

Acadia’s Hawk Watch: Citizen Science, Twenty Years and Counting!

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Started in 1994, Acadia’s Hawk Watch is the longest established Hawk Watch site in the far northeast corner of the United States, contributing to an important continental picture of raptor abundance and phenology, and contributing to numerous scientific studies. We are just starting to explore 19 years of data to understand variation and changes in the numbers and timing of raptor migrations at this important location.

Methods

“I have a bird.” From mid to late August until mid-October, volunteers and staff make daily observations from 9am until 2pm, weather permitting, with the help of passing visitors (average 98/day). Every hour, we record weather conditions, such as wind direction and speed, temperature, humidity, barometric pressure, cloud cover, visibility, and precipitation. We also record every raptor seen. We actively scan for migrating birds using naked eye or binoculars. We identify a bird by it’s shape, size, flight pattern, color, body proportions, and detailed colored markings.

Acknowledgements

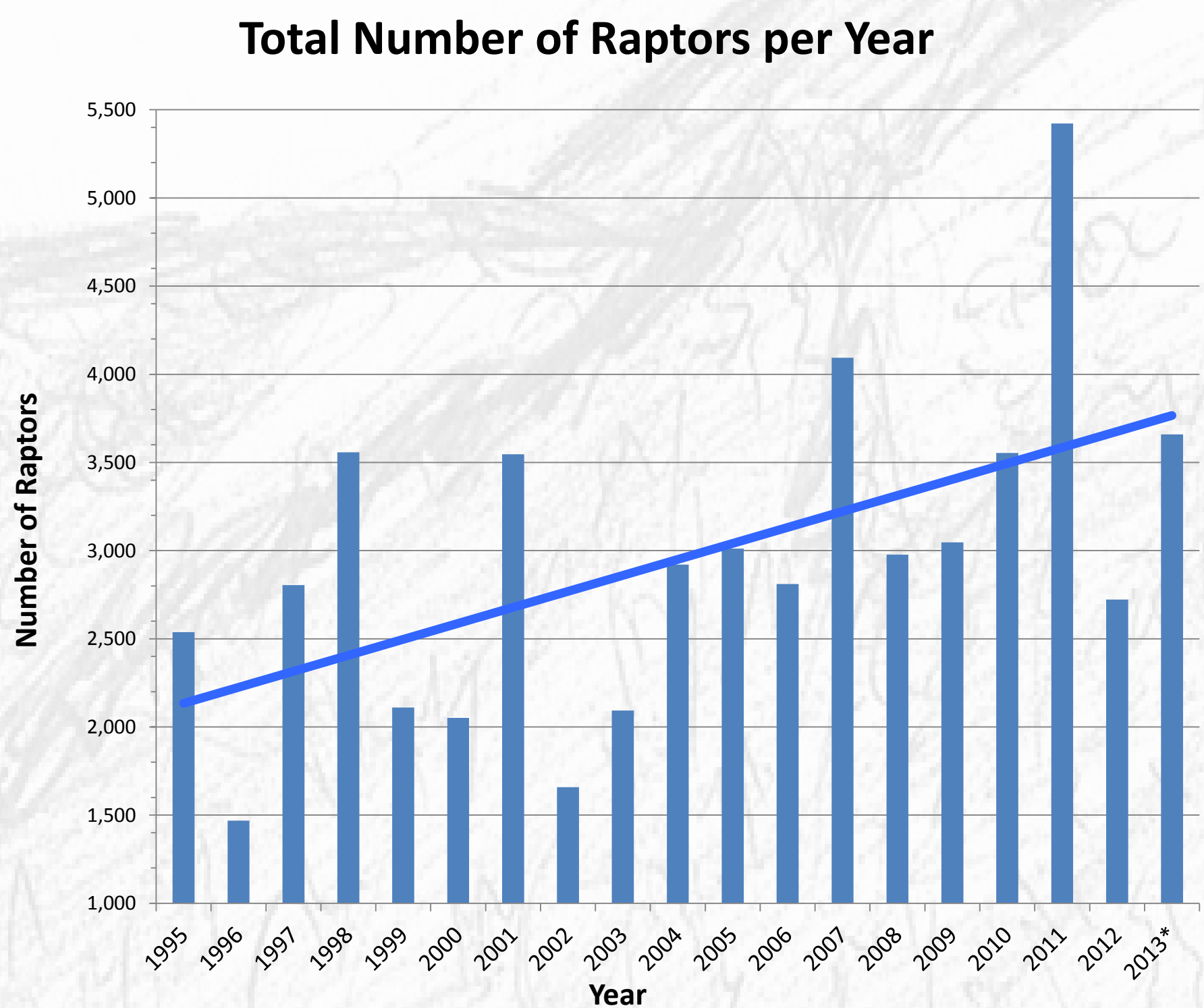
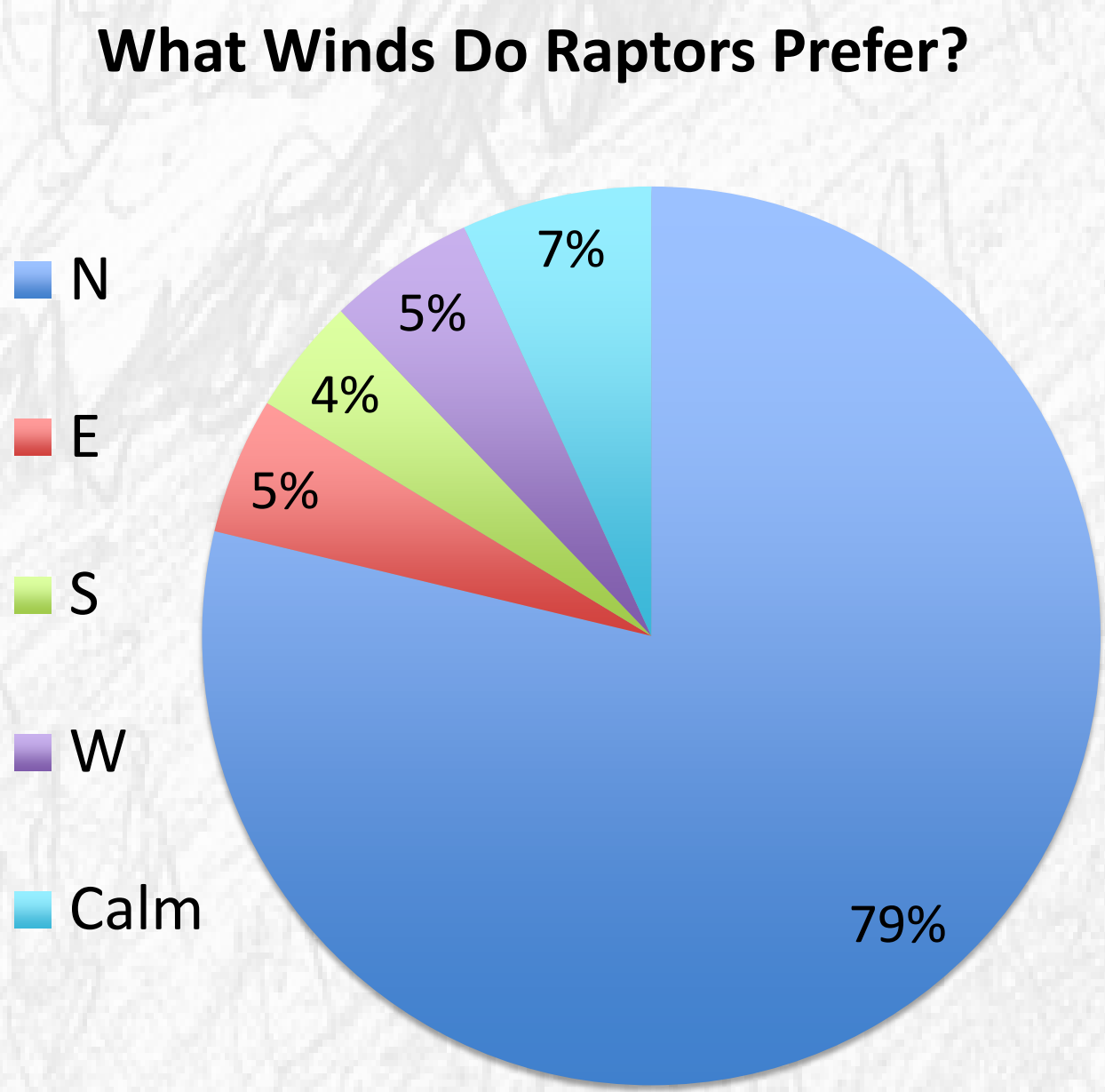
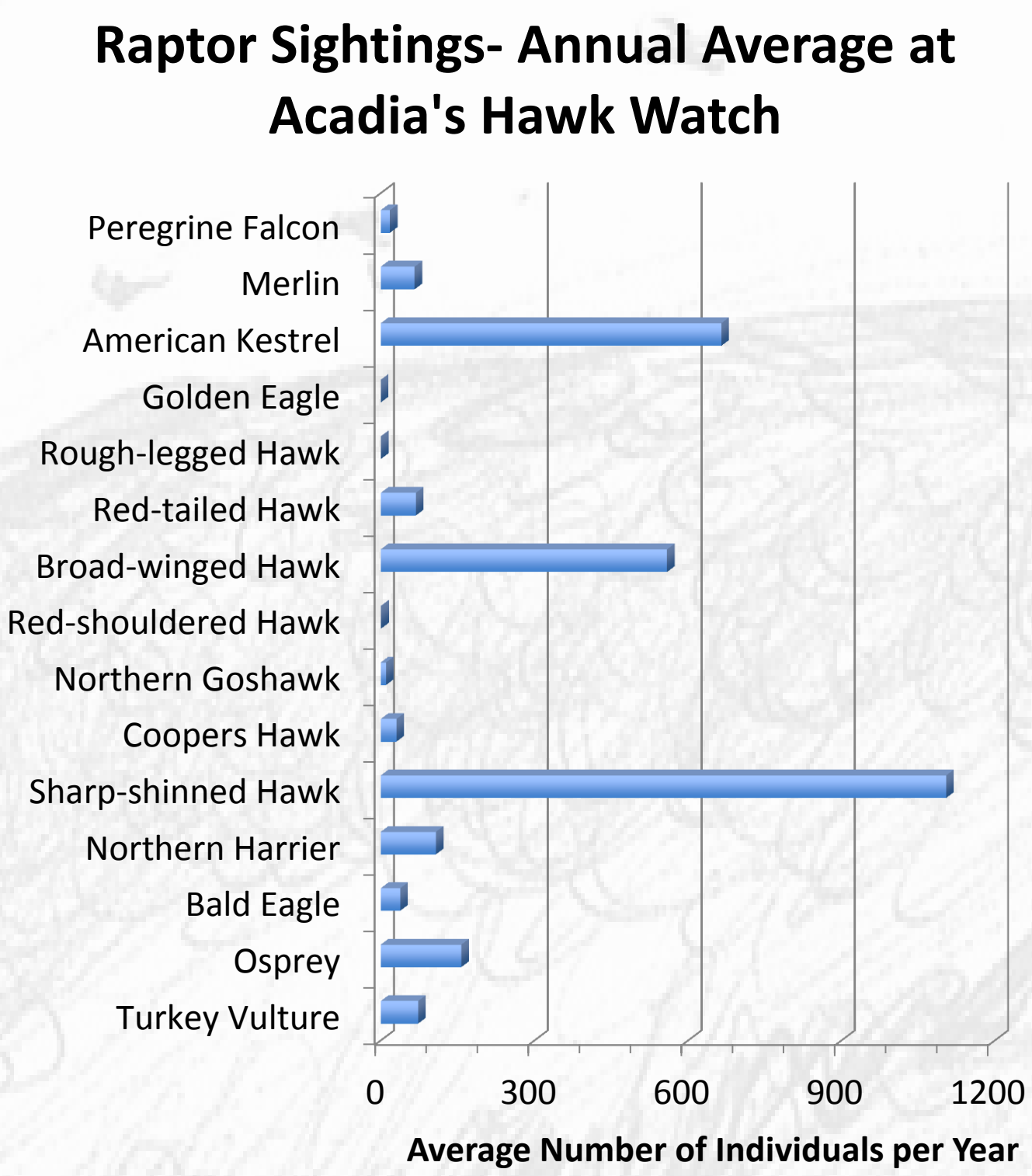
The National Park Service and Schoodic Institute would like thank the many rangers, interns, volunteers, and recurrent visitors that have dedicated countless hours of their time and passion to Hawk Watch. They have traveled from near and far, repetitively, to share their knowledge and skills no matter the time or conditions. Their effort is greatly appreciated.



Photo credit: National Park Service/Kristi Rugg

Results

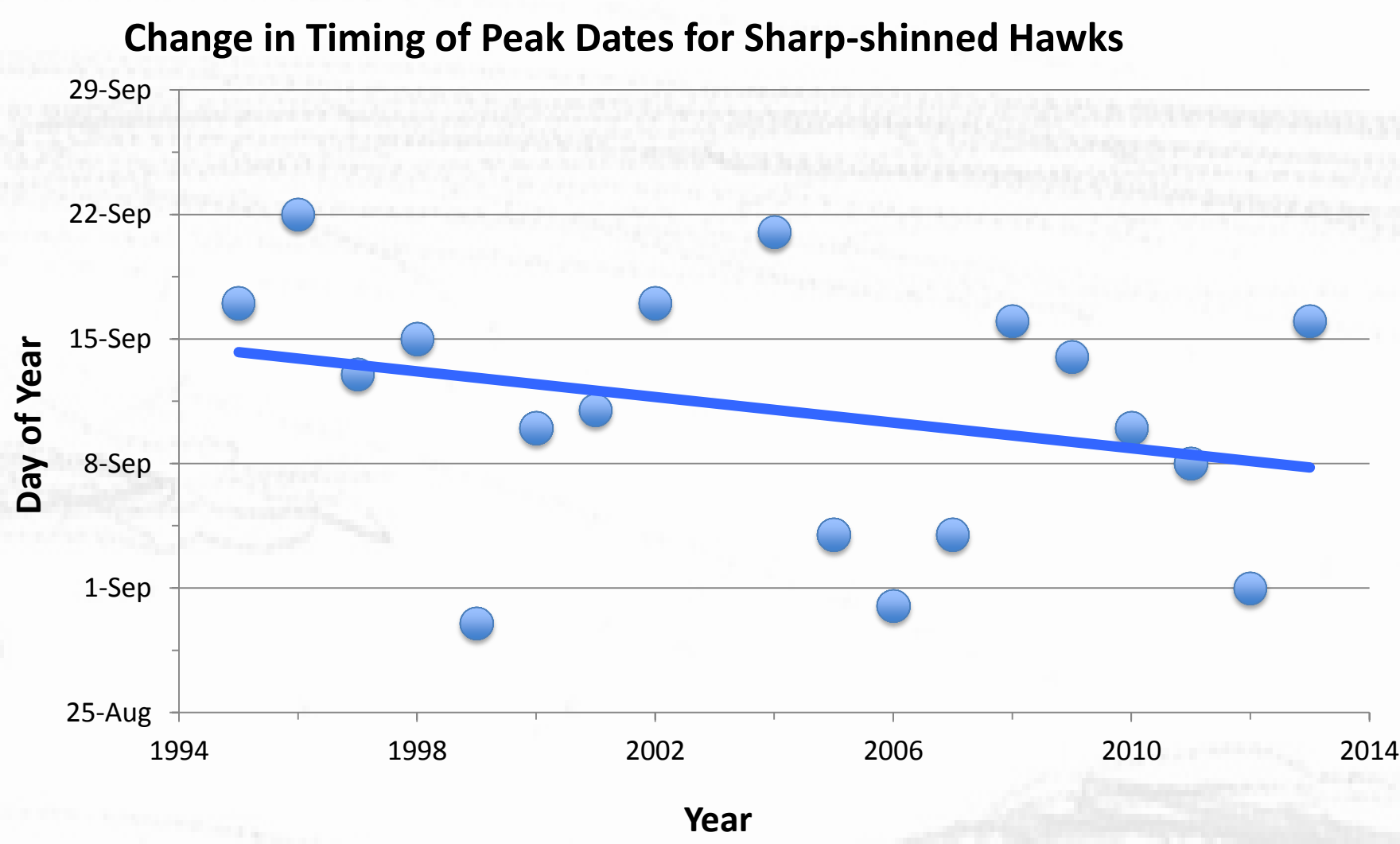
In Acadia, we routinely see 13 species and an average total of 2,950 raptors each fall migration season. Because we are not out every day and miss the very beginning and end of the season, this does not reflect the full number of raptors migrating through Acadia. Though statistical data analysis is not complete, trends indicate that raptor numbers are increasing over the last 19 years for most species. However, the American Kestrel and Cooper’s Hawk appear to be declining in numbers.



Raptors are energy efficient flyers, using the best winds to push them south. In particular winds from north, northwest, and northeast generated the highest count days, including the largest day count on September 17, 2011 when we observed 3,200 birds on a wind out of the northwest.

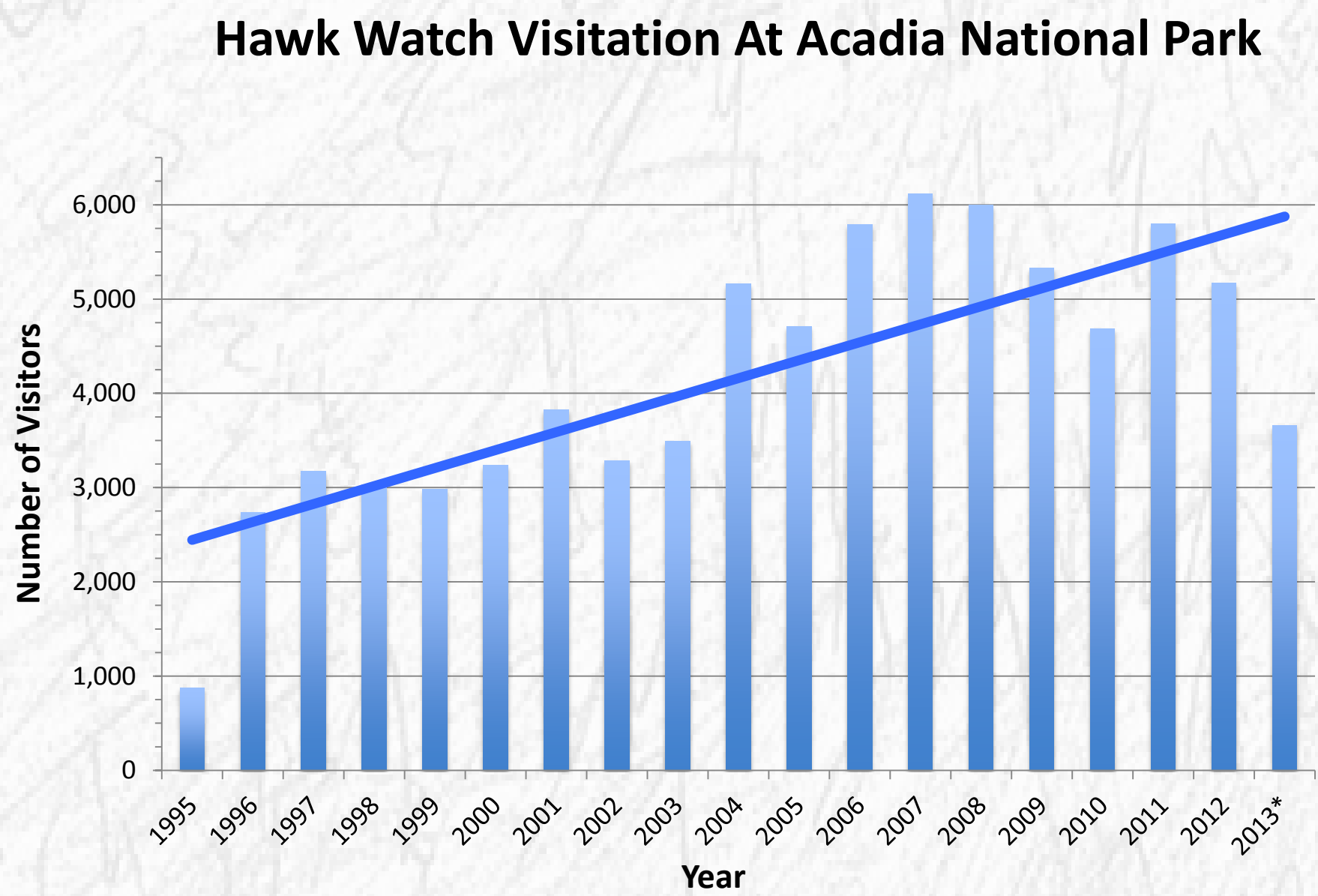
Preliminary Trends

The timing of raptor migrations appear to be changing. Some species are departing for the south earlier, like the Sharp-shinned Hawk; some are departing later, like the Osprey or Northern Harrier; and others show very little change, like the falcons.



Citizen Science

In 20 years, 50 trained park rangers, interns, and volunteers engaged 79,042 visitors to spot, identify, and count 56,045 raptors at Acadia’s Hawk Watch. This collaboration of science-based data collection and interpretation make this program accessible to all visitors and the local community, and visitation responds accordingly.



Conclusion and the future

Hawk Watch represents Acadia’s longest-running citizen science program, one we plan to continue into the future. Looking forward, we will use the data to assess changes in the numbers and timing of migrations, and test how they relate to weather conditions and changes in prey and habitat conditions and phenology.