Strength In Numbers

MULTIPLE WATCHSITES IMPROVE MONITORING EFFORTS

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This spring, Hawk Mountain will complete an analysis of 30 years of hawk counts from seven watchsites in eastern North America. The analysis is the first step in a continent-wide system for monitoring raptor populations on a regular basis.

Population monitoring consists of making regular, repeated measurements to detect changes, or trends, in population size. Unfortunately, most raptor populations are too large and dispersed to count every bird. To effectively monitor birds of prey, we must be able to representatively sample or "index" raptor species. Doing so allows us to identify true declines or increases, beyond the normal limits of short-term fluctuations. It also can help us assess the impact of our conservation efforts.

There is ample evidence that migration counts can serve as indexes for raptor populations. Working with our conservation partners, we have developed new methods for doing just that. The next step in realizing our goal of a continental monitoring network consists of combining counts from watchsites and identifying patterns in population trends.

Why are data from multiple sites necessary? Consider the northeastern United States and eastern provinces in Canada. At any watchsite in this region, counters see only a sample of the total birds.

Watchsites like Hawk Mountain probably count birds originating from the same specific geographic area each year. Although fluctuations in the number of birds counted here may be representative of the entire population, it is also possible that they are not.

The accuracy of our analysis then improves as we add watchsites covering a wider geographic region and representing a greater sample of the population.

In the spring 2005 edition of the *Hawk Mountain News*, I compared trends for the American kestrel at Hawk Mountain Sanctuary to those for Cape May Point, New Jersey. This comparison showed a significant decrease in kestrel numbers at Cape May but no strong evidence of long-term change at Hawk Mountain. Now that six watchsites are analyzed (see map), I can report in greater detail on the fate of the American kestrel in northeastern North America.

Kestrels have decreased 3.1 percent annually since 1974 at Lighthouse Point, Connecticut, and 3.3 percent annually at Montclair, New Jersey. I have refined the previous analysis of Cape May Point, yielding a new estimate of a 3.9 percent annual decrease since 1976. Re-analysis of Hawk Mountain counts shows a 1.6 percent annual decrease since 1974. Moving farther west, no significant long-term trend is apparent at Waggoner's Gap, Pennsylvania, or Holiday