

Colorado Envirothon  
2023 Current Issue  
Adapting to a Changing Climate

Disclaimer: The following is taken from the National Envirothon website located at [2023 Competition Study Resources – NCF-Envirothon](#). It has been adapted to apply to the Colorado Envirothon. Full credit is given to the *2023 NCF-Envirothon New Brunswick* for this information.

The economy of Colorado is strongly dependent on agriculture and natural resource-based industries such as tourism. Tourism is among the largest service industries in Colorado, and in 2020, agriculture generated around \$7.3 billion in agricultural cash receipts with the highest valued commodities being cattle and calves, dairy products, and corn<sup>1</sup>. These two industries are a major part of the foundation for the socio-economic well-being of Coloradans. Climate change is predicted to have direct and indirect impacts on the natural environment on which these resource-based industries depend. These impacts may pose a threat to the viability of many Colorado resource-dependent communities.

The earth's climate is constantly changing and has been doing so for billions of years. Although long-term fluctuations in temperature are normal and greenhouse gasses are emitted to the atmosphere from both natural and human-generated sources, most climate scientists agree that the global warming observed since the mid-20th century (1950s) is cause for immediate concern. Human-induced emissions of greenhouse gasses are being released at a faster rate than natural processes can remove them<sup>2</sup>. Not only do climate models project an increase in temperature, but the models also predict increases in the frequency of hot days above 30°C (86°F) as well as changes in precipitation, extreme weather events, sea level rise, water stress, and ocean acidification. As a result, disruptive changes to ecosystems, the economy, and society are expected to occur on both local and global scales.

The changing climate is one of the most complex issues facing the world today. It spans many disciplines and aspects of everyday life: science, socio-economics, environment, health, politics, as well as moral and ethical values. The impact on Colorado's economy and quality of life for its citizens will depend on how effectively we plan and prepare for the complex challenges and changes that will occur.

Students will learn about factors contributing to a changing climate, the effects of these changes on the environment and natural resources, and the unique challenges facing natural resource dependent communities. As they explore the impacts on human social and economic systems, they will learn about management strategies for mitigating and adapting to a changing climate, and the roles of innovative technologies and programs in responding to local and global changes.

<sup>1</sup><https://economic-impact-of-ag.uada.edu/colorado/>

<sup>2</sup> *Bush, E. and Lemmen, D.S., editors (2019): Canada's Changing Climate Report; Government of Canada, Ottawa, ON. 444 p.*