

The fast and convenient way to view, annotate
and print the highest accuracy topographic maps.

Copy your 16-character ALL TOPO MAP Serial Number to this box for safekeeping:

iGage

For Windows 95/98/NT

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System Requirements

Minimum Computer	60 MHz 486, 8 Meg Ram, Win95™, Win98™ or WinNT™ Run under Virtual PC on a Mac.
Hard Disk Drive	100 megabytes of free space + 15 Meg per additional state set
Monitor Setting	True Color / High Color / 256 Color Mode (will not run in 16-color mode)
Printer	Any graphics capable windows printer. (Laser printers: 1.5MBytes printer memory for 300 DPI printouts, 4+MBytes for 600 dpi.)
Optional GPS Receiver	Garmin™, Magellan™, Lowrance™ with serial cable. Tracking supported for all NMEA output devices.

Installation

Each ALL TOPO MAPS set should be installed using the installation program which is found on the #1 data CD or the dedicated installation disk if one is provided. **Only the first disk needs to be installed.** To run the installation program:

1. Start (turn on) your computer.
2. After your computer completes starting, place CD #1 into the CD-ROM drive.
3. Click **Start** (on the Start menu bar), and then click **Run**.
4. Type **d:\Setup**, where **d** is the letter representing your CD-ROM drive, and then click **OK**.

The installation program will automatically add an icon to start ALL TOPO MAPS, both on your desktop and on the Start Menu under 'Start, Programs, ALL TOPO MAPS'.

The first time you run ALL TOPO MAPS you will need to enter your unique Serial Number which may be found on the 'ALL TOPO MAPS Serial Number Certificate' attached to the 'Warranty and Software Update Registration' card. DO NOT loose your Serial Number, it is your proof of purchase and your key to product updates and support.

Adding Additional State Sets

If you purchase additional state map sets you must run the setup program on each additional set. For each additional map set:

1. Exit AllTopo and its help resources, place data disk #1 in the CD drive.
2. Click **Start** (on the Start menu bar), and then click **Run**.
3. Type **d:\Setup**, where **d** is the letter representing your CD-ROM drive, and then click **OK**.

Thank You for Purchasing ALL TOPO MAPS!

Thank you very much for purchasing and using ALL TOPO MAPS! We are always excited to hear from ALL TOPO MAP users and invite you to send stories, enhancement requests, and general comments to:

email: info@igage.com

The latest updated version of the ALL TOPO MAP viewer and any new tools may be downloaded (at no cost) from the iGage web site:

www.igage.com

Please take a moment to fill in the registration card and return it, or use the web based registration form at www.igage.com/regweb/ We want our upgrade information to be welcome at your address and promise to keep our customer lists (your name and address) private.

Store your *Certificate of Serial Number* in a safe place; you will need it if you upgrade your system's ALL TOPO MAP components. Your certificate lists toll free numbers for All Topo Map support.

Don't divulge your serial number to others. Program updates, special promotions and support are offered only once per customer as metered by your serial number. Other individuals using your serial number will prevent you from obtaining the updated tools and support that you deserve.

What Are ALL TOPO MAPS?

ALL TOPO MAPS are a collection of 7½ minute (1:24,000), 1:100,000 scale and 1:250,000 topographical maps, with easy to use viewing software (AllTopo.exe) for your Win95/98/NT based computer. Each collection includes every map for an entire state. The viewing software allows quick access to every map by location or place/feature name. Export to the clipboard and printing is supported. Straight line, traced distances and areas may be measured.

7½ minute topographical maps represent the smallest scale (most detailed resolution) available for general coverage of rural lands. The base, paper maps are prepared by the USGS in 7 minute 30 second (7½ minute) longitude and latitude increments which project the curved surface of the earth onto the flat surface of the paper.

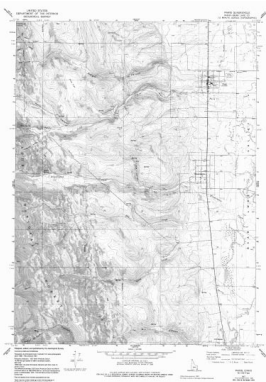
These paper maps are scanned, georeferenced to 2½-minute grid ticks, then digitally rubber-sheet reprojected to flat Universal Transverse Mercator (UTM) space. Finally the digital map images are highly compressed and prepared for use with the ALL TOPO MAPS program.

Returns, Technical Support and Upgrades

If within 30 days you decide that ALL TOPO MAPS is not the product that you expected, please return the disks and the Certificate of Serial Number to the retailer where you purchased the product for a refund.

iGage will gladly exchange disks that are unusable or damaged. Call to request a 'free' disk exchange within 30 days of purchase. After 30 days, your data disks may be replaced or upgraded at any time for a nominal fee.

iGage hopes to provide a useful product and great product support. Our technical support address and telephone numbers can be found on the 'Certificate of Serial Number' card which is included with the data disks.




A 7½ Minute, 1:24,000 Scale
Quadrangle Topo Map

Starting and Using ALL TOPO MAPS

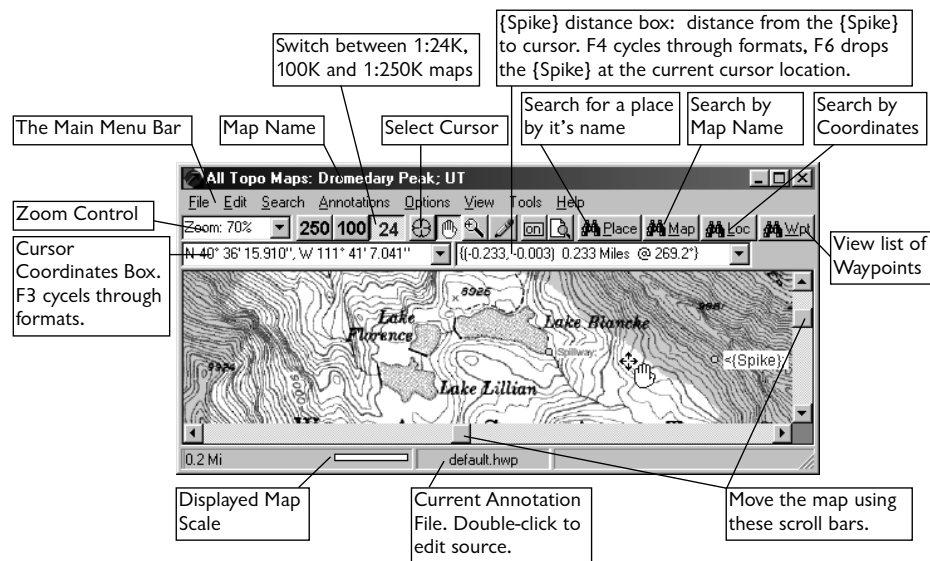
Double click on the ALL TOPO MAPS icon that was placed on your desktop, or find ALL TOPO MAPS under the Windows Task Bar: 'Start Menu: Programs: ALL TOPO MAPS'.



ALL TOPO MAPS will begin loading its components and databases; shortly you will arrive at the map location and scale that you last viewed.

Press the Find Place key  and enter a place name to quickly find the place you are looking for. For a quick overview of ALL TOPO MAPS operation, check out the **Quick User Tips** on the rear cover of this User's Guide.

The ALL TOPO MAP Viewing Screen






Press F1 in any screen for targeted Help.



Use the menu option 'View: Reset All Window Sizes' or press Ctrl-W to force every ALL TOPO MAPS window onto your screen at a reasonable size and position.

Use **250 100 24** or F9 to switch between the 1:24,000, 1:100,000 and 1:250,000 maps. Center the location you are interested in by double-clicking on it with the Bombsight or Draghand cursors, the center map location is preserved when map scales are switched.

Viewing and Moving Around ALL TOPO MAPS


- Method 1: Use the Arrow Keys to move the map around the screen.
- Method 2: Select the 'Drag Hand'  (shortcut = 'D') then use the left-mouse-button to drag the map image on the screen.
- Method 3: Double click the left mouse button at the map location that you want centered on your display.
- Method 4: Use the scroll bars at screen bottom and right to move the map on your screen.
- Method 5: You can quickly jump to any waypoint with the 'Find Wpt'  tool.
- Method 6: If you have a coordinate from a GPS or other source, press the 'Find Loc'  button to display the Find by Location tool.

Moving to an Adjacent Map

- Method 1: Double-click in the currently displayed map's collar (the white border at the edge) to move to an adjacent map.
- Method 2: Press the 'Find Map'  button, single click the map you want to view, then click the 'Show Center Map'  button.

Zoom In and Out

- Method 1: Press the Page Up key to Zoom out 10% (move away from map). Press the Page Down key to Zoom in 10% (move closer to map).
Hint: Also press and hold the Shift key to change the Zoom in 1% increments.

- Method 2: Select the Zoom (shortcut = Z) tool  then use the left mouse button to drag a new window area. Alt-0 will quickly display the entire image so you can resize the view to another area.
- Method 3: Press 'Alt-V' to access the View menu, then select one of the preset Zoom values.
- Method 4: Press the drop button on the Zoom box **Zoom: 15%**, then select one of the preset Zoom values.
- Method 5: Type the desired zoom scale into the zoom box.
- Method 6: Right-click, select zoom, then select a preset zoom value.
- Method 7: If your mouse has a roller wheel, moving the wheel away zooms in; rolling back zooms out.

All Topo Map Viewer Main Menu



You can access the menu bar items by holding the Alt key while pressing the underlined character. The main menu has these selections:

File:	<u>O</u> pen		open other state sets
	<u>O</u> pen BigTopo	Ctrl+B	open seamed maps (see BigTopo below)
	<u>E</u> xport Map to GIS/CAD		writes full or partial images to files
	<u>S</u> etup Printer/Map Scale	Ctrl+R	prepares images for printing
	<u>P</u> rint Viewed Map	Ctrl+P	sends the viewed map to the printer
	<u>P</u> rint Entire Map		sends the entire map to the printer
	<u>E</u> xit	Alt+F4	close ALL TOPO MAPS
Edit:	<u>E</u> xport Map to Clipboard	Ctrl+C	partial or entire map to clipboard or file
	<u>C</u> opy Cursor Position to Clipboard	Ctrl+X	sends current cursor position to the clipboard
	<u>A</u> dd <u>W</u> aypoint	F2	adds the cursor position to the annotation list
	<u>E</u> dit Nearest Waypoint		edit annotation attributes
	<u>Q</u> uick Add Waypoint	F7	adds a waypoint just like the last one
	<u>{</u> Measurement Spike	F6	sets the spike at the cursor position
	<u>S</u> elect Tool	B,Z,D,P	chooses Bombsight, Zoom, Drag Hand

Search:

Search by Place or Feature
Search by Map Name
Search by Coordinate Location
Search by Annotation Wpt
Jump to {Measurement Spike}

Annotations:

Display Map Annnotations
Waypoint Name
Waypoint Description
Waypoint Notes
Clear System Annotations
Pencil Attributes
New Annotation File
Open Annotation File
Save Annotations
Save Annotations As...
Edjt Annotation Source

Alt+P quickly find any named location on maps
Alt+M quickly find a map by its name
Alt+C quickly find a Lat/Lon or UTM position on map
Alt+W quickly find an annotation
Alt+K center the measurement {Spike} on the viewer

Ctrl+Alt+A toggles display of all annotations ON/OFF
Alt+N toggles display of waypoint Names ON/OFF
Alt+D toggles display of waypoint Descriptions ON/OFF
Alt+T toggles display of waypoint Notes ON/OFF
Alt+C removes Spike, clicks, and finds from display
set the Pencil Tool's width and color
Ctrl+N work with a new, empty annotation file
Ctrl+O open another annotation file
Ctrl+S save the current annotation file
Ctrl+A save the current annotations to a new file
F8 edit the text source for the current annotations

Options:

Coordinate System Options
Display UTM 1K/10K Grid
High Quality Display

Alt+Y choose coordinate display style, cache size
Alt+G toggle UTM grid overlay
Alt+Q disable high quality rendering engine
for faster display updates

View:

Detailed Map Information
System Information Logger
Switch Map Scales
Print Preview
Refresh Display
Reset All Window Sizes
Fit On Page
Page Width
Zoom 400, 200, 100, 75, 50, 25%

information on the current map
log of system information, events and errors
toggle through 24, 100 and 250K scale maps
resizes annotations to match printouts
repaints map and annotations
F9 sets All Topo Map window sizes to defaults
Alt+R repaints map and annotations
Alt+W sets All Topo Map window sizes to defaults
Alt+O sets zoom so entire map fits on screen
sets zoom so map's width fits on screen
forces zoom

or Draw Pencil tools

Tools: GPS Tool
BigTopo

Help: Help on ALL TOPO MAPS

About ALL TOPO MAPS

Shift+Ctrl+G display the All Topo Map GPS Tool
Shift+Ctrl+B display the All Topo Map BigTopo map seamer

display the table of contents for ALL TOPO MAP's
online help
display All Topo program version and legal info

All Topo Map Viewer Buttons and Controls

Zoom: 15%

250

100

24



Zoom Box: shows and changes current image magnification.

1:250,000 scale map selector. Switches to large coverage map.

1:100,000 scale map selector. Switches to medium coverage map. (Not available in every All Topo Map set.

1:24,000 scale map selector. Switches to high detail map.

Bombsight cursor selector. Shortcut = B. Use the Bombsight to accurately set waypoints, make {Spike} measurements and trace distances. When selected Shift -> Draghand, Ctrl -> Zoom.

Draghand cursor selector. Shortcut = D. Use the Draghand cursor to position the map. When selected the Shift -> Zoom, Ctrl -> Zoom.

Zoom cursor selector. Zooms in map image. Shortcut = Z. When selected Shift -> Bombsight, Ctrl -> Draghand.

Pencil cursor selector. Shortcut = P. Draws freehand traces. When selected both Shift and Control -> Draghand.

Annotations ON/OFF. Toggles display of all annotations and grids ON/OFF. Shortcut = Ctrl+Alt+A.

Print Preview. When depressed, line widths and annotation sizes are adjusted to match printouts generated with 'Print Viewed Map'. Before printing, setup the print scale and paper orientation using the 'File: Setup Printer / Map Scale' menu option. Shortcut = Alt V, P.



Quickly display a location by its place name. Shortcut = Alt+P. See Ex. 1.



Quickly find and display a map by its mapname. Shortcut = Alt+M.



Quickly find a Location by its Lat/Lon or UTM coordinates. Shortcut = Alt+L



Display waypoint list. Center, edit and reorder waypoints. Shortcut = Alt+W.

N 40° 36' 29.230", W 111° 41' 24.320"

Current cursor coordinate display. Shows the geographic coordinates of the mouse cursor. Press the F3 key to cycle through coordinate formats, or use the drop button to choose from the available formats. Press Cntl-X to copy these contents to the Window's clipboard.


((0.034, 0.077) 0.085 Miles @ 24.0°)

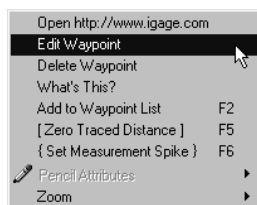
Distance from the {Measurement Spike} to the cursor. Both X,Y and Distance and Bearing are shown. Press F4 to cycle through Feet, Yards, Meters and Miles; or use the drop button to choose format options.

bp.hwp

Current map annotation file. Double-click on its name to edit the annotation source file, use the main menu 'Annotations' to open, save and create files.

Traced Distance [0.571,37 Miles]; Area 13.4 Acres

Viewing status. Distances traced with the Bombsight tool, scale information and errors are displayed in this area. You can use the drag box  to resize the map viewing window.



Right-mouse-click on the map to display this pop-up menu.

Select the 'Open' item to evaluate the hyperlink associated with the nearest waypoint.

Select 'Edit Waypoint' to change the nearest waypoint.

'Delete Waypoint' removes the nearest waypoint from the annotation list.

'What's this?' describes the source of the nearest waypoint on the Status Bar at the bottom of the viewer's window.

'Add to Waypoint List' adds a new coordinate annotation at the current cursor position.

'[Zero Traced Distance]' clears the Bombsight's accumulated distance and area.

{Set Measurement Spike}' places the {Spike} at the current cursor position.

Select 'Pencil Attributes' to change the drawing pencil's width and color.

'Zoom' allows quick zooming to preset magnifications.



Window controls to Minimize, Maximize (fill entire screen) and Close (X) the ALL TOPO MAPS viewer.

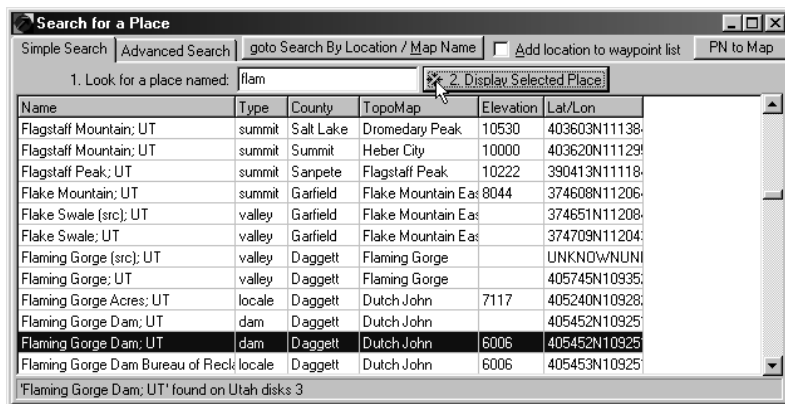
How Do I? Common ALL TOPO MAP Examples

Viewing maps, making simple measurements and printing maps should be easy! These examples show how to perform common tasks in ALL TOPO MAPS:

1. Finding a map by a placename.
2. Measuring the distance between two points.
3. Quickly measure a traced distance and area.
4. Annotate the map with a traced distance and area.
5. Accurately mark property boundaries, compute enclosed area.
6. Print a map.
7. Export a map to the Window's clipboard, a file, CAD or GIS.

Example 1: Finding a Place If You Know Its Name: A 'Simple Search'

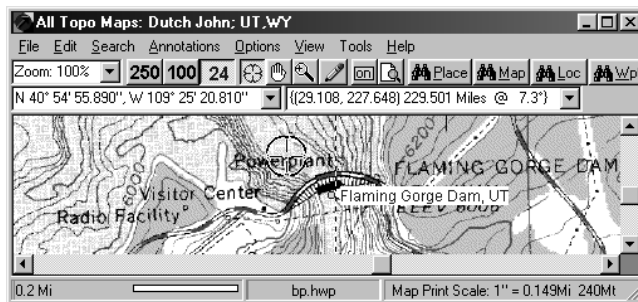
To find the 'Flaming Gorge Dam' using the ALL TOPO MAPS: *Utah* collection. Press the Find Place button (or press 'Alt-P'), then enter the first few characters of the place name:



The grid instantly moves to show all of the place names that are close.

Check the ☐ Add location to waypoint list box to make the annotation permanent and add it to your currently open waypoint list.

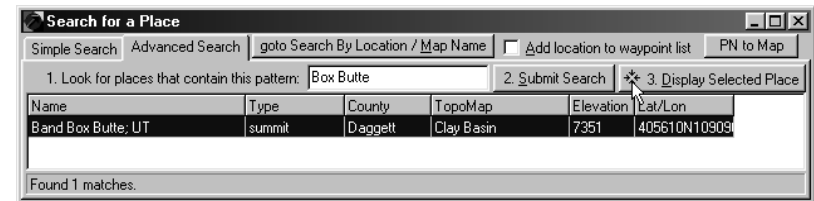
Double click on the 'Flaming Gorge Dam' entry. The 'Dutch John' topographical map will be loaded, and centered at the Flaming Gorge Dam. The dam location will be noted with a marker and annotation note.



To add every location on the current map from the placename database to your annotation list, press the button. After a few moments of searching, the currently viewed map will fully annotated.

Finding a Place If You 'Kind-Of Know' Its Name: An 'Advanced Search'

A 'Simple Search' finds no match for 'Box Butte' in the Utah map collection. Press the button (or press 'Alt-P'), then select the 'Advanced Search' tab, and enter 'box butte' in the search box, then press 'Submit Search'.



It takes ALL TOPO MAPS a few moments to search through thousands of place names and display the search results. Now double click the 'Band Box Butte' entry to load and display the 'Clay Basin' topographical map. 'Band Box Butte' is centered and noted on your display.

Example 2: Determine Distance Between Two Points

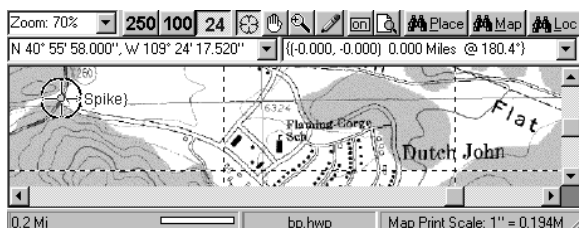
The {Measurement Spike} is like a steel stake, press F6 to pound it into the ground at the cursor location. Once you place the {Spike} on a map, the spike distance window:

{(0.034, 0.077) 0.085 Miles @ 24.0°}

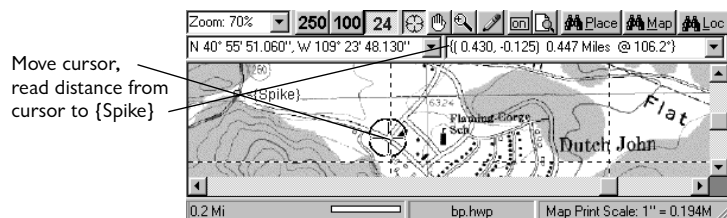
will continuously display the straight line distance from the Spike to the cursor.

To measure the distance between two road intersections:

1. Place any of the cursors over the first intersection, press the F6 key on the keyboard.

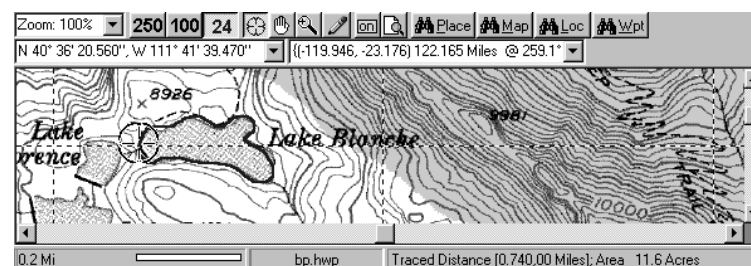


2. Move the cursor to the second intersection, read the distance from the display window. Use the F4 key to cycle between Meters, Feet, Yards and Miles.



Example 3: Quickly Determine Traced Distance and Area

1. Select the Bombsight cursor (shortcut = B), press the F5 key on the keyboard to zero the Bombsight's accumulated distance.
2. Position the cursor at the base measurement point, press and hold the left-mouse-button while moving the cursor clockwise around the feature.

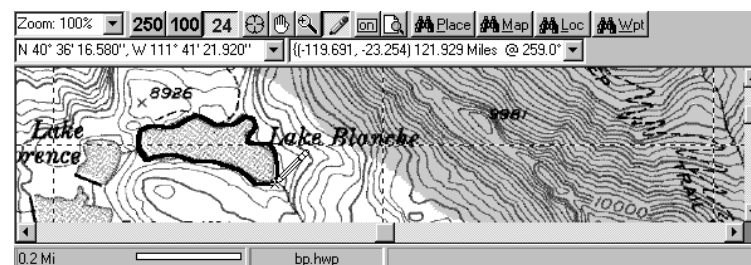


3. Read the traced distance at the bottom of the map viewing screen on the status bar.
If you can't see the status bar, it might be under your Window's Start/Task bar. Press Ctrl-W to resize and position the ALL TOPO MAPS viewing window.

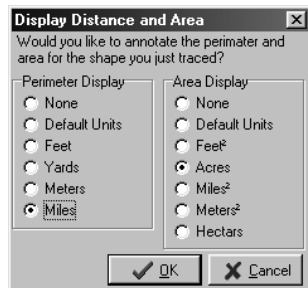
Example 4: Annotate the Map With a Distance and Area

To quickly annotate a map with an irregular area's perimeter and area:

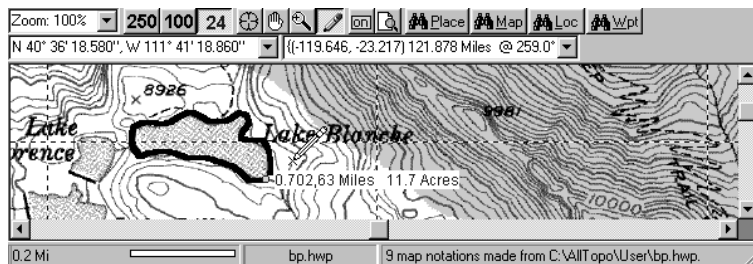
1. Select the Pencil Trace cursor (shortcut = P).
2. Position the pencil at the start of the area, hold the left-mouse-button down, then carefully trace clockwise around the area; end the trace close to where you started. Remove your finger from the mouse button when you complete the trace.



3. Choose distance and area units for the annotation.



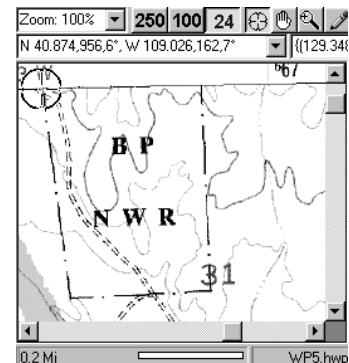
The trace is added to the current annotation set with the perimeter and area displayed:



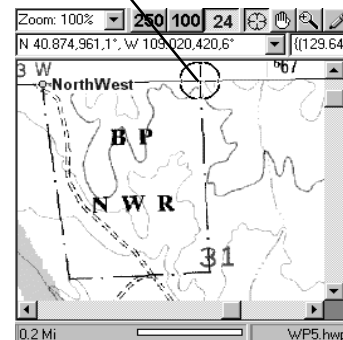
You can edit the annotation's attributes by right-mouse-clicking near the base point and selecting 'Edit Waypoint'. Delete the annotation by right-mouse-clicking near the base point and selecting 'Delete Waypoint'.

Example 5: Mark Property Boundaries, Compute Enclosed Area

To quickly determine the area enclosed by an irregular area:

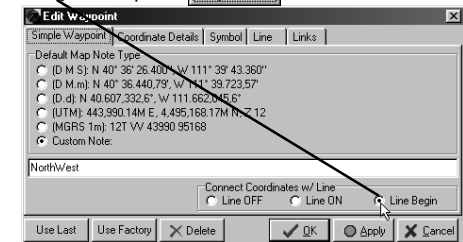


3. Place the cursor over the next corner (move clockwise) and press F2 to create another waypoint.

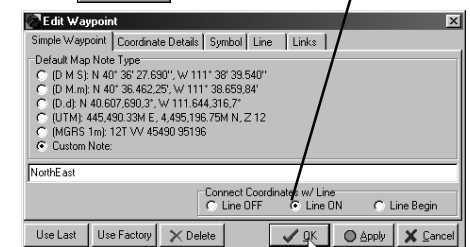


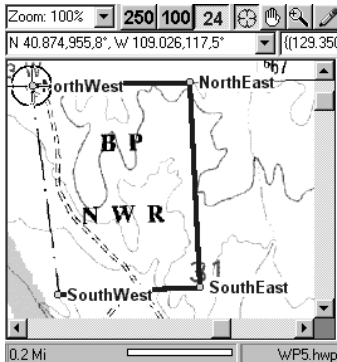
1. Select the Bombsight Cursor (shortcut = B), place the cursor over the first corner.

2. Press F2 to create a new waypoint, then enter a short description for the corner; set 'Connect Coordinates with Line' to 'Begin' and press OK.



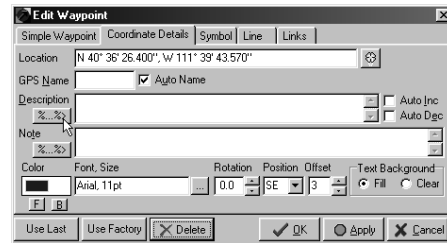
4. Enter a description, insure that 'Connect Coordinates with Line' is set to 'ON' and press OK.





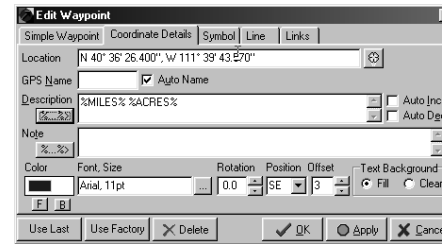
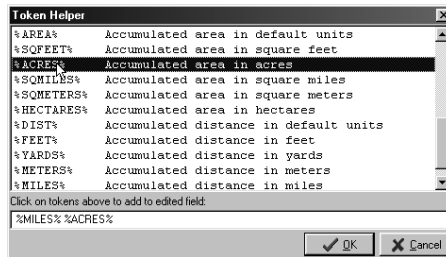
5. Repeat steps 3 and 4 until all corners have waypoints. Position the cursor over the starting waypoint and press F2.

6. Select the 'Coordinate Details' tab, then press the Description's button to display the %token% helper tool.

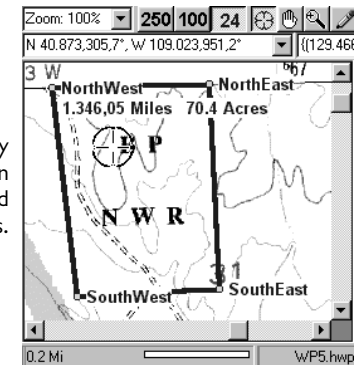


7. Click on %MILES%, then on %ACRES% to include the connecting line's total length and enclosed area.

Press .



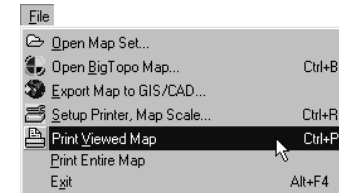
8. Change the text position to SouthEast so that it does not overwrite the first corner's description. Press .




9. All Topo Maps display both the perimeter in miles and the enclosed area in acres.

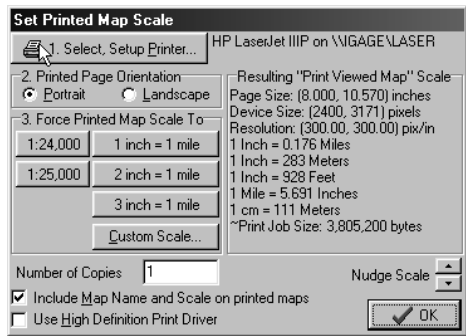
Example 6: Printing Maps


ALL TOPO MAPS makes printing maps at any scale easy. When you are ready to print a map, select the 'File: Setup Printer, Map Scale' menu item (shortcut = Ctrl+R):






ALL TOPO MAPS will adjust its window size to match your printer's page aspect ratio, this insures


that what you see on the display will be what you print. The ‘Print Preview’ button  is automatically pressed and the displayed text is rescaled to match the printed text’s size. The ‘Set Printed Scale’ dialog is shown:



1. Check the listed printer and its resolution. Use the  1. Select, Setup Printer... button to change printers and access Window’s print driver configuration tool.

2. Choose portrait or landscape for the resulting printout: 

3. Select a printed map scale. The 7½ minute quadrangles are normally printed at 1:24,000. Press , or one of the other ‘Force Printed Maps Scale To’ buttons to set the map scale. Press the  button to view the map as it will print.


4. Use the drag hand tool  to move the map on the screen and compose the printed map. When satisfied with scale and composition, select ‘File: Print Viewed Map’ from the main menu (shortcut = Ctrl+P) to send the map to the printer. The printed map will match the map viewed on the screen.


Example 7: Export Maps to Another Application

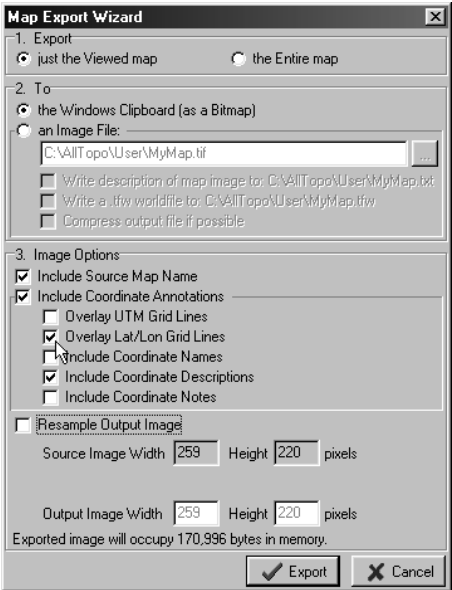
1. Use the Draghand cursor, arrow keys and the PageUp and PageDn keys to compose the desired image to export. Select ‘Edit: Export Map to Clipboard, File or GIS’.
2. Select ‘Export: just the viewed map’ and ‘To: the Windows Clipboard’.
3. Choose any desired image options.
3. Unclick ‘Resample Output Image’ to export the map with full resolution.
4. Press the ‘Export’ button to transfer the image to the Windows Clipboard.
5. Use the ‘Edit: Paste’ option in the destination application to paste the exported image.

CAD/GIS Notes

When exporting images for CAD or GIS applications, select ‘To an Image File’ and supply an output path and filename.

Check  to write a text file detailing the exported image’s contents.

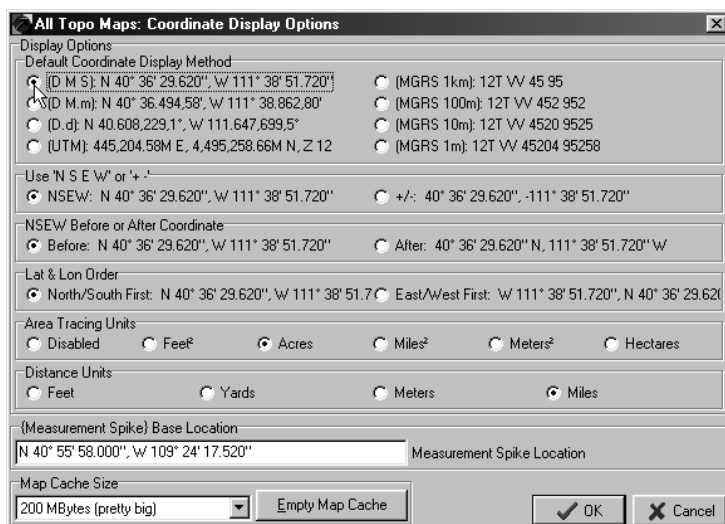
Check  to write a world file. The world file may help your CAD/GIS application georeference the exported image.



All Topo Map Viewer Operation

Setting System and Coordinate Options

The main menu selection ‘Options: Coordinate, System Options’ (shortcut = Alt+Y) allows you to configure the default coordinate format shown on the display.



In addition to choosing the 'Coordinate Display Method', you can configure these additional display options from this menu:

Use 'N S E W' or '+ -'

Select Compass (NSEW) or Signed (\pm) Values for Lat/Lon displayed values:

Compass: N 40° 54.862", W 109° 25.270"
Signed: 40° 54.862", -109° 25.270"

NSEW Before or After Coordinate

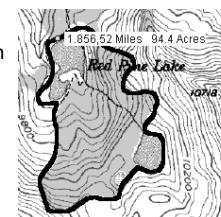
If 'NSEW' is checked, you may choose to display the Compass direction (NSEW) before or after the coordinate value:

Before Coordinate: N 40° 54" 52', W 109° 25" 16'
After Coordinate: 40° 54" 52' N, 109° 25" 16' W

Lat & Lon Order

If Lat/Lon coordinates are selected, you can choose to place the Latitude (North/South) coordinates first or last.

'North/South First' Checked: N 40° 54" 52', W 109° 25" 16'
'East/West First' Checked: W 109° 25" 16', N 40° 54" 52'



Area Tracing Units

By default, area measurement is disabled. You can choose from the following area units:

Square Feet, Acres, Square Miles, Square Meters or Hectares

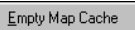
Read about using area measurements in the 'Tracing Paths to Measure Distance' and examples section of this manual.

{Measurement Spike} Base Location

The current measurement spike location is shown in the 'Base Location' box. You can manually enter any legal coordinate to precisely set the {Measurement Spike} location.

Map Cache Size

The map cache greatly speeds up moving between maps. Its default size is 40 Megabytes which holds about 6 maps. Setting a larger cache size will allow more maps to remain available for quick display.

Press the  button to remove all cached files and regain the file space allocated to the map cache.

Measuring Straight Line Distance with the {Measurement Spike}

Also see 'Example 2: Determine Distance Between Two Points' for {Spike} example.

The {Measurement Spike} allows you to make straight line (as the crow flies) distance measurements from the {Measurement Spike} to the cursor.

You can place the {Measurement Spike} at any map location by positioning the cursor over the map and pressing F6 (or mouse right-click and select 'Set {Measurement Spike}'.) As the cursor is moved away from the {Spike} location, the straight line distance is displayed in the {Spike Distance} box:

{{(0.034, 0.077) 0.085 Miles @ 24.0°}}

The 'Spike Distance' is displayed both in planer Cartesian coordinates: "(0.034, 0.77)" showing the (East-West Distance, North-South Distance) and as a Distance and Compass heading: (0.085 Miles @ 24.0°).

You may select the displayed units from Meters, Feet, Yards or Miles by pressing the drop arrow at the {Spike Distance} box's right-hand side or pressing F4 to cycle through the options. The distance units you choose will be the default units for all distance measurements.

Quickly center the {Measurement Spike} on the viewing screen with the main menu option 'Search: Jump to {Measurement Spike}' (shortcut = Alt-K). The {Spike}, like a steel spike is always somewhere and can not be deleted. To move it out of your way, just place it (with the F6 shortcut) on another map or in a map's corner.

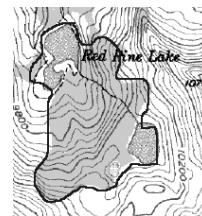
Use the menu option 'Annotations: Clear System Annotations' (shortcut = Alt+C) to clear the {Spike} from the current map.

Tracing Paths to Measure Distance and Area

See 'Example 3: Quickly Determine Distance and Area' for an example.

Tracing a path allows you to measure the length of a road, river, trail or feature that is not straight. ALL TOPO MAPS has two methods for tracing measurement:


1. Quick / Temporary Measurements



generates > Traced Distance [1.930,28 Miles]; Area 96.8 Acres

Area measurement is turned off by default. To enable area computations, select the 'Coordinate, System Options' menu option (shortcut = Alt-Y) and configure 'Area Tracing Units'. Choose 'Area Tracing Units' from Square Feet, Acres, Square Miles, Square Meters and Hectares.

Tracing clockwise accumulates area; tracing counterclockwise subtracts area from the displayed total. Unclosed areas are automatically completed with a straight line back to the starting point.

To determine the length of a trail, move the bombsight cursor  (shortcut = 'B') to the start of the trail and press F5 (or right-click the mouse and select '{Zero Traced Distance}').

Press and hold the left-mouse-button, while dragging the cursor along the path. When you reach the end of the trail release the left-mouse-button.


The status line on the screen bottom continuously displays the traced distance and area.


When you release the Left Mouse button, you may reposition the map and continue to accumulate traced distance and area. Press the Shift key while tracing to move the map without accumulating distance. Press the Alt key while tracing to subtract distance from the traced total.

A common traced distance/area measurement problem occurs when the Windows Task Bar obstructs your view of the bottom of the ALL TOPO MAPS viewer's window: you cannot see the status line. Press Control-W to automatically adjust window sizes or manually re-size your display window.

2. Permanent Traced Distance and Area

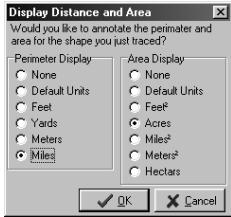
Also see ‘Example 4: Annotate the Map With a Distance and Area’


The Pencil tool  can be used to draw a traced outline along a trail or around an irregular area. A waypoint will be appended to the current annotations, along with the traced line. You can annotate the trace’s anchor waypoint with the traced distance and the enclosed area. To use the Pencil tool:

Select the Pencil Tracing tool  (shortcut = ‘P’). Configure the Pencil’s width and color from the ‘Annotations: Pencil Attributes’ menu. Position the mouse over the start of the path or outline. Press and hold the left mouse button, then drag the Pencil along the desired path.

If you reach the edge of the screen, press and hold the keyboard’s shift key (the cursor will change to a Drag-Hand) then pull the map’s edge to the screen’s center and release the keyboard shift key.

When you complete tracing, release the left mouse button and the ‘Display Distance and Area’ menu will be displayed. If you are interested in displaying the enclosed area, end the trace close to its starting anchor point.



Choose the desired distance and optional area for display, then press .

The trace will be appended to the current annotations with the anchoring coordinate. You can edit the anchor’s text, symbol and links by moving the cursor over the anchor then pressing Shift-F2 or right-click the mouse and select ‘Edit Waypoint’.

You can delete the Pencil trace by deleting the anchor coordinate: position the cursor over the anchor then right-click and select ‘Delete Waypoint’.

‘Control-X’ Marks the Spot - Cursor Location to Window’s Clipboard

Press Control-X to copy the current cursor coordinates to the Windows clipboard. The cursor position is copied in the same format selected for cursor position display (press F3 or use the ‘Options: Coordinates and System Options’ selection to change the default coordinate units).


Control-X is convenient when including location coordinates in a publication or report. *Most programs will insert the saved coordinate from the Window’s clipboard using the ‘Edit: Paste’ command (shortcut = Ctrl-V).*

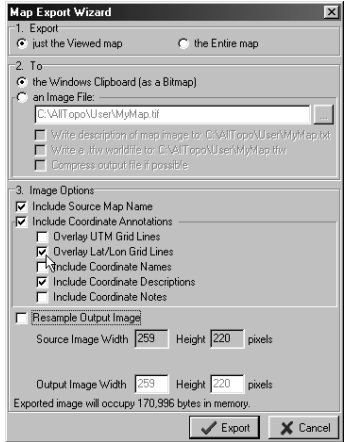
Export Maps to Other Programs with the ‘Map Export Wizard’

To copy the viewed portion or the entire map to the Window’s clipboard or a graphics file, select ‘Edit: Export Map to Clipboard, File or GIS’ (shortcut = ‘Ctrl-C’) to display the ‘Map Export Wizard’. Follow these steps to export an image to the Window’s clipboard or a generic graphics file:

‘1. Export’: choose what to export. You can export just the viewed image or the entire map.

‘2. To’: choose where to export the image. You can export to the Window’s clipboard or a graphics file. If you choose to write to a graphics file, you can select the file’s path and name. See ‘File Type Details’ for file type information. If you export an entire map or a large area, consider exporting to a file instead of the Window’s clipboard to save time and system resources.

Check  ‘Write description of map image to:’ to write a text file that contains information about the exported map. The exported file contains detailed information about the image’s scale, name, source and corner locations in Lat/Lon and UTM coordinates.



Check ☒ **Write a .tfw worldfile to:** to write a text file that contains the northwest corner location and scaling information needed by GIS application to import the image. The extension of the worldfile is file type dependant: .BMP-> .BPW, .TIF->.TFW, .PNG->.PGW.

Checking 'Compress File' may enable image compression for some file types, see 'File Type Details' below.

'3. Image Options': The exported image can be annotated with additional text, grid and scale information. The annotation information is controlled by these options:

'Include Source Map name' adds the map name to the lower left corner of the exported map.

'Include Coordinate Annotations' adds any user defined annotations (waypoints, icons, lines, text) to the exported image.

'Overlay UTM Grid Lines' includes 1,000 meter (10,000 meter if the base map is 1:100,000 or 1:250,000 scale) grid lines and edge markers.

'Overlay Lat/Lon Grid Lines' adds 1° Latitude and Longitude grid lines in blue with edge markers.


'Include Coordinate Names' includes coordinate (waypoint) Names with map annotations.

'Include Coordinate Descriptions' includes coordinate (waypoint) Descriptions with map annotations.

'Include Coordinate Notes' adds coordinate (waypoint) Notes to map annotations.

'Resample Output Image' when checked allows sub-sampling to reduce the size of the exported image. If unchecked, the exported image will have the full resolution of the ALL TOPO MAPS map image.

When checked, you can change the Output image width and height or the final scale. Selecting 50% scale reduces the height and width by a factor of two, and reduces the exported image size by a factor of four. Reduced images are intelligently resampled for the best exported image quality.

After configuring the exported map's settings, press the  button to write the output file or fill the Window's clipboard.

File Type Details

Exported image files can be stored as .BMP, .EPS, .GIF, .PCX, .PNG, .PGA and .TIF files. Details on each of these graphics formats follow. If you don't know which format you want to use, consider:

.BMP	Generates big files that work with almost any application.
.PNG	A good choice for use on web pages. High compression, universal acceptance.
.TIF	GIS applications may be able to use the companion .TFW file to georeference the image.

NOTE: the .JPG format is not supported by BigTopo as this 'lossy' format is unsuitable for map storage.

Windows Bitmap (.BMP) Format

The Windows bitmap .BMP format is the simplest and most widely supported output format. If compression is selected and the scale is set to 100% and no annotations are enabled, then the image is stored with RLE8 compression.

Encapsulated Postscript (.EPS) Format

The exported map image is saved as a Version 3 Encapsulated Postscript file. This format is not widely supported by engineering/GIS applications and should be used with caution. Compression has no effect for EPS files.

Graphics Interchange File (.GIF) Format

The exported map image is saved as a GIF file with palette information. "LZW compression" is not supported. Compression has no effect.

PCX (.PCX) Format

The image is saved as an 8-bit PCX. Compression has no effect.

Portable Network Graphics (.PNG) Format

The PNG format, with compression is an excellent choice for storing generated maps! If compression is checked then PNG 'maximum compression using the best filter for each row' is used. The BigTopo PNG code is based upon the source code for the ZLIB compression library

by Jean-Loup Gailly and Mark Adler. This format is intended to be a patent-free replacement for GIF. It uses the LZ77 compression rather than LZW.

TGA (.TGA) Format

The image is saved as a TGA file. If compression is checked, Run Length Encoding (RLE) is enabled.

TIF (.TIF) Format

The image is saved as a TIF file. Checking compression enables packbits compression, which may not be well supported by your viewer. LZW compression is not supported (try the compressed PNG format as an alternative.)

Some applications are known to have problematic TIFF format readers. Disabling packbits compression on TIF files greatly increases file portability.

Exported Image Resolution

Image exports are made at full resolution unless you check the ‘Resample Output Image’ button. When ALL TOPO MAPS annotates your exported image, it assumes that you will be printing the image at its nominal scale:

1:24,000	160 DPI (Dots Per Inch)	3.81 meters / inch
1:100,000	250 DPI	10.16 meters / inch
1:250,000	250 DPI	25.4 meters / inch

Text size and line widths are adjusted to generate correct sizes for these resolutions. The Print Preview function may not accurately reflect the exported image annotation’s appearance.

Export Map to GIS/CAD

Use the ‘File: Export Map to GIS/CAD’ menu option to export the entire base map. The ‘Map Export Wizard’ is invoked with these options:

- .TIF file with standard USGS filename
- .TFW worldfile enabled
- .TXT information file enabled

The ALL TOPO MAPS companion tool ‘BIGTOPO’ also generates seamed and re-collared maps in a variety of formats suitable for export. See the BIGTOPO section at the end of this manual for more information.

The Worldfile (.TFW)

You can enable the generation of a companion world file for an image written to a graphics file. The WorldFile contains the UTM coordinates for the upper-left corner of the image, the image rotation and the image scale factors. The UTM zone is not enumerated in the world file. The worldfile when found in the same directory as the image file, enables other GIS applications to automatically georeference the exported image. Worldfile extensions are generated by taking the first and third characters of the image filename’s extension and appending a ‘W’. The worldfile for an image contained in ‘TestMap.TIF’ would be named ‘TestMap.TFW’

The format of the .TFW file is:

- item 1: x-dimension of a pixel in map units
- item 2: rotation (typically 0)
- item 3: rotation (typically 0)
- item 4: y-dimension of a pixel in map units (negative if north of equator)
- item 5: x-coordinate of center of upper left pixel
- item 6: y-coordinate of center of upper left pixel

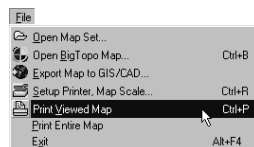
Printing a Map


You may print the entire map or the viewed section of a map.

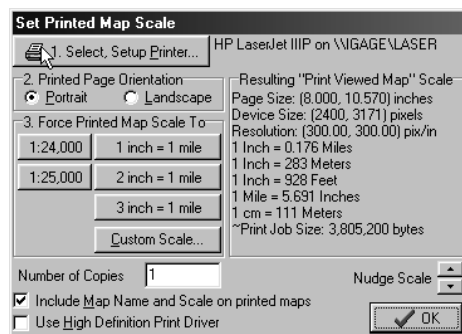
Unless you have a large format raster printer, printing the entire map will typically yield a way-too-small map. When you print the entire map the resulting scale is adjusted to allow the map to print on one printer page.

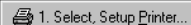
Printing the viewed map allows you to control the scale and the content of the resulting printout.


Before printing choose the ‘File: Setup Printer, Map Scale’ menu selection:





ALL TOPO MAPS will adjust its window to match your printer's page aspect ratio, this insures that what you see will be what you print. The 'Print Preview' button  is automatically pressed and text is rescaled to match printed text.




1. Check the listed printer and its resolution. Use the  button to change printers and access the Window's printer configuration tool.

2. Choose portrait or landscape for the resulting printout using .

3. Select a printed map scale. The 7½ minute quadrangles are normally printed at 1:24,000. Press  to set the map scale.

When the printed map's scale is correct, press the  button to view the map as it will print.

Use the drag hand tool  to move the map on the screen and compose the printed map.

When satisfied with scale and composition, select 'File: Print Viewed Map' from the main menu to send the map to the printer. The printed map will match the map viewed on the screen.

If after selecting a scale, you change the window size or zoom in or out, the resulting printed map's scale will be adjusted to match the altered window size and zoom scale. If the aspect ratio of your window selection does not match the printer's paper then a blank band will appear on your printout.

Include Map Name and Scale

☒ Include Map Name and Scale on printed maps Checking 'Include Map Name and Scale' will include the map's name and printed scale on the printout.

High Definition Print Driver

Checking ☐ Use High Definition Print Driver on the 'Set Printer Map Scale' dialog will enable All Topo Map's internal Raster Image Processor (RIP). The All Topo RIP will resample the map image to the full resolution of your printer. For high resolution or large format printers, resulting print jobs may be excessively large, uncheck 'Use High Definition Printer Driver' if you experience printer 'out of memory' errors or if the print job never finishes.

Printing To Laser Printers

Laser printers must have enough physical memory to hold the entire printed map in memory. If you get half-page printouts or out of memory errors, try lowering the printer resolution from 600/1200 DPI to 300 DPI and uncheck the 'Use High Definition Print Driver' option. Choosing 'Fine Dithering' in the Window's print driver properties page for your printer typically generates better looking maps.

Printing Problems

ALL TOPO MAPS generates huge print jobs that tax your printer's Windows print drivers. Check the web site of your printer's manufacturer for an updated print driver.

Pre 'February 2000' HP Large Format (bigger than legal sized) printer drivers are known to be especially troublesome!

Printing Maps on Large Format Printers

ALL TOPO MAPS will directly print full sized quadrangles on large format raster printer/plotters. Choosing high resolutions in your Windows print driver's properties or checking 'Use High Definition Print Driver' in the ALL TOPO printer setup menu may generate huge print jobs (>4 Gigabytes) that may not be usable with your plotter or computer. Setting the Windows print driver for 300 DPI resolution generates print jobs 1/4 the size of 600 DPI selections.

Waypoints / Coordinate Annotations

Waypoints are locations of interest. ALL TOPO MAPS allows you to easily annotate any map location by cursor position or its coordinates. You can organize these waypoints and associated comments in simple text files, which can be printed, edited, copied to the windows clipboard and downloaded to your GPS (using the ALL TOPO MAPS: *GPS Tool* or by manual entry).

Waypoint locations can be annotated with:

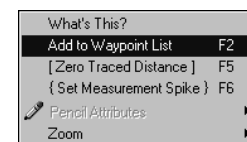
Traced lines	Lines	Triangles
Circles	Ellipses	Rectangles
Crosses	Wind Barbs	Stock and Custom Icon Images

Lines can be drawn between individual coordinates and media content (pictures, web addresses, sounds, movies...) can be attached to waypoints.

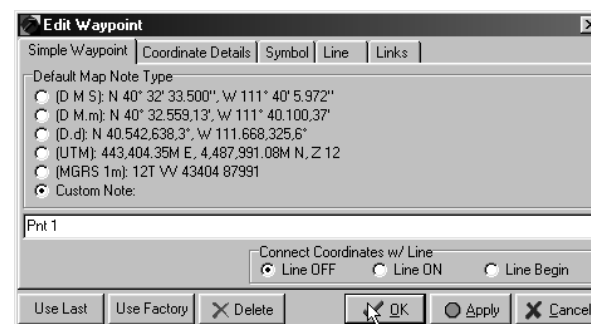
Waypoints can be entered by positioning the cursor over a coordinate and pressing F2. You can quickly enter a waypoint 'just like the last one' by pressing F7.

Saving the Cursor Position as a New Waypoint

To save a coordinate in the waypoint file, place the cursor at a map location and press F2; or press the right-mouse-button and select 'Add To Waypoint List'.



The 'Edit Waypoint' helper is shown, with the 'Simple Waypoint' tab selected:



Default waypoint descriptions containing just the location can be selected, or you can override the 'Default Map Note Types' and enter a custom note.

Use the 'Connect Coordinates with Line' setting to control line drawing between waypoint coordinates. Connecting lines are drawn between coordinates when both coordinates have lines set ON (or Line After).

Using the Advanced Edit Waypoint Tabs

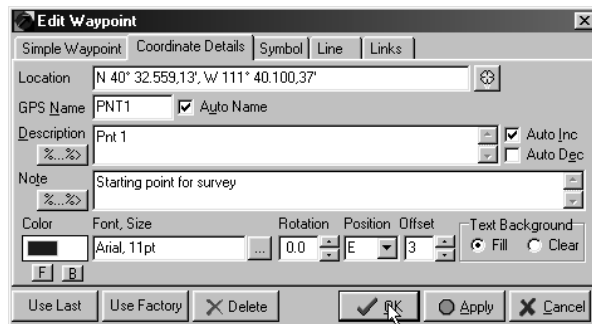
Coordinate text annotations have many text, color, size, symbol and link attributes. These attributes can be easily set using the 'Coordinate Details', 'Symbol', 'Line' and 'Links' tabs of the 'Edit Waypoint' dialog.

The 'Edit Waypoint' dialog is shown when you press F2 to add a new waypoint or right-mouse-click near an existing waypoint and select 'Edit Waypoint'.


The **Use Last** button sets the attributes of the currently selected waypoint to those of the last edited waypoint. The **Use Factory** button sets the attributes of the currently selected waypoint to the standard 'Factory Defaults'.

The 'Coordinate Details' Tab - Waypoint Text Attributes

The 'Coordinate Details' tab sets the text attributes of a waypoint:



Location: Sets the coordinate location for the annotation. You may enter a new coordinate in any reasonable Lat/Lon or UTM format.

Move a waypoint to a new location by manually changing the coordinate location: the easiest method is to first use Ctrl-X to copy the new location to the Window's Clipboard, then use the  button to the right of the location to load the coordinate from the clipboard.

You may also enter coordinates that are relative to the previous coordinate's location. After entering a fully qualified coordinate, put the cursor anywhere on the map and press F2 to enter a new waypoint. In the Location box enter an '@' to indicate a relative coordinate then the X

and Y offset from the previous coordinate:



or enter a length and compass bearing to the new point:




ALL TOPO MAPS re-evaluates relative locations each time annotations are re-drawn on the map.

GPSName: The GPS name is a short one to six character description that is transferred to the GPS for an ID. You can check the 'Auto Name' box to have ALL TOPO MAPS automatically generate a GPSName from the Description. If you're not using a GPS then you can leave the GPS Name blank. The ALL TOPO MAPS: GPS Tool will automatically make the GPS Names unique when it prepares coordinates for transfer to the GPS.

You can toggle the display of GPSName display on and off using the menu option 'Annotations: Waypoint Name' (shortcut = Alt-N).

Description, Note: the Description and Note can be displayed next to coordinate annotations. You can toggle the Description display using the menu option 'Annotations: Waypoint Description' (shortcut = Alt-D). Note is toggled with 'Annotations: Waypoint Note' (shortcut = Alt-T).

Press Ctrl-Enter to enter multiple lines in the Description and Note edit box.

Special %tokens% can be inserted into Descriptions and Notes using the  buttons. The %tokens% automate the display of position, distance, and some system parameters. When text annotations are applied to the map's surface, these commands are reevaluated each time the coordinate is drawn. For example this Description:

"Location = %DMS%"

will be displayed as

Location = N 46 33 9.859 W 112 4 6.159

Using the pencil trace tool, or by connecting coordinates with lines (see example 4), it is possible to display accurate accumulated distances and areas in coordinate Descriptions and Notes.

Auto Name, Auto Inc & Auto Dec: ALL TOPO MAPS can help you name and describe

coordinates by automatically incrementing or decrementing the last number in a description. With 'Auto Inc' checked the coordinate description:

'Point 127' will change to 'Point 128'

when the next waypoint is entered.

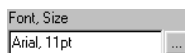
Checking 'Auto Name' will generate a suitable GPSName from the current description:

'Point 127' is named 'PNT128'

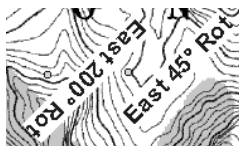
Font Color: control both the foreground color and background color for text annotations. Click the color boxes or the 'F' (text) and 'B' (background) to change text annotation colors.



Font Name and Size: click on the font's name or the [...] button to change the annotation's text font. You can choose any available screen/printer font, set Bold and Italic text, and choose a text size. Text and line sizes are set in points and are resized so that they are the same size when printed or displayed. You can use the 'View: Print Preview' [icon] option to display text and lines as they will appear when printed.



Rotation: adjust the text rotation around the location's base point with Position and Rotation. **Rotation** of 0 degrees generates left to right text; rotation of 180 degrees results in bottom-up text.

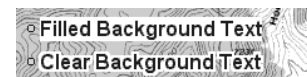


Position: controls the position of text about the coordinate. North, NorthEast, East, SouthEast, South, SouthWest, West, NorthWest and Centered positions are supported:



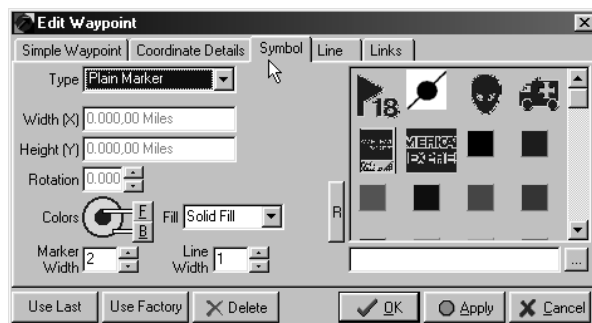
Offset: moves the text away from the coordinate. Offset units are 1/72 of an inch, negative offsets move text closer to the coordinate location.

Text Background: controls text background. 'Fill' creates a rectangular solid background in the selected font background color. 'Clear' just outlines text with the background color.



The 'Symbol' Tab - Waypoint Symbol Attributes

The 'Symbol' tab sets the waypoint symbol type, size, color and fill.

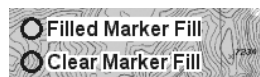


Each waypoint coordinate is annotated with a symbol. You can control the symbol type and its color with the attributes listed on the Symbol tab. Width(X) and Height(Y) entries default to the system's default units: add 'meters', 'feet', 'yards', or 'miles' after the measurement to override the system defaults.

Symbol **Type** selects the type of symbol to place at the coordinate:

Plain Marker	Line	Triangle	Circle
Ring	Ellipse	Square	Rectangles
Cross	WindBarbs	Stock and Custom Icons	

Plain Marker: a square dot **Marker Width** in size with the selected foreground and background colors. **Line Width** sets the outside ring thickness and symbol **Fill** controls the marker's fill.



Line: a line extending from the coordinate location the distance specified by **Width(X)** and **Height(Y)** and rotated (clockwise) by **Rotation** degrees.

Triangle: an unfilled triangle with base length = **Width(X)**, rotated **Rotation** degrees.

Circle: a circle of **Width(X)** diameter. Circles can be filled with clear, solid or hatched patterns.

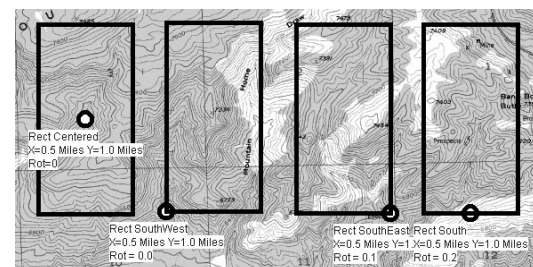
Ring: a circle of **Width(X)** diameter. Rings are unfilled.

Ellipse: an ellipse with **Width(X)** and **Height(Y)**, rotated **Rotation** degrees. Ellipses can be filled with clear, solid or hatched patterns.

Square: a square box with **Width(X)**, rotated **Rotation** degrees. Squares are not filled.

Rect Centered: an unfilled rectangle centered at the coordinate, Width(X) wide by Height(Y) high, rotated **Rotation** degrees.

There are four rectangle symbols:

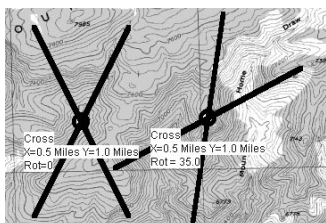


Rect SW: an unfilled rectangle with its Southwest corner based at the waypoint coordinate. **Width(X)** wide by **Height(Y)** high, rotated **Rotation** degrees.

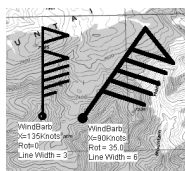
Rect SE: an unfilled rectangle with its Southeast corner based at the waypoint coordinate. **Width(X)** wide by **Height(Y)** high, rotated **Rotation** degrees.

Rect S: an unfilled rectangle with its South edge centered at the waypoint coordinate. **Width(X)** wide by **Height(Y)** high, rotated **Rotation** degrees.

Cross: Two lines crossed at the waypoint coordinate, covering an area Width(X) by Height(Y), rotated **Rotation** degrees.




Wind: A wind barb located at the waypoint coordinate. **Line Width** controls the wind stave size, **Width(X)** sets the wind speed, **Rotation** sets the wind direction. Be sure to enter wind speed with 'Knot' units: Width = '135 Knots'.




Icon: specifies an icon to place centered at the waypoint location. Hundreds of stock icons are available and can be selected from the right hand side of the Symbol tab. Setting the icon's Width(X) to 0.0 results in the icon being displayed at the pixel size it was drawn; set the Width(X) to a value (like '0.25 miles') to force the icon to rescale to map units.



You can add additional icons to the stock icons by copying new icons to the Images path

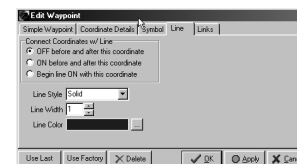
(typically located 'C:\AllTopo\Images\'). Icon bitmaps should be 16 or 256-color bitmaps, the color of the lower left pixel will be used as the 'transparent' color. If you move additional bitmaps into the Stock Images path, use the  button to register the new images into the stock

icon list.

Clicking on a stock icon will automatically set the symbol type to Icon and select Width(X)=0.0. Press the  button to browse for a bitmap.

If you exchange HWP annotation files between computers, be sure to include any needed custom icons with the HWP file. The .HWP file's path is searched for needed icons if they can't be found in the stock images path.

The 'Line' Tab - Waypoint Line Attributes



Select the Line tab to enable and change the attributes of lines connecting successive waypoints. Lines are drawn between successive waypoints if both waypoints have 'Connect Coordinates w/ Line' set to 'On'. The first waypoint may optionally have Line set to 'Begin'.

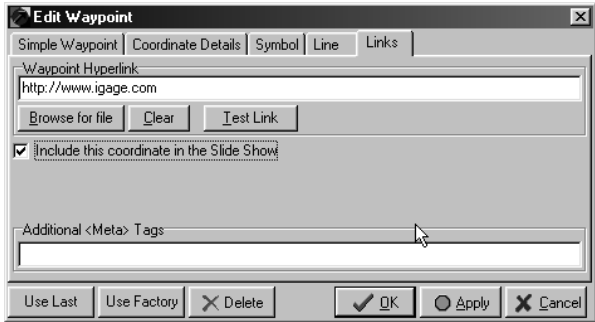
Line Style selects Solid, Dotted, Dashed, Dash-Dotted, or Dash-Dot-Dotted lines. Selecting any Line Style other than Solid will force the Line Width to 0 (hairline).

Line Width sets the line's width. Setting any Line Width greater than 0 (hairline) will force the Line Style to Solid.

Click on the **Line Color**'s color patch or the  key to change the connecting line's color.

The 'Links' Tab - Waypoint Hyperlink and Slide Attributes

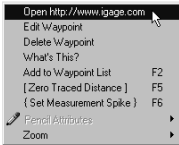
Select the Links tab to connect media to a coordinate, control a waypoint's inclusion in the slide show and add system meta tags.



Waypoint Hyperlink may contain a path to any media content (pictures, sounds, web addresses or a program launch) registered on your Windows system. After setting the link, you can evaluate the link by mouse-right-clicking on the coordinate, then selecting the 'Open' option.

To link to a web site enter a fully qualified path like "http://www.igage.com". To attach a picture to a coordinate, enter a fully qualified path and filename or place the picture in the same path as the .HWP file. A fully qualified pathname is not required for a file in the same path as the base HWP file.

When viewing maps with hyperlinked waypoints right-mouse-click near a linked coordinate and select the 'Open' menu item to execute the link:



☒ **Include this coordinate in the Slide Show** Check the '**Include this coordinate in the Slide Show**' box to add a coordinate as a slide in the ALL TOPO MAPS slide show. When viewing maps, you can press the keypad '*' button to view the first slide, then press the keypad '+' and keypad '-' keys to move between successive slides.

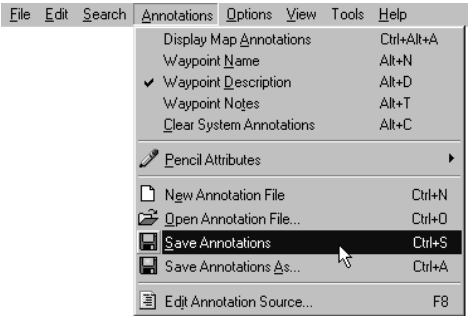
The 'Additional <Meta> Tags' box can be used to enter additional system tags. The most common additional tags are:

- | | |
|------------------------------|---|
| <I "filename"> | includes the contents of another HWP file |
| <T "Title To Display"> | sets the title for the All Topo Map's viewer |
| <A "N 40 00 00 W 119 00 00"> | AutoJump location displayed when opening the HWP file |

Annotation Files

Collections of waypoint coordinates are stored in text files. Typically these files have a '.HWP' file extension. Annotation files are typically stored in the '\\AllTopo\\Users\\' folder. The Annotation file currently in use is displayed at the bottom of the map viewing screen.

You can manage annotation files using the main menu's 'Annotations' selections:



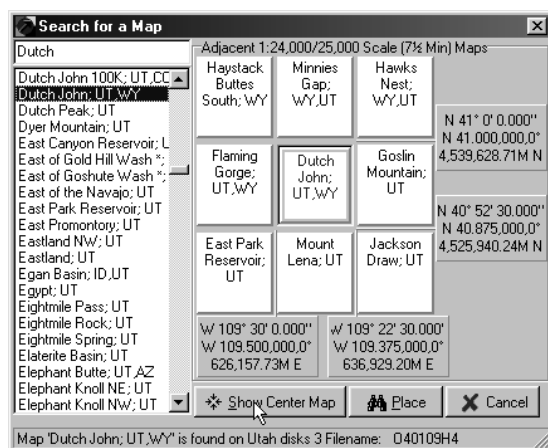
New Annotation File	Ctrl-N	make a new empty annotation file.
Open Annotation File	Ctrl-O	open an existing annotation file.
Save Annotations	Ctrl-S	save the current annotation file.
Save Annotations As...	Ctrl-A	rename then save the current annotation file.


When you create a new annotation file, it is automatically named 'WP1.HWP'. To guard against accidental overwriting and data loss, ALL TOPO MAPS will generate a unique new filename for saved annotations.


The menu option 'Annotations: Edit Annotation Source' (shortcut = F8) opens a text editor containing the source for the current annotation set. The format of annotation files is similar to HTML code. The full syntax of annotation files is available in the online All Topo Map help file.

Using the Find Map Tool

Press the  button or press Alt+M to display the Find Map Tool:

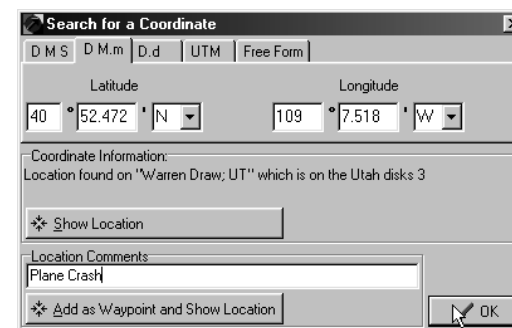



The find map tool displays the currently viewed map, and its eight adjacent neighboring maps. If you know a map's name, you can type in the first few characters, select the correct map then press  to display the selected map.

To move to adjacent maps, click once on the outside map to move it to the center position, then double click on the center map or press  to display the new map. As you move from map to map, the Find Map tool's status line will show the ALL TOPO MAP data disk that holds the selected map.

Using the Find Location Tool

Press the  button to display the Find Location tool (shortcut = Alt+L):




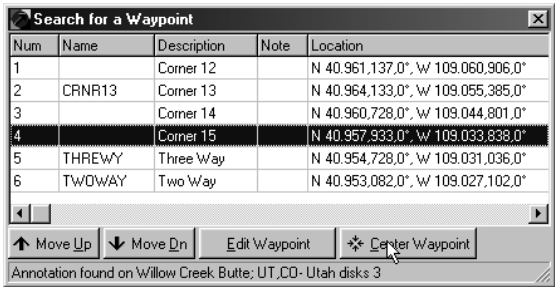
If you have a known coordinate from a GPS or other source, you can quickly place an annotation on the map and jump to the spot. Tabs are available for coordinates in Degrees Minutes Seconds (D M S), Degrees decimal Minutes (D M.m), decimal Degrees (D.d), UTM and Free Form coordinates. The  on the Free Form page will load a coordinate directly from the Window's clipboard.

After entering a coordinate, you can view the corresponding map location by pressing 'Show

Location'. To place an annotated waypoint at the location, enter a coordinate Description in the 'Location Comments' box and press the 'Add as Waypoint and Show Location' button.

Using the 'Search For a Waypoint' Tool

Press the  button (shortcut = Alt+W) to display the Search For a Waypoint tool.



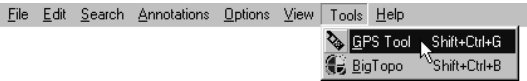
You can use the Search Wpt tool to quickly find, display and edit annotations. Use the mouse to select a coordinate or group of coordinates. You can change the coordinate order using the Move Up and Move Dn buttons, center the map over a location using the 'Center Waypoint' button or directly edit a waypoint by pressing the 'Edit Waypoint' button.

ALL TOPO MAPS: GPS Tool

ALL TOPO MAPS: GPS is the tool that links the ALL TOPO MAPS viewer and your GPS receiver. Waypoints and Routepoints and Tracks may be moved between the ALL TOPO MAPS viewer and your GPS,

Real Time Tracking also automatically plots and centers your current position on the map viewer's window.

You can quickly start the GPS tool by selecting 'Tools: GPS Tool' from the ALL TOPO MAPS viewer window:

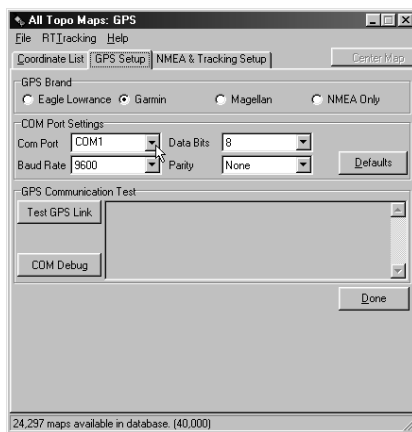



The GPS Tool will be displayed, wait a moment while it loads all available ALL TOPO MAP data sets:



Connect your GPS to the COM port on your computer with the GPS manufacturer's serial cable (available separately).

The first time you run the ALL TOPO MAPS: GPS tool select the 'GPS Setup' tab to choose the correct GPS device brand and communications port settings.





Select the GPS Brand that matches your receiver. Detailed hints and suggestions for use with your GPS brand may be displayed. After reading the hints on your GPS Brand, press the  button.


The 'COM Port' must be set to the COM port that is physically connected to your GPS. COM1 and COM2 are the most common selections.

If you have ever had a PDA (Personal Digital Assistant) cradle attached to the COM port, it's data synchronizing tool may still have the COM port open! The GPS tool will report an 'Error Opening Communication Port' and refuse to select the COM port until the PDA's tool

releases the communication port.

The 'Baud Rate', 'Data Bits', and 'Parity' must match the settings in your GPS. Pressing the  button will select the Baud, Data, and Parity which best match the selected GPS's typical factory defaults, however you must manually set the 'COM Port' number.

After successfully configuring the GPS hardware, press the  to verify that your GPS is talking to ALL TOPO MAPS: GPS. If the test fails, a list of possible causes will be presented.

After verifying the connection, press  to return to the 'Coordinate List' tab.

Use the 'Coordinate List' tab to move coordinates between your PC and GPS:

1. Get coordinates from a source: 'ALL TOPO MAPS' active waypoint list, a 'Waypoint File' or from the 'GPS Receiver'.
2. In the coordinate list box, highlight coordinates to send/receive.
3. Save the highlighted coordinates to a destination: 'ALL TOPO MAPS' active waypoint list, a 'Waypoint File' or to the 'GPS Receiver'.

GPS Example 1: Moving Waypoints From Map to GPS

1. Create a new empty waypoint file in ALL TOPO MAPS. In the ALL TOPO MAPS viewer, select 'Annotations: New Annotation File'.
2. Mark several coordinate annotations using the F2 Key:

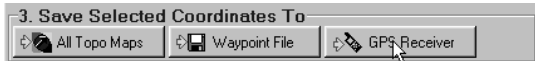


3. Switch to the GPS Tool using the Windows task bar, or by pressing Alt+Tab. If the GPS tool is not already running, start it with the ALL TOPO MAPS menu selection "Tools: GPS Tool".
4. Select 'Load Coordinates From ALL TOPO MAPS' from the 'Coordinate List' tab of the GPS Tool. The GPS tool will retrieve the coordinates from ALL TOPO MAP's annotation base, insure that the GPS Waypoint Names are unique and display the waypoints in the 'Edit and Select

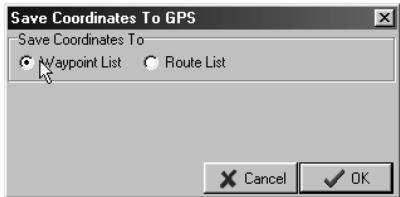
Coordinates to Save' box:



5. Save the coordinates to the GPS by pressing 'Save Selected Coordinates To GPS Receiver':



the 'Save Coordinates To' dialog is displayed:

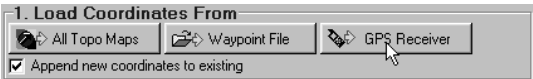


select 'Waypoint List' and press

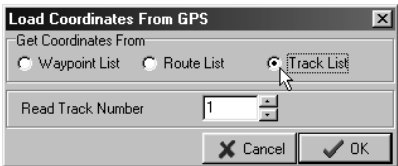
The GPS Tool will quickly append the waypoints to the GPS receiver's waypoint list and display them on the map.

GPS Example 2: Moving a GPS Track from GPS to Map

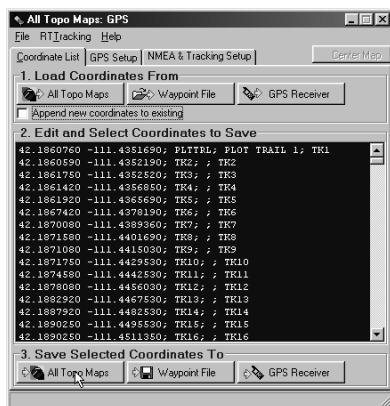
1. Consult your GPS's manual for the sequence to clear the track buffer, then configure the track buffer to accumulate points in Auto mode (or once every 15 seconds). After the GPS establishes it's position, take it on a short trip to accumulate a track history.
2. Select the 'Load Coordinates From GPS Receiver' option on the GPS Tool:



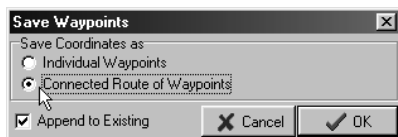
the 'Get Coordinates From' dialog is displayed:




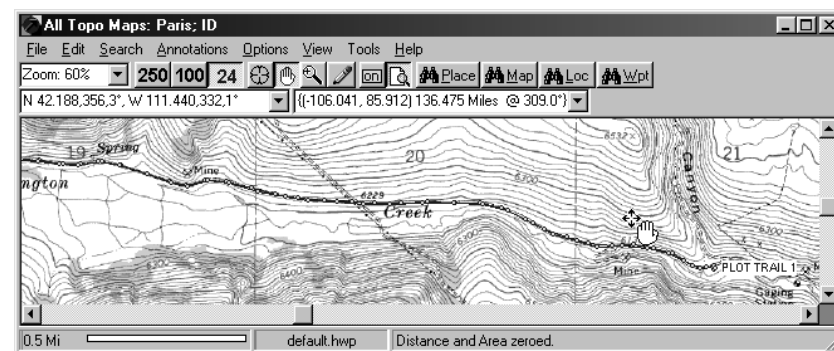
choose 'Track List' and press . The GPS Tool will retrieve all of the track points from your GPS Receiver and place them in the coordinate list:



3. Press the 'Save Selected Coordinates to ALL TOPO MAPS' option on the GPS Tool; the 'Save Coordinates as' dialog is shown:

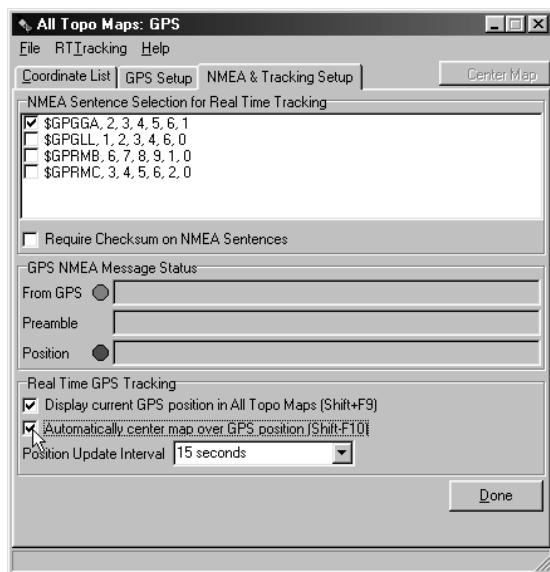


Select 'Connected Route of Waypoints' and press . The GPS Tool will move the GPS's track log to the ALL TOPO MAPS viewer and display your track on the map.



Real Time Position Tracking

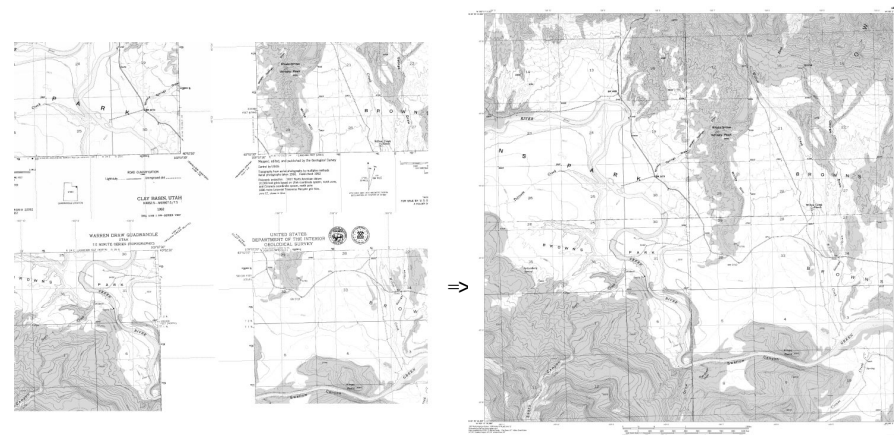
You can use your GPS to continuously track your location in the ALL TOPO MAPS viewer. After starting the ALL TOPO MAPS viewer, start the GPS tool. Select the 'NMEA & Real Time Tracking' tab:



Check both the 'Display current position' and 'Automatically center map' options. When your GPS receiver gets a position lock, the viewer will automatically center the correct map on your screen and place a blue X at your current location on the map.

BigTopo Map Seaming Tool

BigTopo extracts portions of one or more quadrangles, merges the user selected map contents, re-collars and re-grids the resulting georeferenced map image:



BigTopo takes multiple maps

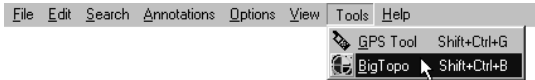
and makes arbitrary coverage quadrangles!

BigTopo accepts bounding coordinates and then quickly produces a seamed topo map, at full resolution. BigTopos can be written to a variety of file formats for exchange with GIS/CAD applications, and may be used without copyright limitations.

The maximum dimension of a BigTopo map is 124,500 meters (about 77.4 miles) in height or width. Windows 95/98 machines are limited to quarter gigabyte BigTopo files (250 megabytes), Windows NT machines can generate larger images if they have sufficient virtual memory allocations; however, most programs (including the All Topo Map viewer) won't be able to open image files that cover more than 1,400 square miles.

Detailed BigTopo information is available by pressing F1-Help on your keyboard from the

BIGTOPO application.
The BIGTOPO tool can be started from the ALL TOPO MAPS viewer 'Tools: BIGTOPO' menu option.



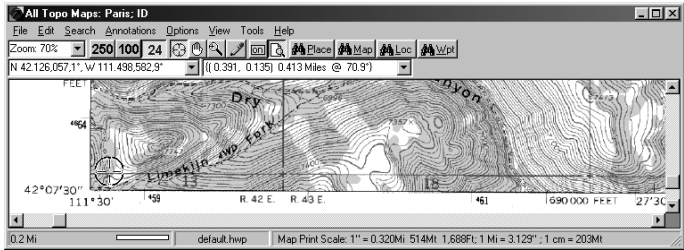
Tour: Building A BIGTOPO Map

Building a BIGTOPO map is easy to do. This tour will take you through these steps:

- 1. Define the BIGTOPO coverage.
- 2. Select annotation options.
- 3. Choose an output file name and path.
- 4. Make the BIGTOPO.
- 5. Preview the seamed map in BIGTOPO.
- 6. Opening the BIGTOPO from within ALL TOPO MAPS


Tour 1: Defining BIGTOPO Coverage

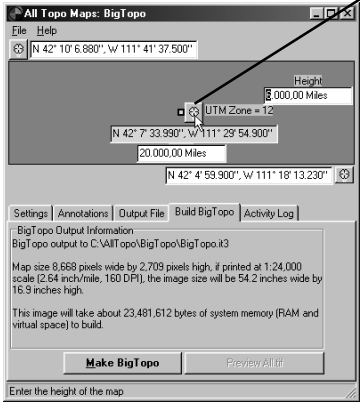
Start the ALL TOPO MAPS viewer and find the center location of the BIGTOPO map you want to make. For this example we will use the corner of a quadrangle as the BIGTOPO's center. Four maps will be seamed:



Press Control-X to copy the current cursor location to the windows clipboard. (Press and hold

the Control key, then press and release the X key, finally release the Control key.) You don't need to select a specific cursor tool; the Bombsight, Drag Hand, Pencil Tracer and Zoom tools all work with Ctrl-X.

Select 'Tools: BIGTOPO' to start BIGTOPO, or use the Windows task bar to re-focus the BIGTOPO tool. Paste the map's corner location into the BIGTOPO's center using the  button:

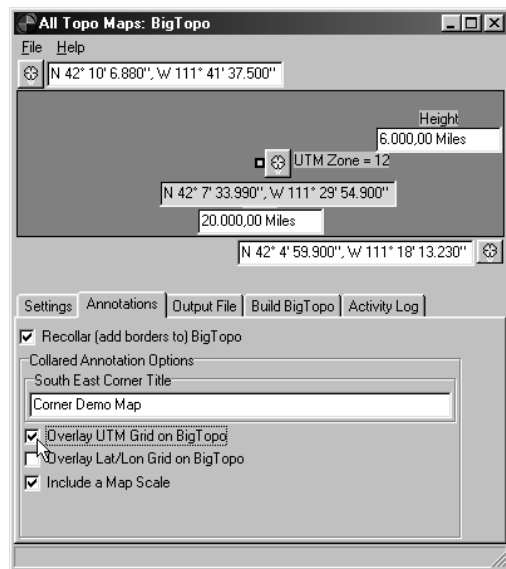


Change the BIGTOPO's Height to 8 miles and the Width to 20 miles to control the resulting map's coverage area.

You can specify the resulting image by it's Northwest corner, it's Southwest corner or it's Center corner.

Tour 2: Select Annotation Options

The 'Annotations' tab controls map recollaring (adding a new border) grids, scales and titles. Select the 'Annotations' tab:

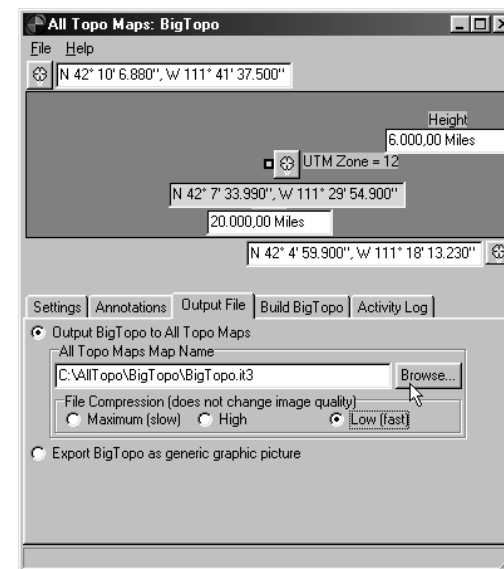


Check 'Recollar (add borders to) BigTopo', enter a map title, check 'Overlay UTM Grid on BigTopo' and 'Include a Map Scale'.

The 'Corner Title' is placed on the resulting map's lower right corner. Black UTM Grids are placed at 1,000 meter intervals with values in the collar, blue Lat/Lon grids are placed on 1° intervals.

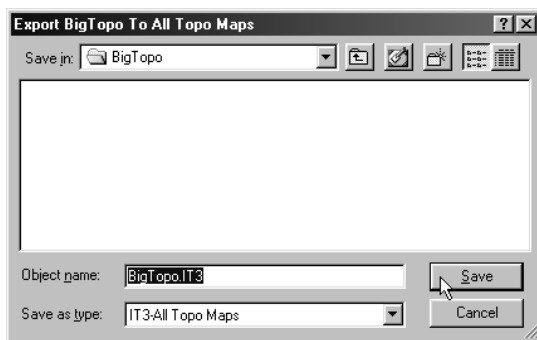
Tour 3: Choosing Output Files and Paths


Select the 'Output File' tab:



Choose: 'Output BigTopo to ALL TOPO MAPS' to make a map that the ALL TOPO MAPS viewer can open and display. Set 'File Compression' to 'Low (fast)' to speed up the map generation.

Press the **Browse...** button:



Enter a filename in the 'Object Name' box, keep the default path, finally press .

Output Notes

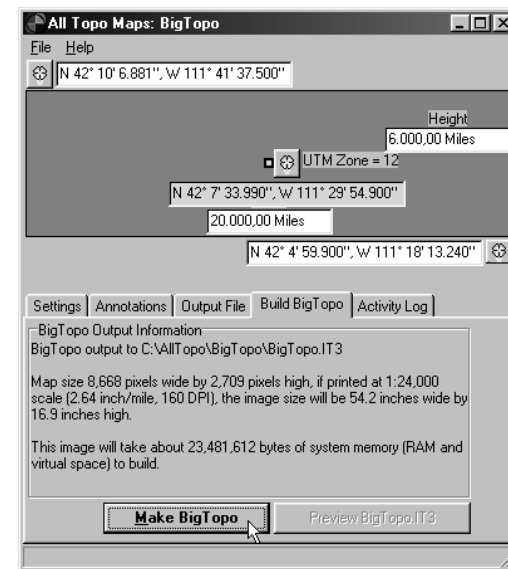
BigTOPO maps are always written at full resolution.

To directly export a map to CAD or GIS applications select 'Export BigTOPO as generic graphic picture' and choose a destination path, filename and file type. If a .TIF output file is selected a .TFW worldfile is also generated. GIS and CAD applications may be able to use the worldfile to georeference BigTOPO maps.

A .TXT file with detailed image information is also written when BigTopos are exported to generic graphics formats.

Tour 4: Making the BigTOPO

Use your mouse pointer to select the 'Build BigTOPO' tab:



Information about the resulting BigTOPO map is displayed, press the 'Make BigTOPO' button to start building the requested BigTOPO map. The 'Activity Log' is automatically displayed while the map is generated.

Tour 5: Previewing a BigTOPO

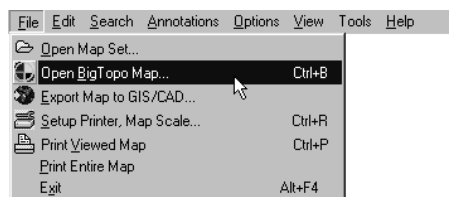
Press the  button found on the 'Build BigTOPO' tab to view the map just generated:



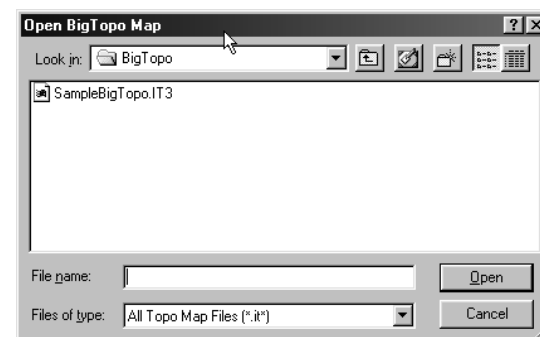
PageUp and PageDown keys zoom in and out, press the shift key to use the magnifying glass to closely inspect the seamed map. After previewing the BigTOPO, use the menu option 'File: Close Preview' to return to the main BigTOPO screen.

Tour 6: Opening a BigTOPO in the ALL TOPO MAPS Viewer

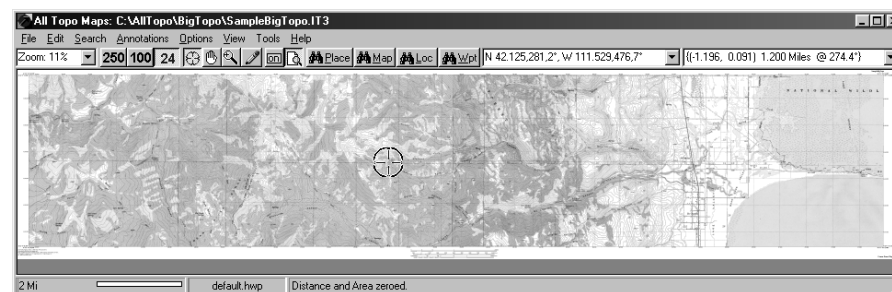
Use the Window's 'Change Task' shortcut keys: Alt+Tab or the task bar at screen bottom to return to the ALL TOPO MAPS viewer, then select the menu option 'File: Open BigTopo Map':



The 'Open BigTopo Map' dialog is shown:



Select the BigTOPO with your mouse, then press **Open**:



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ALL TOPO MAPS Quick User Tips

Panning the Map, Moving the Map on Your Screen:



Use the Drag Hand to move the map.

Use the Arrow Keys to move the map around the screen.

click-click

Double-click within the map to center the clicked location on the screen, or double-click in a map margin (border) to show the adjacent map.



Finds a specific map or move to adjacent maps.

Zooming In and Out: Changing the Map Scale



Zoom tool, drag area to zoom into.

PageUp

Press the Page Up key to zoom out 10% (move away from the map). Hold the Shift key and press Page Up to zoom out 1%.

PageDown

Press the Page Down key to zoom in 10% (move closer to the map). Hold the Shift key and press Page Down to zoom in 1%.

Home

Set the Zoom to 100%.



Switch between 1:250,000, 1:100,000 and 1:24,000 scale maps.

Other Shortcuts and Tips:



Quickly finds a place by its name. Find a Location By Place or Feature Name.



Show/Hide All Waypoints .

F1

Online help.

F2

Add a Waypoint at the current cursor location.

F3

Change the Cursor Coordinate display: D M S, D M.m, D M S.s, UTM or MGRS.

F4

Change the units for the Measurement Spike distance: Meters/Feet/Miles.

F5

Zero the 'Traced Distance' then press left mouse button and drag cursor to trace a path and measure its length.

F6

Place the 'Measurement Spike' at the current Cursor position.

F7

Quick, add a waypoint , just like the last one.



View the Waypoint list.