

Hawks in Suburbia

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I wish I had a quarter for every time someone came up to me and asked, “You know I see a lot more of those red-tailed / “chicken” hawks than I can remember XYZ years ago. Are there more of them around?”

I figured it was time to look at the data and I spent a couple of hours on a Saturday (when I should have been out birding) to see if I could shed light on the question. I started with eBird but I’m a relatively new “eBirder” and couldn’t quite figure out how to get the data that I wanted. Then it dawned on me – let’s look at historical data from one of the longest bird data gathering projects in North America; **National Audubon Society’s Christmas Bird Count**. Citizen scientists have been partaking in this annual survey of birds for over 110 years. What is the NAS Christmas Bird Count and how is it conducted? Let me quote directly from the National Audubon Society website:

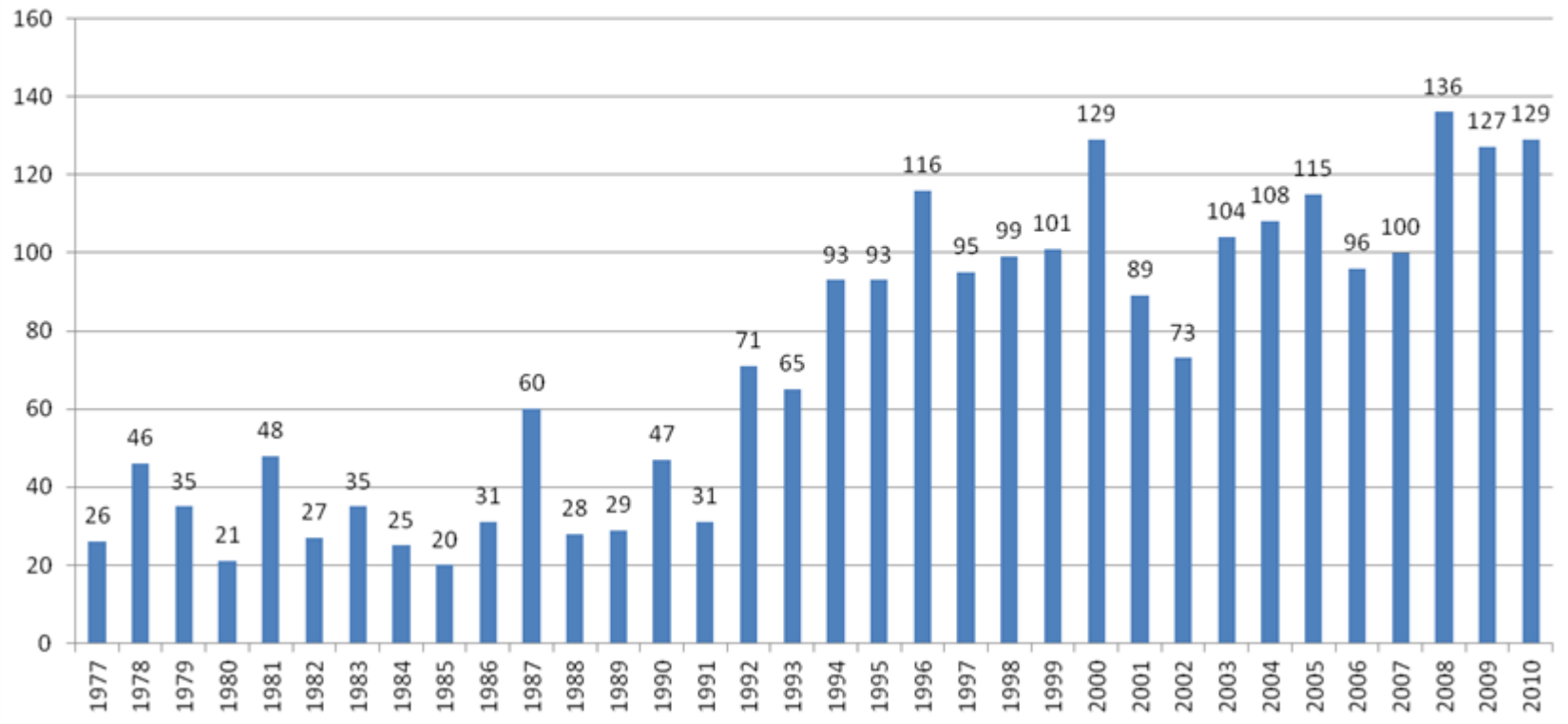
“The Christmas Bird Count (CBC) is a long-standing program of the National Audubon Society, with over 100 years of citizen science involvement. It is an early-winter bird census, where thousands of volunteers across the US, Canada and many countries in the Western Hemisphere, go out over a 24 hour period to count birds.

The first CBC was done on Christmas Day of 1900 as an alternative activity to an event called the “side hunt” where people chose sides, then went out and shot as many birds as they could. The group that came in with the largest number of dead birds won the event. Frank Chapman, a famed ornithologist at the American Museum of Natural History and the editor of Bird-Lore (which became the publication of the National Association of Audubon Societies when that organization formed in 1905) recognized that declining bird populations could not withstand wanton over-hunting, and proposed to count birds on Christmas Day rather than shoot them.

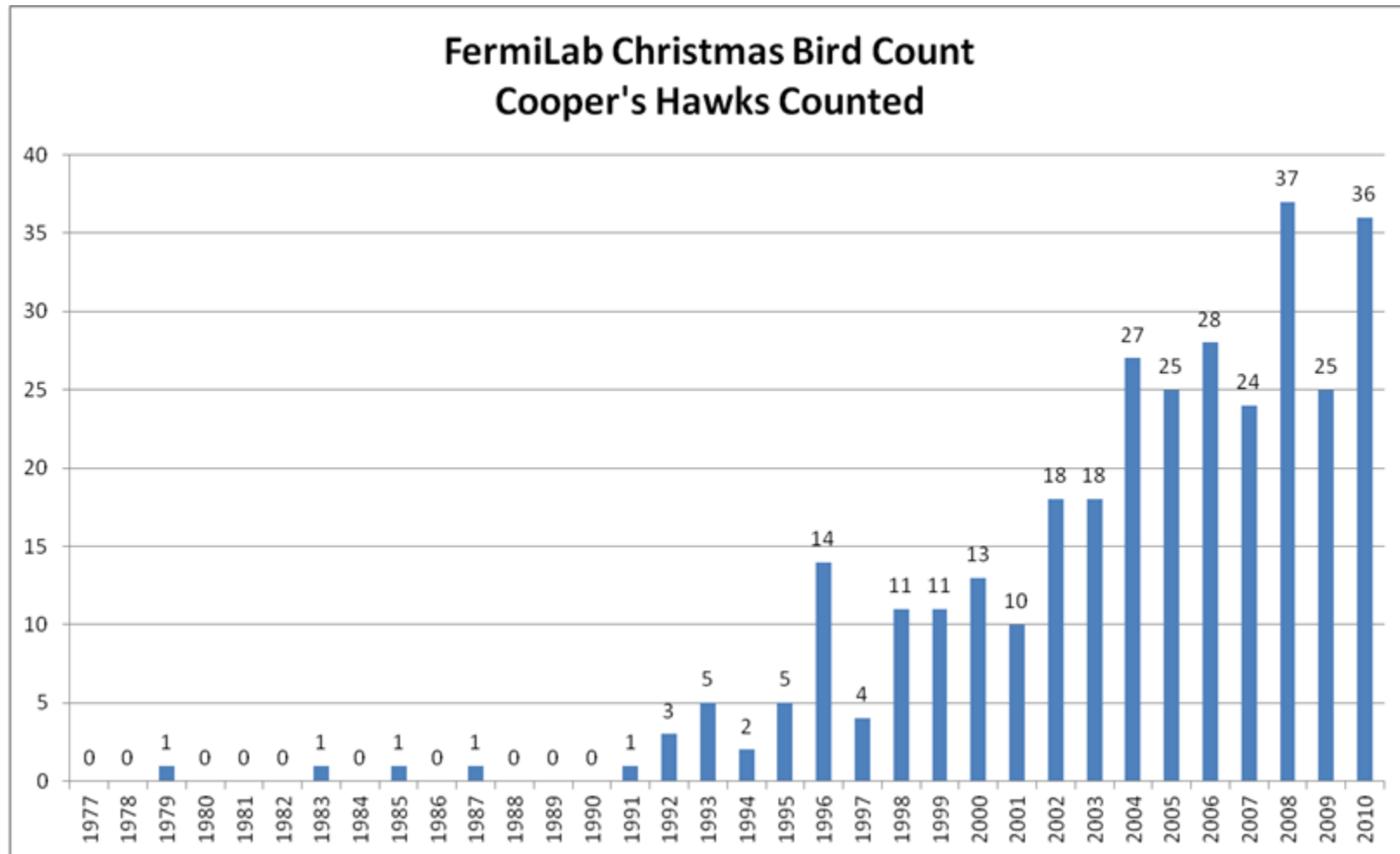
Count volunteers follow specified routes through a designated 15-mile (24-km) diameter circle, counting every bird they see or hear all day. It’s not just a species tally—all birds are counted all day, giving an indication of the total number of birds in the circle that day. If observers live within a CBC circle, they may arrange in advance to count the birds at their feeders and submit those data to their compiler. All individual CBC’s are conducted in the period from December 14 to January 5 (inclusive dates) each season, and each count is conducted in one calendar day.”

Now before I present the results, let me offer that this represents one data gathering effort and by no means should be considered *THE* definitive answer to the question, but the data is interesting. The charts below highlight Christmas Bird Counts going back to the winter of 1976-77, as far back as the NAS database shows data for the FermiLab count circle. Here goes:

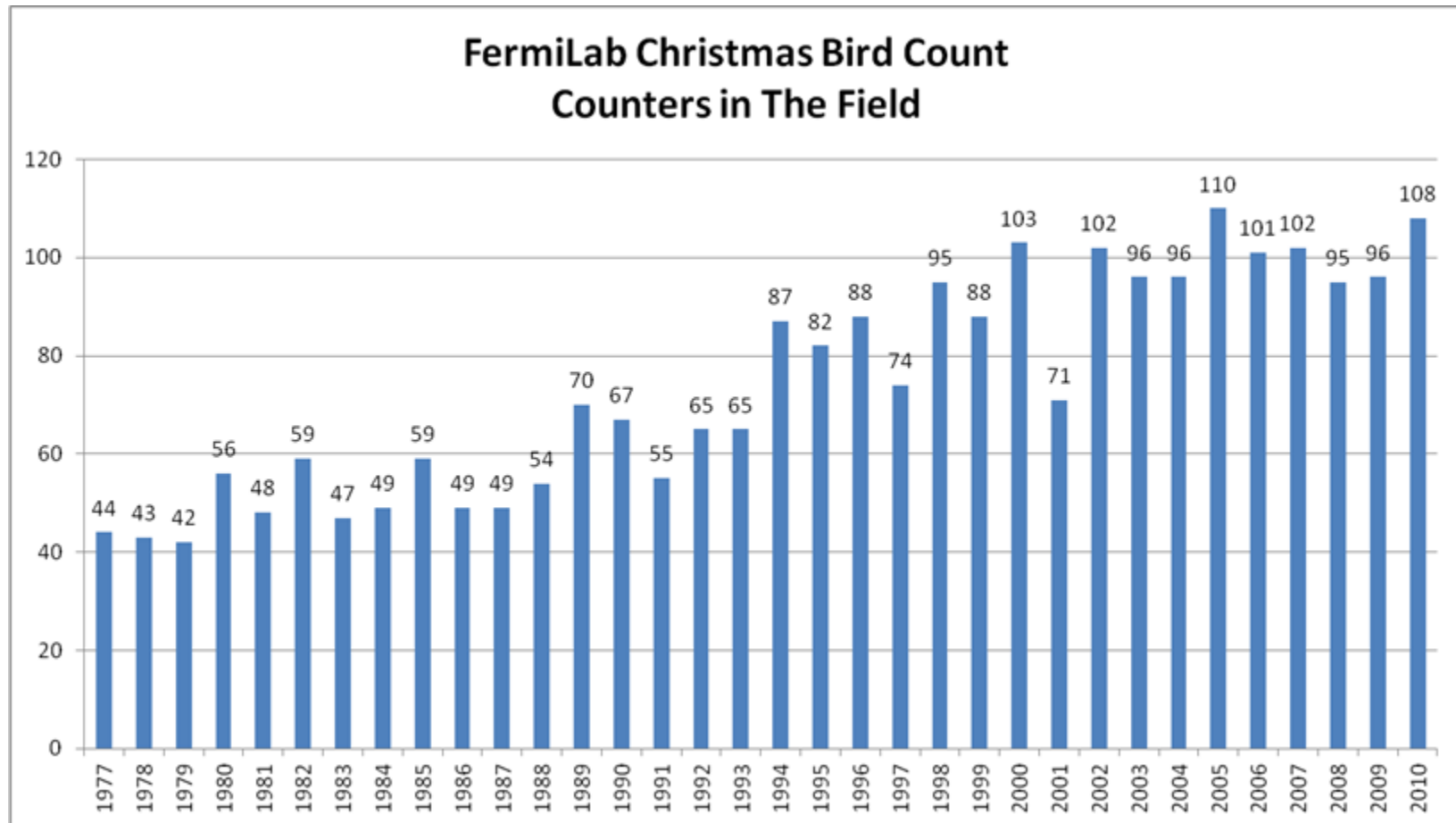
FermiLab Christmas Bird Count Red-tailed Hawks Counted

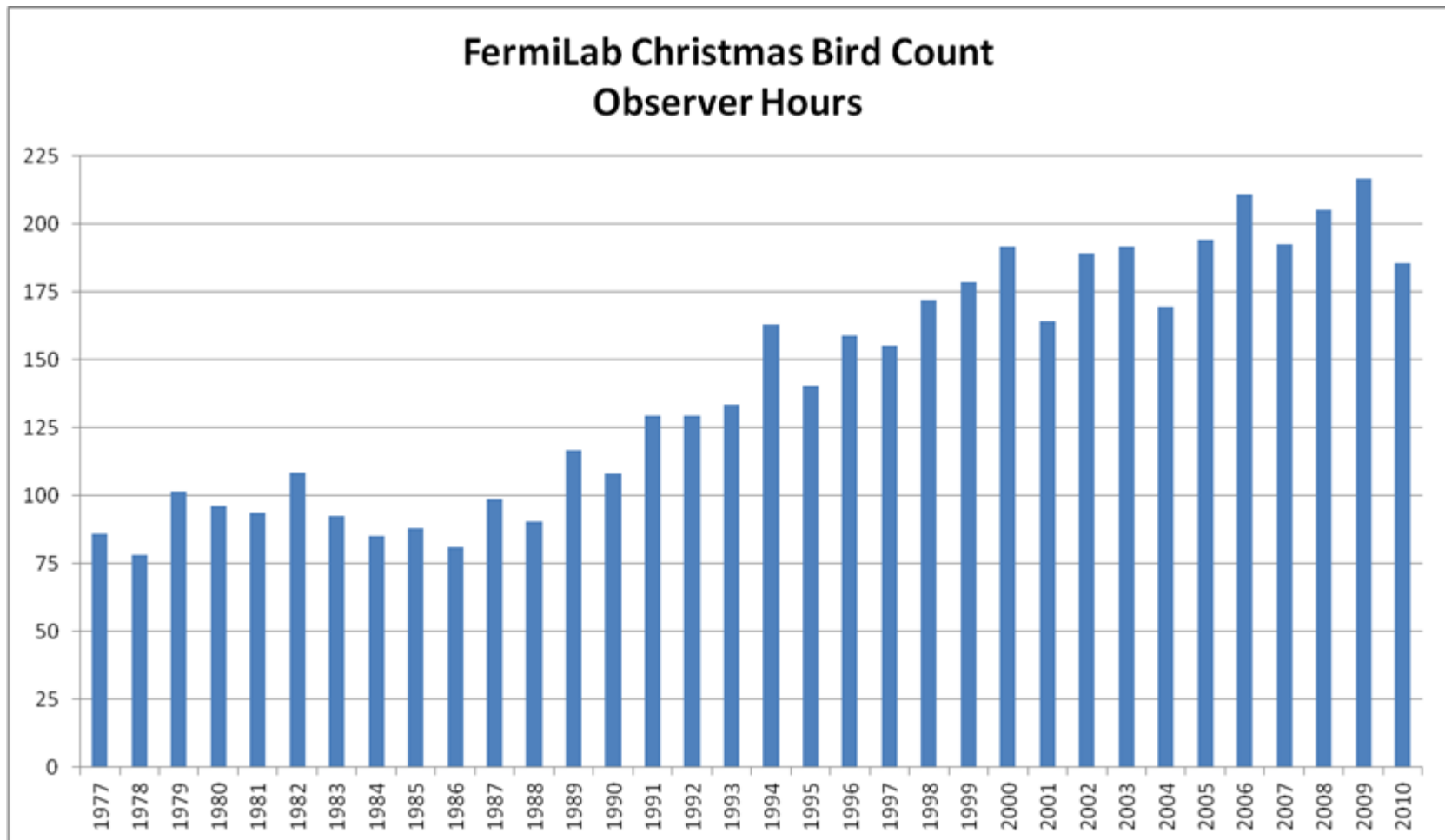


Here's a look at the observed Cooper's Hawks:



WOW...that's great news! Red-tailed Hawks and Cooper's Hawks, particularly in the last decade are increasing by leaps and bounds, right?? Well, let's not break out the Champagne bottles quite yet. Let's look at the next series of charts:





Notice the increase in both the number of observers in the field AND the number of observer hours. Since the early 90's there are more observers spending more time in the field. (Probably coinciding with the uptick in observers and number of hours in the field was the creation of the **DuPage Birding Club** in the late-1980's which provides a number of participants for the FermiLab and Morton Arboretum/ Lisle count circles.)

I shared the above data with several birding friends on my e-mail distribution list and birder extraordinaire', **Bob Fisher** made a couple of astute observations based upon the above data. First, he suggested looking at the number of RTH's observed per observer hour. This analysis would help to normalize the larger number of observers/ hours in the later years of this 34 year observation period. If we look at the average of each year's Red-tailed Hawks counted per observer hour over 10-year rolling periods, here's what the data indicates:

RTH's per Observer Hour

1977-1986 0.350035

1987-1996 0.483949

1997-2010 0.575052 (14-year period)

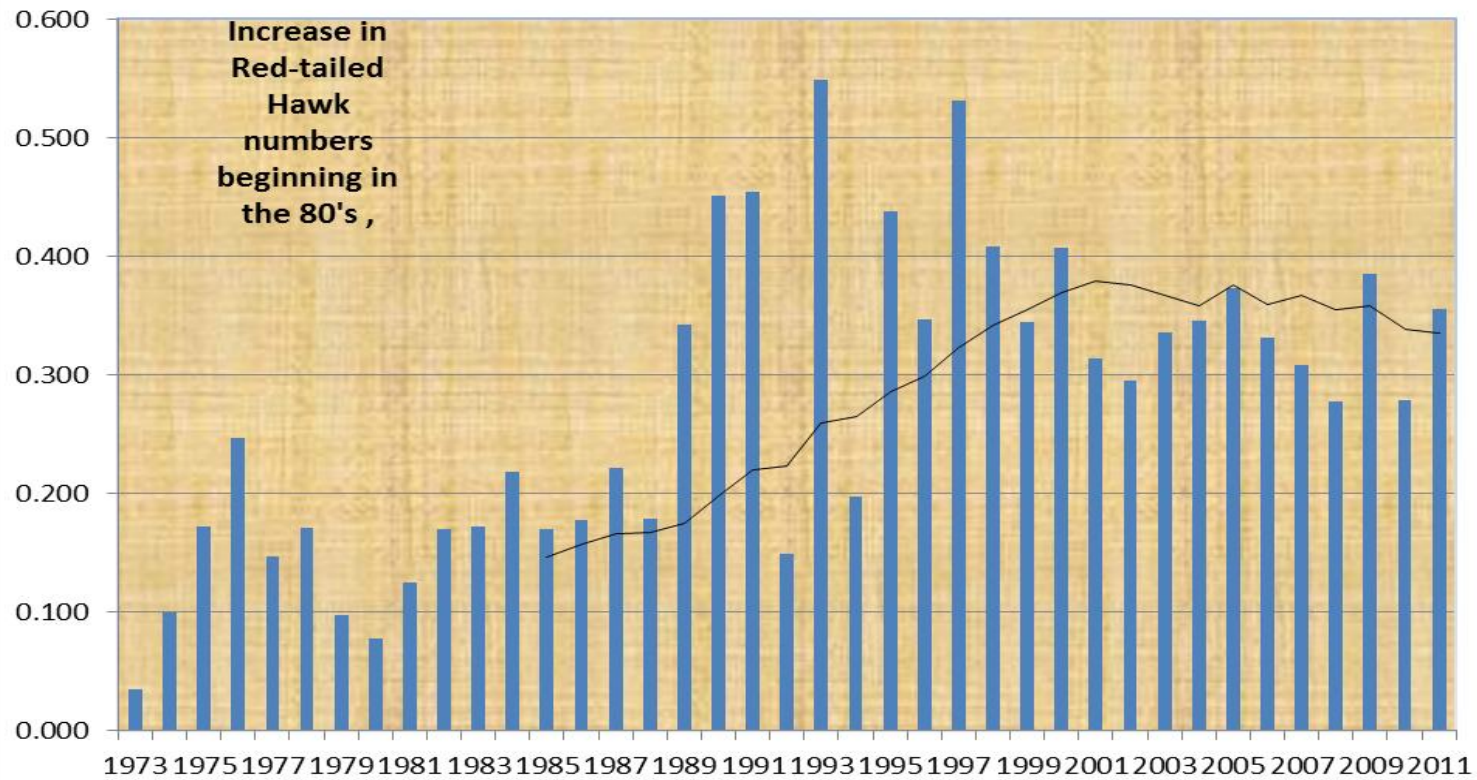
What does this all mean? I'll quote directly from Bob who pointed this out to me and states it most succinctly:

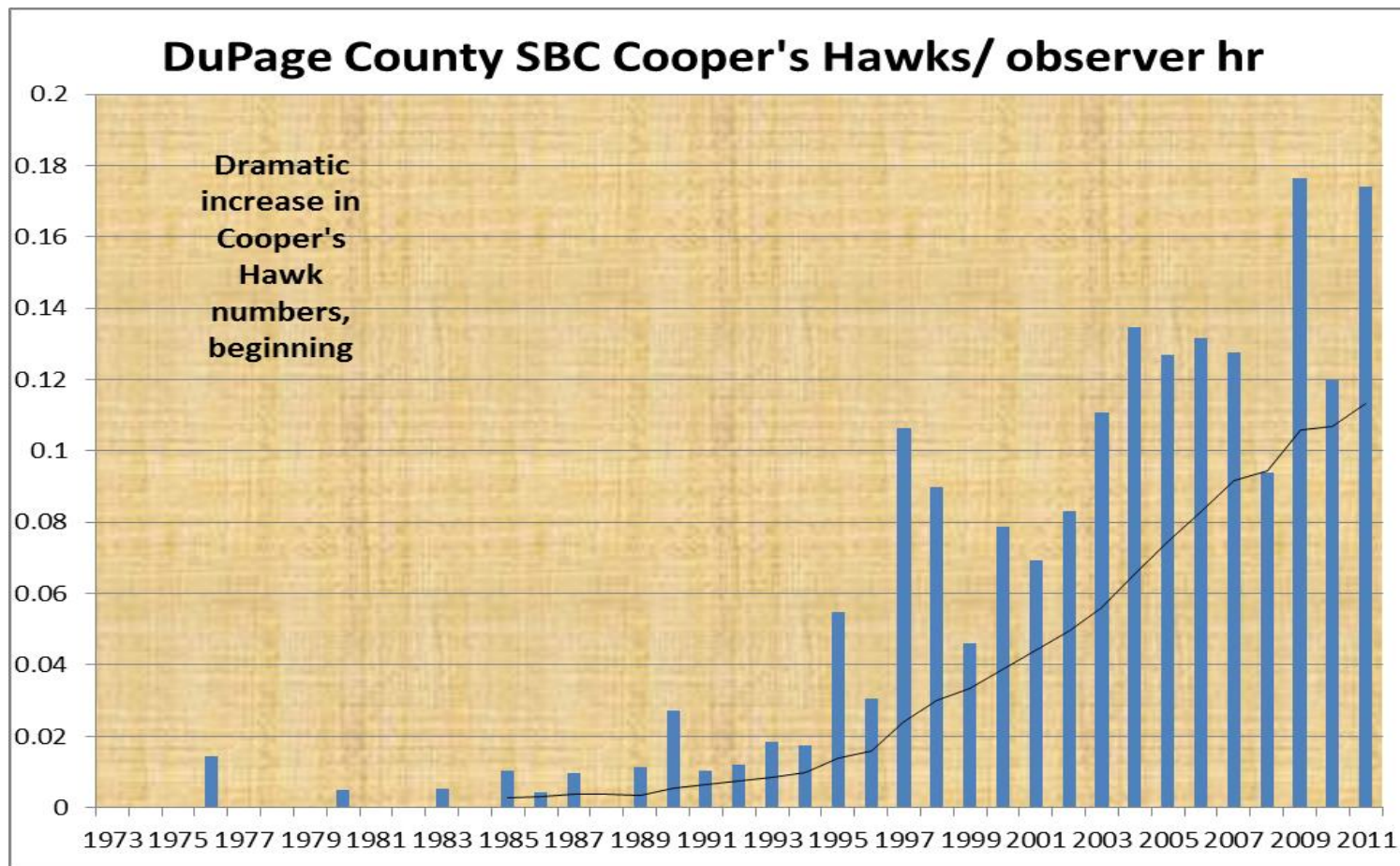
“That converts to a 64%* increase in the frequency of occurrence for Redtails. I suspect that's a statistically significant difference, supporting the proposition that Redtails are present in higher numbers during today's winters than they were 30 years ago.”

(*I revised Bob's originally quoted figure of 62% to reflect the 14-year period I displayed above.)

Although the above data are interesting, the National Audubon Society Christmas Bird Count represents one dataset. Are there any other historical studies that might corroborate or refute this study? Thanks again to Bob Fisher who, provided the following two charts from **DuPage County Spring Bird Count** data that look at Red-tailed Hawk and Cooper's Hawk sightings back to 1973:

DuPage County SBC Red-tailed Hawks/observer hr





The black line you see in the two charts above are 13-year moving averages. It would appear that based upon two historical bird counts, one held in winter and one held in spring, that both Red-tailed Hawks and Cooper's Hawks are increasing in DuPage County. This is evident even when we attempt to "normalize" the greater number of observers in the field in recent years.

There are a number of factors that may have lead to the increase in numbers of Red-tailed Hawks and Cooper's Hawks sighted at Christmas and Spring Bird Counts in the past 3 decades. These factors include, but are not limited to:

- In 1972, birds of prey were added to the Migratory Bird Treaty Act of 1918. This made it a federal crime to take raptors.
- Recent milder winters have led to Red-tailed Hawks either *not* migrating or not migrating as far south in winter

- Cooper's Hawks are well suited to suburbia. There are more people feeding birds and recent landscaping practices use more trees and shrubs which provide both a source of food (birds) and the appropriate cover for these bird hunters to ambush their prey.
- The effect of banning the use of DDT in our country
- The ability of both species to "adapt" to our conversion of the landscape and "still make a living" (I'm not using the term "adapt" in the strict evolutionary sense.)
- The ability of both species to "adapt" to nearby human presence and disturbance.
- More CBC and SBC participants with increasing bird identification skills covering a greater geographic area.

I think these factors offer a framework for answering what many would see as an increase in Red-tailed Hawks (and to a lesser extent, Cooper's Hawks) in our area. Want to check out NAS historical CBC data on your own? Follow this link:

<http://birds.audubon.org/historical-results>

I am grateful to Bob Fisher, president of the Illinois Ornithological Society, for his guidance and assistance with this article.