

Name:

Date:

Albedo Investigation

Task

Now that you have completed the *Changes in Seasonal Albedo with Land Cover Class* activity, you will conduct your own investigation to explore interactions between albedo, land cover, and/or seasonality by posing a research question, developing a hypothesis, and analyzing your results.

Instructions

1) Develop your research question and hypothesis

- a) Spend 5-10 minutes exploring the Student Climate Data tools (e.g. the Carbon Mapper, the Albedo data resources, the Biome resources, etc.) and/or google maps to identify what aspect of albedo/land cover/seasonality you are interested in investigating and in what location(s).
- b) What location(s) did you select to study? What is the latitude and longitude of that location (use Carbon Mapper or Google Maps)?
- c) Pose a **research question** that focuses on albedo and can be answered using the data available on the Student Climate Data website.
- d) Write a **hypothesis statement** that will either be supported or not supported by the results of your investigation. State your hypothesis:
- e) What data/information do you need in order to test your hypothesis?



2) Identify Albedo Trends for Your Location.

- a) From the Data Tools page on the Student Climate Data website (<http://studentclimatedata.unh.edu/data-tools.shtml>), click on ‘Carbon Mapper.’
- b) Close the introductory pop-up window
- c) Click and drag the map and use the zoom tool to find your location on the map. Make sure the latitude and longitude at the bottom of the map matches what you recorded in Part 1. Once you are in the correct location, zoom to **Zoom Level 12** (*displayed at the bottom of the screen, this will allow you to see only one data point for your location*).
- d) In the right-hand panel, click the box next to the **MODIS Albedo** Layer view all of the MODIS layer options
- e) Click on the box next to **MODIS Land Cover**. Wait for the land cover data to load on the map.
- f) Turn on the identify tool by clicking on the  icon at the top left of the map. (**Note: in order to move around the map again you will have to click on the  icon).
- g) Click on your location on the map. Record your land cover data from the identify box.
- h) Now select the albedo layer(s) you are interested in by clicking the boxes next to each layer name. Wait for the data to load.
- i) When you click on your location, the identify box should now provide albedo data for all of the map layers you have selected.
- j) Record the albedo data below (or create your own data table):

Hint: Fill in the column names of blank columns in the table with appropriate variables for your investigation, or create your own data table.

Table 1. Albedo Data

Latitude	Longitude	Land Cover Type	Albedo			



3) Analysis and Discussion

a) What are some notable outcomes of your investigation?

b) Was your hypothesis supported by the data from your investigation? Why or why not?

c) Develop two new research questions you have after viewing your results.

a) What data or information would you need to answer these new questions?

Extension:
Use the
Planning
Guide for
Scientific
Research to
design a new
study