

Wyoming urgently needs to adapt to and mitigate the consequences of climate change. A few months ago my column recommended that Governor Mead and his cabinet review “Climate Change in Wisconsin: People and their Environment.” Our 2012 summer and aftermath dictate we follow Wisconsin’s example without delay.

While Wisconsin’s plan can serve as analogy only, not as blueprint, it offers a pattern to follow. For example, warming temps have brought an influx of lyme-bearing ticks to the state; hence, its public-education campaign delineating the health hazards of the insidious disease. Warning signs showing a progression of ticks have been posted in and around all wooded areas.

Wyoming doesn’t contend with a tick problem. It does, however, have pine beetles and the dead trees that have resulted from their proliferation. Veritable funeral pyres exist throughout the state, as “dry” thunderstorms increasingly bring lightning without accompanying rain.

Larry MacDonnell, Visiting Professor at UW, has authored “Western Water Management and Climate Change.” The paper notes that the West has been warming faster than the US as a whole. Western water systems are increasingly under stress.

This means Wyoming must protect its diminishing resources. Quick responses are needed for future fire emergencies. A lot of red tape goes into securing military planes to combat flames. The bureaucratic tangle ought to be dealt with ahead of time so that fast, effective responses spring up immediately as needed for fire emergencies.

Wyoming ranchers have had to sell their livestock for lack of grazing; farmers’ winter-wheat seeds won’t sprout for lack of rain. Often ranches and farms that have been in the family for generations now face desertification.

The stricken folk and other members of the Wyoming workforce can be recruited to fell our dead pines and store them until the logs can be safely processed as lumber (it takes three years for the beetle larva to die out) and to plant drought-resistant vegetation where logpoles once stood.

Climate-change strategies must include novel approaches to determine allocation of water supplies. Dr. MacDonnell warns of smaller snowpacks, earlier snowmelt, reduced stream flow. Groundwater should never be used “to meet base load demands.”

The Wyoming State Water Plan, authorized by the legislature in 1997 and completed in 2007, is out of date. Although it alludes to reports of groundwater-level decline and ensuing conflicts in some Wyoming river basins, it nevertheless assumes groundwater recharge from precipitation. “Recognized beneficial uses” of groundwater include coal mining and oil and gas well drilling, but the report’s calculations are for conventional recovery only. Since then, methods of hydraulic fracturing have used up vastly more of the diminishing resource. A single fracking operation demands 2 to 8 million gallons of fresh water, and each well is fracked repeatedly. Additionally, the water needs for the proposed coal-to-liquids plant near Hanna in Medicine Bow are staggering. In 2009, Wyoming’s Division of Air Quality approved a petition by Medicine Bow Fuel and Power to mine 777,000 tons of coal daily for the next 30 years as feedstock for the anticipated DKRW operation. Inasmuch as mining a ton of coal uses 5 to 7 gallons of water,

taking the median, 6, would mean 4,662,000 gallons of water per day. That's more than four and a half million gallons every single day over a projected 30 years. And that's just water needed for the coal mining. The conversion itself requires equivalent volumes of water, though final figures are elusive. Revised projections of water-needs through the lifespan of this project is two to three times that estimated in the Final Opinion of Water Supply and Water Yield Analysis issued in 2007 by the State Engineer's Office. Add the household needs of 500 workers that would reside near the plant, plus water allocation for construction of roads, housing, and facilities. No matter how many Chinese investors sink their yuan into DKRW, an exhaustive study must determine just where these unimaginable volumes of water are supposed to come from.

A farmer who feeds his family the seeds meant for his field is a farmer who knows that starvation awaits. The same holds true for a state that depletes its groundwater for the sake of industrial uses that, while providing revenue for the short term, ensure bankruptcy down the road. Professor MacDonnell's paper predicts a 50% chance of Lake Mead drying up by 2021 if water usage is not curtailed. That's a matter of years, not decades. The lake is to Phoenix what groundwater is to Wyoming.

We need an informed analysis, fast. Fortunately, a resource is at hand to provide Wyoming with just such information. The NCAR-Wyoming Supercomputer Center on the outskirts of Cheyenne is gearing up for business. Its primary sponsor is the National Science Foundation. Governor Mead is scheduled to attend its ribbon-cutting ceremony on October 15. Notables from University of Wyoming, which helped underwrite the Center, will be present also. NCAR's parent faculty in Boulder includes experts on water-resource modeling via data for any number of variables. NCAR is invaluable for speedy evaluation of the immediate future of our state.

To undertake the necessary action—tree removal, vegetation planting, early military cooperation to combat wildfires, immediate assessment of water restrictions on the fossil-fuel industry—will be costly. It may require dipping into Wyoming's rainy-day fund. The bitter pill of expense must be swallowed, however. An excess of rainy days is unlikely to beleaguer us anytime soon, but days of infernal wildfires almost certainly will. So will days of water scarcity. It's incumbent upon our legislature and gubernatorial office to learn the facts, look ahead, and implement strategies to mitigate the effects of climate changes that are here to stay.