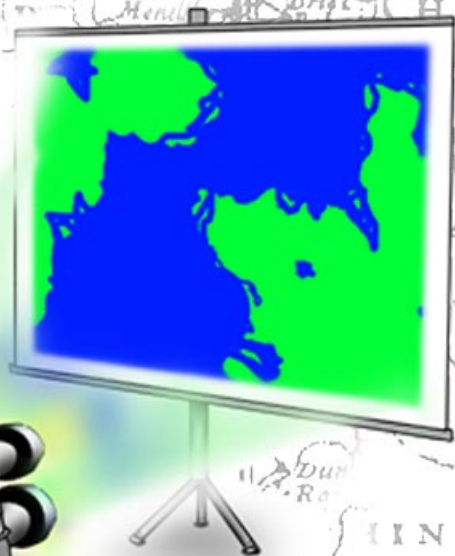# Getting Started

Using TNTatlas®
for X Windows

with
TNTatlas®

Before Getting Started

TNTatlas® is a free product available from MicroImages for viewing hierarchical atlases prepared in TNTmips® with HyperIndex® Linker or for single layout atlases. There are two versions of TNTatlas: a native Windows product called TNTatlas for Windows and a version that runs with MicroImages X Server (MI/X) called TNTatlas. Both versions make use of the same atlas data without modification.

Prerequisite Skills This booklet assumes you have completed the exercises in *Getting Started: Displaying Geospatial Data* and *Getting Started: Navigating*. Those exercises introduce essential skills and basic techniques that are not covered again here. Please consult these booklets for any review you need.

Sample Data The exercises in this booklet use sample data distributed with the TNT products. If you do not have access to a TNT products CD, you can download the data from MicroImages' web site. The exercises in this booklet use the Project Files in the TNTATLAS directory of LITEDATA and the TNTatlas file (.atl) also found there. A read-write copy of sample data on your hard drive is not required since atlases can be run with the data on CD-ROM. Making a copy on your hard drive will generally speed access, however. To gain more experience with atlases, visit the Online Atlases portion of MicroImages' web site. The TNTclient software used for viewing these atlases is similar to TNTatlas but does not use X windows.

More Documentation This booklet is intended only as an introduction to using TNTatlas. You may also wish to consult the TNTmips reference manual for additional information (see the sections on HyperIndex).

TNTmips and TNTlite® TNTmips comes in two versions: the professional version and the free TNTlite version. If you did not purchase the professional version (which requires a software license key), TNTmips operates in TNTlite mode, which limits the size of your project materials. TNTatlas is also a free product from MicroImages, but the size of objects viewed with TNTatlas is not limited; you can view any information the atlas designer has provided for you.

*Merri P. Skrdla, Ph.D., 2 October 2001*

Welcome to TNTatlas

TNTatlas provides a means for small or widespread distribution of atlases. The recipient of an atlas on CD-ROM has everything required to view the atlas. MicroImages requires no payment for the distribution of data and software in this fashion. Once the viewing software (TNTatlas) has been installed, it can be used to view any atlas or object in TNTmips' RVC format. Although TNTmips is required to construct an atlas using HyperIndex Linker, anyone using TNTmips, TNTedit, TNTview, or TNTatlas can access the atlases created (depending on permissions). Any of these products, except TNTatlas, can be used to create a single layout atlas.

One example of widespread distribution of an atlas on CD-ROM was the insertion of a street atlas of Istanbul (in Turkish) in a popular magazine with a distribution of about 30,000. The atlas was so popular it was also distributed with a second issue of the same magazine. Precision agriculture consulting provides a good example of small atlas distributions in which only a single copy of an atlas may be given out to the individual farmer so that he or she may view all the imagery, vectors, and other data collected for the land they farm. In either case, the recipient of the atlas can be viewing the associated data within minutes of inserting the CD-ROM in their computer.

Four booklets address different aspects of working with atlases including assistance with atlas design (*Introduction to: Designing Electronic Atlases*), atlas assembly (*Getting Started: Constructing a HyperIndex*), the scope of projects that can be undertaken (*A Case Study: MERLIN: Enterprise-wide Geospatial Analysis*), and an introduction to the features of *TNTserver and Clients*. This booklet and its companion (*Getting Started: Using TNTatlas for Windows*) are designed for people using TNTatlas who were not involved in the design of the atlas and may be unfamiliar with TNTmips.
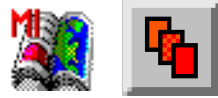
STEPS
☑ copy the files in the TNTATLAS data collection to your local drive

The exercises on pages 4–6 show you how to open an atlas and navigate in a variety of ways. Page 7 describes layer visibility, while page 8 discusses viewing attributes. Page 9 demonstrates web links by attribute. Page 10 describes interface features not already presented and page 11 provides more tips for viewing single layout atlases.
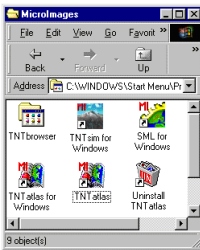
Installing and Launching TNTatlas

The first step in running TNTatlas is installing the program. If you have acquired an atlas on CD-ROM, placing the disc in your CD drive should launch the installation program. It could also launch an Adobe Acrobat or html document with buttons that let you choose between installation, running the atlas (if TNTatlas is already installed), or other functions. If you are installing TNTatlas from a TNT products CD, choose to install TNTlite and when you come to the window with installation choices, choose to install TNTatlas.

Installation is a simple procedure. You simply read the screens that come up and click on the Next or Continue button until you are done with installation and you click Finish. You do not have to reboot your machine for installation to be completed, as you do with many products.

During TNTatlas installation, an association is established between the file that specifies the atlas home page, which has a .atl extension, and the program that launches TNTatlas so that double clicking on any .atl file will open TNTatlas with the home page specified by that file. You can also launch TNTatlas by double-clicking on its icon in the installed location or choosing it from the MicroImages group on the Start menu (Windows only). If launched in this manner, you need to use the File menu to open an atlas (.atl, Open) or an object in RVC format (Open Object). If you received an atlas on CD-ROM, the .atl should be at the root level of the CD. There is no .atl file at the root level of the TNT products CD.
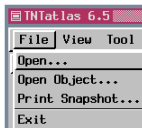
You are instructed here to open an atlas that is provided as part of the sample data for TNTlite. You should, of course, also open the atlas that came on your CD if that is how you acquired TNTatlas.

TNTatlas can be used by anyone with a computer (Windows, Mac, UNIX, LINUX) and CD-ROM drive. You can substitute the Internet and download of the program and data for a CD-ROM drive.

A shortcut to the installed location is created in the MicroImages folder for the Start menu (Windows).

STEPS

☑ install TNTatlas from whatever source you acquired it

☑ launch TNTatlas

☑ choose File / Open from the TNTatlas window and select USA.ATL, which is in the TNTATLAS folder you copied

TNTatlas Components

Three windows open when you launch TNTatlas from an atl file: the TNTatlas view window, the TNTatlas Layer Manager, and the HyperIndex Navigator. The latter two windows do not open until you open an atl file or an object if you launched TNTatlas by double-clicking on the application. The HyperIndex Navigator window is only open when the HyperIndex Navigator tool is active.

HyperIndex Navigator tool
Previous Level
Home Level

Show HyperIndex Navigator

LegendView

HyperIndex Navigator
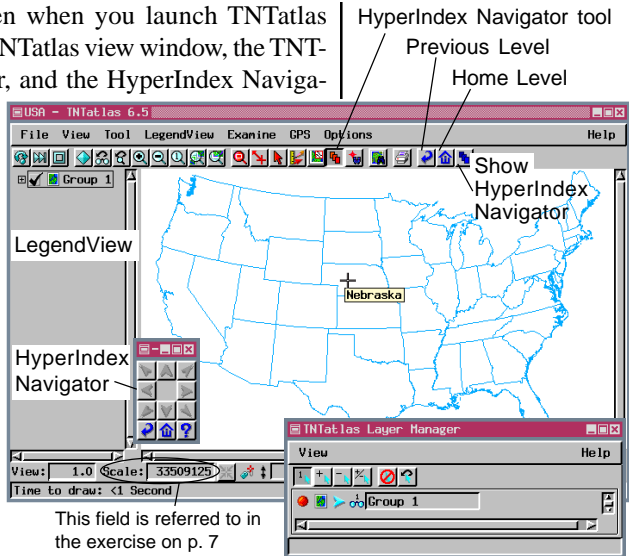
This field is referred to in the exercise on p. 7

A **HyperIndex stack**, or **atlas**, is a collection of graphically and geographically related objects that uses the HyperIndex Navigator for point and click retrieval of objects from the hierarchical links established with HyperIndex Linker. An atlas can also be a single layout that uses map scale controlled visibility to reveal and hide different layers as you zoom in and out. In this case, you use the zoom tools, not the HyperIndex Navigator, to discover the breadth of information presented in the atlas.

The area of the parent object that contains a link to the next level in a stack is called an index area. You can choose to show or hide the outlines of these areas. If you click where index areas overlap, the HyperIndex Link Selection window opens to let you choose which link you want. The index areas in this example are the min/max boxes for each state because the links were created automatically using georeference information rather than individually for each polygon.
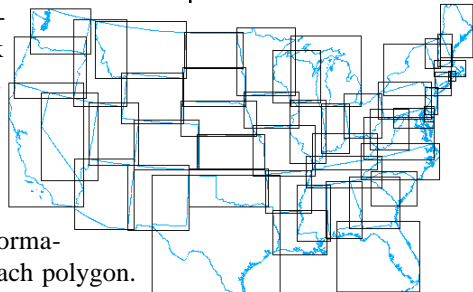
STEPS

☑ note that when you pause the cursor over a state, a DataTip with the state name appears

☑ in the view window, choose Options / Hyper-Index / Show Index Areas

☑ now toggle off the Show Index Areas option

(Do the exercises through p.10 without exiting.)

Navigating Down and Laterally

Vocabulary: The **Home Level** is the first level of a stack. In a published atlas, the Home Level is often a graphic that introduces the purpose of the atlas. You can begin where you want when viewing a stack in TNTatlas by choosing Open Object rather than Open, which makes the Home Level the object displayed when you begin navigating.

STEPS

☑ with the HyperIndex Navigator tool selected, click in the middle of Nebraska

☑ note that all of the arrows in the HyperIndex Navigator window are now active

☑ click on the down-and-right arrow

☑ pause the cursor over several counties noting the county names provided by DataTip

☑ right-click on the up-and-left arrow, note the choices, and select one

☑ click on the Home Level icon button either in the HyperIndex Navigator window or on the view window toolbar

☑ click on the eastern border of Nebraska, then choose *Nebraska county outlines* from the HyperIndex Link Selection window (you can double-click on it or click once then click [OK])

Many objects can be linked to the same parent object. In the atlas used for this exercise, the county maps for each of the states have been linked to the parent object (contiguous states of the USA). When you click on a state, its county map is displayed.

Lateral links exist between all objects linked to the same parent object. The arrows on the HyperIndex Navigator window let you get to these laterally linked objects without first returning to the parent object. If there are multiple objects in a particular direction, left-clicking takes you to the closest object, which is identified by the DataTip when you pause the cursor over the button, and right-clicking provides a list of all objects in that direction to choose from.

Clicking on the Home Level button always takes you to the level of the atlas you started at. The Previous Level button takes you one level up in the hierarchy of the atlas. You have only navigated down one level in this exercise, so the Previous Level and Home Level buttons will bring up the same object.
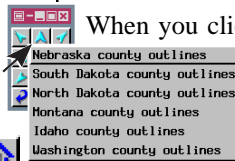
When you click on a location that is covered by multiple index areas, a window opens that lists the descriptions for all the index areas where you clicked. You then choose the link you want to follow or cancel the navigation. You can elect to have this window open if there is just a single link by turning on the Verify Selection toggle button on the HyperIndex cascade from the Options menu in the view window. Generally, it is a nuisance to have to click [OK] each time you navigate, but you may decide with some atlases, particularly if you are running on a slower machine, that you want to see the description of the link before displaying the object.
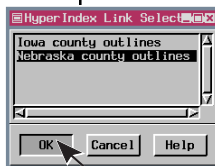
page 6

Layer Visibility

Two conditions may cause a layer to not be currently visible: the Hide / Show indicator is set to hide and/or the layer has map scale controlled visibility and the current scale is outside the visible range. You can see if there are any hidden layers by expanding the group it is in so the layers are listed. The Hide / Show icon is immediately to the left of the layer name. Many atlases, particularly single layout atlases, have so many layers that showing them all at once is not practical. The atlas designer has to make the decision about which layers to make visible initially. If you are interested in any of the other layers, you can turn them on. When a layer is "unhidden," it is drawn on top of all other layers. It is drawn in its proper position in the layer order the next time the view is redrawn.

Map scale controlled visibility turns layers on and off as you zoom in and out. Low resolution images can be replaced by higher resolution images as you zoom in or satellite imagery may replace a scanned map. Vector objects can show different levels of detail. With map scale controlled visibility, a layer can always be on, it can either appear or disappear when the specified scale is reached, or it can be visible only within a designated scale range. The scale field at the bottom of the view window reports the number to the right of the colon in the map scale (for example, 24,000 for 1:24,000). To see the soil map in this exercise, you have to zoom in to 1:42,000 or greater. You cannot change the map scale at which layers are visible in TNTatlas. Assigning map scale controlled visibility is also up to the atlas designer.
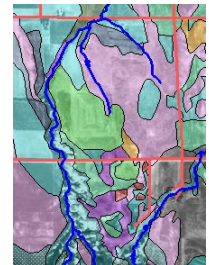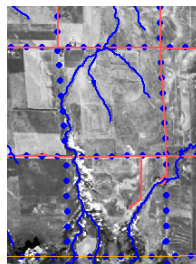
STEPS

☑ turn on index areas (see p. 5 if necessary)

☑ click on the index area in Dawes county
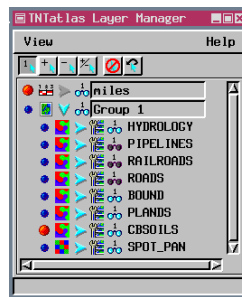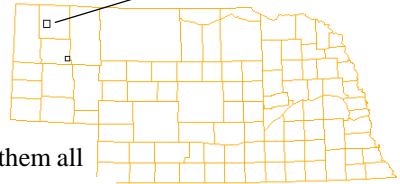
☑ click on Show Details for Group 1

☑ click on the Hide / Show indicator for ROADS and note the presence of the new layer
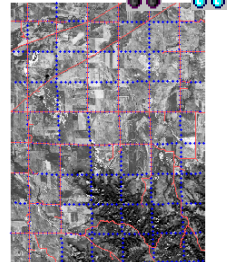
☑ change the entry in the Scale field (see p. 5) to 42000 and press <enter>

☑ change the entry in the Scale field to 55000 and press <enter>

Viewing Database Information

STEPS

☑ change the entry in the scale field to 42000, and press <enter>

☑ find the CBSOILS layer in the TNTatlas Layer Manager window, and click on Show Details ▷ → ▽

☑ click on the Show Tables icon button in the polygon row

☑ click on the View Table icon button for the CLASS and YIELD tables

☑ click on the Select icon button on the view window toolbar

☑ click on a number of soil polygons in the view window noting the records selected

☑ click on Redraw in the view window and note that transparency is restored to polygons that had been selected

☑ click on a Select Record button in the YIELD table then on the Exclusive icon button in the YIELD table's toolbar (note the view will pan if the active element is not visible)

☑ look at the polygon row for CBSOILS in the TNTatlas Layer Manager window and note how many polygons are selected

△▨ ▦▧ ▧◀▶ ▨ 41 of 777 select

☑ repeat steps 8 and 9 for a different soil type

☑ click on the Hyper Index Navigator tool

TNTatlas provides you the same access to database information available in TNTmips. You can view attributes of selected elements and use attributes to select elements. You can use attributes to select elements while the HyperIndex Navigator tool is active, but you must switch to the Select tool or the GeoToolbox to select elements with the mouse.

The Select tool on the view window tool bar lets you select individual elements. In addition to individual element selection, the GeoToolbox lets you draw geometric and irregular shapes for use in selection. You can make measurements using these same shapes or create a sketch layer or region from them (these features are described in *Getting Started: Sketching and Measuring* and *Getting Stared: Interactive Region Analysis*).

If you select elements without first opening a database table, the first table associated with the element type selected opens automatically. For many vector objects, this table may be the element ID table, which is not likely to provide information of interest to you. You need to take the positive actions described in this exercise to open the table you want to view. Unless you are already familiar with the data in the atlas you are viewing, finding the information you want to see is an exploration process. You show details on groups and layers, then reveal the list of tables and decide which to open.

Polygons with transparent fills are not returned to their original state when unhighlighted; you need to redraw to restore their initial appearance. The style field in the class table shows transparent colors as the corresponding solid color.
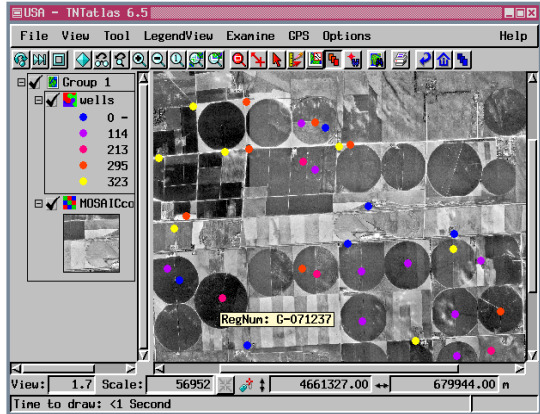
Web Links By Attribute

Point-and-click object retrieval in TNTatlas replaces the current view window contents with the object retrieved. Any object type, including complex layouts that include many different objects and scale bars, legends, or other enhancements, can be retrieved as was demonstrated in the previous exercise. When the link is to an external file type or web site, a separate window opens for that application, and the current view remains unchanged.

The layout for this exercise shows a resampled mosaic of Digital Ortho Quarter Quads (DOQQs) for a portion of Box Butte County as the base for a sample of registered ground water wells in the area. The well points are theme mapped by pumping capacity. Each of the points has a link to the data maintained by the Nebraska Department of Natural Resources for the well represented by the point. Not all the points in the vector object have their associated well log information, which can be obtained from the web site along with ownership and other information that is not associated with any of the points in the vector object.

TNTatlas Miscellaneous Features

STEPS

☑ click on the + to the left of Group 1 in the Legend-View

☑ note the appearance of the layer names and legends

☑ right-click on the MOSAICCOQ layer name in LegendView and choose Hide Legend (note that only the legend for that layer is hidden)

☑ right click on the wells layer name in Legend-View and choose View Metadata

☑ read the metadata, then choose File / Close in the Metadata Viewer window

☑ move the cursor to the right of the vertical scroll bar in the LegendView, but not over the view itself; the cursor ◄─► should become a double-arrow, then click and drag to resize the LegendView

☑ click on the Show Layers arrow for Group 1 in the TNTatlas Layer Manager

☑ click on the Tools icon for the MOSAICCOQ layer and choose Raster Histogram

☑ note the information presented

☑ try other selections on the Tool menu
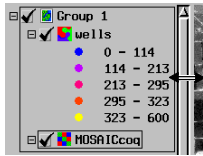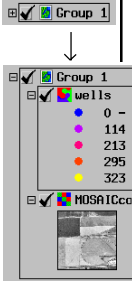
The LegendView, which appears by default at the left of the view window can be turned off, moved to the right of the window, and resized. The information in the LegendView can be expanded and collapsed. With the exception of showing a legend for each layer, the functions of the LegendView are duplicated in the TNTatlas Layer Manager window. The active group and layer have a surrounding rectangle in LegendView rather than the red indicator used in the Layer Manager. It is a matter of personal preference whether you want the legend information in the view window.

You will find right mouse button functions at the group and layer level in LegendView. Clicking the right mouse button on the group name lets you choose between hiding or showing layers, redrawing, or zooming to the extents of the group. The right-mouse menu for the layers lets you hide the legend, redraw the layer, and provides various zooming options depending on the layer type. You can also choose to view metadata for the layer or its extents. These functions and more are available from the Tools menu for each layer in the TNTatlas Layer Manager. The tools menu also provides the options to view extents, object coordinates, raster histograms, or a raster correlation diagram. For vector, CAD, and TIN layers you can also zoom to the active or selected elements.

A number of hot keys are available to make changing view position and zoom easier. The view window must have focus for these to be active: redraw at full view, 0; set zoom to 1X–4x, 1–4; recenter at cursor location <space>, zoom in, +; zoom out, -.
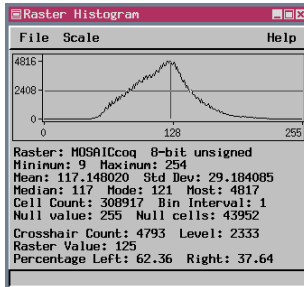
Viewing Single Layout Atlases

The HyperIndex Navigator tool has no function with single layout atlases. You reveal the depths of the atlas with the zoom and pan tools. The hot keys presented at the bottom of the preceding page are also useful. Single layout atlases rarely have all the layers shown at one time. The earlier exercise on *Layer Visibility* describes different methods of making layers draw without specifically using the zoom box, which is actually the most likely method to be used for zooming in.

The Zoom Box is used to select an area you want to zoom up on and is proportional to your view area (unless you have differential zooming turned on). There is an Options / View Preferences toggle that lets you set whether the tool is spring loaded (zooms when you release the mouse) or right-mouse button activated. In the latter case, the Zoom Box remains on the original image where it was drawn, so that its position and size can be adjusted, until you click the right mouse button. Set this toggle in whichever position you prefer (it also applies to the Pan tool to the right of the Zoom Box).

Most single layout atlases are far more complex than the layout used in this exercise, which you should recognize as part of the larger USA atlas. This layout, however, will serve to demonstrate approaches to use with single layout atlases. If you see a layer listed that you want to view but you don't think it is drawn, try zooming to the layer extents. If the layer has map scale controlled visibility, it is likely visible at this scale. If the layer is a mosaic, for example all the TIGER data in the state, it will not likely be visible when you zoom to its extents. Finding a layer of interest may take some thought.
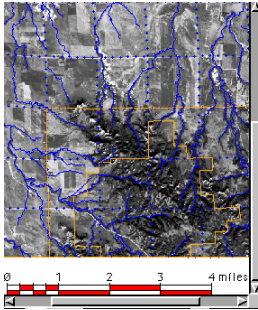
STEPS

☑ choose File / Open Object and select SPOTAND OVERLAYS from the CB_SPOT Project File

☑ click on the Zoom Box tool, position the cursor at the upper left of the raster, draw out a box that encompasses at least two grid squares in each direction, then release the mouse

☑ click on the Full View icon button

☑ choose Options / View Preferences and toggle on the last button (use right mouse button to perform zoom or pan)

☑ repeat step 2 except reposition and resize the box after its initial drawing, then click the right mouse button

☑ click on the Zoom to Active Group icon in the view window

☑ click on the + to the left of Group 1 in LegendView

☑ click on the Zoom to Active Layer icon
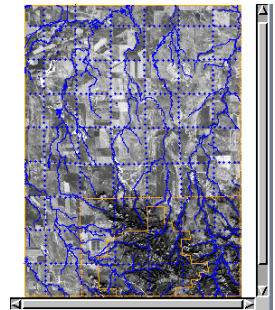
Advanced Software for Geospatial Analysis

MicroImages, Inc. publishes a complete line of professional software for advanced geospatial data visualization, analysis, and publishing. Contact us or visit our web site for detailed product information.

TNTmips   TNTmips is a professional system for fully integrated GIS, image analysis, CAD, TIN, desktop cartography, and geospatial database management.

TNTedit   TNTedit provides interactive tools to create, georeference, and edit vector, image, CAD, TIN, and relational database project materials in a wide variety of formats.

TNTview   TNTview has the same powerful display features as TNTmips and is perfect for those who do not need the technical processing and preparation features of TNTmips.

TNTatlas   TNTatlas lets you publish and distribute your spatial project materials on CD-ROM at low cost. TNTatlas CDs can be used on any popular computing platform.

TNTserver   TNTserver lets you publish TNTatlases on the Internet or on your intranet. Navigate through geodata atlases with your web browser and the TNTclient Java applet.

TNTlite   TNTlite is a free version of TNTmips for students and professionals with small projects. You can download TNTlite from MicroImagesí web site, or you can order TNTlite on CD-ROM.

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