

CLIMATE CHANGE IMPACT WEBQUEST - STUDENT INVESTIGATION SHEET

Name: _____ Date: _____
Lab role: _____

Objectives:

Students will use internet sources to investigate climate change.

Students will relate temperature change to changes in insect, bird, and tree ranges.

Activity:

1. Go to "NASA Global Climate Change Vital Signs of the Planet"
<http://climate.nasa.gov/vital-signs/global-temperature/>
2. Read the introduction and observe the graph.
3. Describe the temperature changes displayed on the graph. Be sure you understand what the graph actually displays; look carefully at the y-axis.
 - a. Specifically, what general statement can you make about the average global temperature between 1880 and 1930 compared the the baseline?
 - b. What general statement can you make about the average global temperature between 1940 and 1980 compared to the baseline?
 - c. What general statement can you make about the average global temperature after 1980 compared to the baseline?
4. Activate the map animation.
 - a. What color does yellow represent on the map? _____
 - b. What color does blue represent on the map? _____
 - c. How does the map change between 1884 and 2015? Make a general statement about the shift in map color over that period of time.
5. Go to "Agricultural Adaptation to Climate Change in Yolo County"
<http://agadapt.ucdavis.edu/pestsdiseases/> and read the first two paragraphs.
6. How are pests and diseases able to survive in new environments?
7. Go to UCAR's "Climate Change and Vector-Borne Disease"
<http://scied.ucar.edu/longcontent/climate-change-and-vector-borne-disease>
8. Read the first five paragraphs.
 - a. Why is climate important for understanding where and when parasitic diseases cause illness in humans?

- b. Look at the malaria map. Why can climate change cause a change in where malaria occurs?

9. Go to the EPA's "Climate Change Indicators" at <https://www.epa.gov/climate-indicators/bird-wintering-ranges> and read the graph caption and 'Background' section.

10. Be sure that you remember what 'latitude' means.
 - a. Study the graph. How has the relationship of winter-time bird population and latitude changed since 1965?

 - b. List three different ways that bird species might react to climate change?

11. Go to the EPA's "Climate Change" at: <https://www3.epa.gov/climatechange/impacts/forests.html>

12. Read the first two paragraphs and describe some ways in which forests benefit society.

13. Enlarge the eastern United States tree range maps. Discuss the projected change in tree range for
 - a. Longleaf-slash pine:

 - b. Loblolly-shortleaf pine:

 - c. Oak and pine:

 - d. Oak and hickory:

 - e. Maple, beech, and birch:

14. Go to Ecology "Effects of Climate Change on Biodiversity" at: <http://sites.sinauer.com/ecology3e/cc24.html>

Look at projected tree diversity for your state. Is it expected to increase or decrease? _____

15. Write a conclusion paragraph to explain the impact of climate change on natural

communities. Support your claims with evidence taken from the readings, graphs, and maps.