

Thank you very much for the opportunity. I'm representing myself and Powder River Basin Resource Council and the Sierra Club. I'm a retired professor of science education at the University of Wyoming, 41 years in the Wyoming. Good planets are really hard to find as you all know. Ours is a good planet with surface temperatures of 57 degrees Fahrenheit, different kinds of wildlife, wild plants. Fruit crops depend on relatively narrow ranges of stable temperatures. The pika is the smallest member of the rabbit family that has adapted to live in the mountainous areas of the Rockies, Sierra Club [sic], the Cascades, and they rarely get above freezing in those areas. When it's exposed to a mild 78 degrees, they can sometimes die. Once they move upslope to reach the top and find the temperature is too warm, the pika has no place to go. In fact, they've already disappeared from over one third of the range. Insects are vitally important. Some carry and are vectors of disease, but they also pollinate plants, and they have great economic impact on crops. They're particularly sensitive to climate change. As invertebrates, they can't regulate their body temperature. Almost 80 percent of the world's crop plants require pollination. And the annual value of insect pollination to crops in the U.S. alone is 20 million. What's more, most of the kinds of living organisms on earth are insects. Since the beginning of the Industrial Revolution, we have continually increased our ability to extract coal and put more CO2 into the atmosphere. Wyoming leads all states and most nations for its coal contribution to increasing CO2. No state except for Wyoming has ever produced more than 200 million tons of coal in a year. Best peak for Wyoming was in 2008 when it produced 462 million tons of coal. It was shipped out of this state. In less abstract terms, in 100 ton coal cars, that's 46,000 miles of coal or enough coal to reach around the earth nearly two times at the equator. Most of the 462 million tons of coal, Wyoming coal of 2008 is now in the atmosphere as CO2. Where is Wyoming in relation to cooling the temperature? 41 percent of U.S. coal comes from the federal land, and 75 percent of it comes from just Wyoming. At the Paris climate conference in December of 2015, 195 countries came together, and they adopted the first ever universal, legally-binding global climate agreement. Success in cooling the climate of the planet can only happen by cooperating nations. Wyoming with the federal government, in

particular the BLM, has a huge role to play. To even consider -- I'm just about finished. Should we even consider leasing more federal land for coal production? From fossil fuel burning, global concentration of CO2 in the air has gone from 280 parts per million in the mid 18th century -- that's the beginning of the Industrial Revolution -- to 402 parts per million in 2006 -- '16, only 200 years. The argument goes that Earth has these natural heating and cooling cycles. Yes, it does, but they happen in hundreds of thousands of years or millions of year, not 200 years. Life has to have time to adjust. The pika and pollinators of food crops do not have the luxury, nor do we.