

Click here to see the references we used in this poster.
Download a pdf of our Climate Change in Colorado poster
 (<https://www.colorado.edu/ecenter/node/338/attachment>)

Before



After



Climate change affects the planet on a global scale and affects every region of the planet in a different way. Here in the Western United States we already see the effects of Climate Change. The Western United States has seen a larger increase in average temperature in the past decade than any other part of the country. This exacerbates already existing problems such as snowpack, water scarcity, drought, pine beetle infestation, etc.

Colorado relies heavily on the snowpack it receives during the winter months. When it comes to the economy skiing/riding is the second largest in the state, but when it comes to water we receive 70% from the snowpack. Unfortunately Colorado has seen a decrease in the average snowpack in the past couple of decades exacerbating existing problems of drought and water scarcity.

A partnership of University of Colorado research centers has collaborated on a great website to help you Learn More About Climate in Colorado

[\(http://learnmoreaboutclimate.colorado.edu/\)](http://learnmoreaboutclimate.colorado.edu/).

Snow



- **Less:** Fall and spring skiing, rafting, alpine lakes and streams
- **More:** Water scarcity and usage restrictions

Warmer spring temperatures are increasing the speed of early snowmelt in the Rocky Mountains. This will bring more spring floods and intense erosion, followed by extended periods of summer drought. (American Meteorological Society, 2005)

Snow is melting 15-30 days earlier than it was 25 years ago. In other words, spring starts a little sooner and summer lasts a little longer, every year.

Scientists say snow pack in the Southern Rockies will drop 50% this century. Sierra Nevada snow pack is expected to fall 90%.



This isn't bad news for just skiers/riders—skiing is Colorado's second largest industry—but we rely on the snow pack for our drinking water. In fact, the snow pack accounts for 70% of Colorado's water supply. Less snow means less water. [Article on increased snow melt \(http://coyotegulch.wordpress.com/2009/06/03/natural-resource-conservation-service-colorados-snowpack-melts-quickly/\)](http://coyotegulch.wordpress.com/2009/06/03/natural-resource-conservation-service-colorados-snowpack-melts-quickly/)

Pine Beetle



- **Less:** Access to recreation areas, food and habitat for wildlife
- **More:** Intense fires, habitat loss, clear-cutting of trees, soil erosion, drops in property value

If you've been in the mountains lately you've seen the devastation caused by the pine beetles, which have killed an area of Colorado's forests equal to over 1.5 million football fields. Rising temperatures and fewer below freezing winter days allow them to thrive at higher elevation.



Dry, dead trees increase the likelihood of intense forest fire, forcing authorities to limit access to hiking and camping.

Pine nuts from pinecones are essential food for bears fattening for hibernation. (Colorado State Forest Service, 2008)

In 2007, Beetle activity in Boulder and Laramie Counties increased 1500%.

Water



- **Less:** Trout, frogs, and food for animals
- **More:** Fishing restrictions, invasive species, unstable ecosystems

Rising water temperature and the changing chemistry of alpine lakes and streams are making it harder for trout, amphibians, water bugs and aquatic plants to survive. Their decline will destabilize entire ecosystems. (The Colorado Water Conservation Board, 2008)



"The most significant threat to our economic security is not having a secure future water supply." -Colorado Governor John Hickenlooper

In the West we receive 70% of our water from snowpack. This becomes a major problem as the West's population booms and the snowpack starts to decrease. We have no other source of water.

Article on Water scarcity in Colorado (<https://www.cusys.edu/newsletter/2009/07-22/campus-ucb.html>)

Colorado Water Conservation Board (<http://cwcb.state.co.us/Pages/CWCBHome.aspx>)

Alpine Wildlife: Pika



- **Less:** Suitable habitat, available food
- **More:** Pikas suffering heat exhaustion and starvation

Since 2005 the Pika is being considered for the Endangered Species list. Increasing temperatures will continue to threaten Rocky Mountain pika populations. A relative of the rabbit and a key part of the alpine food chain, the pika are moving to higher elevations to escape heat exposure and find food. Eventually, they will run out of suitable habitat. (Journal of Biogeography, 2005; Journal of Mammalogy, 2003)

Article on endangered pika (<http://www.npr.org/templates/story/story.php?storyId=111583873&ft=1&f=1025>)

Large Mammals



- **Less:** Elk, deer, bighorn sheep, hunting permits
- **More:** Disease, parasites, hunting restrictions, die-off

As Warmer temperatures move their food sources higher up, large Rocky Mountain mammals are being forced to higher elevations. Rising temperatures also bring deadly parasites and diseases to the higher altitudes, further reducing their populations. (Western Association of Fish and Wildlife Agencies, 2007)

Wildflowers



- **Less:** Abundance and variety of native wildflowers, insects and birds
- **More:** Invasive weeds and grasses

Wildflower buds are sensitive to spring frosts. Earlier snowmelt exposes them to more frequent frost kills. Climate change will shrink mountain wildflower populations, affecting the birds, insects and mammals that depend on them for food and shelter. (Rocky Mountain Biological Laboratory, 2008)



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