

Appendix 3 – MRLC National Land Cover Data Viewer

The Multi-resolution Land Characteristics Consortium (MRLC) National Land Cover Database

(<http://www.mrlc.gov/>) is a project to classify the land cover or land use of the entire US, at a resolution of 30 m x 30 m, based on remote sensing data from satellite imagery. The US is categorized into 21 classes of land use or land cover (4 classes limited to Alaska). When the data is visualized, each of the classes is shown in a unique color. Currently there are publicly available data for 1992, 2001, and 2006. In principal, a new land cover / land use map will be produced every 5 years by the consortium. For the 2001 and 2006 National Land Cover Data (NLCD), there are two additional coverages: a map of impermeable ground cover (e.g. asphalt, cement), and a map of % tree canopy cover. Users of the 2006 NLCD should read the **Product Description** and **Legend** (from the home page, click **Finding Data > National Land Cover Database 2006**).

To visualize land cover data around a point, open the **MRLC Consortium Viewer**

(<http://gisdata.usgs.gov/website/mrlc/viewer.htm>). On the left side of the view window are numerous buttons to activate features (see Fig. 1). Scrolling over the buttons tells what they are. Useful features include **Legend** (under **Documents**), and the **Measure** and **Eraser** (under **Tools**). The button **XY** opens a window to enter longitude and latitude. Entering the long-lat (decimal degrees required, format longitude, latitude: **-91.6300661, 44.0615459**) and hitting return will zoom the view window to that location. Each color represents a different land use / land cover class; a key is provided in Fig. 2. More detailed instructions on using the Viewer are at <http://gisdata.usgs.gov/website/mrlc/userinstructions.htm>.

In the upper right of the view window is the **Scale Information**. You can use this to change scales down to 1:52 inches – too fine a scale to be of use. Below the scale information is the **Display**. You can display various coverages, including overlays. For example, you can overlay city names, hydrology, roads, and political boundaries over the 2006 NLCD. To access a coverage, click the check box next to the coverage name. If the feature **Legend** button has been clicked on the left-side panel, the legend for each display coverage will be shown (see Fig. 2). Make sure that the 2006 NLCD (CONUS) Land Cover check box is checked, and all other boxes are unchecked.

To analyze land use / land cover around a desired point (e.g. a specified point count location), enter the longitude and latitude (e.g. **-91.6300661, 44.0615459**). Select the desired scale, using the **Scale Information** tool. Click the **Eraser** to remove the geocoordinate label from the view window. Make sure that no coverage is checked in the Display except the 2006 NLCD (the default view has the **Boundaries – National Atlas States** checked, so uncheck this). Finally, make a screen grab of the landscape visualization (using Windows **Snipping Tool**, or the Mac OS see <http://www.wikihow.com/Take-a-Screenshot-in-Mac-OS-X>) to copy the section of the land use image you intend to analyze. Paste the grabbed image into a new **ImageJ** image file (see Appendix 4).



Fig. 1. The MRLC Consortium Viewer of the NLCD, showing some of its main features.

NLCD Land Cover Classification Legend	
	11 Open Water
	12 Perennial Ice/ Snow
	21 Developed, Open Space
	22 Developed, Low Intensity
	23 Developed, Medium Intensity
	24 Developed, High Intensity
	31 Barren Land (Rock/Sand/Clay)
	41 Deciduous Forest
	42 Evergreen Forest
	43 Mixed Forest
	51 Dwarf Scrub*
	52 Shrub/Scrub
	71 Grassland/Herbaceous
	72 Sedge/Herbaceous*
	73 Lichens*
	74 Moss*
	81 Pasture/Hay
	82 Cultivated Crops
	90 Woody Wetlands
	95 Emergent Herbaceous Wetlands
* Alaska only	

Fig. 2. Color key of land cover / land use classes of the 2006 NLCD.