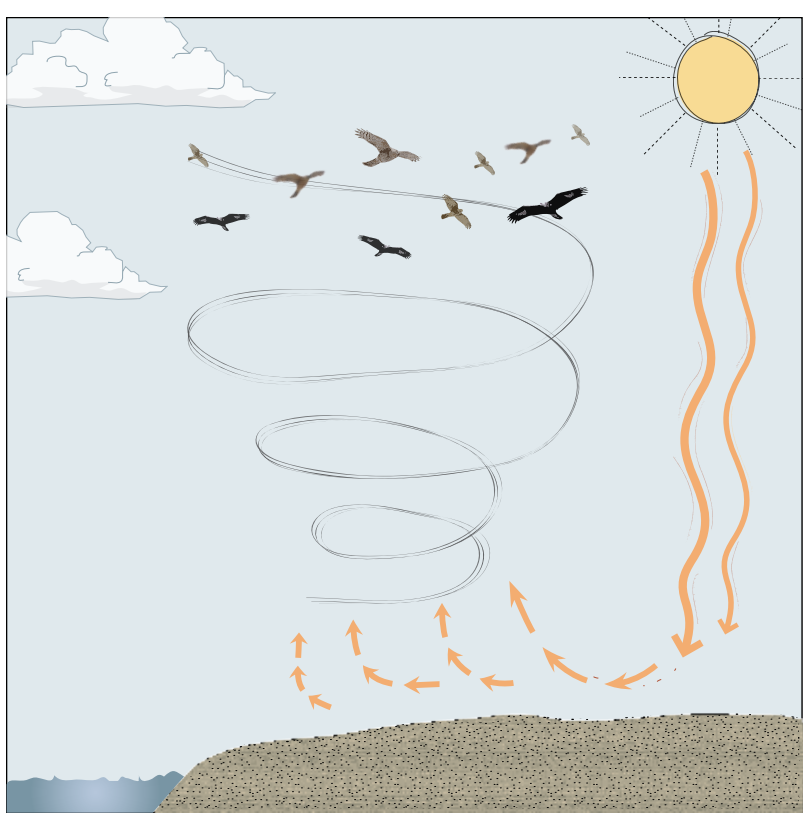
The mouth of the Detroit River is a significant corridor for the passage of migratory birds. Since the early 1980's 8,653 hours have been spent counting migrating hawks, eagles and falcons from exact locations at Lake Erie Metropark's boat launch and wavepool and the Pointe Mouillee State Game Area headquarters. Relatively consistant coverage at these sites began in 1998 with volunteers, and in 2000, the first full-time counter was hired exclusively to count every migrating raptor overhead. Essentially, all of these raptors have spent the breeding season in Canada and are being counted as they pass from Ontario over the Detroit River and into Michigan, heading towards each species' respective winter range.



THE GREAT LAKES & RAPTOR MIGRATION

For migrating hawks, eagles and falcons, it is less efficient to fly over water. As a result, many major corridors for the passage of these birds are situated so that migrating raptors can avoid moving over large bodies of water. The Great Lakes have many such corridors and southwestern Ontario is one of the most significant, serving as a funnel through which birds can avoid Lake Erie and follow southwest, overland paths to reach more southerly wintering areas. As birds travel through the forests, agricultural areas and cities of southern Ontario on their journey south, birds that prefer to travel close to shorelines can be counted at Hawk Cliff (43 kilometers south of London, Ontario), Holiday Beach (13 kilometers from Lake Erie Metropark, near Amherstberg, Ontario), and finally at the mouth of the Detroit River. Many species, especially buteos (e.g., Red-tailed Hawk and Broad-winged Hawk), utilize thermals which contribute largely to raptors' preference for travel overland.

THERMALS are pockets of warm, rising air that only form over land. Raptors use these for lift, enabling them to fly many miles with minimal flapping as they glide from one thermal pocket to the next. Broad-winged Hawks are famous at this site for building incredibly large numbers in these thermals at the northern shore of Lake Erie.



RAPTORS AT THE DETROIT RIVERMOUTH

As birds descend from more northerly areas of Ontario, they arrive somewhere in southwestern Ontario, awaiting optimal migration conditions of suitable winds and often thermal formation (especially in cases of the broad-winged hawk). During these optimal conditions, birds travel through southern Ontario, and congregate on the north shore of Lake Erie, especially during winds that push the birds south along the north Lake Erie shoreline.

Although thermals only form over land, they do distort and actually drift over the surface of the water with the help of wind, making it appear that kettles are forming over the water. As migrating hawks are forced to cross the Detroit River, they can lose altitude and are often seen gliding out of a thermal to reach the Michigan mainland.

WEATHER

Bird migration is weather dependent, and many significant passages of raptors occur only after suitable weather conditions. The timing of weather fronts is critical for the development of large raptor flights. Factors such as wind direction, wind strength to congregate birds on the north shore of Lake Erie, formation of thermals from warm, sunny days are important. Flights are ideal for many species following the passage of a cold front and winds that push birds along the north shore of Lake Erie.

RAPTOR COUNT AND POPULATION

Due to the tremendous effect of weather conditions on the number of raptors that pass through the Detroit Rivermouth, we cannot make any conclusions about the population trends of these raptors from the data collected. However, it is important that we can report clearly on our count numbers and the amount of effort expended each year so that data from here can contribute to the many other sites that monitor migrating hawks, eagles and falcons. This information empowers larger analyses on the trends in eastern North America.

METHODS

Three count locations have been used since 1991. Datasets show counts for each location individually, however counts are lumped together for analysis. Birds counted at Lake Erie Metropark and Pointe Mouillee State Game Area are not double-counted. The figures presented below show the trends of the count data with Lake Erie Metropark boat launch and wavepool and Pointe Mouillee State Game Area lumped together. The wavepool was used in place of the Lake Erie Metropark boat launch until the late 1990s. Only birds that are actively migrating are counted. These birds must pass behind the counter and not turn back towards the Detroit River to be counted.

CONCLUSIONS

It is important to acknowledge that these trends do not represent population trends, per se. The variables that effect migration, in particular, weather and the nature and timing of migration of each species (how dependent each species is on a particular weather), do not allow population trends to be deduced from these data over such the short span of 18 years. However, we can conclude where changes have been most evident in the count data itself, and it is then important to view this data with many other monitoring sites and the curent scientific literature to explain what may be occurring.

THE FUTURE

Consistent coverage by trained raptor counters is important. A running count of each species will provide the clearest picture possible of the trends at this particular site. A comprehensive report on the nature of migration at these sites will be completed by August 2010.

Acknowledgements

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THE DATA

