# TNTatlas

Nebraska Land Viewer Atlas 2nd Edition

The Nebraska Land Viewer atlas was developed as a model presentation of multiple layers of statewide geodata in the form of an electronic atlas with more than a terabyte (TB) of data (if uncompressed) on a single DVD. The 2nd Edition of the atlas features faster loading and display as well as enhanced interactive tools for exploring the atlas geodata.

Natural color orthoimagery at 1-meter resolution covering the entire state of Nebraska is the basis of the Land Viewer atlas, but has been reorganized to provide much faster display of this detailed imagery. The original orthoimagery was made publicly available for downloading as 5,867 JPEG files. Each of these original raster files matches 3.25 minutes of latitude and longitude and thus they have various sizes. A seamless raster mosaic was prepared from these rasters and has been exported to a tiled set of 3,239 separate JP2 files, each 8,192 cells by 8,192 cells. The new orthoimage layer in the atlas is a multifile raster object linked to these JP2 files, which incorporate JPEG2000 compression at a ratio of 200:1 in order to maintain the original 1-meter image resolution and still fit all of the atlas data on a single DVD. Use of this innovative multifile raster structure provides dramatic improvement in display speed from the hard drive and especially from the DVD when compared to display of the original orthoimage mosaic used in the 1st Edition (a single raster object with JPEG2000 compression). When the multifile raster orthoimage layer is displayed at or near maximum resolution (1X zoom), redisplay after scrolling is 5 to 10 times faster, now typically less than 1 second. The time required for initial loading of the atlas data from the DVD has also been reduced.

The Land Viewer atlas also includes a variety of vector layers for location reference that represent publicly available geodata, such as city and county outlines, highways and roads, Natural Resource Districts (NRDs), township/range/section grids, and USGS map quadrangle outlines. The atlas opens with a statewide view of Nebraska counties overlaid on a Landsat satellite image mosaic, and more detailed layers are turned on automatically as you zoom in to smaller areas. Two custom exploration tools are provided to let you quickly focus in on any area of interest. If you know the approximate location of your area, you can simply left-click with the mouse in the TNTatlas view to zoom in to it. The zoom-in action (controlled by a tool script and set as the default tool in the atlas) varies depending on how far you have already zoomed in, and is designed to enable you to zoom from the initial full state view to maximum detail in the orthoimage layer in no more than 4 steps. At the initial full view, the left-click action selects the enclosing county and zooms to its extents. Subsequent left-clicks recenter the view on that point and zoom in by 4X, until the display scale falls below 1:25,000, after which the left-click zooms in to maximum detail in the orthoimage layer. You can also search for areas by name using the Find Area of Interest dialog that opens automatically with the atlas. You can use this dialog to locate a township, section, NRD, county, USGS map quadrangle, or city or town. When a single match is found, the view highlights and centers the feature and automatically zooms in to show it and its immediate surroundings. The Find Area of Interest dialog and its actions are set up by a TNT display control script so that the dialog remains active as you use the Zoom In tool or any of the interactive tools in the GeoToolbox. If you close the Find Area of Interest dialog, or it becomes hidden behind other windows, simply press the Open Find Area Dialog icon button on the toolbar to reopen it.

The Find Area of Interest window also provides a quick way to download quarter-quadrangle orthoimages from the Nebraska DNR ftp site. You can use controls on the Orthoimages tabbed panel to get the list of available images for the USGS quadrangle you have centered in the view, select the desired images, choose from two available coordinate reference systems, and download the associated files. A Help file opened from the Help button on the Find Area of Interest window provides more detailed information on the atlas's exploration tools and download utility.
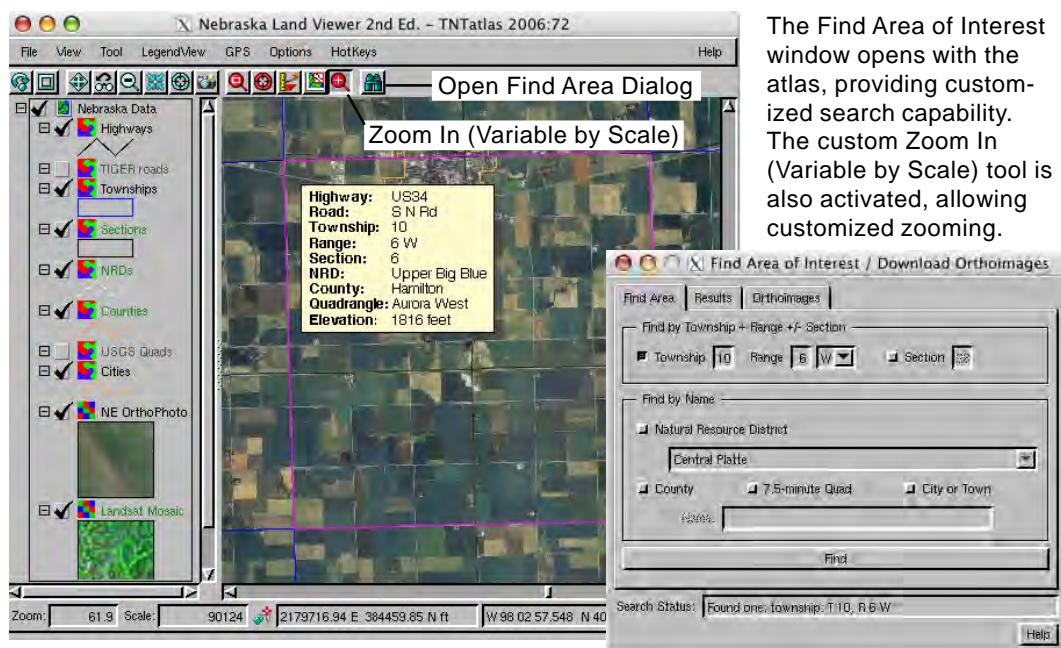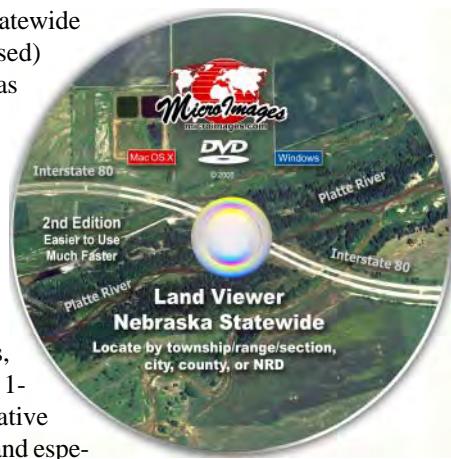
The Find Area of Interest window opens with the atlas, providing customized search capability. The custom Zoom In (Variable by Scale) tool is also activated, allowing customized zooming.