

AP Environmental Science

Ecological Footprint- Web Activity

Procedure- Following the steps describe below, answer all of the questions for this activity on loose-leaf paper. Answers are expected to be well articulated and, of course, in complete sentences.

→ Visit the website: www.footprintnetwork.org

In the navigation banner at the top scroll over “FOOTPRINT SCIENCE” a drop down menu appears, click on “GLOSSARY” or use the link below:

<http://www.footprintnetwork.org/en/index.php/GFN/page/glossary/>

Define the following terms (para-phrase): *acre, biological capacity or biocapacity, biologically productive land and water, ecological footprint, hectare, global hectare*

In the navigation banner at the top scroll over “FOOTPRINT BASICS” a drop down menu appears, click on “OVERVIEW” or use the link below:

http://www.footprintnetwork.org/en/index.php/GFN/page/footprint_basics_overview/

- 1) Write a five-sentence paragraph (no more, no less) that summarizes the concept of an ecological footprint, as it is explained on this page.
- 2) Find and draw the image in the middle of the text (It is essentially a flow chart).

Look at the vertical menu on the left titled “IN THIS SECTION” find the link “World Footprint” (3rd from the top) and click on it or use the link below:

http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/

- 3) Describe the growth of the world ecological footprint from 1960-2005.
- 4) Describe and explain the two potential ecological footprint models for the year 2050.
- 5) What is overshoot?

On the right, find the drop down menu that says “COUNTRY TRENDS” and start by selecting “United States of America” or use the link below:

http://www.footprintnetwork.org/en/index.php/GFN/page/trends/united_states_of_america/

- 6) According to the data shown on the graph, has there been a year when the ecological footprint and the biocapacity have been equal?
- 7) Describe the general trend in biocapacity that is shown on the graph from 1961-2009.
- 8) Describe the general ecological footprint trend that is shown on the graph from 1961-2009.
- 9) What is the biocapacity of the U.S.A. in 2009, as shown on the graph, in global hectares per capita?
- 10) What is the ecological footprint of the U.S.A. in 2009, as shown on the graph, in global hectares per capita?
- 11) Compare the U.S.A.’s biocapacity to its ecological footprint in 2009. What is the range (difference) between the U.S.A.’s biocapacity and it’s ecological footprint in global hectares per capita? What can you infer about the U.S.A.’s production vs. consumption of resources from this difference between the biocapacity and the ecological footprint?

Above the graph, find the box that says “COUNTRY TRENDS Curious about the Footprints of individual countries?” Click on the drop box and select “Japan” or click on the link below:

<http://www.footprintnetwork.org/en/index.php/GFN/page/trends/japan/>

- 12) Is Japan's ecological footprint for 2009, in global hectares per capita, higher or lower than the U.S.A.'s? By how much (in global hectares per capita)?

According to the CIA World Factbook: Japan's population is 127,253,075 (July 2013 est.), the country covers 377,915 sq km and 11.26% is arable land (can be used for agriculture). While, the U.S.A.'s population is 316,668,567 (July 2013 est.), the country covers 9,826,675 sq km, and 16.29% is arable land (can be used for agriculture).

- 13) Compare Japan's biocapacity to its ecological footprint for 2009. What is the range (difference) between the Japan's biocapacity and its ecological footprint in global hectares per capita? Citing population size and Japan's actual geographic area, explain a potential reason for this difference.

Above the graph, find the box that says "COUNTRY TRENDS Curious about the Footprints of individual countries?" Click on the drop box and select "Colombia" or click on the link below:

<http://www.footprintnetwork.org/en/index.php/GFN/page/trends/colombia/>

- 14) Citing global hectares per capita, describe Columbia's the general trend in biocapacity between 1961 and 2009.
- 15) Citing global hectares per capita, describe Columbia's the general trend in ecological footprint between 1961 and 2009.
- 16) How does Columbia's biocapacity compare to its ecological footprint overall?
- 17) What do you think this says about Columbia's long-term sustainability compared to the U.S. or Japan?

In the navigation banner at the top scroll over "RESOURCES" a drop down menu appears, click on "Footprint Calculator" or use the link below:

<http://www.footprintnetwork.org/en/index.php/GFN/page/calculators/>

Select your location (U.S.A.), click "begin", click under NEW USERS click "get started", and choose an avatar. Calculate your ecological footprint by answer the questions and clicking "OK" in the maroon circle (it turns green when you scroll over it) on the right to go to the next question.

- 18) What was your ecological footprint according to the model in terms of the number of Earth's necessary to sustain you lifestyle? Did this surprise you? Why or why not?
- 19) How many global acres of Earth's productive area are required? Tons of Carbon Dioxide?
- 20) List the percentage breakdown for each of the five categories in the pie chart for your ecological footprint.

Go back and edit your footprint, and explore scenarios to reduce your footprint...

Edit your Footprint by making CHANGES to your lifestyle.

- 21) Describe the changes you made to your lifestyle and the impact it had on your ecological footprint.
- 22) What was your ecological footprint according to the model in terms of the number of Earth's necessary to sustain you lifestyle? Did this surprise you? Why or why not?
- 23) How many global acres of Earth's productive area are required? Tons of Carbon Dioxide?
- 24) List the percentage breakdown for each of the five categories in the pie chart for your ecological footprint.