

Weather Today, Climate Tomorrow

Hi, I'm Jesse Schomberg. My colleague Hilarie Sorensen is here with me today. Hilarie is Minnesota Sea Grant's Climate Change Extension Educator. Welcome back to The Sea Grant Files, Hilarie.

Happy to be here...

So, Hilarie, when you were here last April you talked about the Vagaries of Variability, Climate and Weather and we've certainly witnessed some of those vagaries playing out over the planet lately. How would you say the Upper Midwest is faring compared with other parts of the United States and the world?

Well we have definitely been seeing a lot of extremes going on in many parts of the country and world from the drought in the southwest, Hurricane Joaquin and flooding in the east and extreme rainfall causing flash floods along France's southeastern Mediterranean coast just to name a few... August was earth's warmest on record in the last 135 years. In the northland September has been 6.6 degrees above normal according to NOAA so we have definitely experienced a very warm September locally (source: NOAA)

Across the Great Lakes Region June through August witnessed a range of weather including hail, high winds, heavy rainfall and tornadoes in early August. We have also had above average water levels in the Great Lakes and current water level projections from October to December anticipate above average water levels for Lake Superior as well as above normal temperatures throughout the fall.

Question on El Nino, upcoming winter predictions... relationship with climate change?

Due to El Nino the equatorial Pacific ocean has had warmer than average sea surface temps and based on previous years, el Niño winters tend to be warmer than normal in the Great Lakes region with the potential for less snow and reduced ice cover. NOAA is predicting a warmer winter for the northland in part due to El Nino Pacific Ocean warming. Also predicted is a drier than normal winter through the months of December through February (Source: GL Quarterly Climate Outlooks)

Question about the possibility of "water refugees" from the southwest coming to the GL region

Someone living in AZ asked me this question last year wondering about the potential for increased pressure on Great Lakes water resources from places like Southwest if drought conditions persist. It's definitely interesting to think about water quantity and access issues that we currently have in many parts of the country and world and seeing those increasing in the future and what that might mean for GL communities because of our access to fresh water. I know that many folks are currently exploring water policies and their impact on water supply and water management in the southwest under growing climate uncertainty.

People are also asking about northern forests and their fate. What type of trees might people in the Arrowhead Region of Minnesota plant to prepare for what climate experts are saying is occurring and likely to occur moving forward

According to the National Climate Assessment projections for forests in the Great Lakes region, many of our tree species will shift their ranges to adapt to a changing climate. Current and projected future distribution of forest types in the Midwest show habitats for white/red/jack pine, maple/beech/birch, spruce/fir and aspen birch forests projected to greatly decline from northern forests especially under higher emissions scenarios. Oak forest types are anticipated to expand. Some forest types that are dominant now may still be present but in reduced quantities. It's hard to say for sure because even within a certain forest type there will be different responses to climate change but generally that's what we are seeing. (Source: NCA 2014)

Water impacts for this area: supply, quality, impacts on species

We are definitely seeing impacts from a changing climate to our water resources in both quantity, quality and ecosystem impacts including impacts on biodiversity, productivity and shifting disturbance regimes. For our water resources there are concerns about groundwater recharge with the risk to small streams and temporary wetlands drying under reduced soil moisture and rising air and water temperatures. Water quality impacts from increased flooding and erosion from intense storms is also a big risk to local water resources. It's also important to note that climate change does not happen in a vacuum and tends to exacerbate other environmental problems including water quality and species impacts such as increased sedimentation and nutrient loading from erosion and runoff during heavy rain events.

What can folks do in this region to prepare for a different climate?

One main thing is to not become overwhelmed and panic. Although it is a large complex issue that we are facing, there are many practical steps to be taken at the individual and community level through education, events, and participation in the political process to stay informed about the current trends and strategies to reduce our carbon footprint through land use planning, energy conservation, waste reduction, transportation planning, water resource protection and management including things like green infrastructure implementation and other measures to store water and to make sure that climate stays on the radar of decision makers.

Thanks for joining us, Hilarie. Hilarie, Minnesota Sea Grant's climate change specialist, will be presenting at the River Talks speaker's series, on October 28 at Barker's Island Inn Restaurant in Superior, Wisconsin at 7 pm. You are all invited to come to Hilarie's talk.