

# Using the 2008 TerraViva! SEDAC Viewer in the Classroom

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## Overview of Activities

- Introduction to the TerraViva! SEDAC Viewer
- Using the Basemap: Human Footprint v2
- Using Map Display Features
- Searching with the Gazetteer
- Conducting Spatial Query Analysis
- Visualizing Data in Multiple Maps
- Accessing Cartographic Maps

# Introduction to the TerraViva! SEDAC Viewer

The 2008 TerraViva! SEDAC Viewer CD contains satellite-based data, maps, socioeconomic data, and geographic information system (GIS) tools that enable easy integration and visualization for analysis and demonstration. Applicable to lessons in the physical sciences and the social sciences, the GIS tools foster global and regional data analysis. Session participants will each receive the CD and have an opportunity to use the 2008 TerraViva! SEDAC Viewer to visually analyze satellite-based data along with socioeconomic data and maps to explore and demonstrate relationships between humans and the environment.

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The 2008 TerraViva! SEDAC Viewer is produced by ISCIENCES, L.L.C., and is available for free on CD from the NASA Socioeconomic Data and Applications Center (SEDAC) at the following URL: <http://sedac.ciesin.columbia.edu/>

SEDAC is operated by the Center for International Earth Science Information Network (CIESIN) of Columbia University with support received from NASA under contract NNG08-HZ11C.

# Installing the 2008 TerraViva! SEDAC Viewer

- Installation requires Administrative privileges on a microcomputer running the Windows NT, 2000, or XP operating system.
- May be installed on multiple computers.

# Starting the 2008 TerraViva! SEDAC Viewer

- After installation, click **Start, Programs, TerraViva!, and TerraViva! SEDAC Viewer** to begin.
- The 2008 TerraViva! SEDAC Viewer window will appear.
- Click **No** when asked if you want to upgrade to the latest software.
- Click **OK** if message indicates using saved configuration.
- A new window will display the TerraViva! Base Map: Human Footprint v2 2007 (SEDAC).

## Stopping the 2008 TerraViva! SEDAC Viewer

- To quit using the 2008 TerraViva! SEDAC Viewer, click **File** in the top menu of the TerraViva! Base Map and click **Exit**.
- When asked if you want to quit, click **Yes**.



## Introduction to Help in the 2008 TerraViva! SEDAC Viewer

- From the top menu of the basemap, click **Help**.
- Within the Help menu:
  - click **TerraViva! Users Guide** to view organized instructions on using features and tools.
  - click **Help Index** to quickly select TerraViva! Users Guide topics.
  - click **Map Guides** to view guides for maps.
  - click **GeoData Guides** to view guides for data sets.

## Reference Information for the 2008 TerraViva! SEDAC Viewer

- From the top menu in the Basemap, click **GeoInfo** and **Reference Information**.
- Click each of the following under Reference Information:
  - **Abbreviations,**
  - **Cross-Reference List of Country Data Codes,**
  - **Cross-Reference List of Geographic Names,**
  - **Cross-Reference List of Hydrographic Data Codes,**
  - **United Nations System,**
  - **Water Bodies, and**
  - **Weights and Measures.**

# Using the Basemap: Human Footprint v2

## Introduction to the Basemap: Human Footprint v2

- From the top menu of the Basemap, click **Help**, **Map Guides**, and **Guide for Human Footprint v2**.
- Note that the Human Footprint Map represents the “human influence on the earth’s land surface in terms of a Human Influence Index (HII) normalized by biome that includes forests, grasslands, shrublands, savannas, tundra, woodlands, and desert”.
- Within the *Map Guide for Human Footprint v2*, click **File** and **Exit** to stop displaying the guide.

## Exploring the Human Footprint v2

- On the top menu, click the multi-colored bars to display the map legend.
- Position the cursor on locations within continents on the Human Footprint v2.
- Note that the Human Influence Index (HII) value displays for each location within continents.
- HII values range from 0 to 100, where 100 represents the highest amount of human influence.
- For a cursor position, the bottom Status Bar displays
  - Upper line: location (state, country), map value (HII), display instance
  - Lower line: location (lat/lon), current map scale, status, standard time

## Display Country Profile in Human Footprint v2

- Move the cursor around the eastern part of South America and note that the country name displays on the bottom of the map.
- With the cursor on Brazil, left click to display the country profile window.
- Click each tap to display values for **Indicator**, **Chiefs of State**, **Map**, and **Flag**.

## Displaying other Country Profiles

- While displaying the country profile window, click on another country in the Human Footprint v2 map to display its profile.
- Click other countries to display profiles.
- Click **File** and **Exit** in the country profile window to stop displaying profile window.

# Using Map Display Features



## Options to Display the Map

- On the top menu, click the magnifying glass with a square in it and position the cursor over an area of the map, press the left mouse button, and move the cursor diagonally before releasing the button to magnify the area.
- On the top menu, click the globe to return to the world view of the map.
- On the top menu, click the magnifying glass with a plus in it to double magnification.
- On the top menu, click the magnifying glass with a minus in it to decrease magnification by two times.
- On the top menu, click the globe to return to the world view of the map.

## Displaying Alternative Map Projections

- On the right side of the top menu of the basemap, click the pull-down menu to view map projection choices.
- From the pull-down menu, click *Robinson* to display that map projection.
- From the pull-down menu, click *Miller Cylindrical* to display that map projection (note size of Greenland).
- From the pull-down menu, click *Geographic Lat/Lon* to display that map projection.

# Searching with the Gazetteer

# Search for a country

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled **Geographic Entity**, select “Countries”.
- Click in the left side text box of the Gazetteer, labeled **Name** and type “Madagascar”.
- The list on the right side of the Gazetteer will display “Madagascar” and similar names.
- Click “Madagascar” in the list to display the label locating the country on the Base Map.

# Search for a state

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled Geographic Entity, select “FirstLevel”.
- Click in the left side text box of the Gazetteer, labeled Name and type “Santa Catarina”.
- The list on the right side of the Gazetteer will display “Santa Catarina” and “Brazil”.
- Click “Santa Catarina” in the list to display the label locating the state on the Base Map.

# Search for a city

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled Geographic Entity, select “CitiesPlaces”.
- Click in the left side text box of the Gazetteer, labeled Name and type “Lima”.
- The list on the right side of the Gazetteer will display “Lima” and “Peru”.
- Click “Lima” in the list to display the label locating the city on the Base Map.

# Search for a place

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled Geographic Entity, select “CitiesPlaces”.
- Click in the left side text box of the Gazetteer, labeled Name and type “Leyte”.
- The list on the right side of the Gazetteer will display “Leyte” and “Philippines”.
- Click “Leyte” in the list to display the label locating the island on the Base Map.

## Search for a Weather Station

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled Geographic Entity, select “Weatherstations”.
- Click in the left side text box of the Gazetteer, labeled Name and type “Warwick”.
- The list on the right side of the Gazetteer will display “Warwick” and “Australia”.
- Click “Warwick” in the list to display the label locating the island on the Base Map.



## Search for a Water Body

- On the top menu of the Base Map, click **GeoInfo** and **Gazetteer**.
- On the left side menu of the Gazetteer, labeled Geographic Entity, select “Waterbodies”.
- Click in the left side text box of the Gazetteer, labeled Name and type “Yellow Sea”.
- The list on the right side of the Gazetteer will display “Yellow Sea”.
- Click “Yellow Sea” in the list to display the label locating the island on the Base Map.
- Click the Close button in the Gazetteer when finished using the Gazetteer.

# Conducting Spatial Query Analysis

# Spatial Query to Assess Human Footprint of the World

- On the top menu of the basemap, click **Tools** and **Spatial Query**.
- Choose “Human Footprint v2 2007 (SEDAC)” under Select a Theme to Analyze.
- Choose “Entire World” under Region/Country.
- Click **OK** button to display statistics for chosen area.
- Note the values for Mean, Mode, and Median.

## Spatial Query to Assess Human Footprint for United States

- On the top menu of the basemap, click **Tools** and **Spatial Query**.
- Choose “Human Footprint v2 2007 (SEDAC)” under Select a Theme to Analyze.
- Choose “United States” under Region/Country.
- Click **OK** button to display statistics for chosen area.
- Note the values for Mean, Mode, and Median.

## Spatial Query to Assess Human Footprint for Germany

- On the top menu of the basemap, click **Tools** and **Spatial Query**.
- Choose “Human Footprint v2 2007 (SEDAC)” under Select a Theme to Analyze.
- Choose “Germany” under Region/Country.
- Click **OK** button to display statistics for chosen area.
- Note the values for Mean, Mode, and Median.

# Visualizing Data in Multiple Maps

## Displaying Multiple Maps

- On the top menu of the TerraViva! Basemap, click **MapLibrary**, **Anthrosphere**, and **Adjusted Population Density 2000 (SEDAC)**.
- On the top menu of the TerraViva! Basemap, click **Help**, **Map Guides**, and **Guide for Adjusted Population Maps**.
- On the top menu of the TerraViva! Basemap, click **MapLibrary**, **Anthrosphere**, and **Vegetation Lifeforms 1993 (USGS EROS)**.
- On the top menu of the TerraViva! Basemap, click **Help**, **Map Guides**, and **Guide for AVHRR Landcover Maps**.
- On the top menu of the TerraViva! Basemap, click **MapLibrary**, **Hazard Frequency and/or Distribution**, and **Flood Hazard Frequency 2006 (CHRR)**.
- On the top menu of the TerraViva! Basemap, click **Help**, **Map Guides**, and **Guide for Flood Hazard Frequency and Distribution**.

## Integrating Multiple Maps

- On the top menu of the TerraViva! Basemap, click intersecting squares to link Basemap to other maps.
- On the top menu of the TerraViva! Basemap, click four squares to arrange windows so all are visible.
- On the top menu of the TerraViva! Basemap, click the magnifying glass with the plus inside and click South America.
- All four maps should magnify South America.
- On the top menu of the TerraViva! Basemap, click the magnifying glass with the plus inside to stop magnification.



## Analyzing Data on Multiple Maps

- Position the cursor on areas of interest within any of the maps.
- View the values displayed for the data represented by each of the maps.
- Compare the relationships between the data values displayed for locations of interest.

# Accessing Cartographic Maps

## Accessing Cartographic Maps in Portable Document Format (PDF) files

- On the top menu of the Base map, click **MapLibrary**.
- From the pull-down menu, click **Select Cartographic Map** to display choices.
- Click the title of the world map to be displayed in PDF.
- Click **Select Regional Map** to display a list of map choices for continents and regions.
- While displaying a PDF map, click the + or - sign on the top to change the magnification.
- While displaying a PDF map, move the mouse over a menu symbol to view its function.
- To stop displaying a PDF map, click **File** from the top menu and click **Exit**.

For additional information about the  
2008 TerraViva! SEDAC Viewer and  
other data products and services, visit  
<http://sedac.ciesin.columbia.edu>