

Conservation Matters

A monthly column focused on conservation education, as the result of collaboration among several area conservation commissions and organizations. If your town's commission or conservation organization would like to contribute articles, please contact Jessica Tabolt Halm jesshalm78@gmail.com

Title: How's the Weather Today?

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How's the weather today? That's a much different question than asking about the characteristics of a climate. I like to relate weather and climate to a pitch and baseball game.

Imagine a pitch (or even an inning) in a baseball game. A strike to make the count 0-1 does not mean the batter will strike out, and certainly does not mean the batter's team is going to lose the game.

A popular misconception ties the weather of one particular day with the climate as a whole. One day or week, or month does not define a climate, much like a called strike in a baseball game does not define the winner of the game. So, someone might point to a -20 January day or a 65 degree July day and utter something akin to "we could sure use some of that global warming today!" Most baseball fans do not think the game is over when the first batter gets behind in the count. Likewise, an abnormally warm or cold day does not define a climate.

Rather, the climate is defined by summarizing decades' worth of weather data, much like a baseball game is nine innings long. In order to understand fundamental changes to climate, long-term records are necessary to decipher what has happened and to provide input as to what may happen.

As attention to global climate change ramps up, with increases in wildfires, flooding, and unusual weather patterns across the planet, the scientific, business, and political communities around the world are forecasting and taking note.

But what does this mean for those of us living in interior New Hampshire? I wondered what is happening to climate in Grafton County? What do we already know? Who might know it?

One such place that keeps detailed records is in our back yard – the Hubbard Brook Experimental Forest in North Woodstock. Since the 1950's, detailed weather records have been kept as part of a forest ecosystem study. Hubbard Brook lead scientist Scott Bailey notes Hubbard Brook's role in collecting vital data. "Long term study sites where the same measurements are made every day for years and decades allow us to know how climate and the ecosystems that depend on it are changing."

Here are some of the findings from our own back yard at Hubbard Brook.

- Average annual air temperatures have warmed an average of 2.6 degrees over the last 60 years.
- Winters have warmed more than other seasons.
- Daily minimum temperatures (usually night-time lows) have warmed more than daytime highs, but both have increased.
- There are 10 fewer days below freezing now than 60 years ago.
- Precipitation has increased by an average of 12 inches per year. Summer precipitation has increased more than any other season.
- Heavy precipitation events are increasing. On average, there are seven more days a year of rainfall exceeding $\frac{3}{4}$ of an inch.
- Streamflow has increased. This indicates the additional precipitation has mainly been transferred to streams.
- Spring runoff has occurred about a week earlier.
- Snowpack has decreased and the average number of days with snow on the ground has decreased by 24 days.
- Duration of lake ice cover has decreased.

Since we are currently in the winter months, I thought I would dig deeper into the details and implications of the changes to winters we are experiencing and can expect moving forward.

Winter recreation is not only important to our immediate area, but also important to the mental health of those living here in these short winter days. With more rain and less snow, ski areas rely more on snowmaking. However, other winter sports like snowmobiling and Nordic skiing suffer from a shallower snowpack, on average about a foot less than 60 years ago.

Much as we occasionally grumble about winter, it is a key economic driver for northern New Hampshire.

Logging operations face more mud days and a shorter time period with frozen ground that loggers depend on to move their heavy equipment through the forest. In addition, the warmer winters allow previously absent invasive forest pests to survive here.

On first blush, having a warmer, shorter winter may be seen by some as a good thing. But these fundamental changes suggest that here in Grafton County, and elsewhere, tourism, forestry operations, outdoor recreation, and maple syrup production may be negatively affected.

For further reading, the data used in this column are referenced from two excellent publications from the Hubbard Brook Research Foundation: “Confronting our Changing Winters” and “Facts about Climate Change” both available at <https://hubbardbrook.org>.



Photo caption: Snowshoers and snowmobilers have, on average, about three fewer weeks with snow on the ground than 50 years ago.