GAP Ecological Systems

The GAP Ecological Systems data layer, one of several data layers available in the U.S. Geological Survey (USGS) GAP Land Cover Dataset, depicts native vegetation, agricultural areas, and urban development in 590 land use classes. Ecological Systems refers to the vegetation classification developed by NatureServe to map the natural vegetation of the U.S. Separate Ecological Systems datasets have been created for Alaska (LANDFIRE) and Hawaii (Hawaii Gap Analysis Project). Data for agricultural and developed lands were derived from the National Land Cover Database (NLCD 2001).

Vegetation mapping for the GAP Ecological Systems data layer was done at an intermediate scale; thus, the data are not intended for use at scales larger than 1:100,000. Although classification decisions at intermediate scales may generalize or omit some distinctive regional vegetation types, the intent of this classification was to create a vegetation layer to meet the needs of land managers working across broad landscapes.

The GAP Ecological Systems data layer can be an important research tool for examining wildlife-habitat relationships, fire dynamics, climate change effects, habitat restoration scenarios, and possible gaps in biodiversity protection. Wildlife-habitat relationships may be investigated in EnviroAtlas with additional information on species distribution and habitat needs by overlaying data layers such as ecoregions, protected areas (PADUS), and connectivity.

Things to know before using these data:

The vegetation classes developed for the GAP Ecological Systems database are modeled from satellite imagery and additional digital data on soils, geology, topography, and aspect. As such, the data should be considered a representation of reality rather than a strict replication of actual ground cover.

One or more Ecological Systems may occur under similar growing conditions and have similar spectral signatures on satellite imagery, thus introducing errors into the data.

The GAP land cover data provided by USGS through their web service used Landsat satellite imagery from 1999–2001. As a result, changes in land cover from 2001 to the present will not be reflected in this version of the data. The GAP Ecological Systems data was created using a 30 meter pixel cell with a minimum mapping unit of 1 acre (0.4 hectares);
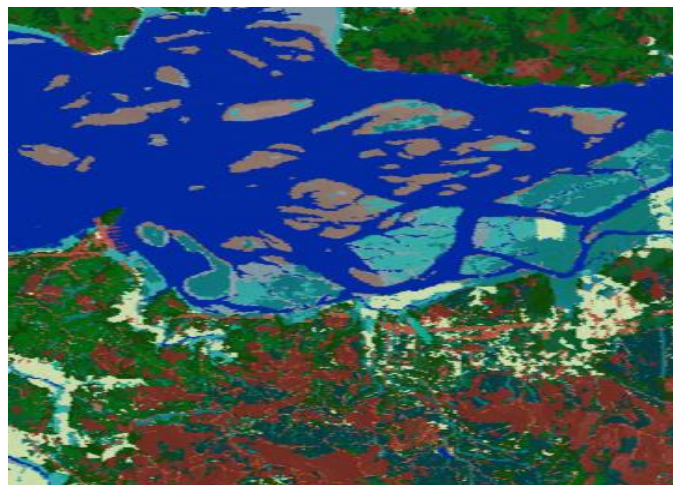
for this reason, smaller habitat types may not be well represented. Riparian areas and rare habitat types are among the most frequently missed classes.

Where can I go for more information?

The USGS GAP Land Cover dataset differs from the USGS National Land Cover dataset (NLCD) in its emphasis on vegetation classes to facilitate habitat identification. NLCD has more detail in developed areas. Click here for access to GAP data and more information on USGS methodology for modeling land cover.

The most detailed classifications from NatureServe's Ecological Systems have been cross-walked to the five highest levels of the National Vegetation Classification (NVC), Class, Subclass, Formation, Division and Macrogroup. To view other national land cover data layers developed at coarser scales (e.g., class, formation), see the GAP Analysis Program Land Cover Data Viewer.

Click here for full GAP Ecological Systems metadata.

NOTE: The data described in this fact sheet have not been prepared or reviewed by the EnviroAtlas team; they are sourced from publicly available external web services and as such are prepared, stored, and managed by the organizations listed above. The EnviroAtlas team has no control over the way these data display in our application. Please go to the sources listed here for more information.