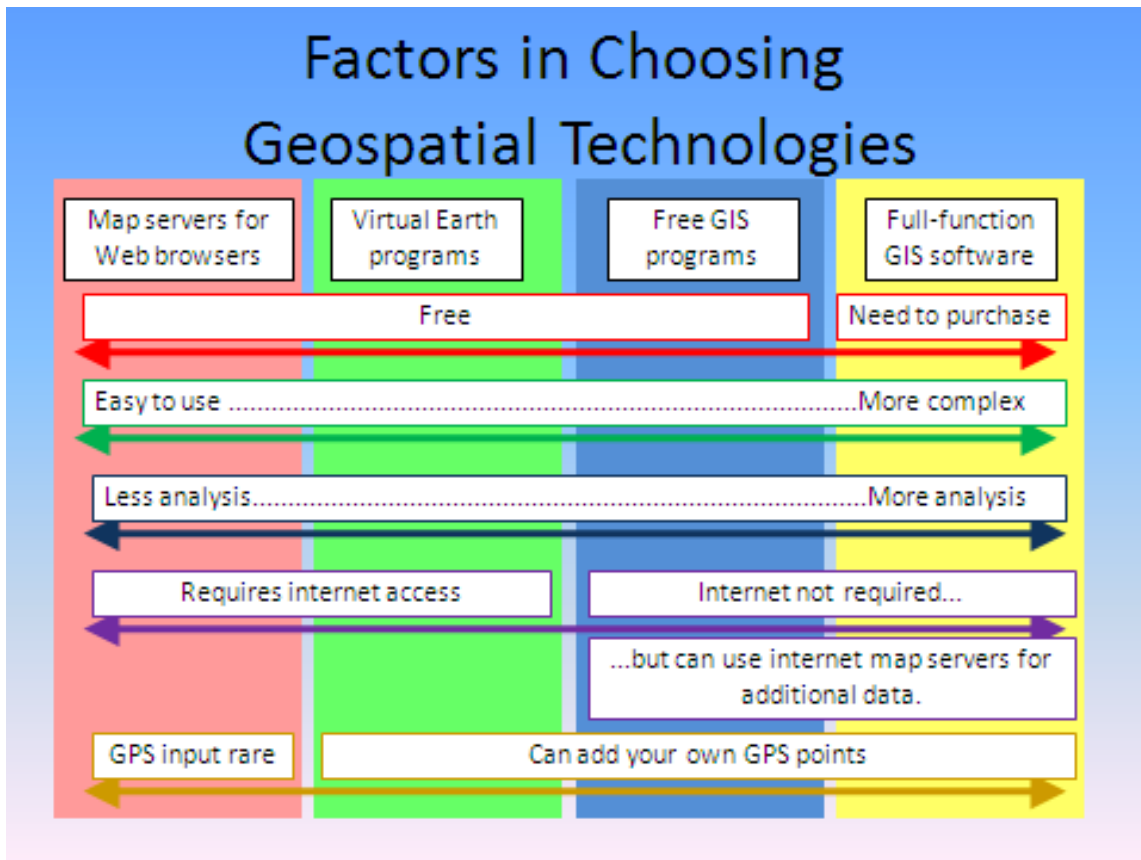


Using GIS in Biology & Environmental Science

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Websites for viewing maps (map servers) - only requires a browser, no extra software.

1. Maryland iMap: <<http://mdimap.com/imap/>> - State map, under development.
2. Google Maps: <<http://maps.google.com>> - has imagery, streets, topography (shaded relief).
3. Acme Mapper: <<http://mapper.acme.com>> - has everything Google Maps has plus topo maps.
4. USGS: <<http://seamless.usgs.gov>> - variety of layers, including land cover, to view and/or download.
5. National Atlas: <<http://nationalatlas.gov>> - variety of layers, including biology ones; data can be downloaded.
6. Health Map: <<http://www.healthmap.org>> - example of another internet map server, of which there are many more - just search for the subject you want and you may find one.
7. NatureServe Explorer data: <<http://www.natureserve.org/explorer/#>> or <<http://www.natureserve.org/getData/animalData.jsp>> - maps of the ranges of various plants & animals; view online or download.
8. NASA Earth Observations: <<http://neo.sci.gsfc.nasa.gov>> - view, analyze, and download images.

9. My NASA Data: <<http://mynasadata.larc.nasa.gov/index.html>> - view & analyze data; download images or GIS grid files.

Virtual Earth programs - download & install a program; needs internet access to use

1. Google Earth: <<http://earth.google.com>> - fast, in common use.
2. ArcGIS Explorer: <<http://www.esri.com/software/arcgis/explorer/index.html>> - slower than Google Earth, but images of large areas have less patchwork appearance, and you can add other GIS shapefiles.

Free GIS programs

1. ArcExplorer Java Edition for Education (AEJEE) can be downloaded from <<http://www.esri.com/software/arcexplorer/download-education.html>>, then follow the installation instructions. It comes with some sample data, and a help file that will demonstrate many of its capabilities.

2. MapWindow GIS <<http://www.MapWindow.org>>. This is the only free GIS that allows editing shapefiles.

Full-function GIS programs - require purchase

1. ArcGIS 9: <<http://www.esri.com/industries/k-12/index.html>>. For Windows systems only; cost for schools is \$500 for a site license, but software can also be earned for free by doing certain projects. Very powerful, industry standard software, requiring good computers and significant hard drive space; not hard to begin but it has many aspects to learn for complete use.

2. MyWorld: <<http://www.myworldgis.org/>>. Purchased through Pasco; cost varies with number of licenses. Java-based, runs on Windows or Macintosh systems. Somewhat simpler to use compared to ArcGIS; but requires decimal-degree data & may have trouble with large datasets.