



Albanian Youth For Environmental Education
AYFEED

A Geographic Information Systems Workshop

<http://ayfeed.wordpress.com/>

LESSON 4

Lesson 4 – ECOREGIONS AND THREATENED SPECIES

Required Internet Connectivity

Software: ArcGIS Explorer – a free GIS viewer for download at ESRI's website, and a companion to this book.

Data: ArcGIS Online, and boundary of Albania data accompanying this book.

Activity Description: Exploring the World through Ecoregions: Terrestrial Ecoregions and Threatened Species.

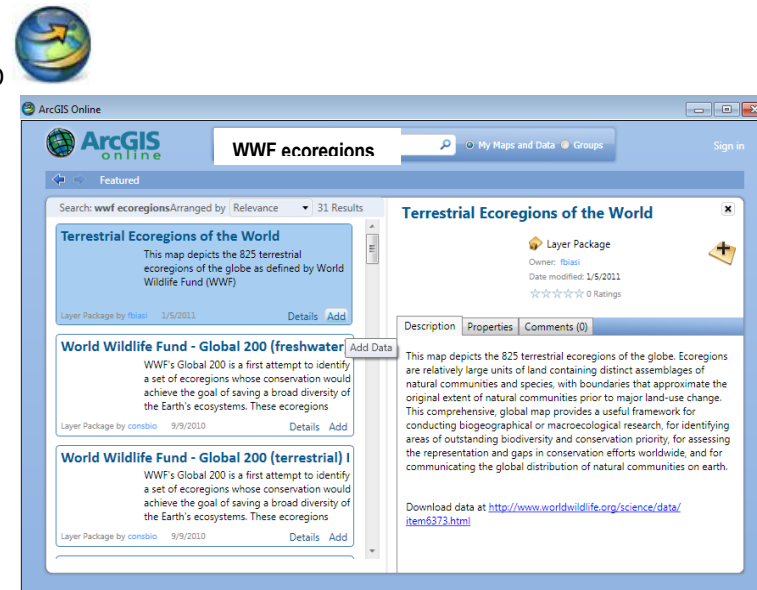
Estimated Time: 90 minutes (takes into account more than one child per computer and limited command of English)

In This lesson you will learn about World Ecoregions, and Threatened Species. In the next steps you will also learn how to navigate, find and see data in ArcGIS Explorer by using the navigation controls, the find tool and the swipe tool.

1 USING WHAT YOU KNOW FROM LESSON 3

The World Wildlife Fund (WWF) developed Terrestrial Ecoregions as a conservation tool by looking at the globe in terms of geography and biology – bio-geography. An Ecoregion is a relatively large unit of land, or water that contains a distinct assemblage of natural communities that share a large majority of species, dynamics, and environmental conditions. There are 887 terrestrial Ecoregions in the world.

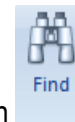
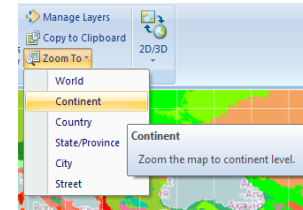
- Open ArcGIS Explorer by double clicking on the Icon on your desktop
- After you have open it go to the ArcGIS Explorer icon
- Click New
- In the **Ribbon** Click over the Home tab, then click Add Content
- Click ArcGIS Online
- In the Search bar type WWF Ecoregions
- Find Terrestrial Ecoregions of the World
- Click the link Add at the bottom right



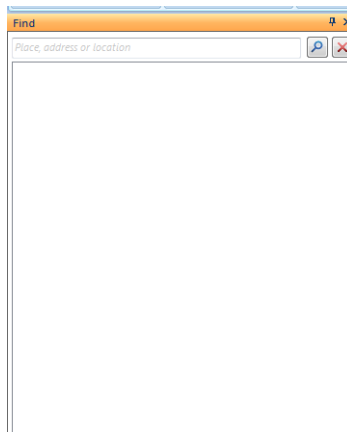
2 NAVIGATING & FINDING POINTS OF INTERESTS



- Using your **Navigation Control** in the bottom left of your map
 - Center your map over the Continent of Africa
- In the **Ribbon** under the Home tab, use the Zoom To tool and click Continent
- Pan around the world and locate the Equator in your map
- Just as you added the WWF ecoregions in Step 1, now search for World boundaries
- Find and add National Geographic World Map



- After you have added the National Geographic World Map, click over the Find icon in the Home tab
- On the top left side of your screen, search for Equator and then for Equador. What do you see?

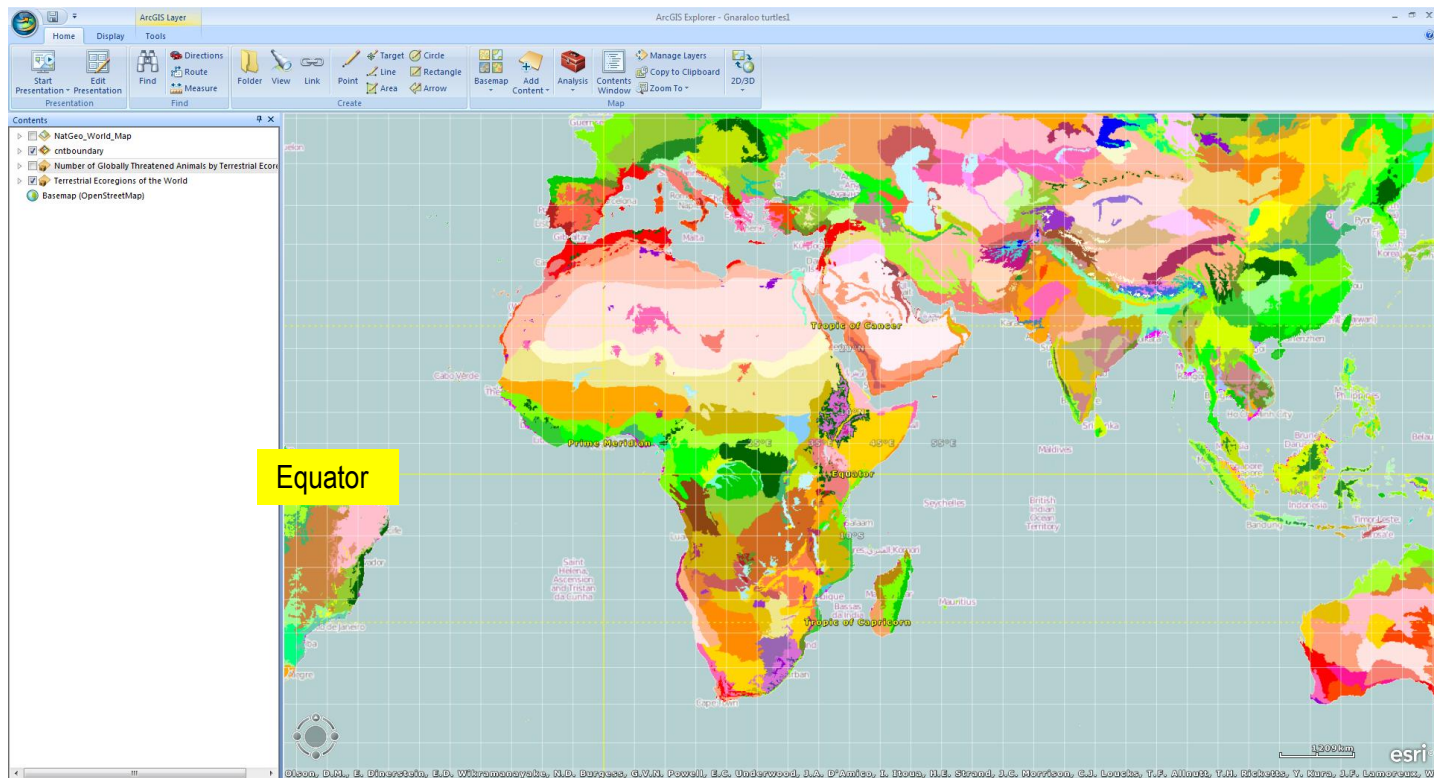


If you check the check box next to the listed results of your search, a pin is added to your map.

How many places in the world have been named after the Equator?

How many countries in the world have been named after the Equator?

Now, uncheck the button next to NatGeo World_Map, so you can see the Ecoregions again.

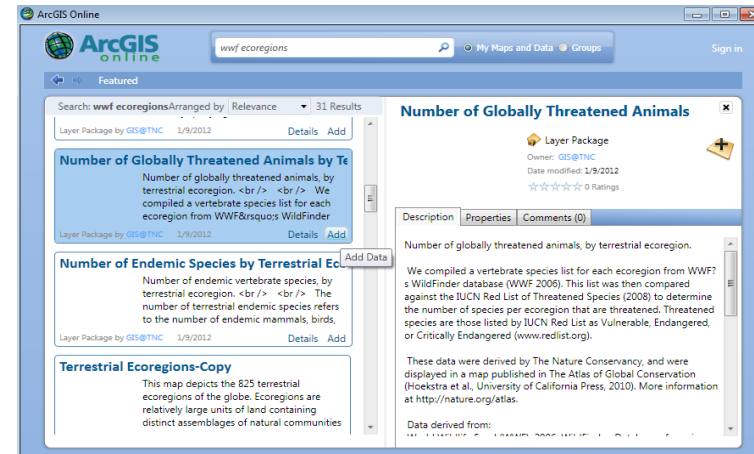


Looking at Terrestrial Ecoregions what do you notice about the number of Ecoregions in Africa as you move away from the equator?

The increase of Ecoregions around the Equator is a global pattern that can be explained by the abundance of energy from the Sun boosting the productivity of the ecosystems. Also, climates around the equator tend to be more stable, limiting ecosystem disturbances.


3 SEEING THE DATA

- In the **Ribbon** under the Home tab, click Add Content
- Click ArcGIS Online
- Search for threatened animals
- Find and add Number of Globally Threatened Animals by Terrestrial Ecoregions.
 - Zoom To / Continent to see better, and pan the map.



- In the **Contents window**, highlight 'Number of Globally Threatened Animals' layer.
- In the **Ribbon**, click the Tools tab
- Click Show Legend Icon
- Do the same for the Terrestrial Ecoregions of the World layer

If you remember in Lesson 3, you learned another way of opening the legend. It is important to remember that, there are many ways to do the same task in ArcGIS. Do what is most easy for you.

- In the **Contents window**, Highlight the 'Number of Globally Threatened Animals' layer
- In the **Ribbon**, click the Tools tab
- Find and click the Swipe Tool 

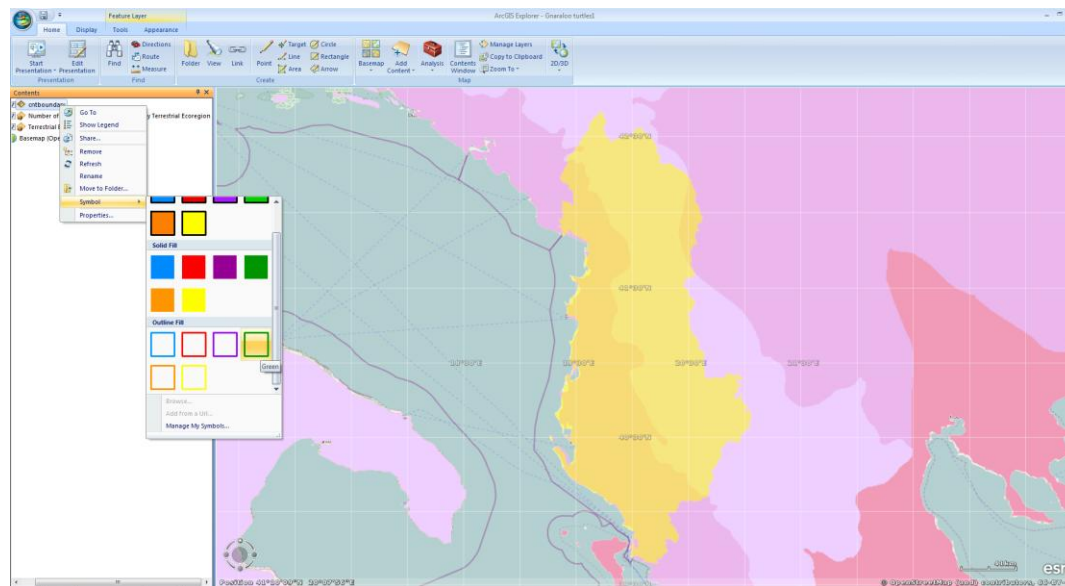
The Swipe tool lets you see layers underneath your chosen layer.

- Move the cursor over the map.
- You can choose the direction in which you want to swipe depending on if you put your cursor in top, bottom, left, or right of the map.
- Hold down the mouse icon and drag, revealing the layer underneath.

Remember, you can see the legend for each layer if you click over the + sign on its left.

Do you notice similarities about the size and placement of Ecoregions that have more than 150 threatened animals? Why do you think size and placement impacts the number of threatened animals?

- Next in the **Ribbon** under the Home tab click Add Content
- Click shapefiles
- Browse in the folder Lesson 4 under Data
- Find and open **cntboundary.shp** (same as you did in lesson 3)
- In the **Contents window**, Right click on the **cntboundary** layer
- Click Symbol
- Scroll down, go under Outline Fill, pick color blue




Another example of doing the same task in another way!

- Using the *Swipe* tool, legends, the map, and what you know answer these questions:

Hint: the *Swipe* tool erases only the layer that is highlighted in the Contents window. Highlight the layer you want to erase before using *Swipe*.

What is the range of threatened animals in Albania? Is that number different if you included Kosova? Do national boundaries follow Ecoregions? Why?

How many terrestrial Ecoregions does Albania have? Is that number different if you included Kosova? Do national boundaries follow Ecoregions? Do you think they should? Why?

- Now to finish, Click  icon (top Left)
- Click Save
- Save as Mylesson4 in you student folder
- Exit ArcGIS Explorer

Congratulations! You have learned how to navigate the ArcGIS Explorer Interface by using the Navigation Control, and the Swipe tool. You also learned that there are many ways to do the same task in ArcGIS. You also explored Terrestrial Ecoregions and Threatened Animals, in the world and in Albania.