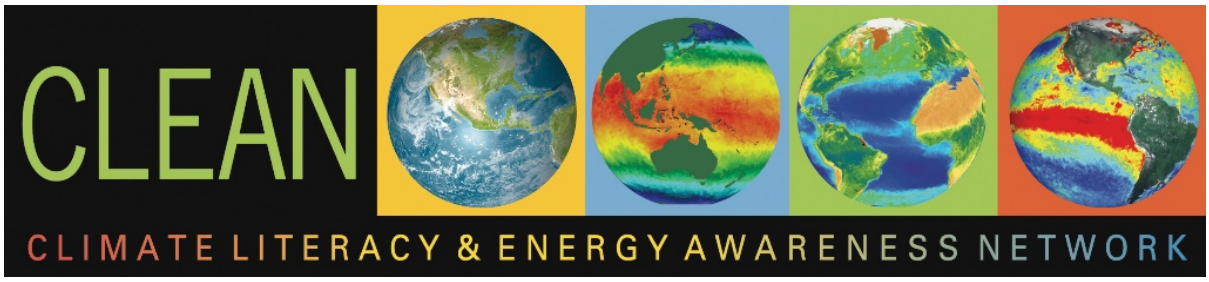


Using NASA NEO and ImageJ to Explore the Role of Snow Cover in Shaping Climate | Students Measure Changes in Ice and Snow | Keeping track of snowfall in a changing climate

CLEAN STEM Flash

A Timely Climate and Energy E-Learning Series to Use and Share

January 13th, 2021

Topic: Snow and Climate Change

Snow is important not only for the climate but also for people who depend on it. As the climate changes, snowfall amount and snow cover extent will also change. This will pose many challenges for people and ecosystems as a whole. In this newsletter, you will find two resources on snow and climate change: 1) an activity that has students explore real satellite imagery to analyze snow cover, and 2) a video that discusses snow and ice in Alaska. We have also included an article that describes the importance of monitoring snow and how snow impacts people, ecosystems, and the economy.

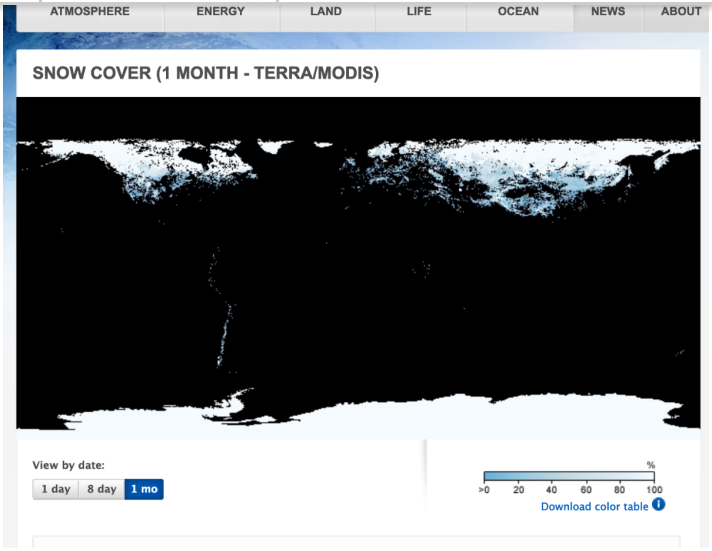
CLEAN Resource Feature

Activity: Using NASA NEO and ImageJ to Explore the Role of Snow Cover in Shaping Climate

This activity utilizes real data to investigate the relationship between snow and climate. Students use products from NASA and a free tool in order to get hands-on experience analyzing and interpreting data.

Audience: High School

Browse CLEAN for more activities on Snow.



displaying land surface temperature, snow cover, and reflected short wave radiation data from the NASA Earth Observation (NEO) website. Then they explore and animate these images using the free tool ImageJ and utilize the Web-based analysis tools built into NEO to observe, graph, and analyze the relationships among these three variables.

CLEAN Resource Feature

Video: Students Measure Changes in Ice and Snow

This short video features the Alaska Lake Ice and Snow Observatory Network (ALISON project), a citizen science program in which 4th and 5th graders help scientists study the relationship between climate change and lake ice and snow conditions.

Audience: Elementary, Middle School, High School

Take a look at some more CLEAN videos focused on Snow.

This video is an overview of an old project at the University of Alaska. Though the project is no longer running the background science is still relevant and necessary. The video discusses investigations by students that contribute to a larger data set. They examine how lakes store solar energy and how measurements of snow density, ice thickness, thermal conductivity, and temperature gradients provide information about climate.

In the News: Keeping track of snowfall in a changing climate

This article discusses changes in snowfall due to climate change. The authors discuss monitoring snow conditions and how that affects local and global communities. It focuses on Europe and the snow in the Alps but it also includes a climatologist at Rutgers University who discusses North American data. The article stresses the importance of snow as well as the potential changes that will occur with climate change.

Explore the CLEAN collection of climate & energy learning resources

CLEAN supports teaching and learning about climate and energy with 700+ free peer-reviewed, scientifically accurate, and classroom-ready resources.

Browse the CLEAN collection by NGSS topics.

Check out the CLEAN STEM Flash Library of past issues.
Received this as a forward? Sign up to get future issues sent to your inbox.

clean@colorado.edu

CLEAN is funded by grants from the National Oceanic and Atmospheric Administration (NA12OAR4310143, NA12OAR4310142), the National Science Foundation (DUE-0938051, DUE-0938020, DUE-0937941) and the Department of Energy.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.