



ATtILA Analytical Tools Interface for Landscape Assessments

Office of Research and
Development

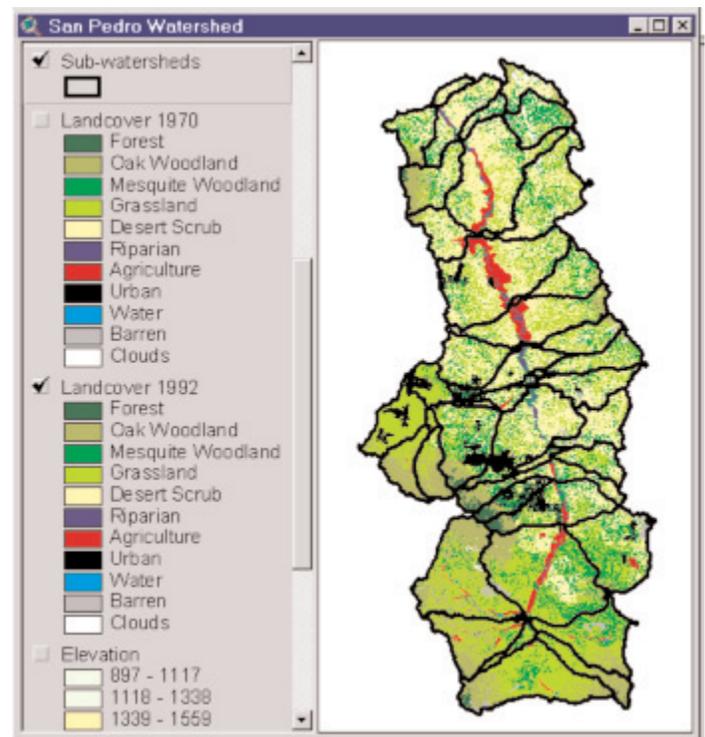
National Exposure
Research Laboratory

Environmental Sciences
Division

Landscape Ecology
Branch

Environmental management practices are trending away from simple, local-scale assessments toward complex, multiple-stressor regional assessments. Landscape ecology provides the theory behind these assessments while geographic information systems (GIS) supply the tools to implement them. A common application of GIS is the generation of landscape metrics, which are quantitative measurements of the environmental condition or vulnerability of an area (e.g., ecological region or watershed). The generation of these metrics can be a complex, lengthy undertaking, requiring substantial GIS expertise.

The U.S. EPA Landscape Ecology Branch has developed a user-friendly interface to facilitate this process. The Analytical Tools Interface for Landscape Assessments (ATtILA) is an easy to use ArcView extension that calculates many commonly used landscape metrics. By providing an intuitive interface, the extension provides the ability to generate landscape metrics to a wide audience, regardless of their GIS knowledge level. ATtILA is a robust, flexible program. It accepts data from a broad range of sources and is equally suitable across all landscapes, from deserts to rain forests to urban areas.



For More Information
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[http://www.epa.gov/
nerlesd1/land-sci/
tools.htm](http://www.epa.gov/nerlesd1/land-sci/tools.htm)

Four families of metrics are included in the extension: landscape characteristics, riparian characteristics, human stressors, and physi-

ATtILA

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cal characteristics. Each group has a dialog to accept user input on which metrics to calculate and what input data to use. Landscape characteristics are related to land cover proportions and patch metrics (e.g. percent grassland cover or number and size of grassland patches). Riparian characteristics describe land cover adjacent to and near streams (e.g. percent of crop land within 30 meters of streams). Human Stressors are concerned with population, roads, and land use practices (e.g. population change or extent of human use), and physical characteristics provide statistical summaries of such attributes as elevation and slope.

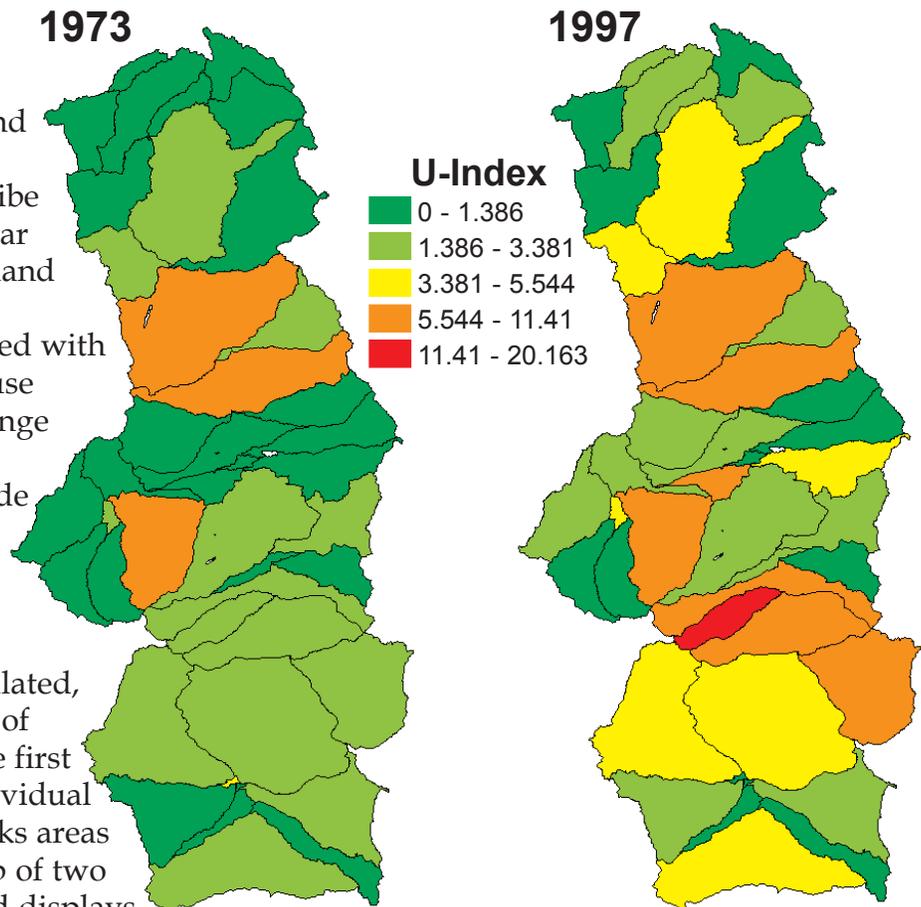
Once metrics have been calculated, the extension has three types of output display available. The first displays areas ranked by individual metric values, the second ranks areas by a weighted index made up of two or more metrics, and the third displays a bar chart of selected areas and metrics.

Because of the size of landscape data sets and the complexity of the calculations to generate some metrics, we recommend a minimum of a Pentium II 266 MHz (or equivalent) with 32 MB of memory. A preferred system would include a Pentium II 400MHz (or better) with 64 MB of memory and a fast (<8 ms) hard drive or better.

To use the ATtILA, you will need version 3.1 or later of ArcView and the Spatial Analyst version 1.1 extension. Both UNIX and

Windows (95, 98, ME, XP, and NT) environments are supported.

Human Use Index



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