

Is the sky falling? Global climate changes and the forests of the Mid Klamath

The dogwoods bloomed twice last year – once in the spring and once in the fall. They have bloomed twice a year for the past few years. While I appreciate the beauty of the white blossoms, I can't help but be concerned about the extra energy that the dogwoods are putting into flowering instead of getting ready for the winter ahead. Global climate change is a likely explanation for this behavior. The Governor's Climate Action Team reported in March 2006 that agriculture, along with forestry, is the sector of the California economy that is most likely to be affected by a change in climate. Is the blooming of the dogwoods a symbol of this change?

There is a certain rhythm to the seasons. The spring dogwood bloom correlates with the return of turkey vultures, lamprey eels and sturgeon. The spring season fades into long summer days listening to cicadas and working in the garden. At some point early in the fall, the seasons click yet again – it is time to fish for Fall Chinook. This season fades into (hopefully) the return of the coho and turkey vultures rounding themselves up in the sky, getting ready for the flight south. Changes in this pattern are jarring. The turkey vultures came back this year well before the eels returned, but just in time to get snowed on. The fall bloom of dogwoods doesn't really signify anything except concern for the global impacts on our local environment.

We've heard it all before: The temperatures are rising, the sea is rising, the level of carbon dioxide in the atmosphere is rising. Is this similar to Chicken Little's hysterical warning that "the sky is falling!" or should we be genuinely concerned? Furthermore, what does global climate change really mean for our day-to-day lives, and, perhaps especially, our generation-to-generation lives.

Temperature influences almost every aspect of the plant life cycle – photosynthesis, respiration, the length of growing season, water use, flowering and fruit maturation. It is reported that during the period 1951 to 2000, the growing season has lengthened by about a day per decade. If the growing season lengthens to a point where it no longer coincides with the life cycle of important insect pollinators, we may lose the productivity of our forests.

Growth rates of weeds, insect pests, and pathogens are also likely to increase with elevated temperatures, and their ranges may expand. In addition to changes in temperature, we are also experiencing an increase in the concentration of carbon dioxide in the atmosphere. The concentration of CO₂ in the atmosphere has risen about 30 percent since the late 1800s. Photosynthesis increases when a plant is exposed to a doubling of CO₂. However, elevated CO₂ levels are also associated with decreased concentrations of mineral nutrients in plant tissues, especially a decrease in plant nitrogen, which plays a central role in plant metabolism. The distribution of species is expected to shift, the risk of climate-related disturbance such as wildfires, disease, and drought is expected to rise, and forest productivity is projected to increase or decrease depending on species and region.

What does this mean for us here in the Mid Klamath? There is no person, scientist, or climate change model that can predict exactly what will happen to the climate in the decades to come. The unpredictability of wildfire, disease and drought make efforts for ongoing forest restoration of utmost importance. As a community we need to be prepared for years of drought and catastrophic wildfire. Our restoration projects should also strive to maintain and restore species diversity and avoid single-species management. In other words, in the face of uncertainty, we shouldn't put all of our eggs in the same basket. Of the myriad of species present in any given forest stand some species will be better suited to the future climate conditions – whatever those conditions may be. Finally, MKWC would like to encourage the community to observe the changes that are occurring in our forest and river and share your observations with others. While a climate change model won't be able to tell us exactly what changes will occur, our observational skills can help us adapt to inevitable change.