Climate Change is Local

By Gary Beverly (April 21, 2020)

I have lived north of Prescott for 46 years. It used to snow here; now hardly ever. We used to have rains; now much less. And it's hotter these days. That's how climate change looks here, to me.

The longer view is more important and difficult to understand. Unfortunately the media doesn't help by representing our climate future in terms of melting ice and rising sea levels, which is true but is not locally relevant. We are far above the flooding coast and melting glaciers are thousands of miles away.

So let's think local: what about our rivers and forests?

Climatologists project that the Southwest will trend hotter and drier, and there are significant concerns about a possible mega-drought lasting decades. Soil moisture will decrease, stressing plant life and reducing aquifer recharge and our essential groundwater supplies. Snowfall will decrease and melt sooner, reducing year-round streamflow. More intense storms will produce runoff surges, increasing erosion and soil loss. Reduced stream flow and higher water demand will cause water providers to pump more groundwater, further stressing our rivers. Bottom line: more dry streams (like the Verde River) and less wildlife habitat.

There is an alarming synergy between increased temperatures and forest health. Higher temperatures make pinon, juniper, and ponderosa pine trees significantly more sensitive to drought mortality. Warmer winters favor bark beetle survival and reproduction, increasing pest populations. Drought weakens the ability of trees to resist bark beetles, so lots of trees die. Dead trees burn easily. Intense thunderstorms with dry lightning may start more fires. Fueled by standing dead and dry trees, intense firestorms can slash across landscapes (for example, the Rodeo-Chediski and Wallow mega-fires), followed by floods and siltation of streams and reservoirs. These fires are so hot and intense that the soil is baked, seeds are destroyed, and the forest will likely not regrow. Instead, forest researchers fear a "type conversion" from forest to chaparral, which can regrow from root crowns and is more fire tolerant.

A projected hotter and drier climate may cascade into an Arizona public lands disaster: we lose our forests and streams. That scenario is possible within a century. For more details, read "A Great Aridness" by William DuBuys.

What to do? Individual efforts are important: Google for "yavapaisierra" to find a list of suggestions. We all need to work hard to mitigate climate change by creating a movement:

> *"Movements are what take five or ten percent of people and make them decisive – because in a world where apathy rules five or ten percent is an enormous number." (Bill McKibben)*

The current administration is working hard to make the problem much worse. Our President has compromised 95 essential environmental rules, withdrawn from the Paris Agreement, weakened the CAFE mileage standards and the Clean Power Plan, increased methane emissions, and promoted fossil fuel drilling and mining. This despite clear warnings by climate scientists that we have only a decade to convert to a renewable energy economy if we are to avoid extreme effects from climate change.

Local and regional efforts are now much more important. Every city and county should work to minimize greenhouse gas emissions. The U.S. Conference of Mayors provides "… guidance and assistance … to reduce the greenhouse gas emissions that are linked to climate change." Over 1060 cities nationwide have signed the Mayors Climate Protection Agreement, including 13 Arizona cities. In April 2017, over 700 citizens asked the Prescott City Council to sign on, but they refused!

We will keep trying… We need to make progress, not go backwards!