Australian Government
Geoscience Australia

NATMAP
Raster 2003

USER GUIDE

APPLYING GEOSCIENCE TO AUSTRALIA'S MOST IMPORTANT CHALLENGES

NATMAP Raster 2003 User Guide

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NATMAP Raster 2003 Basic Help

Select a Map

In the top left of the Viewer is a small map of Australia covered by five buttons. Each button corresponds to a different way of selecting a map.

Click on the appropriate button on this image to select the map you want.

Navigate around a map

Pan: click, hold and drag

Zoom In: click, hold and drag down
Zoom Out: click, hold and drag up

Recentre: click
In Mapsheets, you can click off the map to load a neighbouring map; in Mosaic, this is the same as the Hand Pan tool

Zoom to Extents: The map sheet will fill the map display window

Changing layers: select the layer you want to view from the pop-up menu.

Accessing the user guide and help: click on the USER GUIDE text in the lower left corner.

NATMAP Digital Maps - Troubleshooting 2003 Release

Please note: Geoscience Australia no longer supports the 2003 Releases of NATMAP Raster Mosaic or NATMAP Raster Mapsheets, and we recommend that users upgrade to the latest version of this product, NATMAP Digital Maps 2008 Release. The 2005 versions - NATMAP Raster Premium 2005 and NATMAP Raster 2005 - are now subject to limited support only and this support will be withdrawn when NATMAP Digital Maps 2008 has been available for one year.

- Internet Explorer 7 Issues
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Microsoft Internet Explorer 7 issues

An issue has been identified with the latest release of Microsoft's Internet Explorer 7. If you have upgraded to Internet Explorer 7 and are now experiencing difficulties with either NATMAP Raster Mapsheets 2003 or NATMAP Raster Mosaic 2003, download a patch here (raster2003_fix_ie7.exe [15MB]). Save this file temporarily to your hard drive, then run.

This patch is only available online. Users unable to download the patch should consider upgrading to the latest version of this product, NATMAP Digital Maps 2008 Release.

Windows XP Service Pack 2 issues

An issue has been identified with changes to the Internet Explorer 6 web browser, introduced by Windows XP Service Pack 2. More detailed information on the problem and some fixes are available.

Installing

I want to copy all maps to the hard drive and install the Viewer from there. Is there an easy way to do this?

You can now download a file to copy the maps to your hard drive correctly and then run the Setup program. This batch file has been thoroughly tested and is virus free. It should work on all Windows platforms (not tested on Vista).

1. Download the setupHD.bat file and save it to your computer
2. Run the setupHD.bat file. You will be prompted to enter your CD drive letter (in most cases this is D or E) and to load CD1 into your CD drive
3. Once CD1 has finished copying, insert CD2 and press any key to continue
4. The installation process will begin as soon as the contents of CD2 have been copied to your hard drive.

Note that this batch file creates a folder on your C: drive called 'natmap'.

You also need at least 1.3Gb of free space on your C: drive in order to copy all the maps from either Mapsheets or Mosaic.

If you already have the latest version of the Viewer installed on your computer, click the Cancel button when the Setup program begins running.

I load the CD in and nothing happens. Isn't there an AutoRun?

There is no AutoRun feature on the CD.

Many users have their Viewer configured to read maps off the CDs. If there was an AutoRun feature, then it would try to run the Setup program every time the user was asked to swap CDs (which isn't very desirable). Therefore, no AutoRun feature was added.

I load the CD and start Setup. I get an error message that says 'This is not a valid Win32 application' or 'This is not a system32 application'.

This is caused by one of the following:

- problem with your CD-ROM driver
- an incorrectly downloaded file (not appropriate here)
- a virus.

To work around this problem, you need to run the Setup from your hard drive instead of the CD. You can do this by either:

- **full hard drive installation:** follow these instructions
- **install from hard drive but leave maps on CD:** Copy just the setup files (all files from the top level of your hard drive except for the 'Rasters' folder) to a folder on your hard drive. Run Setup.exe from your hard drive. Once the Start screen is loaded, exit from the program, and launch the Raster Configurator. Specify where on your CD your maps are located by following the steps for adding a search path. This will load the correct location of the maps into the Viewer software.

If the problem is your CD-ROM driver, you will need to obtain a new driver. Check your computer manual and/or contact your place of purchase for more information (you may be able to download one for free).

When installing, I get an error with error code '0x80040707'.

This is caused by an incompatability between some Windows XP machines and InstallShield. A solution and more information is now available.

When installing, I get the following error message: Error number: 0x80070725 Description: Incompatible version of the RPC stub.

This happens because of an incompatible version of OLEAUT32.dll in your Windows system directory. If you are using Windows NT 4 or Windows 2000 please refer to Microsoft Knowledge Base Article Q321915. If you are using Windows 98 please try the following steps (you will need your Windows 98 installation CD-ROM in your CD drive):

1. search for OLEAUT32.dll on your computer. Make a back up copy of this file somewhere on your system (in case you need to restore it)
2. select Start/Run and type in sfc to activate the System File Checker utility
3. select option 2 - 'Extract one file from installation disk'
4. enter oleaut32.dll in the space provided
5. press Start (in the SFC box)
6. in the Restore From window, enter the path to your CD (this will vary according to your PC setup) and press OK
7. the original OLEAUT32.dll file will be restored - you will then need to reboot your computer to complete the process.

You should now be able to install Raster Mapsheets or Mosaic 2003.

I am using Windows NT. Why does a desktop icon not appear?

On some NT machines and systems the desktop icon for NATMAP Raster may not appear because of administrative restrictions. Please check with your system administrator. More information can be found in the Installation chapter in the User Guide.

Why can't the Viewer find the maps after I have copied the maps to my hard drive?

When copying maps to your C: drive or another network drive, ensure that:

1. the maps from each CD are still stored in directories called 'cd1' and 'cd2' in the chosen directory. For example, you have created a directory on your C: drive called 'C:Natmap'; in this directory you would have copied the 'mapdata.txt' file and created two directories called 'cd1' and 'cd2', which contain the maps on CD1 and CD2 respectively
2. the search path for the Viewer to find the maps is set to the correct directory (in this example, the Configurator would need to be set to C:Natmap in order for the maps to load correctly).

Refer to the Raster Viewer Configurator section for more details.

I get the following self-registration error message:

'One or more files did not properly self-register.

Following files did not self-register:

*   C:Program FilesEarth Resource MappingImage Web ServerClientNCSecw.dll. The specified procedure could not be found
*   C:Program FilesEarth Resource MappingImage Web ServerClientNCSView.dll. The specified procedure could not be found
*   C:Program FilesEarth Resource MappingImage Web ServerClientNCSAddOn.dll. The specified procedure could not be found.'

This error occurs when an ECW plug-in (such as the Arc/Info ECW plug-in) or another piece of software that can read ECW files is installed that uses later versions of shared files than that used in NATMAP Raster.

If you no longer need the ECW plug-in, uninstall it. Reinstall NATMAP Raster.

If you still need the ECW plug-in, or you are unable to uninstall the plug-in, try either of the following:

*   uninstall Raster. Rename the folder *C:Program FilesEarth Resource MappingImage Web ServerClient* to something like *Client_old* or *Client_plugin*. Reinstall Raster
*   copy all the files in the C:Program FilesEarth Resource MappingImage Web ServerClient directory that start with NCS and have a .dll extension. If you are using Windows NT, paste these files into C:WinNTsystem32; otherwise paste the files into C:Windowssystem. Run Raster.

I get the following self-registration error message:

'The following files did not self-register:

1. C:Program FilesNatmapNATMAP RASTER VIEWER1.4ControlsECWConverter.ocx. A device attached to the system is not functioning
2. C:Program FilesNatmapNATMAP RASTER VIEWER1.4ControlsGazetteerControl.ocx. A device attached to the system is not functioning
3. C:Program FilesNatmapNATMAP RASTER VIEWER1.4ControlsMapDataControl.ocx. A device attached to the system is not functioning
4. C:Program FilesNatmapNATMAP RASTER VIEWER1.4ControlsRedfearn.ocx. A device attached to the system is not functioning.'
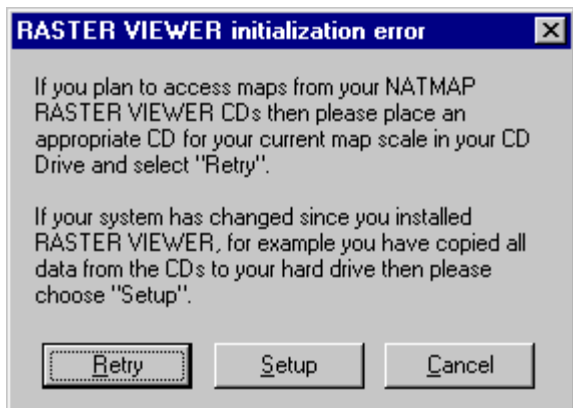
Try the following:

- check your version of Internet Explorer. We recommend Internet Explorer v5.5 but no earlier than v5.0. You may need to reinstall a later version
- manually register files using the *regsvr32* command. Click on Start > Run..., then in the dialog box type 'regsvr32' plus the full path name and file name. Include quotes if any names have spaces. You can also drag the icon representing the file from Windows Explorer into the dialog box rather than typing the path and file name
  The line in the dialog box should read: regsvr32 '{installation path}{filename}'. Hit OK and the file may register
- you may have old versions of some operating system files, particularly if you are running Windows98. The files possibly causing the problem are *msvcrt.dll* and *mfc42.dll*, located in the System directory. Check the Microsoft website for more up-to-date versions (you need msvcrt.dll v6.10.8637.0 or later, and mfc42.dll v6.00.8665.0 or later). Rename any existing versions on your computer, and download the updated versions into the same directory.

Starting the Viewer and using the Configurator

Initialisation Problems

If you have not inserted a NATMAP Raster CD into your CD drive or if you have changed your system since the last time it was run - for example, if you have copied all of the map data files to your hard drive - you will be presented with the following screen:


If you insert a CD and choose Retry and the **mapdata.txt** file is still not found, you will be presented with the same screen. You should probably choose Setup at this stage.

Choosing Setup will present you with the following screen:

Choose OK and you will be presented with the standard *File Open* box. Use the dialog box to select the **mapsmapdata.txt** file, then press OK. For example:
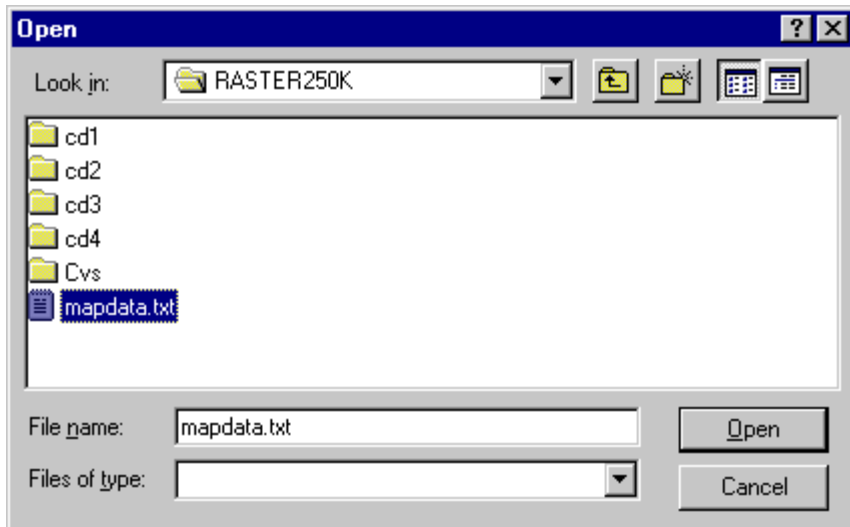
The Viewer and other software should now run as normal.

I've copied the maps to my hard drive and used the Configurator to add a new search path. When I try to load a map, I get an error message saying the map can't be found.

Check that you have copied the maps correctly and maintained the correct directory structure.

When you use the Configurator to add a new path, make sure you select the folder that contains the mapdata.txt file, not the folders that contain the actual maps. This file contains information used to help load the correct map.

Loading a CD after an Viewer initialization error appears does not relaunch the Viewer.

If the Raster Configurator is set to search for maps on CDs only, and the Viewer is launched without a CD, then an initialization error will appear. Loading a CD and pressing Retry will not work.

Solution 1: Press Cancel, close the Viewer and relaunch with the CD in the CD-ROM drive.

Solution 2: If disk space permits, copy data to the hard drive and reconfigure the map image search path to the folder of your choice on your computer's hard drive.

I've changed the location of my maps, or added a new location, using the Configurator. The changes don't appear in the Viewer.

You need to close the Viewer first before any changes you make in the Configurator are activated.

I have just installed NATMAP Raster but whenever I start I get the following message: 'An ActiveX control on this page is not safe. Your current security settings prohibit running unsafe controls on this page. As a result this page may not display as intended'.

I have changed my Internet Explorer security setting to LOW but I still cannot load any maps.

This is an Internet Explorer problem and appears to be caused by a problem with a Windows file used by IE. To resolve the issue, you need to:

1. remove Internet Explorer
2. rename the COMCAT.DLL file in your %SystemRoot%System32 folder
3. reinstall Internet Explorer.

An error message appears requiring a screen resolution of at least 800x600.

The Viewer will not run on a screen resolution of less than 800x600 pixels. This is the minimum screen resolution at which all buttons, map windows and other links will fit. At 800x600 resolution, you will need to ensure that the Autohide property setting for the Windows task bar is turned on.

The bottom of the Viewer screen is cut off. I can't change layers.

When running a display at 800x600 pixels, the user should ensure that any **task bars** have their *autohide* property setting turned on. For the Windows task bar, this is done from Start > Settings > Taskbar, then ensuring that the Autohide check box is ticked.

I launch the Viewer, and I get a blank coloured screen with a picture indicator, but no picture:
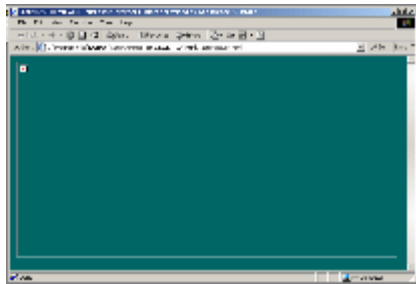
This problem can be caused by a *file association* you have on your computer - the Windows name for describing which program opens which types of files. The program you already use to open these file types won't let you open them in other programs such as Internet Explorer.

You would probably also find that if you can start the Viewer, the icons down the side navigation panel in the Search for a Map and View a Map windows would also be missing.

Solution:

1. go into Windows Explorer, select Tools > Options..., and select the File Types tab
2. look for an association that refers to the program you use to open JPEGs or GIFs (e.g. 'Photo Suite Image') - there should also be a list of all the different image types it can open including JPEG, GIF, JPG etc
3. delete this association.

The Viewer should now display all images correctly. If not, you may have missing files, and you should uninstall and reinstall the Viewer.

Searching for a map

I am missing images from the navigation panel on the left side of the Viewer:

Refer to the solution for fixing file associations in Windows Explorer.

I've launched the Search by NATMAP name, Search by NATMAP number, or Search by Coordinates tools. I then change the map layer, but the drop-down lists do not update.

This is a known bug. To work around this, select the map layer you wish to view, and then click on the appropriate search tool button located in the top left of your screen. The correct lists of map names will appear and you will be able to load the correct map layer.

Why do I get more than one result for the same place?

In many cases, you may get two or more results for the same name, place type and state. This is because the original Gazetteer has hundreds of feature codes, which has been aggregated into the 20+ Place Types used in the NATMAP Raster Place Name Search and the on-line Place Name Search on the Geoscience Australia website to make searching easier. Each individual entry remains in the data; however, in the NATMAP Raster Place Name Search the results are displayed with the aggregated Place Type, not the original feature code.

I can't find my Place Name, but I know it exists.

Some places (mainly beginning with 'O') were not appearing in the Place Name results due to a sorting problem in the data files.

Solution:

1. download the corrected place name data files
   - **For fast connections**: Download the place name data files as one ZIP file [14.1MB]
   - **For modems and slow connections**: download the data files in three parts.
     - Download Part 1 [ZIP file 4.5MB]
     - Download Part 2 [ZIP file 4.8MB]
     - Download Part 3 [ZIP file 4.8MB]
2. unzip the 17 *.dta files into the RASTERCommon folder in the location you have installed the NATMAP Raster Viewer. (In most cases this will be C:Program FilesNATMAPNATMAP RASTER VIEWER1.4RASTERCommon. If you can't find this folder, or don't remember where it is, do a search on 'RASTERCommon'.) Overwrite any existing files
3. run the Viewer. Search by a place name and check that it appears in the list.

If you're sure that the place name is spelt correctly, try using a alternate name. Many place names have alternative names, some of which are officially recognised and some which aren't. If you think that a place name has been omitted, or is spelt incorrectly, please contact Geoscience Australia.

I've clicked on the Place Name, but it's taken me to the wrong place.

Check you are clicking on the correct result - see the note on multiple results. Another reason is that large area features such as administrative areas, or long linear features such as rivers, are difficult to assign one coordinate point to. If you believe that there is an error in the position of a feature, please please contact Geoscience Australia.

I get a mountain that doesn't have an elevation.

Not every mountain, hill or trig station in the Place Name Search has an elevation attached to it. At the moment around 500 of these features have elevations attached, and more will be progressively added in future versions.

I've gone back to the Place Name Search and my results have disappeared.

The bottom right part of the Place Name Search page is generated each time the Place Name Search is loaded. Any place name, state or place type you have previously entered will still be there - you just have to click on the Search button again to reload the results.

I zoom in on the Index Map and the 1:250 000 scale map boundaries disappear.

The map boundaries will disappear depending upon the current zoom level.

Using the Viewer

I select a map, but instead of the maps being displayed I get an error box where the map should be:
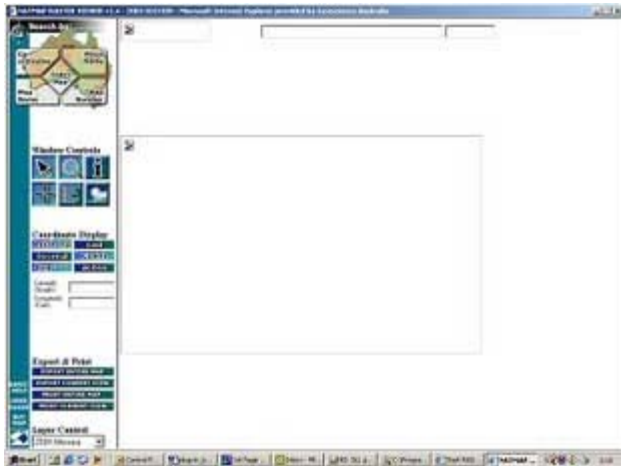
This problem occurs if ER-Mapper Image Web Server IE Plugins (versions 1,7.x.x and up) are installed. It may also occur if the Arc/Info ECW plug-in is installed. This plug-in allows the display of ECW images in the Internet Explorer web browser. It is used by both the Raster viewer software as well as many ER-Mapper Image Web Server (IWS) sites and specialist software. Raster uses an earlier version than many of these plug-ins. Computers without this plug-in or those using Version 1,6.x.x or below should be unaffected.

Solution 1 (do not use if the Arc/Info ECW plug-in is installed):

1. navigate to the following directory
   95, 98, 2000, Me, XP: C:Windowssystem
   NT: C:WinNTsystem32
2. select all files beginning with NCS which have a .dll extension
3. delete these files
4. close down all programs and restart your computer
5. start the Raster Viewer
6. select a map to check it loads correctly.
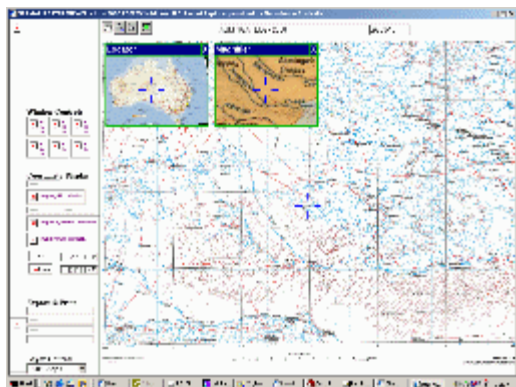
Solution 2:

1. uninstall Raster
2. rename the folder *C:Program FilesEarth Resource MappingImage Web ServerClient* to something like *Client_old* or *Client_plugin*

3. reinstall Raster.

Solution 3:

1. navigate to C:Program FilesEarth Resource MappingImage Web ServerClient
2. copy all files in this directory beginning with NCS
3. paste these files into the C:Windowssystem directory on 95/98/Me/2000/XP, or the C:WinNTsystem32 directory on NT
4. start the Raster Viewer. Select a map to check it loads and views correctly.

I am missing images from the navigation panel on the left side of the Viewer:

Refer to the solution for fixing file associations in Windows Explorer.

The climate graph doesn't update when I change maps or move around.

The Climate Graph window opens a new Internet Explorer window and displays a JPEG image of the climate graph for the particular 1:250 000 scale map area you have viewed on your screen. However, if you leave the Climate Graph window open, and you move maps using either the Hand Pan or the Click Pan tool, the climate graph will not update in the new window.

Solution: Reclick the Show Climate button. The correct graph will be displayed.

An error message appears saying 'Tile has no projection'.

This message may appear when scrolling or point-panning on some machines with slower PC processing speeds. It is resolved by restarting the Viewer.

Maps do not appear in the Locator and Magnifier windows.

If there is an error message saying that 20M.ecw or 5M.ecw cannot be found, then you should uninstall the Viewer and reinstall in order to restore these maps.

If there is no error message, and the Locator and Magnifier windows remain green, then the problem is caused by a limitation in Internet Explorer versions earlier than v5.5. This limitation was removed at IE5.5 Service Pack 1. You are best upgrading Internet Explorer to at least v5.5 SP1.

I have loaded a map, and am not zooming or panning around. My CPU usage stays high (at least 60%).

As with missing Locator or Magnifier maps, this is caused by a limitation in versions of Internet Explorer prior to v5.5 SP1. If this problem persists, you need to upgrade to at least this version of IE to better handle map display.

I have moved the Locator / Magnifier / Information window completely off the screen and can't drag it back.

Press the Show Locator button on the left-hand side of the screen twice. This will close and reload the window so it is partially visible on the side of the screen.

I'm having trouble using the Zoom tool. Why isn't there a Zoom Box tool?

The version of the ECW software developers kit (SDK) used in this release of Raster did not have the Zoom Box tool available - only the standard ER Mapper Zoom tool.

I click on the centre of the blue cross in the main Viewer. The map then jumps and the coordinates change slightly.

This is caused by a slight incompatability between the cursor, the centre of the cross, coordinate calculations performed by the Viewer software, and maintaining the shape of the map in the browser window, which adds up to around 1-2 pixels (which for the 1:250 000 scale map layers is about 30-60 metres).

It is more significant when zoomed out, as each pixel on the screen represents a larger area on the map.

There is no workaround for this bug; however, the error remains less than the stated accuracy of NATMAP Raster which is 150m.

I have the blue cross centre hairs turned off. If I minimise the side navigation bar, the blue cross reappears.

There is no workaround to this minor bug at this stage - it will be looked at in the next version.

Some of the coordinate display buttons don't work.

Some buttons are designed to be disabled depending upon which coordinate display mode you are in.

I'm using 800x600 screen resolution and I can't see the layer pop-up menu.

If you select the layer control box, and no pop-up menu appears, use the up- and down-arrow keys on your keyboard to move between the layers. Hit ENTER once you've chosen the appropriate layer.

Map images

The map image isn't very clear and/or the colours aren't very good.

Check you have:

- optimised your screen colour settings
- optimised your screen resolution
- read the note on image clarity.

Grid lines are missing from some of the maps.

Some grid lines may disappear from the screen, especially on the index map. This is due to screen resampling of the ECW image. The grid lines will reappear when you change your zoom level.

Exporting

I cannot export SE53-11 BRUNETTE DOWNS. (Mapsheets only).

There is a problem with this ECW file that is preventing export into other formats.

- Download replacement ECW file for SE53-11 BRUNETTE DOWNS [ECW file 2.8MB]

If you have already installed your maps onto your hard drive, then save this new file to the same location as the existing map.

If you are running the maps off your CD, then follow these instructions:

1. create a folder on your hard drive or network (e.g. C:NATMAP)
2. vrom CD1, copy the *mapdata.txt* file located in X:Rasters250K-Sheets (where X: is your CD drive) to the folder you created in Step 1 above
3. in this folder, create another folder called 'mapsheets-cd1'
4. save the downloaded map in the 'mapsheets-cd1' folder
5. open the Raster Configurator
6. follow the instructions for adding a search path to the Configurator. The folder you need to select will be the folder you created in Step 1
7. follow the instructions for modifying the search path order in the Configurator. The folder you created in Step 1 needs to be at the top of the list. Click the Apply button and then click OK to exit the Configurator
8. start the Viewer and load the map.

I exported the current view as an ECW file. When I load the ECW into another program, the coordinates are wrong.

There is a bug with the ECW exporter. Rather than assigning the coordinates of the current view to the exported image, the ECW exporter uses the coordinates of the top left of the image file currently loaded in the Viewer. If you have loaded the Mosaic, for example, then the top left corner of the Mosaic file (250k.ecw) will be assigned to any subset images you save as ECW files. For Mapsheets images, the top left corner of each individual map image (i.e. sg5310.ecw, sk5523.ecw, etc.) will be assigned to any subset ECW files.

Solution 1:

Save your current views as GeoTIFFs if you want to retain correct coordinate information. If you need to convert GeoTIFFs to ECW files, you should download, install and use the free ECW compressor from ER Mapper.

Solution 2:

1. download the free ECW Header Editor from ER Mapper and install it on your computer
2. set your current view to the extents you wish to export
3. click on the Map Information window. Record the coordinates for the **top left** of the current view
4. export the current view as an ECW file
5. start the ECW Header Editor you installed in step 1. Open the ECW file you created in Step 4, and change the coordinates of the top left of this ECW file to those you recorded in Step 3. Save your changes.

I have tried to export the current view as an ECW file, and I get the following message:

There is a 700MB limit on exporting the current view as an ECW file. This is a limit imposed by the ECW software used in the Viewer.

I tried exporting the current view or an individual map, and I get the following message.

There is a limit on how large a file you can export which is imposed by a combination of your computer and the Viewer software.

Printing

I'm having trouble printing to my Canon printer.

Download and install the most recent driver for your Canon printer from the Canon website.

I don't get a scale bar when I print from a Mosaic layer.

This is because of the map projection used for the Mosaic layers.

Problems with other software

I can't run TrackRanger v3.3 to v3.5 after installing NATMAP Raster Viewer.

The TrackRanger GPS navigation system produced by Advantech Design shares many ER Mapper files as the NATMAP Raster Viewer. These files have a .DLL (Dynamic Link Library) extension. TrackRanger uses different versions of these DLL files to the NATMAP Raster Viewer. If NATMAP Raster Viewer is installed after TrackRanger, TrackRanger may not work as installing NATMAP Raster Viewer overwrites these shared DLL files.

Solution:

TrackRanger v3.6f will detect and upgrade the DLLs installed by NATMAP Raster 2003. Versions of TrackRanger earlier than this may not work with NATMAP Raster 2003. Earlier versions of TrackRanger will detect and upgrade DLLs from earlier versions of NATMAP Raster.

I installed the TrackRanger demo from Australian Outback Tracks; now Raster will not work.

Installation of the TrackRanger demonstration software included on the Westprint Australian Outback Tracks CD causes the same problem as installing old versions of TrackRanger.

If you want to preview these maps without installing the TrackRanger demonstration software, download the demonstration version of OziExplorer or ER Viewer software. Geoscience Australia does not take any responsibility for the use of third-party software.

If you have already installed the TrackRanger demo, then you will need to uninstall TrackRanger, Raster and OziExplorer, and any other software (including plug-ins) that view ECW images. Reinstall Raster and then your other software.

I have installed the ArcGIS ECW plug-in - now I can't use the Viewer.

As with TrackRanger, this is caused by a DLL conflict. A solution and explanation are now available.

Note that this can occur with **any** ECW plug-in you may download which has a version number of 1.7.x.x or later.

I installed the on-line viewer - now I can't use the NATMAP Raster Viewer.

Refer to the notes on the ArcGIS ECW plug-in.

NATMAP Raster 2003 - Frequently Asked Questions

This FAQ list provides a comprehensive set of responses to questions asked about NATMAP Raster. To submit a question not already answered by this FAQ list, or that isn't contained in the NATMAP Raster 2003 User Guide, please contact Geoscience Australia.

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- 21 May 2003   What other versions of NATMAP Raster are there?
- 21 May 2003   What's new in 2003?
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- 1 Sep 2002   Why do the maps appear tilted when I load them into the Viewer?
- 4 Apr 2003   What are the lines I can see in the satellite image?
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Installing and Starting the Viewer

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- 12 Aug 2003   The 1:1 000 000 scale map Mosaic doesn't appear to be accurately georeferenced.
- 1 Sep 2002   How do I install the NATMAP Raster software?
- 1 Sep 2002   Can I keep previous versions of NATMAP Raster Viewer or AUSLIG GEODATA RASTER VIEWER on my computer?
- 21 May 2003   If I already have the Mosaic, do I need to reinstall the Viewer to view Mapsheets?
- 4 May 2004   How can I easily copy the maps to my hard drive and run the setup file?
- 4 May 2004   I've copied the maps onto my hard drive after I've installed the Viewer. How do I get the Viewer to find the maps?

Selecting a Map

- 23 May 2003   Why do I get more than one result for the same place name using the Place Name Search?
- 24 Jul 2003   Why don't the Place Name Search results stay on when I change map layers or go back to the Place Name Search?

Using the Viewer

- 11 Oct 2002   Why aren't the maps "crystal clear" when I view them?
- 4 Apr 2003   Can I measure distances?
- 22 May 2003   Why is the zoom tool different?
- 30 Jul 2003   How do I display the correct climate graph for the area I'm viewing?

Exporting maps

- 19 Nov 2003   Can I export maps directly to OZF2 format for use in OziExplorerCE?
- 1 Sep 2002   If I want to export a map into a different format, how large will the files be?
- 1 Sep 2002   How can I export high resolution map images from NATMAP Raster?
- 21 May 2003   Is there any limit on the size of the file I can export?
- 23 May 2003   Why does the Exporter only work for Mapsheets layers?

Printing Maps

- 26 May 2003   Why do I get a warning when I print from any of the Mosaic layers? Why is no scale bar printed

Using NATMAP Raster maps in other applications or products

- 1 Sep 2002   What should I do if I want to incorporate NATMAP Raster map images into my own product, service or report?
- 1 Sep 2002   Does NATMAP Raster fall under the Commonwealth Spatial Data Access and Pricing Policy?
- 4 Oct 2002   How do I use NATMAP Raster map images in other applications?
- 4 Nov 2003   How can I reproject the maps in NATMAP Raster?

Troubleshooting

- 1 Sep 2002   How do I report a bug or problem?
- 18 Sep 2002   I have TrackRanger GPS software and the Raster Viewer on my computer. I can't get either to work.

This on-line version of this FAQ list will be updated regularly.

NATMAP Raster 2003 - Consumer Information

- Contact Information
- National Mapping Division
- Acknowledgements
- Conditions of Use
- Accuracy and Reliability of Data

Contact information

Up-to-date information on NATMAP Raster products can be found on the Digital Topographic Maps pages.

Geoscience Australia welcomes feedback on any aspect of its products or services. Please direct your comments or any queries regarding this document or data to us via any of the methods below. If you are submitting a bug report, please read the 'how to report' document first.

Email	General Queries, NATMAP Raster product feedback, bug reports
	Topographic map errors and omissions
	Place Name Search errors and omissions
	Satellite imagery queries, errors and omissions
	Copyright, commercial applications, external users
Phone	Freecall 1800 800 173 (within Australia)
	(02) 6249 9966 or overseas +61 2 6249 9966
Fax	(02) 6249 9960 or overseas +61 2 6249 9960
Mail	Map Sales Geoscience Australia GPO Box 378 CANBERRA ACT 2601

About Geoscience Australia's national mapping division

Geoscience Australia is the national agency for geoscience research and spatial information. It serves government and supports the community through its output areas of geoscience for urban centres, oceans and coasts, and regional and rural areas.

The National Mapping Division within Geoscience Australia undertakes national mapping, geodetic, remote sensing, and land information coordination activities in support of Australia's economic and social development.

The National Mapping Division was formerly known as the Australian Surveying and Land Information Group (AUSLIG), Australia's national mapping agency. In September 2001, AUSLIG merged with the Australian Geological Survey Organisation (AGSO - Geoscience Australia) to form Geoscience Australia, the national agency for spatial information in Australia.

Acknowledgements and contributions

Data acknowledgements

Geoscience Australia's National Mapping Division gratefully acknowledges contributions to map content. Information is supplied by Commonwealth, State, Territory, and local government agencies as well as private sector agencies and individuals. A comprehensive list of contributors is available on the Topographic Mapping pages on the NATMAP web site.

The place name data contained within this product is from the Gazetteer of Australia. Copyright of the Gazetteer of

Australia resides with the relevant State, Territory and Commonwealth Governments and Australia Post © 2002.

The Landsat Satellite Mosaic of Australia was created by GeoImage Pty Ltd for the Australian Greenhouse Office as part of the National Carbon Accounting System. Scenes were acquired by the National Earth Observation Group (previously known as ACRES). Copyright Commonwealth of Australia 2001.

Software acknowledgements

The NATMAP RASTER VIEWER software was developed by Geoscience Australia and CSIRO Mathematical and Information Sciences to provide easy access to the images contained in NATMAP Raster products. NATMAP RASTER VIEWER provides a set of tools for selecting, displaying, printing and exporting maps.

The following products were used in the development of NATMAP RASTER VIEWER:

- ERMapper ECW SDK license and ERMapper ECW SDK web page
- ImageMagick license and ImageMagick web page
- LibDES license and email author
- LibTiff license
- LibGeoTiff license and LibGeoTiff web page.

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For information and/or help in facilitating your application, please contact the Geoscience Australia Copyright Officer. For further information refer to Geoscience Australia's Copyright Policy.

Commonwealth Spatial Data Access and Pricing Policy

The NATMAP Raster products, along with the other NATMAP paper products, does not fall under the Spatial Data Access and Pricing Policy. The policy covers selected digital datasets. For more information, refer to the Commonwealth Office of Spatial Data Management Spatial Data Policy web site.

Accuracy and reliability of data

The map images used in NATMAP Raster products are constructed from digital topographic data or scanned from paper maps with a basic horizontal accuracy of approximately +/- 140 metres. The images have been computer post-processed to re-project and georeference the images to the Map Grid of Australia (MGA) for the Mapsheets product and the Geocentric Datum of Australia (GDA94) for the Mosaic product, and have undergone subsequent validation. Therefore, the accuracy of positions reported by the software should approach that of the original paper map.

Topographic information included in the map images have been checked from multiple sources including SPOT imagery. Maps have not been field checked, so some information may not be accurate or up-to-date. An example of rapidly changing features are telecommunication towers which proliferate at an an ever-increasing rate. Homestead names are also subject to regular change and are difficult to keep up-to-date.

Every effort has been made to make the map images a useful reference, but feedback from map users is very

valuable. If you discover errors or omissions on the map, please contact NATMAP customer support or send your annotated map to us (we will replace your map with the corresponding current edition). We value your assistance for the next edition.

Reliability of individual map sheets are available.

More information on the maps themselves can be found in the About NATMAP Raster pages.

The custodians of the Gazetteer of Australia data used in the Place Name Search and Geoscience Australia do not warrant that the data is free from errors or omissions. Also, the custodians and Geoscience Australia shall not be in any way liable for any loss, damage or injury suffered by the licensed user of the data or any other person or organisation consequent upon or incidental to the existence of errors or omissions in the data.

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About NATMAP Raster

- Versions
- Components
- Map Layers
- Coordinates
- Creation Process
- Map Image Specifications

Versions

2003 - Mapsheets and Mosaic

In 2003 two versions of NATMAP Raster were released. The differences are outlined below.

- **Mapsheets**: all 513 1:250 000 scale NATMAPs plus three map insets are included as separate ECW files. The 1:250 000 scale maps use the Map Grid of Australia as their projection, meaning that the coordinates of the maps are measured in metres and the maps can be used for measuring distances and areas. Pixel size is 31.75m
- **Mosaic**: all 513 1:250 000 scale NATMAPs plus three map insets are joined together in one ECW file. The coordinates are latitude/longitude, which are ideal for interfacing with GPS software, but are not suitable for measuring distances or areas. The pixel size in metres varies depending where you are in Australia. Mosaic also includes a single map image of all 1:1M NATMAPs and a Landsat Satellite Image Mosaic of Australia, both of which use latitude/longitude coordinates.

More information on coordinate systems and why the different products are suited to different applications is found in the Coordinate Systems.

Updated features for 2003
- Inclusion of over **150 new maps**
- All 1:250 000 scale maps are created to the same specification (i.e. have the same look and feel)
- Mosaic version - all 1:250 000 scale NATMAPs joined together into one image
- Inclusion of 1:1M and Landsat satellite imagery (Mosaic only)
- Popup windows for legend and climate graphs
- More comprehensive User Guide, troubleshooting and Basic Help.

Features retained in 2003 from 2002

- Updated maps from 2002
- Image resolution of 200dpi
- Access to grid coordinates
- Improved georeferencing
- Raster Viewer Configurator tool
- Bulk exporting
- Available on Windows 95, 98, 2000, XP, Me or NT4
- User interface via IEv5.5 or higher
- Map loading via latitude and longitude
- Panning from map to map.
- Finding the latitude and longitude coordinates of a point on the map
- Printing the entire map or the current view
- Exporting the entire map or current view; JPEG, BMP, PNG, TIFF and GeoTIFF image formats are supported
- Online help file that can be read on screen or printed as needed.

All other components in the two products are the same as in previous versions.

Are upgrades available?

At this stage no - if you want updated maps and/or Viewing software, you need to buy the new version.

Previous releases

Name and Version	Released	Images	Cell Size	CDs	Production Method	Coords
AUSLIG GEODATA Raster-250K v1.0	May 97	LZW compressed 8-bit TIFF	150dpi	7	Scanned	None
AUSLIG GEODATA Raster-250K 2000 v1.1	Oct 00	ECW with exporter	150dpi	2	Scanned Geocoded	Lat/long AGD66
AUSLIG GEODATA Raster-250K 2000 Release 2 v1.2	Jul 01	ECW with exporter	150dpi	2	Scanned Geocoded	Lat/long AGD66
NATMAP Raster 250K Mapsheets 2002 v1.3	Sep 02	ECW with exporter	200dpi	2	EPS graphics file conversion (70%) Scanned (30%) All images rectified	Easting & Northing; MGA Zone number
NATMAP Raster Mapsheets v1.4 - 2003 Edition	Sep 03	ECW with exporter	200dpi	2	EPS graphics file conversion All images rectified	Easting & Northing; MGA Zone number
NATMAP Raster Mosaic v1.4 - 2003 Edition	Sep 03	ECW with exporter	200dpi	2	EPS graphics file conversion All images rectified	Lat/long GDA94

Product components

NATMAP Raster products are made up of the following components.

- This Product User Guide and associated documentation
- **Digital map images (*.ecw format)**. These are organised into **layers**, with each layer equivalent to a specific map series, scale or product. The number of map images you receive will depend upon which particular NATMAP Raster product you have purchased

  Further information on the images that make up each layer may be found in Map Layers and Image Specifications

- **Software for viewing, exporting and data management**. The NATMAP RASTER VIEWER is the software in this package that is used for selecting and viewing maps. The stand-alone RASTER EXPORTER can be used to export the ECW map images into other graphic formats such as GeoTIFF, TIFF, JPEG, Windows Bitmap and PNG. The RASTER CONFIGURATOR allows you to manage where your maps are stored, so you are not restricted to storing all maps in the one location.

Map layers

Landsat 7 Satellite Image of Australia (Mosaic only)

Layer ID in the Raster Viewer: 'Satellite Mosaic'

The Landsat 7 Picture Mosaic of Australia was produced by the Australian Greenhouse Office (AGO) as part of their National Carbon Accounting System. The mosaic is comprised of 369 individual Landsat satellite scenes acquired between July 1999 and September 2000. For more information on the Landsat 7 satellite, refer to the Earth

Observation and Satellite Imagery.

1:250 000 scale topographic map series (Mapsheets and Mosaic)

Layer ID in the Raster Viewer: '250K Maps' (Mapsheets); '250K Mosaic' (Mosaic)

The NATMAP 1:250 000 scale maps included in this NATMAP Raster product have been produced by Geoscience Australia's National Mapping Division and its predecessor, the Australian Surveying and Land Information Group (AUSLIG), in conjunction with the private sector. This is the largest scale at which published topographic maps cover the entire continent. The maps have been revised using a variety of data sources, including SPOT and Landsat satellite imagery, other government agency information, and data supplied by private companies and individuals. Production of the new NATMAP series began in the early 1990s, and concluded in 2003.

For more information, please refer to the 1:250 000 scale NATMAP legend explanation. Additional information on map specifications, new maps and the current status of NATMAP revision can be found on the Topographic Mapping pages on the Geoscience Australia website.

1:1 Million scale topographic map series (Mosaic only)

Layer ID in the Raster Viewer: '1M Mosaic'

The International Map of the World (IMW) Australia series was Australia's contribution to a common effort by many international mapping agencies to map the world at 1:1M scale. It was initially conceived for planning economic development but has been used as the basis for many other maps including aeronautical charts and thematic mapping. The series was completed in 1978 and was revised regularly until the mid-1980s.

Small scale reference maps (Mapsheets and Mosaic)

Layer ID in the Raster Viewer: '5M Map'

The smaller scale general reference maps provide a general overview of Australia, but still contain similar information to the larger scale maps. These maps have been regularly revised since the mid-1990s, and revision information is sourced from the same sources as the 1:250 000 scale maps. The Locator map used here is derived from GEODATA TOPO-10M, which is freely available from the Geoscience Australia website. The 1:5M scale General Reference Map of Australia is used for the 5M Map layer and the Magnifier map.

Topographic Map Index (Mapsheets and Mosaic)

The NATMAP Map Index shows which maps cover which areas. The version of the NATMAP Map Index used in NATMAP Raster is slightly different from the printed version. The version included here does not show 1:100 000 scale maps and combines the 1:1M and 1:250 000 scale maps into the one map in order to make viewing easier. The 1:9M Compact Reference Map has been used as a base.

Coordinate systems

Information on coordinate systems can be found in the coordinate system pages.

Creation process

The images used in this version of NATMAP Raster are derived from the most current edition of the respective maps available from Geoscience Australia's Map Sales as at August 2003. A full list of the currency of all layers and individual maps in the NATMAP Raster product is included in this User Guide.

'Raw' raster images were created from the digital EPS files used to produce the new NATMAP paper map series. Where digital EPS files were not available, the paper map was scanned to generate the 'raw' raster images. Each 'raw' raster image was transformed to be positionally accurate and encoded with coordinates and projection information before being compressed in the final ECW image.

Why are some maps marked with an asterisk (*) in the drop-down menus and in the Map Currency list?

The content of some 1:250 000 scale maps may differ from the printed map. Maps marked with an asterisk (*) after the edition number in any drop-down menu have been created from digital data that has not fully met NATMAP specifications; however, the content and structure of these maps are close enough to final specifications to be included in this product. Maps covering Tasmania have been produced from digital data; however, printed versions of these maps are not yet available.

Maps which may differ from the final printed version are:

- SD51-12 MONTAGUE SOUND SPECIAL
- SD51-16 PRINCE REGENT
- SE52-11 BININDUDU
- SE52-14 BILLILUNA
- SF51-06 PATTERSON RANGE
- SF51-07 SAHARA
- SF51-11 TABLETOP
- SF51-14 GUNANYA
- SF52-01 CORNISH
- SF52-02 LUCAS
- SF52-06 STANSMORE
- SK55-20 TASMANIA NORTH-WEST (including KING ISLAND)
- SK55-21 TASMANIA NORTH-EAST
- SK55-22 TASMANIA SOUTH-WEST
- SK55-23 TASMANIA SOUTH-EAST

Why are some features not shown on 1:250 000 scale NATMAPs?

Some features on maps, especially small scale maps, are subject to what is known as *cartographic generalisation*. It refers to a group of techniques used by map makers which allow the level of information to be retained, while the amount of data shown on the map is reduced.

These techniques include:

- pre-selection
- reshaping or smoothing lines
- removing small features
- aggregating many small features into a few large features, e.g. showing a group of buildings as a single building
- selecting certain features that maintain an overall shape, e.g. reducing the number of streams in a stream network without losing the overall pattern of drainage
- enlarging important features which may otherwise be too small to show
- moving features relative to each other *(displacement)*.
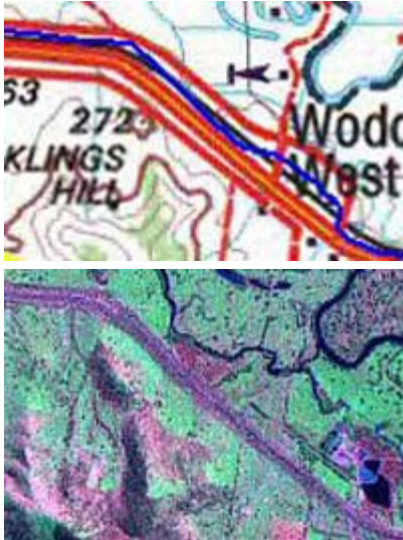
More on displacement

Features may be located on the earth's surface in such a way that they cannot be separated at the scale of the map. To make sure that the map is readable, one feature is kept in its true position, and the rest are displaced.

In NATMAPs, the following features may be displaced when one or more are adjacent. The higher a feature is on the list, the more likely that it has been held in the correct position over those lower on the list.

1. hydrographic lines such as coastlines, watercourses and lakes
2. railways
3. principal roads
4. secondary roads
5. minor roads
6. tracks
7. buildings
8. vegetation boundaries

If two features need to be offset to one another and neither is listed, the position of the feature with greater landmark value will be maintained.

For example, if a railway and road are coincident at the scale being produced, the road would be displaced. Where two or three features are close and adjacent, one may be displaced by up to 225 metres at 1:250 000 scale. In the worst case when all these features are close together, one may be displaced by up to 675 metres at 1:250 000 scale. However, any features that have been displaced must maintain their relative position. See the picture below.

This extract from the Wangaratta 1:250 000 scale NATMAP (SJ55-02) shows displacement of the Murray Valley Highway from its true position. The blue line is a GPS track showing the highway's true position, but the highway, railway and the Hume Freeway (red/yellow double line) have all been displaced for clarity. Compare this to the Landsat 7 ETM+ satellite image of the same area, where you cannot clearly distinguish between the three features. The relative position of the highway, the railway and the freeway have been maintained.

Generalisation is not a completely automatic process and some human judgement is required. Decisions are usually based upon the significance of the feature at the scale of the map being produced, how many other similar features there are nearby, and the purpose of the map itself.

One major impact of generalisation is when using maps with global positioning systems (GPS). When a GPS track is overlaid on a map, the track may not match the road as it is shown on the map because of the displacement described above. This isn't an error in the position of the road as such, but one of the consequences of trying to make a map clear and readable.

Feature Masking

To make printing easier many features do not mask out other features. For example, if you have a close look at any of the new NATMAPs you would see that most rivers can be seen 'underneath' or 'on top of' the roads. The digital process used to manufacture the map images in NATMAP Raster can only show one layer in each pixel of the image, hence some features will be masked. The order in which the layering occurs is fixed, and in some maps may have produced some illogical results or effects that will not appear on the paper map. Significant illogical effects (such as canals covering roads) have been edited but may be incomplete.

Map Rotation in the Mapsheets product

The map images in Mapsheets appear tilted because they are georeferenced to the Map Grid of Australia (MGA).

Each map's boundaries are based on latitude and longitude, but these boundaries do not always correspond to MGA gridlines. In order to match the map image to MGA, the image has to be rotated and stretched. Note that the blue MGA gridlines on the map are orientated vertically and horizontally in the Viewer, whilst lines of latitude and longitude will be shown at an angle.

Join lines

The Landsat Satellite image is made up of 369 individual images, or scenes. Most of these scenes are cloud free, and in order to achieve this images were taken at different times of the year. Whilst every effort is made to colour match the images, in some cases image matching is not perfect because of differences in ground conditions or time of year that the images were taken.

Join lines will be visible in the 1:1M scale Mosaic as individual maps in this image were made to different sets of specifications.

Bleed edges/overlaps

New NATMAPs are produced with what is known as a *bleed edge*. This is the overlap area along the top and right-hand side of the map which allows a map user to overlay neighbouring maps easily. These edges remain in the maps in the Mapsheets product, but have been removed in the Mosaic product. This was decided upon to reduce processing time and the likelihood of features and text being cut off, and improve joining. In some cases, this may mean that slightly older information has been retained in these areas; however, this has only occurred in a handful of places around the country.

Note on improving image clarity

The map images in NATMAP Raster have been compressed. Images that are compressed are like files that have been 'zipped' - information has been removed from the image using a particular technique or algorithm to reduce the file size.

Depending upon the compression technique, some information may be lost from the image altogether when it is compressed. This is called *lossy* compression. ECW, JPEG and MrSID are common lossy compression techniques. LZW is a *lossless* compression (i.e. information is not lost when an image is compressed); however, file sizes are not reduced as much.

The images in this product use ECW compression. This will mean that some features will lose some of their clarity; in particular, very thin lines such as tracks and watercourses may become blurry. Colours may also not be uniform within areas (e.g. forest areas shown as green on the paper map may, on the image, contain traces of other colours). These effects are called *artefacts*.

The resolution or cell size of an image also affects its clarity. Map images with a resolution of 150 dots per inch (dpi) will not be as clear as maps with 200 or 300dpi as there are less pixels in each image. As a result, text or other features in map images with lower resolutions will appear pixellated or blocky.

Other factors affecting image clarity include your monitor specifications, the software being used to view the map images (if not using the Raster Viewer), and the the zoom scale. If viewing in other software packages often there is an option to 'zoom to raster resolution'; this zoom level will give the clearest view of the image. Zooming in too far will cause pixellation and artefacts will appear to be very significant; clarity is also reduced if zooming out too far. For best results, you should set your zoom to around the same level as if you were looking at the paper map version at the same viewing distance.

Whilst every effort has been made to minimise the number and extent of artefacts within each map image, users should be aware that artefacts exist as a result of fitting all of the NATMAP 1:250 000 scale maps onto 2 CDs at an affordable price. The map images in this product are not intended to be exact replicas of the paper map in terms of quality, but do contain the same information as shown on the paper version.

The number of artefacts may be minimised by exporting the map image to TIFF or GeoTIFF; however, these will produce very large file sizes and will not remove all artefacts, and cannot be viewed using the Raster Viewer. For more information, refer to the FAQ on the size of exported files.

For more information on compression techniques, refer to Image Compression in the ACRES product pages on the Geoscience Australia website.

Map image specifications

File Naming Convention: all images in the 250K Sheet layer in the Mapsheets product are named to the corresponding six digit NATMAP 250K map number. Where a map does not have a NATMAP 250K map number, such as North West Tasmania, a number was created for that tile. Mosaic or individual map images are named according to scale; that is 250K.ecw, 1M.ecw, 5M.ecw, 20M.ecw. The Landsat 7 satellite image mosaic of Australia is named ls7_mosaic.ecw

Positional Accuracy: each identifiable coordinate pixel should be within 4 pixels of the calculated position. The production of maps involves cartographic generalisation of features which adds additional inaccuracies into the images. A full listing is below.

Dataset	Image Resolution	Positional Accuracy
250K Sheets (Mapsheets only)	32m	127m
250K Mosaic (Mosaic only)	0.00033 degrees	0.0012 degrees
1M Mosaic (Mosaic only)	0.00116 degrees	0.0047 degrees
5M Sheet	0.0056 degrees	0.022 degrees
20M	0.024 degrees	0.096 degrees
Satellite Mosaic (Mosaic only)	0.00045 degrees (approx 50m)	0.0018 degrees

Note: the size of a pixel in metres for any of the Mosaic layers varies with the degree of latitude.

Location	250K	1M	5M	20M	Satellite
Torres Strait (Qld)	35m	127m	615m	2.6km	44m
Darwin (NT), Weipa (Qld)	35m	126m	610m	2.6km	44m
Cairns (Qld), the Kimberleys (WA)	34m	124m	600m	2.5km	43m
Townsville (Qld), Tennant Creek (NT), Port Hedland (WA)	33m	121m	586m	2.5km	42m
Rockhampton (Qld), Alice Springs (NT), Carnavon (WA)	32m	118m	570m	2.4km	41m
Brisbane (Qld), Oodnadatta (SA), Leonora (WA), Geraldton (WA)	31m	114m	551m	2.3km	39m
Newcastle (NSW), Broken Hill (NSW), Port Augusta (SA), Perth (WA)	30m	109m	530m	2.2km	38m
Adelaide (SA), Albury (NSW)	29m	104m	505m	2.1km	36m
King Island (Tas)	27m	99m	478m	2.0km	34m
Hobart (Tas)	26m	93m	450m	1.9km	32m

Coordinate System: Refer to the Coordinate Systems pages.

Currency: Refer to the map currency pages for the reliability dates for each standard map sheet area.

Legends:

- 1:250 000 scale [JPEG image, 71KB]
- Expanded 1:250 000 scale
- 1:1M scale [JPEG image, 64KB]
- 1:5M scale [JPEG image, 26KB]
- Landsat Satellite Image Mosaic of Australia [JPEG image, 20KB]
- Gazetteer of Australia (used in Place Name Search)

CD layout

Your NATMAP Raster product is organised on the CDs as follows:

	CD1	CD2
Mapsheets	Maps for WA and NT 1:5 000 000 map* 1:20 000 000 map* Map Index* Raster Viewer Software and installation files	Maps for Qld, NSW, Vic, SA, ACT and Tas.

Mosaic	1:1 000 000 scale map mosaic Landsat Satellite Image 1:5 000 000 map* 1:20 000 000 map* Map Index* Raster Viewer Software and installation files User Guide	1:250 000 scale map mosaic

Maps labelled * are part of the installation files, and become useable upon installation to your hard drive where they are visible in your chosen installation directory.

The maps (except for those labelled * in the table above) are stored in the **Rasters** folder on both CDs in both products. Within this folder is another folder which will be named with the appropriate layer name. See the table below.

	CD1	**CD2**
Mapsheets	**Rasters** > 250K-Sheets > cd1	**Rasters** > 250K-Sheets > cd2
Mosaic	**Rasters** > 1M-Mosaic > cd1 **Rasters** > Satellite-Mosaic > cd1	**Rasters** > 250K-Mosaic > cd2

NATMAP Raster 2003 Map Currency

The list can be sorted by clicking on the column titles.

1:250 000 scale maps

Map Number	Map Name	State	Edition	Reliability
SG53-10	ABMINGA	SA	ED2	2000
SG55-05	ADAVALE	QLD	ED2	1999
SI54-09	ADELAIDE SPECIAL	SA	ED1	1998
SG50-13	AJANA	WA	ED2	1998
SG53-09	ALBERGA	SA	ED2	1998
SF53-10	ALCOOTA	NT	ED2	1999
SF53-14	ALICE SPRINGS	NT	ED3	1996
SD53-01	ALLIGATOR RIVER	NT	ED2	1999
SE53-15	ALROY	NT	ED2	1998
SI54-07	ANA BRANCH	NSW	ED2	2000
SH53-12	ANDAMOOKA	SA	ED2	1997
SH55-07	ANGLEDOOL	NSW	ED2	1995
SF51-02	ANKETELL	WA	ED2	1996
SH56-10	ARMIDALE SPECIAL	NSW	ED2	1999
SD52-13	ASHTON	WA	ED2	2001
SE55-05	ATHERTON	QLD	ED2	1999
SG55-06	AUGATHELLA	QLD	ED2	1998
SD52-15	AUVERGNE	NT	ED2	1998
SF53-04	AVON DOWNS	NT	ED2	1998
SE55-15	AYR	QLD	ED2	1995
SJ55-07	BAIRNSDALE SPECIAL	VIC	ED1	1994
SF51-09	BALFOUR DOWNS	WA	ED2	2001
SI51-03	BALLADONIA	WA	ED3	1998
SJ54-08	BALLARAT	VIC	ED2	1999
SI54-12	BALRANALD	NSW/VIC	ED2	2001
SG55-04	BARALABA	QLD	ED3	1998
SI54-13	BARKER	SA	ED2	1998
SH50-08	BARLEE	WA	ED2	1997
SH55-13	BARNATO	NSW	ED2	1997

SG54-11	BARROLKA	QLD	ED3	2002
SF53-06	BARROW CREEK	NT	ED2	1998
SH53-09	BARTON	SA	ED2	2001
SI55-08	BATHURST	NSW	ED2	1996
SE53-03	BAUHINIA DOWNS	NT	ED3	1999
SG54-01	BEDOURIE	QLD	ED4	2002
SE53-06	BEETALOO	NT	ED2	1998
SJ55-04	BEGA	NSW/VIC	ED3	1995
SG50-11	BELELE	WA	ED2	2001
SH50-11	BENCUBBIN	WA	ED2	1997
SJ55-01	BENDIGO	VIC/NSW	ED2	1999
SG52-05	BENTLEY	WA	ED2	2000
SG54-06	BETOOTA	QLD	ED3	1999
SH53-07	BILLA KALINA	SA	ED2	2001
SE52-14	BILLILUNA	WA	ED2	2002
SG54-05	BIRDSVILLE	QLD	ED3	2001
SG52-15	BIRKSGATE	SA	ED2	2000
SE52-11	BIRRINDUDU	NT	ED2*	2002
SG55-01	BLACKALL	QLD	ED2	2001
SG52-03	BLOODS RANGE	NT	ED2	2000
SD53-07	BLUE MUD BAY	NT	ED2	1998
SC54-07	BOIGU	QLD	ED2	1997
SF53-02	BONNEY WELL	NT	ED2	1998
SI55-05	BOOLIGAL	NSW	ED2	1998
SH51-13	BOORABBIN	WA	ED2	1996
SF54-10	BOULIA	QLD	ED2	1997
SE54-02	BOUNTIFUL ISLANDS INSET	QLD	ED1	1998
SH55-10	BOURKE	NSW	ED2	1997
SF55-03	BOWEN	QLD	ED2	1998
SI50-12	BREMER BAY	WA	ED2	1996
SF54-15	BRIGHTON DOWNS	QLD	ED2	2001
SG56-15	BRISBANE SPECIAL	QLD/NSW	ED2	2000
SH54-15	BROKEN HILL	NSW	ED2	2000
SE51-06	BROOME	WA	ED2	2001
SG51-08	BROWNE	WA	ED2	2000
SD51-11	BROWSE ISLAND INSET	WA	ED1	2001

SE53-11	BRUNETTE DOWNS	NT	ED2	2000
SF55-06	BUCHANAN	QLD	ED2	1996
SG51-01	BULLEN	WA	ED2	2001
SH54-04	BULLOO	QLD	ED2	2001
SG56-02	BUNDABERG	QLD	ED3	1995
SE54-06	BURKETOWN	QLD	ED2	1999
SI54-05	BURRA	SA	ED2	1994
SI50-05	BUSSELTON SPECIAL	WA	ED1	1996
SG50-10	BYRO	WA	ED2	2001
SE55-02	CAIRNS	QLD	ED2	1996
SH54-06	CALLABONNA	SA	ED2	2001
SE53-08	CALVERT HILLS	NT	ED2	2000
SD52-14	CAMBRIDGE GULF	WA	ED3	1997
SD51-15	CAMDEN SOUND SPECIAL	WA	ED1	2001
SE54-13	CAMOOWEAL	QLD	ED2	2001
SI55-16	CANBERRA	NSW	ED3	1998
SG54-07	CANTERBURY	QLD	ED2	1999
SD55-09	CAPE MELVILLE	QLD	ED2	1996
SD52-07	CAPE SCOTT SPECIAL	NT	ED1	1995
SD54-04	CAPE WEYMOUTH	QLD	ED2	1996
SC54-12	CAPE YORK	QLD	ED2	1997
SI55-06	CARGELLIGO	NSW	ED2	1995
SG49-04	CARNAVON SPECIAL	WA	ED1	2000
SG55-10	CHARLEVILLE	QLD	ED2	1999
SE51-04	CHARNLEY	WA	ED2	2001
SF55-02	CHARTERS TOWERS	QLD	ED2	1999
SH53-14	CHILDARA	SA	ED2	1998
SG56-09	CHINCHILLA	QLD	ED2	1998
SI54-06	CHOWILLA	SA	ED2	1997
SE55-13	CLARKE RIVER	QLD	ED2	1997
SF55-11	CLERMONT	QLD	ED2	1996
SF54-02	CLONCURRY	QLD	ED2	1997
SH55-14	COBAR	NSW	ED2	1997
SG52-01	COBB	WA	ED2	2000
SH54-11	COBHAM LAKE	NSW	ED2	2000
SC53-13	COBOURG PENINSULA SPECIAL	NT	ED1	1997

SD54-08	COEN	QLD	ED2	1996
SJ54-12	COLAC	VIC	ED3	1995
SI50-06	COLLIE	WA	ED2	2000
SG50-04	COLLIER	WA	ED2	1998
SG54-03	CONNEMARA	QLD	ED2	2001
SH53-06	COOBER PEDY	SA	ED2	1999
SH52-11	COOK	SA	ED2	2001
SD55-13	COOKTOWN	QLD	ED2	1996
SH52-15	COOMPANA	SA	ED3	2001
SG52-10	COOPER	WA	ED2	2001
SI55-11	COOTAMUNDRA	NSW	ED2	1994
SH54-09	COPLEY	SA	ED2	1998
SG54-10	CORDILLO	SA	ED2	1999
SF52-01	CORNISH	WA	ED2*	2001
SI50-03	CORRIGIN	WA	ED2	1997
SE51-16	CROSSLAND	WA	ED2	2001
SE54-11	CROYDON	QLD	ED2	2001
SG50-15	CUE	WA	ED2	2001
SI51-04	CULVER	WA	ED3	1998
SH51-11	CUNDEELEE	WA	ED2	2001
SH55-02	CUNNAMULLA	QLD	ED2	2001
SH53-08	CURDIMURKA	SA	ED2	1997
SH54-14	CURNAMONA	SA	ED3	1997
SG56-13	DALBY	QLD	ED2	1999
SG53-11	DALHOUSIE	SA	ED2	1999
SE53-01	DALY WATERS	NT	ED2	1998
SF50-02	DAMPIER SPECIAL	WA	ED1	1996
SC54-08	DARU	QLD	ED2	1997
SD52-04	DARWIN	NT	ED5	1999
SJ55-15	DEAL ISLAND INSET	VIC	ED1	1998
SD52-16	DELAMERE	NT	ED2	2001
SI55-13	DENILIQUIN	NSW/VIC	ED2	1997
SE51-07	DERBY	WA	ED3	1999
SH55-03	DIRRANBANDI	QLD	ED2	1995
SE52-06	DIXON RANGE	WA	ED2	1996
SE54-14	DOBBYN	QLD	ED2	2001

SH50-05	DONGARA	WA	ED2	1996
SE54-10	DONORS HILL	QLD	ED2	1999
SD52-09	DRYSDALE	WA	ED2	2001
SF55-16	DUARINGA	QLD	ED2	1996
SI55-04	DUBBO	NSW	ED2	1997
SF54-06	DUCHESS	QLD	ED2	1997
SG51-14	DUKETON	WA	ED2	2002
SI50-07	DUMBLEYUNG	WA	ED2	1999
SF51-04	DUMMER	WA	ED2	2001
SG54-15	DURHAM DOWNS	QLD	ED2	1999
SD54-12	EBAGOOLA	QLD	ED2	1995
SG55-07	EDDYSTONE	QLD	ED2	2001
SH51-06	EDJUDINA	WA	ED2	1998
SF50-14	EDMUND	WA	ED2	1996
SE55-09	EINASLEIGH	QLD	ED3	2002
SF53-07	ELKEDRA	NT	ED2	2001
SI53-06	ELLISTON	SA	ED2	1999
SF55-15	EMERALD	QLD	ED2	2001
SH55-06	ENNGONIA	NSW	ED2	1997
SG54-12	EROMANGA	QLD	ED2	2001
SI51-06	ESPERANCE SPECIAL	WA	ED1	1997
SH52-14	EUCLA SPECIAL	WA	ED1	1998
SH55-01	EULO	QLD	ED2	2001
SG53-13	EVERARD	SA	ED2	1998
SD52-12	FERGUSSON RIVER	NT	ED3	2001
SG53-06	FINKE	NT	ED2	1999
SI55-07	FORBES	NSW	ED2	1997
SH52-10	FORREST	WA	ED2*	2001
SH53-13	FOWLER	SA	ED3	1998
SG56-03	FRASER ISLAND SPECIAL	QLD	ED3	1998
SF53-03	FREW RIVER	NT	ED2	1998
SH54-10	FROME	SA	ED3	2001
SH53-15	GAIRDNER	SA	ED2	1997
SE54-03	GALBRAITH	QLD	ED2	2001
SF55-10	GALILEE	QLD	ED2	1996
SD53-03	GALIWINKU SPECIAL	NT	ED1	1998

SG54-13	GASON	SA	ED2	2001
SE54-12	GEORGETOWN	QLD	ED2	2000
SH50-01	GERALDTON SPECIAL	WA	ED1	1995
SE54-16	GILBERTON	QLD	ED2	2000
SH53-01	GILES	SA	ED2	2001
SH55-16	GILGANDRA	NSW	ED2	1996
SG50-06	GLENBURGH	WA	ED2	2001
SG50-12	GLENGARRY	WA	ED2	1999
SF54-09	GLENORMISTON	QLD	ED2	2001
SH56-01	GOONDIWINDI	QLD/NSW	ED2	1999
SE52-10	GORDON DOWNS	WA	ED2	2001
SI55-12	GOULBURN	NSW	ED2	1994
SD53-04	GOVE PENINSULA SPECIAL	NT	ED1	1998
SH56-06	GRAFTON	NSW/QLD	ED3	1994
SE53-13	GREEN SWAMP WELL	NT	ED2	2001
SD53-08	GROOTE ELYANDT SPECIAL	NT	ED1	1996
SF51-14	GUNANYA	WA	ED2*	2002
SG56-10	GYMPIE	QLD	ED2	1995
SG53-03	HALE RIVER	NT	ED2	2001
SJ54-07	HAMILTON SPECIAL	VIC	ED1	1994
SD54-16	HANN RIVER	QLD	ED3	1999
SH56-14	HASTINGS	NSW	ED3	1999
SI55-09	HAY	NSW	ED2	1997
SF53-16	HAY RIVER	NT	ED2	2001
SE53-10	HELEN SPRINGS	NT	ED2	1998
SF52-05	HELENA	WA	ED2	2002
SG53-01	HENBURY	NT	ED2	1996
SG51-07	HERBERT	WA	ED2	2002
SF53-13	HERMANNSBURG	NT	ED2	1996
SF56-14	HERON ISLAND	QLD	ED2	1996
SF52-07	HIGHLAND ROCKS	NT	ED2	2001
SH50-09	HILL RIVER	WA	ED2	1998
SD53-14	HODGSON DOWNS	NT	ED3	1999
SD54-11	HOLROYD SPECIAL	QLD	ED1	1999
SG55-15	HOMEBOIN	QLD	ED2	2001
SJ54-03	HORSHAM	VIC	ED2	1996

SF53-11	HUCKITTA	NT	ED2	2001
SF55-01	HUGHENDEN	QLD	ED2	1998
SI50-04	HYDEN	WA	ED2	1997
SF53-15	ILLOGWA CREEK	NT	ED3	2001
SE55-10	INGHAM	QLD	ED2	1998
SG54-14	INNAMINCKA	SA	ED2	1999
SE55-06	INNISFAIL	QLD	ED2	1998
SH56-05	INVERELL	NSW/QLD	ED3	1999
SG56-14	IPSWICH	QLD	ED3	2000
SI55-01	IVANHOE	NSW	ED2	1998
SH50-12	JACKSON	WA	ED2	1997
SC54-15	JARDINE RIVER	QLD	ED2	1996
SF55-14	JERICHO	QLD	ED2	2001
SI55-14	JERILDERIE	NSW/VIC	ED2	1994
SF51-03	JOANNA SPRING	WA	ED2	2002
SH52-05	JUBILEE	WA	ED2	2001
SF54-03	JULIA CREEK	QLD	ED2	1997
SG54-04	JUNDAH	QLD	ED2	2000
SH51-09	KALGOORLIE	WA	ED2	1996
SI53-16	KANGAROO ISLAND SPECIAL	SA	ED1	1994
SD53-09	KATHERINE	NT	ED3	1998
SH50-15	KELLERBERRIN	WA	ED3	1997
SG50-01	KENNEDY RANGE	WA	ED2	1996
SI53-07	KIMBA	SA	ED2	1996
SH53-11	KINGOONYA	SA	ED2	2001
SG51-10	KINGSTON	WA	ED2	2002
SH50-03	KIRKALOCKA	WA	ED2	1997
SH54-01	KOPPERAMANNA	SA	ED2	1998
SG53-05	KULGERA	NT	ED2	1998
SH51-10	KURNALPI	WA	ED2	1996
SE51-10	LAGRANGE	WA	ED2	2001
SG52-04	LAKE AMADEUS	NT	ED2	1996
SH53-04	LAKE EYRE	SA	ED2	1997
SI51-01	LAKE JOHNSTON	WA	ED2	1996
SF52-11	LAKE MACKAY	NT	ED2	2001
SF53-01	LANDER RIVER	NT	ED2	2001

SE52-05	LANSDOWNE	WA	ED2	2001
SD53-13	LARRIMAH	NT	ED2	1998
SH51-02	LAVERTON	WA	ED2	1998
SE54-09	LAWN HILL	QLD	ED2	1998
SE51-08	LENNARD RIVER	WA	ED3	2001
SG52-13	LENNIS	WA	ED2	2001
SH51-01	LEONORA	WA	ED2	1996
SE52-07	LIMBUNYA	NT	ED2	1999
SI53-11	LINCOLN SPECIAL	SA	ED2	1998
SG52-16	LINDSAY	SA	ED2	2000
SH56-07	LISMORE SPECIAL	NSW	ED2	2000
SE52-02	LISSADELL	WA	ED2	1997
SD52-05	LONDONDERRY	WA	ED2	2001
SF55-13	LONGREACH	QLD	ED3	2002
SH52-09	LOONGANA	WA	ED2	2001
SH55-09	LOUTH	NSW	ED2	1997
SF52-02	LUCAS	WA	ED2*	2002
SF52-14	MACDONALD	WA	ED2	2001
SG54-02	MACHATTIE	QLD	ED3	2001
SF55-08	MACKAY	QLD	ED2	1996
SF54-11	MACKUNDA	QLD	ED2	2001
SG51-03	MADLEY	WA	ED2	2002
SH52-13	MADURA SPECIAL	WA	ED1	1998
SC55-05	MAER	QLD	ED2	1997
SI51-07	MALCOLM SPECIAL	WA	ED1	1998
SJ55-08	MALLACOOTA	VIC/NSW	ED2	1995
SI54-04	MANARA	NSW	ED2	1998
SE51-13	MANDORA	WA	ED2	2001
SF54-16	MANEROO	QLD	ED2	2000
SH56-09	MANILLA	NSW	ED2	1999
SG52-11	MANN	SA	ED2	2000
SF54-08	MANUKA	QLD	ED2	2000
SF50-08	MARBLE BAR	WA	ED2	1996
SH54-05	MARREE	SA	ED3	1998
SG56-06	MARYBOROUGH	QLD	ED2	1998
SH52-06	MASON	WA	ED2	2000

SH52-08	MAURICE	SA	ED2	2001
SG53-07	MCDILLS	NT	ED2	1999
SF54-07	MCKINLAY	QLD	ED2	1997
SE51-15	MCLARTY HILLS	WA	ED3	2002
SD52-10	MEDUSA BANKS	WA	ED2	1998
SJ55-05	MELBOURNE	VIC	ED2	1998
SC52-16	MELVILLE ISLAND SPECIAL	NT	ED1	1998
SI54-03	MENINDEE	NSW	ED2	2000
SH51-05	MENZIES	WA	ED2	1996
SI54-11	MILDURA	VIC/NSW	ED2	1998
SD53-02	MILINGIMBI SPECIAL	NT	ED1	1998
SE54-15	MILLUNGERA	QLD	ED2	2001
SH54-07	MILPARINKA	NSW	ED2	2001
SH51-07	MINIGWAL	WA	ED2	2001
SF49-16	MINILYA SPECIAL	WA	ED1	2000
SG55-11	MITCHELL	QLD	ED2	1996
SG49-12	MONKEY MIA SPECIAL	WA	ED1	2000
SD51-12	MONTAGUE SOUND SPECIAL	WA	ED2*	2001
SG56-01	MONTO	QLD	ED3	1995
SH50-10	MOORA	WA	ED2	1998
SH55-08	MOREE	NSW	ED2	1996
SE54-01	MORNINGTON ISLAND SPECIAL	QLD	ED1	1998
SF51-16	MORRIS	WA	ED2	2001
SE55-01	MOSSMAN	QLD	ED3	1994
SE51-11	MOUNT ANDERSON	WA	ED2	2001
SE52-13	MOUNT BANNERMAN	WA	ED2	2001
SI50-11	MOUNT BARKER SPECIAL	WA	ED1	1994
SF50-11	MOUNT BRUCE	WA	ED2	2001
SF55-07	MOUNT COOLON	QLD	ED2	1996
SF52-12	MOUNT DOREEN	NT	ED2	2001
SE53-12	MOUNT DRUMMOND	NT	ED2	2000
SG50-03	MOUNT EGERTON	WA	ED2	1996
SE52-01	MOUNT ELIZABETH	WA	ED2	2001
SD53-05	MOUNT EVELYN	NT	ED3	2001
SF54-01	MOUNT ISA	QLD	ED3	1997
SF52-16	MOUNT LIEBIG	NT	ED2	2001

SD53-06	MOUNT MARUMBA	NT	ED2	1998
SF53-05	MOUNT PEAKE	NT	ED2	2001
SG50-02	MOUNT PHILLIPS	WA	ED2	1996
SE52-09	MOUNT RAMSAY	WA	ED2	2001
SF52-15	MOUNT RENNIE	NT	ED2	2001
SF52-04	MOUNT SOLITAIRE	NT	ED2	2001
SF52-08	MOUNT THEO	NT	ED2	2001
SF54-13	MOUNT WHELAN	QLD	ED2	2001
SD53-15	MOUNT YOUNG	NT	ED2	1999
SG56-05	MUNDUBBERA	QLD	ED3	1998
SE51-14	MUNRO	WA	ED2	2001
SG50-14	MURGOO	WA	ED2	2001
SH53-02	MURLOOCOPPIE	SA	ED2	1999
SF55-09	MUTTABURRA	QLD	ED3	2002
SG51-05	NABBERU	WA	ED2	2001
SF53-09	NAPPERBY	NT	ED3	1999
SJ54-02	NARACOORTE	SA	ED3	1998
SH51-16	NARETHA	WA	ED2	1998
SH55-12	NARRABRI	NSW	ED2	1996
SI55-10	NARRANDERA	NSW	ED2	1997
SI55-03	NARROMINE	NSW	ED2	1994
SH51-04	NEALE	WA	ED2	2001
SI56-02	NEWCASTLE	NSW	ED3	1999
SE53-05	NEWCASTLE WATERS	NT	ED2	1998
SI50-08	NEWDEGATE	WA	ED2	1997
SF50-16	NEWMAN	WA	ED2	1994
SH50-07	NINGHAN	WA	ED2	1997
SG53-16	NOOLYEANA	SA	ED2	2001
SE51-12	NOONKANBAH	WA	ED3	1999
SH52-03	NOORINA	SA	ED2	2001
SE54-07	NORMANTON	QLD	ED2	1994
SI51-02	NORSEMAN	WA	ED2	1996
SF51-05	NULLAGINE	WA	ED3	1997
SH52-16	NULLARBOR	SA	ED3	1998
SI53-01	NUYTS	SA	ED3	1999
SI55-02	NYMAGEE	NSW	ED2	1998

SH55-15	NYNGAN	NSW	ED2	1995
SI54-02	OLARY	SA	ED2	1997
SF50-05	ONSLOW	WA	ED2	1996
SG53-15	OODNADATTA	SA	ED2	2001
SH52-12	OOLDEA	SA	ED2	2001
SC54-16	ORFORD BAY	QLD	ED2	1996
SI54-01	ORROROO	SA	ED2	1999
SI54-15	OUYEN	VIC	ED2	1998
SG54-09	PANDIE PANDIE	SA	ED2*	2001
SH54-13	PARACHILNA	SA	ED2	1997
SF51-06	PATERSON RANGE	WA	ED2*	2002
SG50-08	PEAK HILL	WA	ED2	1999
SI50-10	PEMBERTON SPECIAL	WA	ED1	2000
SE51-02	PENDER	WA	ED3	1999
SJ54-06	PENOLA SPECIAL	SA	ED1	1999
SF51-08	PERCIVAL	WA	ED2	2002
SF56-05	PERCY ISLES	QLD	ED2	1996
SH50-06	PERENJORI	WA	ED2	1996
SH50-14	PERTH SPECIAL	WA	ED1	2000
SG52-07	PETERMANN RANGES	NT	ED2	2000
SD52-08	PINE CREEK	NT	ED3	2001
SI50-02	PINJARRA	WA	ED2	2000
SI54-14	PINNAROO	SA	ED2	1995
SH51-08	PLUMRIDGE	WA	ED2	2001
SG53-12	POOLOWANNA	SA	ED2	2001
SI54-08	POONCARIE	NSW	ED2	1997
SI53-04	PORT AUGUSTA	SA	ED2	1997
SF56-09	PORT CLINTON	QLD	ED4	1997
SF50-04	PORT HEDLAND SPECIAL	WA	ED1	1995
SD52-11	PORT KEATS	NT	ED3	1998
SJ55-09	PORT PHILLIP SPECIAL	VIC	ED1	1998
SD51-16	PRINCE REGENT	WA	ED2*	2001
SF55-04	PROSERPINE	QLD	ED2	1999
SF50-07	PYRAMID	WA	ED2	1996
SG55-09	QUILPIE	QLD	ED2	1998
SE53-16	RANKEN	NT	ED2	1998

SH51-03	RASON	WA	ED2	2001
SI51-05	RAVENSTHORPE	WA	ED2	1996
SG52-02	RAWLINSON	WA	ED2	2000
SE54-08	RED RIVER	QLD	ED2	2000
SI54-10	RENMARK	SA	ED2	1995
SF54-04	RICHMOND	QLD	ED2	2000
SG51-11	ROBERT	WA	ED2	2002
SF51-13	ROBERTSON	WA	ED2	2001
SG50-07	ROBINSON RANGE	WA	ED2	2001
SE53-04	ROBINSON RIVER SPECIAL	NT	ED1	1996
SF56-13	ROCKHAMPTON	QLD	ED3	1996
SG53-02	RODINGA	NT	ED2	1996
SF50-03	ROEBOURNE	WA	ED2	1997
SG55-12	ROMA	QLD	ED2	1995
SD53-11	ROPER RIVER	NT	ED2	1995
SF50-12	ROY HILL	WA	ED2	2001
SF51-10	RUDALL	WA	ED2	2002
SF51-15	RUNTON	WA	ED2	2002
SD54-15	RUTLAND PLAINS	QLD	ED2	2001
SF52-13	RYAN	WA	ED2	2001
SF51-07	SAHARA	WA	ED2*	2002
SF53-08	SANDOVER RIVER	NT	ED2	1998
SG50-16	SANDSTONE	WA	ED2	1999
SG52-06	SCOTT	WA	ED2	2000
SH51-12	SEEMORE	WA	ED2	2001
SG53-04	SIMPSON DESERT NORTH	NT	ED2	2001
SG53-08	SIMPSON DESERT SOUTH	NT	ED2	2001
SI56-01	SINGLETON	NSW	ED3	1999
SG51-13	SIR SAMUEL	WA	ED2	2001
SE53-09	SOUTH LAKE WOODS	NT	ED2	2001
SH50-16	SOUTHERN CROSS	WA	ED2	1997
SG55-03	SPRINGSURE	QLD	ED2	2001
SF54-14	SPRINGVALE	QLD	ED2	2001
SJ54-04	ST ARNAUD	VIC	ED2	2001
SH55-04	ST GEORGE	QLD/NSW	ED2	1994
SF55-12	ST LAWRENCE	QLD	ED2	1996

SG51-06	STANLEY	WA	ED2	2002
SF52-06	STANSMORE	WA	ED2*	2002
SI53-02	STREAKY BAY	SA	ED2	1998
SH54-02	STRZELECKI	SA	ED2	2001
SG55-16	SURAT	QLD	ED2	1999
SI54-16	SWAN HILL	VIC/NSW	ED2	2001
SI56-05	SYDNEY SPECIAL	NSW	ED2	1998
SF51-11	TABLETOP	WA	ED2*	2002
SG52-09	TALBOT	WA	ED2	2001
SJ55-03	TALLANGATTA	VIC/NSW	ED2	1998
SH53-05	TALLARINGA	SA	ED2	2001
SG55-02	TAMBO	QLD	ED2	2001
SH56-13	TAMWORTH	NSW	ED3	2000
SE52-15	TANAMI	NT	ED2	2002
SE52-16	TANAMI EAST	NT	ED2	2001
SF55-05	TANGORIN	QLD	ED2	2001
SE53-02	TANUMBIRINI	NT	ED2	1999
SH53-10	TARCOOLA	SA	ED2	1999
SG55-08	TAROOM	QLD	ED3	1998
SK55-21	TASMANIA NORTH EAST	TAS	ED4*	2001
SK55-20	TASMANIA NORTH WEST	TAS	ED4*	2002
SK55-23	TASMANIA SOUTH EAST	TAS	ED4*	2001
SK55-22	TASMANIA SOUTH WEST	TAS	ED4*	2002
SE53-14	TENNANT CREEK	NT	ED3	1998
SG54-16	THARGOMINDAH	QLD	ED2	2001
SF52-03	THE GRANITES	NT	ED2	1998
SG51-15	THROSSELL	WA	ED2	2002
SC54-11	THURSDAY ISLAND	QLD	ED2	1997
SH54-03	TICKALARA	QLD	ED2	2001
SF53-12	TOBERMOREY	NT	ED2	2001
SG55-13	TOOMPINE	QLD	ED2	1998
SH53-16	TORRENS	SA	ED2	1997
SE55-14	TOWNSVILLE	QLD	ED2	1998
SG51-02	TRAINOR	WA	ED2	2002
SF50-15	TUREE CREEK	WA	ED2	1996
SG52-08	ULURU / AYERS ROCK	NT	ED5	2002

SF51-12	URAL	WA	ED2	2002
SF54-05	URANDANGI	QLD	ED2	1997
SD53-10	URAPUNGA	NT	ED2	1998
SH54-08	URISINO	NSW	ED2	2001
SH52-01	VERNON	WA	ED2	2001
SE52-04	VICTORIA RIVER DOWNS	NT	ED2	2001
SI55-15	WAGGA WAGGA	NSW/VIC	ED2	1994
SG52-14	WAIGEN	WA	ED2	2000
SH55-11	WALGETT	NSW	ED2	1995
SE53-07	WALLHALLOW	NT	ED2	2000
SE54-04	WALSH	QLD	ED2	2000
SJ55-02	WANGARATTA	VIC/NSW	ED2	1995
SH52-02	WANNA	WA	ED2	2000
SJ55-06	WARBURTON	VIC	ED2	2000
SJ55-10	WARRAGUL SPECIAL	VIC	ED1	1994
SG51-04	WARRI	WA	ED2	2001
SH53-03	WARRINA	SA	ED2	2001
SH56-02	WARWICK	QLD/NSW	ED3	2000
SE52-03	WATERLOO	NT	ED2	1999
SE52-08	WAVE HILL	NT	ED2	2001
SF52-10	WEBB	WA	ED2	2001
SD54-03	WEIPA SPECIAL	QLD	ED1	1996
SH52-04	WELLS	SA	ED2	2001
SC53-16	WESSEL ISLANDS SPECIAL	NT	ED1	1996
SE54-05	WESTMORELAND	QLD	ED3	1998
SG51-16	WESTWOOD	WA	ED2	2001
SH54-12	WHITE CLIFFS	NSW	ED2	1997
SI53-08	WHYALLA	SA	ED3	1999
SH51-14	WIDGIEMOOLTHA	WA	ED2	1996
SH54-16	WILCANNIA	NSW	ED2	1997
SF52-09	WILSON	WA	ED2	2002
SG51-09	WILUNA	WA	ED2	2001
SG54-08	WINDORAH	QLD	ED2	2001
SE52-12	WINNECKE CREEK	NT	ED2	2001
SF50-13	WINNING POOL	WA	ED2	1996
SG53-14	WINTINNA	SA	ED2	1999

SF54-12	WINTON	QLD	ED2	2000
SI56-13	WOLLONGONG SPECIAL	NSW	ED1	1995
SG52-12	WOODROFFE	SA	ED2	2000
SG50-05	WOORAMEL	WA	ED2	1994
SG55-14	WYANDRA	QLD	ED2	1999
SF50-10	WYLOO	WA	ED2	1994
SH52-07	WYOLA	SA	ED2	2001
SH50-02	YALGOO	WA	ED2	1995
SE51-03	YAMPI	WA	ED2	1999
SF50-09	YANREY SPECIAL	WA	ED1	2000
SH55-05	YANTABULLA	NSW	ED2	2001
SI53-03	YARDEA	SA	ED2	1996
SG50-09	YARINGA	WA	ED3	2001
SF50-06	YARRALOOLA	WA	ED2	1996
SF51-01	YARRIE	WA	ED3	1996
SI53-12	YORKE PENINSULA SPECIAL	SA	ED2	2002
SH50-04	YOUANMI	WA	ED3	2002
SG51-12	YOWALGA	WA	ED2	2001
SH51-15	ZANTHUS	WA	ED2	2001

1:1 000 000 scale maps (Mosaic only)

Map Number	Map Name	Edition	Reliability
SC52	MELVILLE ISLAND	ED2	1982
SC53	CAPE WESSEL	ED1	1972
SC54	TORRES STRAIT	ED1	1974
SD51	BRUNSWICK BAY	ED1	1972
SD52	DARWIN	ED2	1975
SD53	ROPER RIVER	ED2	1981
SD54	MITCHELL RIVER	ED1	1974
SD55	COOKTOWN	ED1	1973
SE50	ROWLEY SHOALS	ED1	1977
SE51	BROOME	ED1	1977
SE52	HALLS CREEK	ED1	1976
SE53	NEWCASTLE WATERS	ED2	1979
SE54	NORMANTON	ED2	1978
SE55	TOWNSVILLE	ED2	1972

SF49	CLOATES	ED1	1977
SF50	HAMERSLEY RANGE	ED1	1977
SF51	OAKOVER RIVER	ED1	1981
SF52	LAKE MACKAY	ED2	1978
SF53	ALICE SPRINGS	ED1	1974
SF54	CLONCURRY	ED3	1978
SF55	CLERMONT	ED1	1978
SF56	ROCKHAMPTON	ED2	1977
SG49	CARNARVON	ED1	1977
SG50	MEEKATHARRA	ED1	1977
SG51	WILUNA	ED2	1975
SG52	PETERMANN RANGES	ED1	1975
SG53	OODNADATTA	ED2	1973
SG54	COOPER CREEK	ED1	1973
SG55	CHARLEVILLE	ED2	1979
SG56	BRISBANE	ED1	1978
SH49	HOUTMAN ABROLHOS	ED1	1974
SH50	PERTH	ED2	1975
SH51	KALGOORLIE	ED2	1973
SH52	NULLARBOR PLAIN	ED2	1981
SH53	TARCOOLA	ED2	1977
SH54	BROKEN HILL	ED1	1977
SH55	BOURKE	ED4	1973
SH56	ARMIDALE	ED1	1976
SI50	ALBANY	ED1	1977
SI51	ESPERANCE	ED2	1980
SI53	PORT AUGUSTA	ED2	1979
SI54	ADELAIDE	ED2	1977
SI55	CANBERRA	ED3	1980
SI56	SYDNEY	ED3	1979
SJ53	DU COUEDIC	ED1	1972
SJ54	HAMILTON	ED3	1972
SJ55	MELBOURNE	ED3	1983
SJ56	BODALLA	ED2	1977
SK55	TASMANIA	ED2	1981

Other layers

MAP NAME	EDITION	RELIABILITY
AUSTRALIA 1:5M GENERAL REFERENCE MAP	ED3	1996
AUSTRALIA REPORT MAP (Approx scale 1:20 000 000)	ED1	1996
LANDSAT 7 SATELLITE IMAGE OF AUSTRALIA (Mosaic only)	ED1	07/1999 to 09/2000

Note: Map editions marked with an asterisk (*) indicate interim raster maps. These maps may differ slightly from the printed version of the map.

Installing and Starting NATMAP Raster

- System Requirements
- Uninstalling previous versions
- Installing the New Viewer
- Starting

System requirements

	Recommended	Minimum
CPU	233MHz Pentium or faster	133MHz Pentium
Memory	64MB	32MB
Disk	At least 26MB free for software; 1.2GB for maps	At least 26MB free for software
Display	1024 x 768 with true colour	800 x 600 with 64K colours [see below]
Optical drive	4x or faster CD-ROM drive	CD-ROM drive required
Browser	IE5.5	IE5.0

Screen colour display settings

To obtain the best quality on-screen display of the maps, a true colour (24 bit) display is strongly recommended.

To utilise printing capabilities, a colour printer is recommended. A black and white printer may be used; however, the usefulness of the printed map images will be reduced.

Macintosh users

NATMAP Raster 2003 only exists as a Windows-based software package because much of the core third-party functionality is only supported in a Windows environment. We cannot support Raster on a Mcintosh Virtual PC - users can install it at their own risk.

800x600 screen resolutions

If you operate your display at 800x600 pixels, you should ensure that any task bars have their *autohide* property setting turned on. For the Windows task bar this is done from Start > Settings>Taskbar then ensuring that the Autohide check box is ticked.

Installing/Updating Internet Explorer

The NATMAP Raster application and setup program will not function unless an appropriate version of Internet Explorer (IE5.5 or higher) is available on your system. No other browsers, including Netscape Navigator, are supported by the core third party functionality.

You can run NATMAP Raster using IE versions earlier than 5.5 and later than 5.0. However, you may find that CPU usage blows out and the Locator and Magnifier maps may not display properly.

It is recommended that users install the latest version of Internet Explorer, which is available from Microsoft on the Internet at http://www.microsoft.com.

If Internet Explorer version 5 or above is installed on your machine and you still receive an error message, please ensure you are running the Viewer correctly (see Starting the Viewer).

Network Restrictions

If you are planning on running the NATMAP Raster Viewer and associated software on a network, your ability to install the software and to change layers using the Raster Viewer Configurator will depend upon your administrative privileges. If you are a restricted user, and the system administrator has installed the Viewer, you may not be able to:

- install a desktop icon
- install any of the software.

In the case where a standard user cannot install software, then the administrator will need to follow the installation procedures for installing from a network. The administrator will need to:

- install the software from its location on the network to each computer
- add a desktop icon into the <user profile>\Desktop directory
- create a folder in the <user profile>\Desktop\Start Menu\Programs\ directory called NATMAP RASTER VIEWER, and create shortcuts to the Exporter, the Configurator, the Viewer and the User Guide.

This will ensure that the Viewer and the Configurator will operate correctly.

Network XP users should also be aware of incompatabilities between the InstallShield installation software and XP. If you get an error message with an error code '0x80040707', then you should use this solution suggested by InstallShield to fix the problem.

Uninstalling old viewers

Note: Before installing a new version of NATMAP Raster you will need to remove any previous versions of the NATMAP Raster Viewer.

To do this, go to Start Menu > Settings > Add/Remove Programs, and then select NATMAP RASTER VIEWER or AUSLIG RASTER VIEWER and the program will be removed.

From release version 1.3 the Raster Viewer had a name change from 'AUSLIG RASTER VIEWER' to 'NATMAP RASTER VIEWER'. If you have a Raster Viewer version prior to 1.3 then it will be prefixed with 'AUSLIG' rather than 'NATMAP'.

If you have not uninstalled any previous versions of the Viewer, and you attempt to install the new Raster Viewer, you will get an warning message. You should exit out of the installation process and use the above procedure to remove the previous version.

Installing the new viewer

The Setup.exe Program

The setup program:

- copies a series of OCXs and DLL files to your hard disk
- registers the OCXs and DLLs
- copies HTML files and program (.exe) files to the installation directory you specify
- copies the encrypted data files for the Place Name Search to the installation directory you specify
- creates registry keys that describe the configuration of the installed NATMAP Raster - that is, where the map images and data layers are located.

These files require approximately 26MB of space on your hard disk.

Note: On some systems, the installation program may report that some DLLs cannot be copied because the file is 'currently in use'. In general, it is safe to press the Ignore button to continue the installation. These files are usually already installed on Windows 98, Windows Me and Windows NT systems. Â However, they need to be in the installation package to accommodate Windows 95 systems.

Options for installing

There are three ways of installing the NATMAP Raster Viewer - the method you choose is really determined by

where you want to store the map images and your system configuration.

The map images used by the system are stored on the CDs in compressed form. The images are decompressed by software. Thus, the performance of the system is largely determined by the speed of the CPU. The next factor that affects performance is the speed of CD-ROM drive. On a system with a fast CPU (> 600MHz) and sufficient disk space, performance can be improved by using the first installation procedure as outlined below. Otherwise, use the second installation procedure.

Installation Procedures	Advantage	Disadvantage
1. Copy to and install from hard disk/network drive	No need to change CDs when changing layers or maps Faster system response when loading maps	Requires 1.2GB of hard drive space for each product
2. Install directly from CD	Do not need to use hard disk space to store maps	Requires user to swap CDs if changing layers and maps Slower system response when loading maps
3. Install software from CD, and copy some or all maps/layers at a later date	Do not need to use all hard disk space to store maps	May require user to insert CDs if some layers and maps are still accessed via CD Best for advanced users

Copying CDs to Hard Disk

Automatic installation

1. Uninstall any old versions of the Viewer
2. Download this batch file and follow the instructions.

Manual installation

If you want to run NATMAP Raster without the CDs, the data on the CDs should be copied to a local, or networked, hard disk on your system. You will need 1.2GB of free space on your hard disk for all the Raster map images in each individual product.

1. Uninstall any old versions of the Viewer
2. Create a directory at the desired network location (eg 'C:\NATMAP\')
3. Copy all of CD1 to the new network directory
4. From CD2, copy the **\Rasters\<*layer name*>** directory into the **\Rasters** directory on your hard drive
5. **setup.exe** can be run from the hard disk to install the NATMAP RASTER VIEWER software. Follow the on-screen instructions.

Note that if you are installing the software on a network with security restrictions, you should NOT install as 'Administrator' but as 'Normal User'.

Installing and running from CD

Note: There is no AutoRun feature on the CD.

After uninstalling any old versions of the Viewer, run **Setup.exe** which is located in the top level directory on CD1. To run this file, insert the CD-ROM labelled **CD1** into your CD drive. Then either:

- browse to the top directory of the CD in Windows Explorer and double click on **Setup.exe**; or
- go to Start > Run..., and in the box type **D:\Setup.exe** (if your CD drive is not D: then use the appropriate letter.

Follow the on-screen directions.

Installing from CD and copying maps/layers later

If you have already installed the NATMAP RASTER VIEWER from the CD-ROM and you want to access the data from a local or networked hard drive, then:

- Uninstall any old versions of the Viewer
- Download this batch file and follow the instructions to copy maps to your hard drive.
- When the setup file begins to run, hit Cancel.

When you next run the NATMAP RASTER VIEWER, without the matching CD in the drive, the software will prompt you to specify the new location for the map files. Follow the on-screen instructions to adjust the configuration of the software.

The NATMAP RASTER VIEWER is able to operate with some map data files located on the hard disk and some located on the CDs. This type of configuration is intended for advanced users only. The Raster Viewer Configurator tool is provided to configure how the software locates map data files.

Installing other NATMAP Raster 2003 products

If, for example, you have purchased Mapsheets 2003, and then purchased Mosaic 2003 (or vice versa), you do **NOT need to reinstall the Viewer**. The registry keys that are installed as part of the installation process include keys for ALL layers - all you need to do is use the Raster Viewer Configurator to enable the Viewer software to locate the maps from the other product - the same process you would use if you had installed the software from the CD and then copied the maps to your hard drive. This is only applicable to the 2003 releases.

Uninstalling the new Viewer

To remove the software, run Start > Settings > Control Panel > Add/Remove Software Select NATMAP RASTER VIEWER, then Add/Remove. The uninstallation software will then remove the files, registry entries and Start menu items. Any maps or layers you have copied to your hard drive will not be uninstalled.

STARTING THE VIEWER

via Start Menu

The Viewer is started by selecting the **NATMAP RASTER VIEWER** item available via the Start menu. This may be done by selecting Start > Programs > NATMAP RASTER VIEWER (or the name provided by the user on installation) > NATMAP RASTER VIEWER.

via Windows Explorer / Command Prompt

This Viewer may also be started by executing the **RasterViewer.exe** file located in the **Html** directory of the path to which the Map Viewer was installed.

via Internet Explorer

If you are already using Internet Explorer, the Map Viewer can be loaded through the File|Open dialog box. **Note:** Only the html page **RasterViewer.html** should be loaded in this manner. Attempting to load other pages will fail as they are designed to work only as part of a whole, and cannot be accessed separately.

via the Desktop icon

A desktop icon will be created at installation. Double-clicking on this icon will launch the NATMAP Raster Viewer. Please note that a desktop icon will not be created on some network systems with restricted security privileges for users.

Selecting Maps Using the Raster Viewer

- Select a Layer
- Search by NATMAP name or number

  - Search by Coordinates
  - Search by Index Map
  - Search by Place Name

Selecting a layer

You can also choose which map series, scale or dataset to use. In NATMAP Raster 2003 this is called a layer . Each NATMAP Raster product contains different layers - for specific information refer to Product Components.

The pop-up menu located at the bottom-right of the screen lists the layers available to view. The largest scale which is part of each product is the default layer. You can change the layer to view at any time by clicking on the arrow and selecting the appropriate layer.

You can add or remove layers using the RASTER VIEWER CONFIGURATOR. However, you must have a valid *mapdata.txt* file associated with the layer which contains information about the map images making up the layer.

Selecting a map - Overview

In the top left of the Viewer is a small map of Australia covered by five buttons. Each button corresponds to a different way of selecting a map.

You can select a map by:

- NATMAP name or number
- coordinates as latitude and longitude
- coordinates as easting, northing and zone
- the NATMAP Index Map
- the Place Name Search.

Viewing Maps Using the NATMAP Raster Viewer

- Overview
- Map Pane
- Moving around the map
- Accessing help and the Web
- Changing Layers
- Map Windows
- Window control buttons
- Coordinate Display
- Exporting
- Printing

Viewing a map - Overview

The following image shows the appearance of the **view a map** screen.

The screen contains windows, buttons and text boxes. This section provides an overview of the screen. Subsequent sections provide more detail about each button, text box, etc.

The screen is divided into two broad areas: the right pane that displays the map, and the left pane that contains controls. These are called the *map pane* and the *tools pane* respectively.

The *map pane* contains:

- the main image of the map
- a blue cross hair that marks the centre point of the map
- two overlay windows: the *Locator window* and the *Magnifier window* (the three other overlay and popup windows - Map Information, Legend, and Climate - are not shown in the example). More information about these windows is available in the Map Windows page
- the current map name and sheet number displayed at the top right of the screen for the appropriate layer you are viewing. Note that the Satellite Image layer in the Mosaic displays the 1:250 000 scale map name and number
- the icons for the pan, zoom, click-pan, and zoom-to-extents tools at the top left of the screen.

The *tools pane* is split into vertical sections.

At the top is the *select-a-map* graphic that allows you to return to the Select Map mode. In the middle of the left pan are a series of buttons and text boxes. From top to bottom these are:

- buttons to show or hide the locator, magnifier or map information window, and the centre marker
- buttons that select the type of position information: latitude/longitude or grid; its format: decimal degrees or degrees/minutes/seconds; and the datum for the co-ordinate system: GDA or AGD for lat/long, MGA or AMG for grid
- text boxes to display the position information
- buttons to export or print the entire map or the current map view.

To maximise the clarity of the map, check that you have optimised your screen colour settings. You should also

refer to the note on image clarity for other tips on improving the display of the map.

The Map Pane toggle button

The fraction of the screen used by map image can be increased by hiding the left pane. To hide the left pane of the map screen, click on the icon at the top left side of the map screen.

The icon acts as a toggle: one click hides the left pane. Another click un-hides the left pane.

Moving around a map

At the top left side of the map pane are four buttons with icons. These buttons are used to select particular modes. When the cursor is over the map display area, its shape is determined by which mode has been selected.

The Zoom to Extents tool

The **Zoom to Extents** button will cause the map to be redisplayed showing its full extents. The map sheet will fill the map display window.

The Hand-Pan Tool

Clicking on this tool selects **Hand-Pan** mode. To pan the map, place the mouse over the map, press and hold down the left mouse button. Drag the mouse in the direction you wish the map to pan. To complete the pan, release the left mouse button.

Notes :

- it is possible to drag the map completely off the screen. To relocate the map into the viewable area, use the Zoom to Extents button described below
- this tool only allows panning on a single map sheet. To move to another map sheet, use the click-pan method described below, or select the desired map using the select map methods.

You can switch from Pan mode to Zoom mode temporarily by pressing both the left and right mouse buttons simultaneously, or by pressing the shift key followed by the left mouse button.

The Zoom Tool

Clicking on this tool selects **Zoom** mode. To increase the zoom of the map, place the mouse over the map and press and hold down the left mouse button. Move the icon towards the bottom of the screen. As the mouse moves the map will zoom. When the map has been zoomed enough, release the mouse button. The map will now refresh itself and show greater detail. There may be a short pause as additional image data is read from the CD and decompressed. To zoom out drag the icon towards the top of the screen.

Note that even in zoom mode, the map will recentre onto the position you clicked.

You can switch from Zoom mode to Pan mode temporarily by pressing both the left and right mouse buttons simultaneously, or by pressing the shift key followed by the left mouse button.

This style of Zoom tool is standard to all ER Mapper applications. No Zoom Box tool, which is the more common style of Zoom tool used in Windows applications, is available as yet with the standard ER Mapper software developers kit which was used in developing the NATMAP Raster Viewer. At some point in the future ER Mapper may include the Zoom Box tool in their software developers kit, in which case it will be added to the NATMAP Raster Viewer.

Click-Pan and Panning from map to map

Clicking on this icon selects **Pointer** mode, which is used to:

- obtain the position of locations on the map
- click-pan mode.

In **Click-Pan** mode, clicking on the map will cause the map to be panned so that the clicked point is now the centre of the map (as indicated by the blue cross hair).

In Mapsheets, if you click on a point that is beyond the edges of the current map region then a new map will be loaded that contains the clicked location. The new map will be at the same zoom level as the previous view and will be centred on the clicked point. There is no difference between the Click-Pan tool and the Hand-Pan tool for Mosaic images, as there is only one image to be loaded.

Click-Pan is intended to make it easy to pan the map to follow a feature such as a road or river. Simply click on a point on the road or river you wish to follow and the map will be centred over the clicked position. For Mapsheets layers, if the river or road moves off the current map simply click on the blank spot next to the current map and the neighbouring map will be loaded in the position that you clicked.

Click-Pan is also provided by the Locator and Magnifier windows. Clicking on the maps within the Magnifier and Locator windows causes the map that matches the clicked point's location to be loaded in the main map view, centred on the clicked point. In this way the magnifier and locator windows can be used to select and load a new map.

How to access on-line and help documents

In the bottom left-hand corner of your screen, there are four links to on-line and help documents:

BASIC HELP	clicking on the BASIC HELP text will open a new window with the Quick Help Guide. This page contains an overview of basic searching and viewing tools
USER GUIDE	clicking on the USER GUIDE text will open a new window with this User Guide
BUY MAP	clicking on the BUY MAP text will open a new window which links to the on-line NATMAP Retailers page on the Geoscience Australia website. You can find your nearest NATMAP retailer using this tool. You will need an Internet connection for this tool to work
	clicking on the NATMAP logo will take you to the Geoscience Australia web site. You will need an Internet connection for this tool to work.

Exporting NATMAP Raster Maps

- Overview
- File Sizes
- Exporting from the Viewer
- Exporting from the DOS prompt
- RasterExport software

Exporting overview

There are three ways in which the maps in NATMAP Raster 2003 can be converted into other common image formats such as TIFF, GeoTIFF, JPEG, Windows Bitmap (BMP) and Portable Network Graphics (PNG) formats:

- using the exporting functions in the Viewer
- from the DOS prompt using RasterConvert (Mapsheets only), which enables a batch file to be written automatically to convert multiple files
- using the Raster Exporter, a stand-along software package for providing a simple graphical user interface for selecting maps and output image options (Mapsheets only).

Can I directly export to OziExplorer OZF2 format for use with OziExporerCE?

At this stage no. There are a couple of ways to do this:

- for individual maps in the Mapsheets product, simply import the ECW into OziExplorer and then convert it to OZF2
- for subset areas of the Mosaic layers or Mapsheets, export to GeoTIFF first. If your GeoTIFF file is large, download the free ECW compressor from ER Mapper and compress the GeoTIFF to an ECW before importing into OziExplorer. (Note that there is a bug with saving the current view to an ECW file).

Why doesn't RasterConvert or the Raster Exporter work for all layers?

RasterConvert and the Raster Exporter only work for Mapsheets layers, or for the small-scale Mosaic layers, because they are designed to export single files only. The 1:250 000 scale, 1:1 000 000 scale and Satellite Image Mosaics are all very large files, so they cannot be exported using these extra pieces of software because of the file size limitations for exporting large files that are imposed by the ER Viewer software used in the Viewer and your computer's processing power.

These utilities are only included in the Mapsheets product. However, if the Mosaic layers are added to a Viewer installed from Mapsheets, then both utilities will recognise these layers and allow you to attempt an export. If you do, then the export warning dialog box will appear.

Installation

The ECW Conversion Utilities are automatically installed when you install the NATMAP RASTER VIEWER.

File sizes

Approximate exported file sizes at 100% resolution are:

- JPEG - 2-3 times the size of the original ECW; file size approx 3-7MB
- Bitmap, PNG or TIFF/GeoTIFF - 20-50 times original size; file size approx 70-120MB

Note that there is a limit on the size and quality of the file you can export.

Exporting from the viewer (Mapsheets and Mosaic)

Refer to the Viewer help.

Exporting from the DOS prompt using RasterConvert (Mapsheets only)

1. From the Start Menu, open an MSDOS Command Prompt window
2. Change to the directory containing the ECW Conversion utilities. These utilities are located in the Tools sub-directory of the path to which NATMAP RASTER VIEWER was installed. In this example we will assume that the Map Viewer was installed in *C:\Program Files\NATMAP\NATMAP RASTER VIEWER\1.4*
3. Run the ECWConvert program. For example:

    - *C:\Program Files\NATMAP RASTER VIEWER\1.4\Tools>* **RasterConvert d:\maps\cd2\sf5504.ecw sf5504.jpg**
    - where *d:\maps\cd2\sf5504.ecw* is the input ECW file and *sf5504.jpg* is the filename of the image to create. Because the extension ".jpg" was given for the output file a JPEG image will be created.

The RasterConvert program can take up to three command line parameters. Its usage is as follows:

- RasterConvert ecwfile [outputfile [geotiff | tiff | jpg| png | bmp]]

Where:

- ecwfile is the ECW file to convert
- outputfile is the filename of the image to create. This parameter is optional. If it is not specified then the output file produced will be the same as the ECW file with the extension changed to ".tif". For example, if the input file is *sf5504.ecw* the output image will be *sf5504.tif*. The output format will be GeoTIFF.

The third optional parameter specifies what type of image to create. If this parameter is not specified then the output image type is determined from the output file name. If no type can be determined then GeoTIFF will be used.

Raster Exporter (Mapsheets only)

1. You can run RasterExport from the Start menu by selecting Programs > NATMAP RASTER VIEWER > RasterExport. Or, using Windows Explorer, you can double click on the **RasterExport.exe** file located in the **Tools** directory of the path to which NATMAP RASTER VIEWER was installed.
2. The RasterExport program will start and you will be presented with the main window:
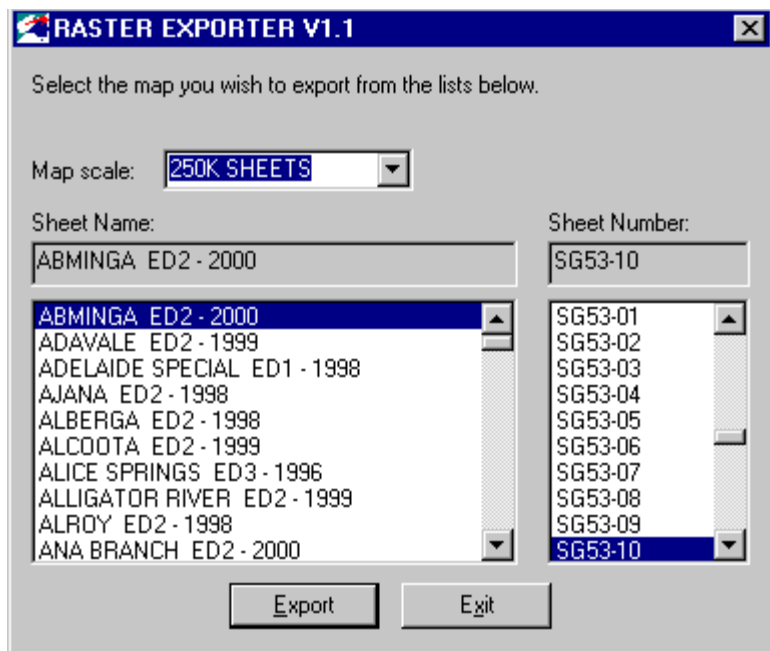
3. Select the map you wish to export from the lists. The lists are synchronised, so selecting a map name from the left list will update the selected map number in the right list. To quickly find a map name, click in the selected map name box and type the first letter of the map you are after. You should then be taken to the first map starting with that letter. Note that more than one map name (or map number) can be selected using the standard Windows keyboard modifiers <Control> and <Shift>.
4. Once you have selected a map(s), click on the Export button.
5. The window that you will see depends on whether you selected one map, or more than one map.

Single Map selected

You will be presented with a standard Save As window where you can enter the name of the image file you wish to create. For example:
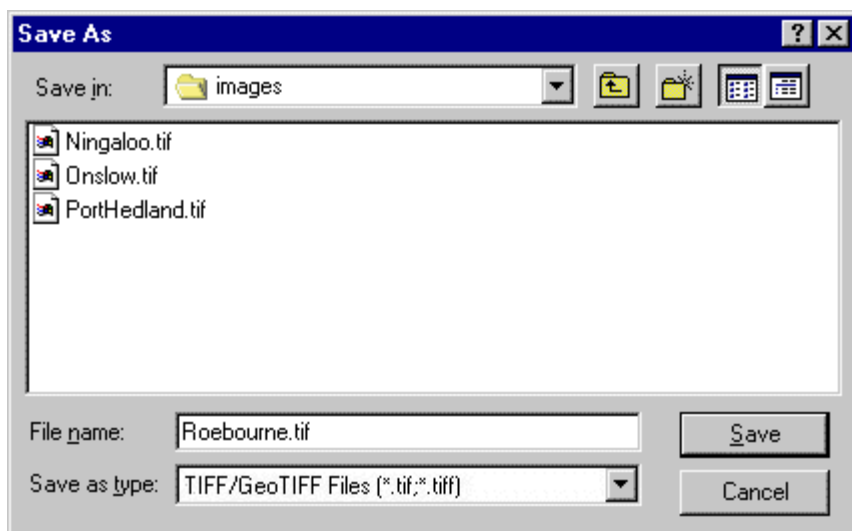
Once you have entered the name of the image you want to create, click on the Save button.

6. If you have entered a TIFF file name then you will be presented with the following window asking you to select which TIFF format to save in: GeoTIFF or TIFF. You can also choose whether to use LZW compression.
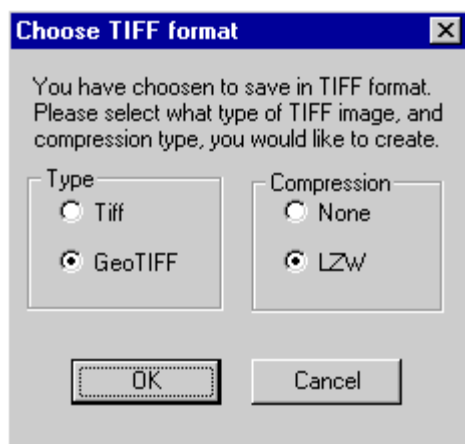
Select which TIFF format and compression you require and click on OK.

7. You will then be presented with a window asking for the required resolution of the output image.
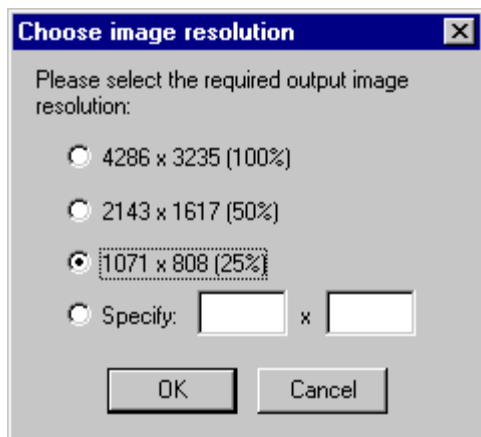
Select, or enter, the output resolution you require and click on OK.

Note: Most of the ECW images are quite large and maintaining the original resolution (100%) will require significant amounts of memory. Also, depending on the output format, very large image files (50 to 100MB) may be produced.

8. Your output image file will now be created and you will be taken back to the main RasterExport window where you can select another map to export, or click on the "Exit" button to exit the program.

Two or more maps selected

If you selected more than one map, then you will be shown the following window:

9. Press the Browse button to browse to the folder in which you want the exported maps to be created.

   Use output image combo box to select the format for the exported maps.

   Select the output resolution.

10. If you selected GEOTIFF or TIFF format you will be shown the following window, which allows you to choose to use either LZW compression or no compression.
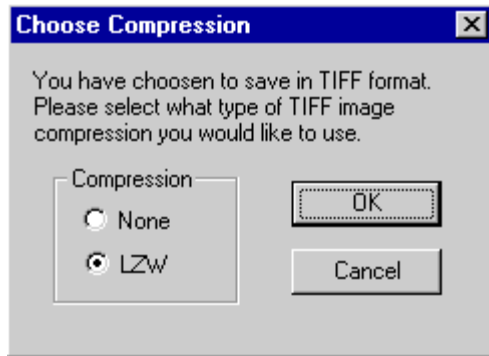
   When all the settings for the export operation are correct, press the OK button.
   The selected maps will be exported.

11. If the maps were selected using Map Names, the files created will have the same name as the map. For example exporting the Alice Springs map to a TIFF file this way will produce a file called "ALICE SPRINGS ED2 - 1996.tif". If the maps were selected using Map Numbers then the files created will have the same name as the map number. Exporting the Alice Springs map this way would produce a file called 'SF53-14.tif'

Using the Raster Configurator

Configurator overview

Warning: incorrect use of this tool may render the NATMAP Raster Viewer inoperative. Please spend time reading and understanding these instructions before making modifications to the default configuration.

NATMAP Raster Viewer can view maps and layers located in different places - on different CDs, on your computer's hard drive, or on a shared computer through a network. When you install the NATMAP Raster software, the Viewer will only search for maps in one of the above locations (which one depends upon from where you ran the Setup program and whether you have installed the Viewer from the Mapsheets or Mosaic products).

The Configurator is a tool that helps you manage where your maps and layers are located, and tells the Viewer where to look for maps to load. This is especially useful when you have moved the location of your maps (for example copying some maps from the CD to your hard drive).

You can use the Configurator to:

- search for maps in more than one location
- add search paths for new layers
- change a search path for a layer

The viewer searches for a required map data file in the order and location specified by each element of the search path until the required map data file is found or the search path is exhausted. The default configuration provides only one element in the search path. Hence, map data can only be found in one location. Adding a new element to the search path for a particular map series will configure the viewer to look in two or more locations. The configurator provides the ability view, change, add, re-order and delete map search paths for each map series, and for each release version of the viewer software.

Administrators of computer networks or XP machines should read this important notice on using the Configurator over a computer network with restricted administrative privileges for users.

I've changed the location of my maps, or added a new location, using the Configurator. The changes don't appear in the Viewer.

If you make changes in the Configurator, make sure you have closed the Viewer so that changes will update properly. As the Viewer runs in an Internet Explorer window, any changes you make to map layers will not be refreshed in the window. The Viewer needs to be closed and restarted for changes to be activated.

Check that you have selected the correct folder.

Running Raster Viewer Configurator

The NATMAP RASTER VIEWER Configurator is automatically installed when you install the NATMAP RASTER VIEWER.

You can run the Configurator from the Start menu by selecting Programs > NATMAP RASTER VIEWER > Raster Viewer Configurator. Or, using Windows Explorer, you can double click on the **RasterViewerConfigurator.exe** file located in the Tools directory of the path to which NATMAP RASTER VIEWER was installed.

The Raster Viewer Configurator program will start and you will be presented with the main window:

- Adding a search path for a map layer
- Removing a search path for a map layer
- Modifying a search path

Using NATMAP Raster in Other Applications

- Using with GIS/CAD or graphics programs
- Using with GPS

Using NATMAP Raster maps in GIS, CAD or graphics programs

The simplest method for using the NATMAP Raster images as a backdrop within a GIS environment or a graphics package is to obtain the appropriate ECW plugin for the software you are running from the ER Mapper web site. Geoscience Australia does not take any responsibility for the use of these plug-ins. For more information or support, please contact ER Mapper.

If you don't want to use the ECW format, then the images will need to be exported using the Raster Exporter for Mapsheets or the exporting tool in the Viewer for Mosaic and/or Mapsheets. You can convert map images to GeoTIFF (to retain coordinate information) or TIFF, JPEG, BMP or PNG files.

If you want to access the vector information from which the NATMAP Raster images are made, then you will need to obtain GEODATA TOPO-250K data for your area of interest.

How do I reproject maps in NATMAP Raster for use in other applications?

NATMAP Raster does not have the functionality to reproject maps. You need to use a third-party imaging or GIS software (such as ER Mapper, ERDAS Imagine, or ESRI ArcGIS) to reproject the maps.

Using NATMAP Raster maps with GPS

NATMAP Raster maps are an ideal set of base maps for use in conjunction with Global Positioning Systems (GPS). To use NATMAP Raster with a GPS you will require a GPS receiver and probably some additional software and a portable computer. Because NATMAP Raster has not been specifically designed to work with any particular GPS system, the integration of NATMAP Raster images into each system will be different. You should fully investigate what is required to make such a system work. A quick option to see what is available in the way of software that will integrate GPS and NATMAP Raster, is to search the Internet for the category **GPS,mapping,software** and review the range of products on offer from different suppliers. Two major Australian software vendors who support NATMAP Raster images in their software are OziExplorer and Advantech Design (producers of TrackRanger). Alternatively, you could visit your local specialist map shop or GPS distributor for advice.

Many additional GPS software programs such as OziExplorer require additional calibration files in order to read the NATMAP Raster maps. Check with the software vendor for these; often, they are freely available.

Windows XP Service Pack 2 Issues

Description of the Problem

When starting Raster 2003 or earlier versions, users may be prevented from running the Raster Program. A yellow 'Information Bar' will appear between the toolbar and the content window in Internet Explorer. It will read *'To help protect your security, Internet Explorer has restricted this files from showing active content that could access your computer. Click here for options…'*

You will be unable to click on any of the menu options.
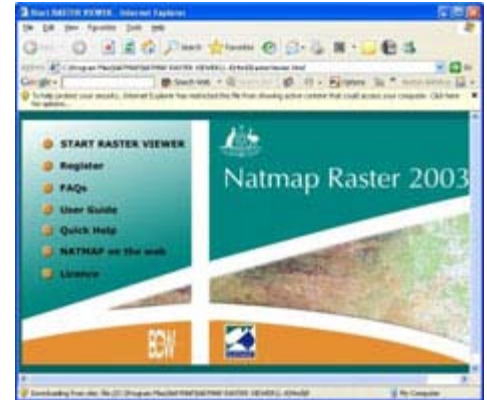
Cause of the problem

The Raster program copies a number of HTML files to your local drive, which are accessed when you start the program. Some of these HTML files contain Javascript code to perform some basic functions e.g. to check that the browser is Internet Explorer.

Windows XP Service Pack 2 includes improvements to Internet Explorer security, that prevent local web pages (i.e. pages stored on your computer) from running when they contain *active content*. This *active content* includes Javascript, Java applets and ActiveX controls. XP SP2 also includes a number of other add-ons that restrict pop-windows and downloading of files in Internet Explorer.

A full list of browser changes implemented in Windows XP SP2 can be found on the Microsoft website.

Fixes for the problem

Option 1: Users can opt to 'allow blocked content' by clicking on the yellow information bar, and selecting *'Allow Blocked Content'*.

You will then be prompted with a dialog box, asking you whether you wish to let this file run active content. The active content in Raster (Javascript), **will not harm your computer** - you should select **Yes** to allow the file to run.

Unfortunately this will only enable active content for the current Explorer window. You will need to **repeat** the above process for subsequent windows that you open (e.g. Raster Viewer window).

Option 2: Turn off the active content check in your browser. From the **Tools** menu in Internet Explorer select Internet Options. Under the **Advanced Tab** place a tick next to the box titled **'Allow active content to run in files on My Computer'**.

Please note that this may allow malicious active content in files on your local computer to cause problems so you should only do this if you feel confident in your computer's security measures (i.e. you should have an up to date virus scanner and firewall). You may wish to uncheck this box when you have finished running Raster, to prevent malicious active content from running when not using Raster. If you opt to leave this box checked (and therefore allow active content to run for local files), then it is recommended that you check that your antivirus program will block malicious content from running locally.

NATMAP Raster Troubleshooting and Bugs

▼ Reporting a bug or problem
▼ Installing
▼ Starting the Viewer or Configurator
▼ Searching for a map
▼ Using the Viewer
▼ Map Images
▼ Exporting
▼ Printing
▼ Problems with other software

Reporting bugs and problems

How do I report a bug in NATMAP Raster 2003?

Bug reports should be submitted to Geoscience Australia. Find out how to contact us.

Please ensure that you record as much detail as you can about the fault as non-specific faults are difficult to replicate.

If you are reporting an error related to the content of NATMAP Raster, please state the map sheet name, number and latitude, longitude coordinates and what the error is.

If you are reporting an error or crash in the software, please include:

- the details of your operating system
- computer specifications (Type and speed of CPU, amount of RAM, capacity of hard disk)
- what you were doing when you encountered the bug, including other software you had running
- any other non-Office software you have on your computer
- screen dumps of any error messages which appear.

In 2003 the following bugs have been fixed:

- registration page location is set to installation drive rather than C: drive
- missing place names added.

In 2002 the following bugs were fixed:

- GeoTIFF export function retains correct georeferencing information
- inaccuracies in image positions removed by regenerating and regeoreferencing all map images
- Print Current View bug in W9x systems removed (printing patch is now part of software).

Installing

I load the CD in and nothing happens. Isn't there an AutoRun?

There is no AutoRun feature on the CD.

Many users have their Viewer configured to read maps off the CDs. If there was an AutoRun feature, then it would try to run the Setup program every time the user was asked to swap CDs (which isn't very desirable). Therefore, no AutoRun feature was added.

Information on how to install the Viewer software from the CD can be found here.

I load the CD and start Setup. I get an error message that says 'This is not a valid Win32 application' or 'This is not a system32 application'.

This is caused by one of the following:

- problem with your CD-ROM driver
- an incorrectly downloaded file (not appropriate here)
- a virus.

To work around this problem, you need to run the Setup from your hard drive instead of the CD. You can do this by either:

- **full hard drive installation:** Copy all your CDs to the hard drive (requires at least 1.2GB for 2 CDs). More information on installing from the hard drive, can be found here
- **install from hard drive but leave maps on CD:** Copy just the setup files (all files from the top level of your hard drive except for the 'Rasters' folder) to a folder on your hard drive. Run Setup.exe from your hard drive. Once the Start screen is loaded, exit from the program, and launch the Raster Configurator. Specify where on your CD your maps are located by following the steps for adding a search path. This will load the correct location of the maps into the Viewer software.

If the problem is your CD-ROM driver, you will need to obtain a new driver. Check your computer manual and/or contact your place of purchase for more information (you may be able to download one for free).

When installing, I get an error with error code '0x80040707'.

This is caused by an incompatibility between some Windows XP machines and InstallShield. More information and a solution can be found here.

I am using Windows NT. Why does a desktop icon not appear?

On some NT machines and systems the desktop icon for NATMAP Raster may not appear because of administrative restrictions. Please check with your system administrator. More information can be found in the Installation chapter in the User Guide.

Why can't the Viewer find the maps after I have copied the maps to my hard drive?

When copying maps to your C: drive or another network drive, ensure that:

- the maps from each CD are still stored in directories called 'cd1'and 'cd2' in the chosen directory. For example, you have created a directory on your C: drive called 'C:\Natmap'; in this directory you would have copied the 'mapdata.txt' file and created two directories called 'cd1'and 'cd2', which contain the maps on CD1 and CD2 respectively
- the search path for the Viewer to find the maps is set to the correct directory (in this example, the Configurator would need to be set to C:\Natmap in order for the maps to load correctly). Refer to the Raster Viewer Configurator section for more details.

Some files do not self-register when installing.

e.g. 'The following files did not self-register:

- C:\Program Files\Natmap\NATMAP RASTER VIEWER\1.4\Controls\ECWConverter.ocx. A device attached to the system is not functioning
- C:\Program Files\Natmap\NATMAP RASTER VIEWER\1.4\Controls\GazetteerControl.ocx. A device attached to the system is not functioning
- C:\Program Files\Natmap\NATMAP RASTER VIEWER\1.4\Controls\MapDataControl.ocx. A device attached to the system is not functioning
- C:\Program Files\Natmap\NATMAP RASTER VIEWER\1.4\Controls\Redfearn.ocx. A device attached to the system is not functioning.'

Try the following:

- check your version of Internet Explorer. We recommend Internet Explorer v5.5 but no earlier than v5.0. You may need to reinstall a later version.
- manually register files using the *regsvr32* command. Click on Start > Run..., then in the dialog box type 'regsvr32'plus the full path name and file name. Include quotes if any names have spaces. You can also drag the icon representing the file from Windows Explorer into the dialog box '{installation path}\{filename}'. Hit OK and the file may register.
- you may have old versions of some operating system files, particularly if you are running Windows98. The files possibly causing the problem are *msvcrt.dll* and *mfc42.dll*, located in the System directory. Check the Microsoft website for more up-to-date versions (you need msvcrt.dll v6.10.8637.0 or later, and mfc42.dll v6.00.8665.0 or later). Rename any existing versions on your computer, and download the updated versions into the same directory.

Starting the Viewer and using the Configurator

Initialisation Problems

If you have not inserted a NATMAP Raster CD into your CD drive or if you have changed your system since the last time it was run - for example, if you have copied all of the map data files to your hard drive - you will be presented with the following screen:

If you insert a CD and choose Retry and the **mapdata.txt** file is still not found, you will be presented with the same screen. You should probably choose Setup at this stage.

Choosing Setup will present you with the following screen:

Choose OK and you will be presented with the standard *File Open* box. Use the dialog box to select the **maps\mapdata.txt** file, then press OK. For example:
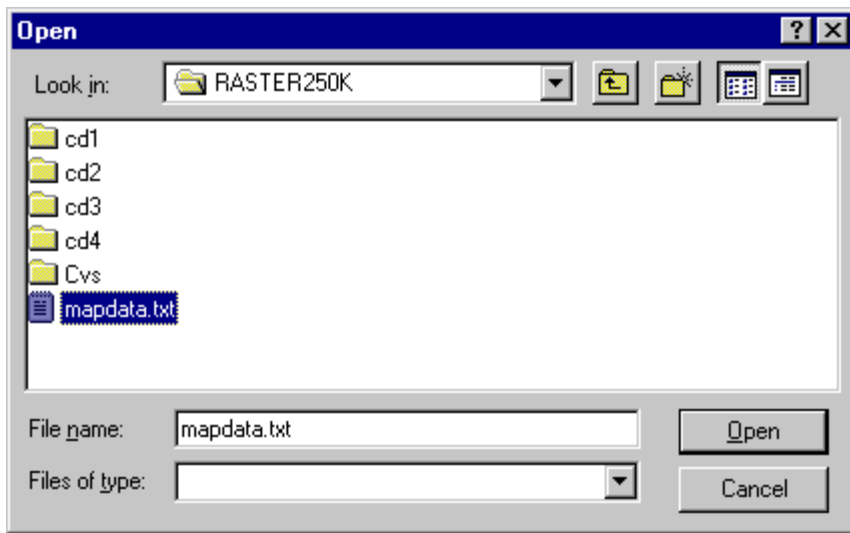
The Viewer and other software should now run as normal.

Loading a CD after an Viewer initialization error appears does not relaunch the Viewer.

If the Raster Configurator is set to search for maps on CDs only, and the Viewer is launched without a CD, then an initialization error will appear. Loading a CD and pressing Retry will not work.

Solution 1: Press Cancel, close the Viewer and relaunch with the CD in the CD-ROM drive.

Solution 2: If disk space permits, copy data to the hard drive and reconfigure the map image search path to the folder of your choice on your computer's hard drive.

I've changed the location of my maps, or added a new location, using the Configurator. The changes don't appear in the Viewer.

You need to close the Viewer first before any changes you make in the Configurator are activated. More information can be found here.

I have just installed NATMAP Raster but whenever I start I get the following message:

- **'An ActiveX control on this page is not safe. Your current security settings prohibit running unsafe controls on this page. As a result this page may not display as intended.'**
- **I have changed my Internet Explorer security setting to LOW but I still cannot load any maps.**

This is an Internet Explorer problem and appears to be caused by a problem.

1. Remove Internet Explorer
2. Rename the COMCAT.DLL file in your %SystemRoot%\System32 folder
3. Reinstall Internet Explorer.

An error message appears requiring a screen resolution of at least 800x600.

The Viewer will not run on a screen resolution of less than 800x600 pixels. This is the minimum screen resolution at which all buttons, map windows and other links will fit. At 800x600 resolution, you will need to ensure that the Autohide property setting for the Windows task bar is turned on.

The bottom of the Viewer screen is cut off. I can't change layers.

When running a display at 800x600 pixels, the user should ensure that any task bars have their *autohide* property setting turned on. For the Windows task bar, this is done from Start > Settings > Taskbar, then ensuring that the Autohide check box is ticked.

Searching for a map

I've launched the Search by NATMAP name, Search by NATMAP number, or Search by Coordinates tools. I then change the map layer, but the drop-down lists do not update.

This is a known bug. To work around this, select the map layer you wish to view, and then click on the appropriate search tool button located in the top left of your screen. The correct lists of map names will appear and you will be able to load the correct map layer.

Why do I get more than one result for the same place?

In many cases, you may get two or more results for the same name, place type and state. This is because the original Gazetteer has hundreds of feature codes, which has been aggregated into the 20+ Place Types used in the NATMAP Raster Place Name Search and the on-line Place Name Search on the Geoscience Australia website to make searching easier. Each individual entry remains in the data; however, in the NATMAP Raster Place Name Search the results are displayed with the aggregated Place Type, not the original feature code.

I can't find my Place Name, but I know it exists

If you're sure that the place name is spelt correctly, try using a alternate name. Many place names have alternative names, some of which are officially recognised and some which aren't. If you think that a place name has been omitted, or is spelt incorrectly, please contact Geoscience Australia.

I've clicked on the Place Name, but it's taken me to the wrong place.

Check you are clicking on the correct result - see the note on multiple results. Another reason is that large area features such as administrative areas, or long linear features such as rivers, are difficult to assign one coordinate point to. If you believe that there is an error in the position of a feature, please please contact Geoscience Australia.

I get a mountain that doesn't have an elevation.

Not every mountain, hill or trig station in the Place Name Search has an elevation attached to it. At the moment around 500 of these features have elevations attached, and more will be progressively added in future versions.

I've gone back to the Place Name Search and my results have disappeared.

The bottom right part of the Place Name Search page is generated each time the Place Name Search is loaded. Any place name, state or place type you have previously entered will still be there - you just have to click on the Search button again to reload the results.

I zoom in on the Index Map and the 1:250 000 scale map boundaries disappear.

An explanation can be found here.

Using the Viewer

The climate graph doesn't update when I change maps or move around.

The Climate Graph window opens a new Internet Explorer window and displays a JPEG image of the climate graph for the particular 1:250 000 scale map area you have viewed on your screen. However, if you leave the Climate Graph window open, and you move maps using either the Hand Pan or the Click Pan tool, the climate graph will not update in the new window.

Solution: Reclick the Show Climate button. The correct graph will be displayed.

An error message appears saying 'Tile '' has '.

This message may appear when scrolling or point-panning on some machines with slower PC processing speeds. It is resolved by restarting the Viewer.

Maps do not appear in the Locator and Magnifier windows.

If there is an error message saying that <pathname>\20M.ecw or <pathname>\5M.ecw cannot be found, then you should uninstall the Viewer and reinstall in order to restore these maps.

If there is no error message, and the Locator and Magnifier windows remain green, then the problem is caused by a limitation in Internet Explorer versions earlier than v5.5. This limitation was removed at IE5.5 Service Pack 1. You are best upgrading Internet Explorer to at least v5.5 SP1.

I have loaded a map, and am not zooming or panning around. My CPU usage stays high (at least 60%).

As with missing Locator or Magnifier maps, this is caused by a limitation in versions of Internet Explorer prior to v5.5 SP1. If this problem persists, you need to upgrade to at least this version of IE to better handle map display.

I have moved the Locator / Magnifier / Information window completely off the screen and can't drag it back.

Press the Show Locator button on the left-hand side of the screen twice. This will close and reload the window so it is partially visible on the side of the screen.

I'm having trouble using the Zoom tool. Why isn't there a Zoom Box tool?

Find out more about the Zoom tool here.

I click on the centre of the blue cross in the main Viewer. The map then jumps and the coordinates change slightly.

This is caused by a slight incompatability between the cursor, the centre of the cross, coordinate calculations performed by the Viewer software, and maintaining the shape of the map in the browser window, which adds up to around 1-2 pixels (which for the 1:250 000 scale map layers is about 30-60 metres).

It is more significant when zoomed out, as each pixel on the screen represents a larger area on the map.

There is no workaround for this bug; however, the error remains less than the stated accuracy of NATMAP Raster which is 150m.

Some of the coordinate display buttons don't work

Some buttons are designed to be disabled depending upon which coordinate display mode you are in. More information can be found here.

I'm using 800x600 screen resolution and I can't see the layer pop-up menu

If you select the layer control box, and no pop-up menu appears, use the up- and down-arrow keys on your keyboard to move between the layers. Hit ENTER once you've chosen the appropriate layer.

Map images

The map image isn't very clear and/or the colours aren't very good.

Check you have:

- optimised your screen colour settings
- optimised your screen resolution
- read the note on image clarity.

Grid lines are missing from some of the maps

Some grid lines may disappear from the screen, especially on the index map. This is due to screen resampling of the ECW image. The grid lines will reappear when you change your zoom level.

Exporting

I have tried to export the current view as an ECW file, and I get the following message:

There is a 700MB limit on exporting the current view as an ECW file. This is a limit imposed by the ECW software used in the Viewer.

I tried exporting the current view or an individual map, and I get the following message:
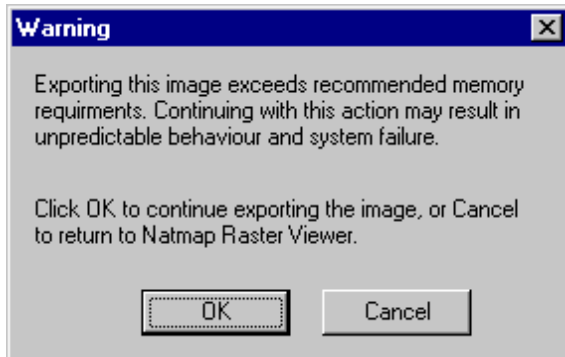
There is a limit on how large a file you can export which is imposed by a combination of your computer and the Viewer software. More information can be found here.

Printing

I'm having trouble printing to my Canon printer.

Download and install the most recent driver for your Canon printer from the Canon website.

I don't get a scale bar when I print from a Mosaic layer.

This is because of the map projection used for the Mosaic layers.

More details can be found here.

Problems with other software

I can't run TrackRanger v3.3 to v3.5 after installing NATMAP Raster Viewer.

The TrackRanger GPS navigation system produced by Advantech Design shares many ER Mapper files as the NATMAP Raster Viewer. These files have a .DLL (Dynamic Link Library) extension. TrackRanger uses different versions of these DLL files to the NATMAP Raster Viewer.

If NATMAP Raster Viewer is installed after TrackRanger, TrackRanger may not work as installing NATMAP Raster Viewer overwrites these shared DLL files.

Solution:

TrackRanger v3.6f will detect and upgrade the DLLs installed by NATMAP Raster 2003. Versions of TrackRanger earlier than this may not work with NATMAP Raster 2003.

Earlier versions of TrackRanger will detect and upgrade DLLs from earlier versions of NATMAP Raster.

I have installed the ArcGIS ECW plug-in - now I can't use the Viewer.

As with TrackRanger, this is caused by a DLL conflict. As at the time of release we are working on a fix. An update will be posted on the NATMAP Raster web page.

The Raster Configurator

Adding a search path for a map layer

1. Select Version to change (most users will only have one version, the current one).
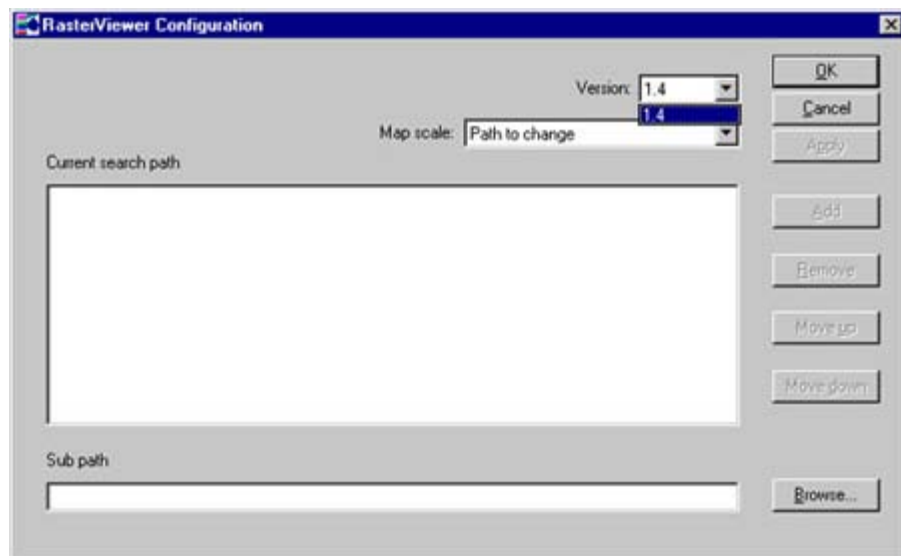
2. Select the map series whose path you wish to change.
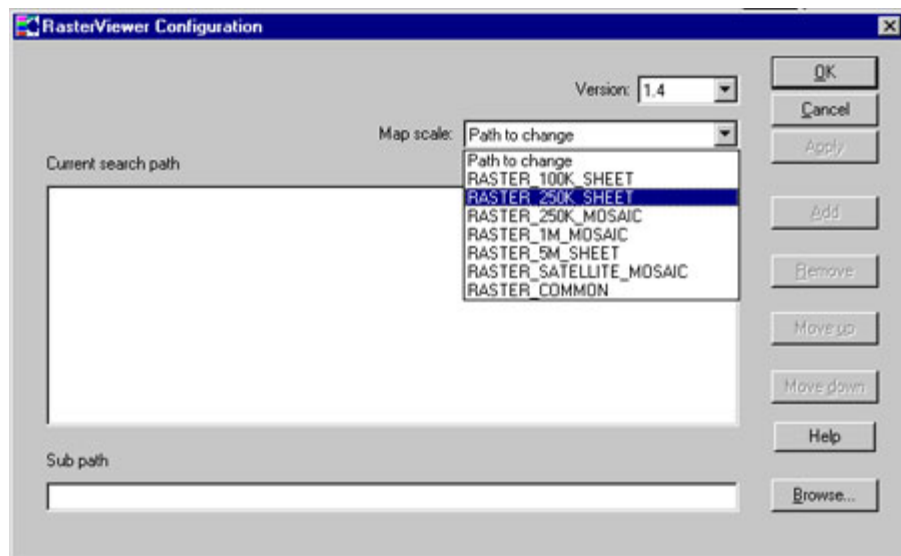
3. Enter the new search path.

Either type the new path in the Sub path text box, or click the 'Browse...' button to use a file explorer to select a sub path.
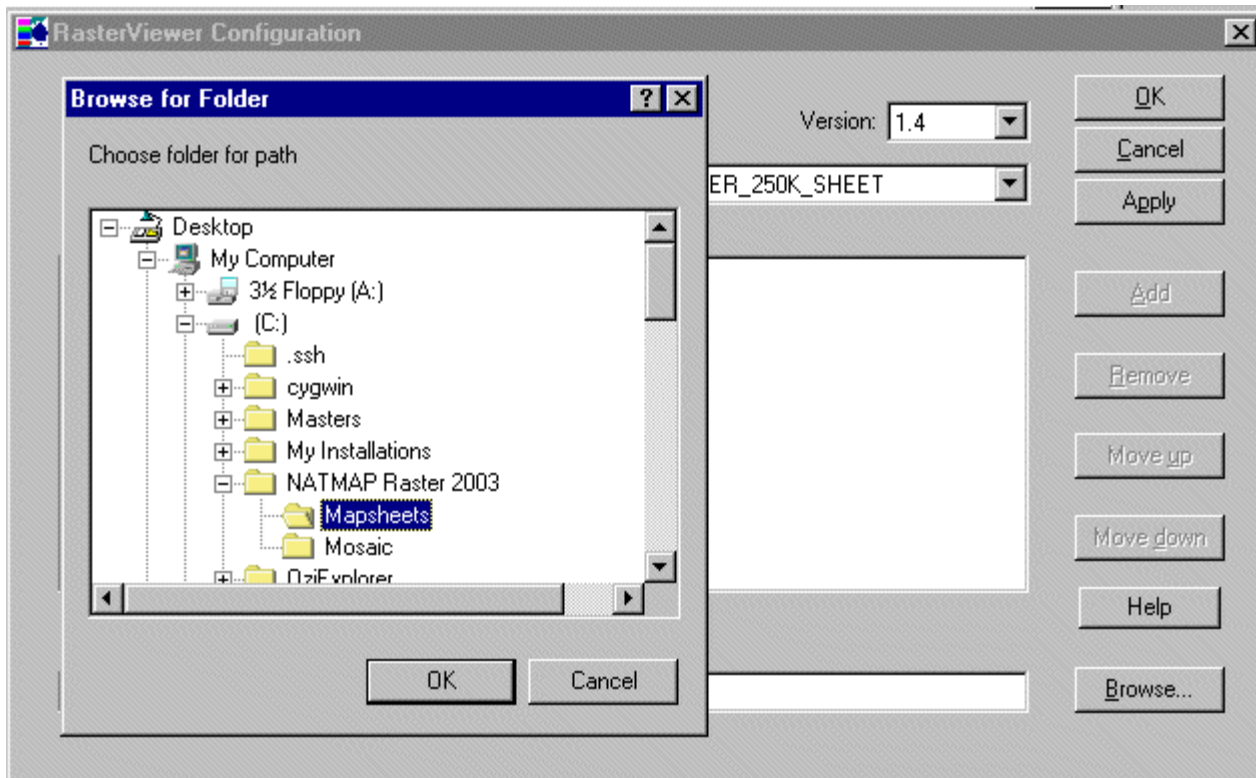
4. Click the Add button. The new path should be added to the list of search paths.

5. Click the 'Apply' button to save these changes.

Important note when adding or modifying a search path

When you add (or modify) a search path, you need to select the folder **above** the folders containing the maps. The Configurator works by using information in a file in this location, rather than by pointing directly to the 'cd1' or 'cd2' folders.

Installing and Starting NATMAP Raster

System requirements

	Recommended	Minimum
CPU:	233MHz Pentium or faster	133MHz Pentium
Memory	64MB	32MB
Disk	At least 26MB free for software; 1.2Gb for maps	At least 26MB free for software
Display	1024 x 768 with true colour	800 x 600 with 64K colours [see below]
Optical drive	4x or faster CD-ROM drive	CD-ROM drive required
Browser	IE5.5	IE5.0

Screen colour display settings

To obtain the best quality on-screen display of the maps, a true colour (24 bit) display is strongly recommended.

To utilise printing capabilities, a colour printer is recommended. A black and white printer may be used; however, the usefulness of the printed map images will be reduced.

Macintosh users

NATMAP Raster 2003 only exists as a Windows-based software package because much of the core third-party functionality is only supported in a Windows environment. We cannot support Raster on a Mcintosh Virtual PC - users can install it at their own risk.

800x600 screen resolutions

If you operate your display at 800x600 pixels, you should ensure that any **task bars** have their *autohide* property setting turned on. For the Windows task bar this is done from Start > Settings > Taskbar then ensuring that the Autohide check box is ticked.

Installing/updating Internet Explorer

The NATMAP Raster application and setup program will not function unless an appropriate version of Internet Explorer (IE5.5 or higher) is available on your system. No other browsers, including Netscape Navigator, are supported by the core third party functionality.

You can run NATMAP Raster using IE versions earlier than 5.5 and later than 5.0. However, you may find that CPU usage blows out and the Locator and Magnifier maps may not display properly.

It is recommended that users install the latest version of Internet Explorer, which is available from Microsoft on the Internet at http://www.microsoft.com.

If Internet Explorer version 5 or above is installed on your machine and you still receive an error message, please ensure you are running the Viewer correctly (see Starting the Viewer).

Network restrictions

If you are planning on running the NATMAP Raster Viewer and associated software on a network, your ability to install the software and to change layers using the Raster Viewer Configurator will depend upon your administrative privileges. If you are a restricted user, and the system administrator has installed the Viewer, you may not be able to:

- install a desktop icon;
- install any of the software.

In the case where a standard user cannot install software, then the administrator will need to follow the installation procedures for installing from a network. The administrator will need to:

- install the software from its location on the network to each computer;
- add a desktop icon into the <user profile>\Desktop directory;
- create a folder in the <user profile>\Desktop\Start Menu\Programs\ directory called NATMAP RASTER VIEWER, and create shortcuts to the Exporter, the Configurator, the Viewer and the User Guide.

This will ensure that the Viewer and the Configurator will operate correctly.

Network XP users should also be aware of incompatabilities between the InstallShield installation software and XP. If you get an error message with an error code "0x80040707", then you should use this solution suggested by InstallShield to fix the problem.

Uninstalling old viewers

Note: Before installing a new version of NATMAP Raster you will need to remove any previous versions of the NATMAP Raster Viewer.

To do this, go to Start Menu > Settings > Add/Remove Programs, and then select NATMAP RASTER VIEWER or AUSLIG RASTER VIEWER and the program will be removed.

From release version 1.3 the Raster Viewer had a name change from "AUSLIG RASTER VIEWER" to "NATMAP RASTER VIEWER". If you have a Raster Viewer version prior to 1.3 then it will be prefixed with 'AUSLIG' rather than 'NATMAP'.

If you have not uninstalled any previous versions of the Viewer, and you attempt to install the new Raster Viewer, you will get an warning message. You should exit out of the installation process and use the above procedure to remove the previous version.

Installing the new viewer

The Setup.exe Program

The setup program:

-

copies a series of OCXs and DLL files to your hard disk

▶ registers the OCXs and DLLs
▶ copies HTML files and program (.exe) files to the installation directory you specify
▶ copies the encrypted data files for the Place Name Search to the installation directory you specify
▶ creates registry keys that describe the configuration of the installed NATMAP Raster - that is, where the map images and data layers are located.

These files require approximately 26MB of space on your hard disk.

Note: On some systems, the installation program may report that some DLLs cannot be copied because the file is 'currently in use'. In general, it is safe to press the Ignore button to continue the installation. These files are usually already installed on Windows 98, Windows Me and Windows NT systems. However, they need to be in the installation package to accommodate Windows 95 systems.

Options for installing

There are three ways of installing the NATMAP Raster Viewer - the method you choose is really determined by where you want to store the map images and your system configuration.

The map images used by the system are stored on the CDs in compressed form. The images are decompressed by software. Thus, the performance of the system is largely determined by the speed of the CPU. The next factor that affects performance is the speed of CD-ROM drive. On a system with a fast CPU (> 600MHz) and sufficient disk space, performance can be improved by using the first installation procedure as outlined below. Otherwise, use the second installation procedure.

Installation Procedures	Advantage	Disadvantage
1. Copy to and install from hard disk/network drive	No need to change CDs when changing layers or maps Faster system response when loading maps	Requires 1.2Gb of hard drive space for each product
2. Install directly from CD	Do not need to use hard disk space to store maps	Requires user to swap CDs if changing layers and maps Slower system response when loading maps
3. Install software from CD, and copy some or all maps/layers at a later date	Do not need to use all hard disk space to store maps	May require user to insert CDs if some layers and maps are still accessed via CD Best for advanced users

Copying CDs to Hard Disk

Automatic installation

1. Uninstall any old versions of the Viewer
2. Download this batch file and follow the instructions.

Manual installation

If you want to run NATMAP Raster without the CDs, the data on the CDs should be copied to a local, or networked, hard disk on your system. You will need 1.2GB of free space on your hard disk for all the Raster map images in each individual product.

1. Uninstall any old versions of the Viewer

2. Create a directory at the desired network location (eg 'C:\NATMAP\')
3. Copy all of CD1 to the new network directory
4. From CD2, copy the **\Rasters\<*layer name*>** directory into the **\Rasters** directory on your hard drive
5. **setup.exe** can be run from the hard disk to install the NATMAP RASTER VIEWER software. Follow the on-screen instructions.

Note that if you are installing the software on a network with security restrictions, you should NOT install as 'Administrator' but as 'Normal User'.

Installing and running from CD

Note: There is no AutoRun feature on the CD.

After uninstalling any old versions of the Viewer, run **Setup.exe** which is located in the top level directory on CD1. To run this file, insert the CD-ROM labelled **CD1** into your CD drive. Then either:

- browse to the top directory of the CD in Windows Explorer and double click on **Setup.exe**; or
- go to Start > Run…, and in the box type **D:\Setup.exe** (if your CD drive is not D: then use the appropriate letter.

Follow the on-screen directions.

Installing from CD and copying maps/layers later

If you have already installed the NATMAP RASTER VIEWER from the CD-ROM and you want to access the data from a local or networked hard drive, then:

- Uninstall any old versions of the Viewer
- Download this batch file and follow the instructions to copy maps to your hard drive.
- When the setup file begins to run, hit Cancel.

When you next run the NATMAP RASTER VIEWER, without the matching CD in the drive, the software will prompt you to specify the new location for the map files. Follow the on-screen instructions to adjust the configuration of the software.

The NATMAP RASTER VIEWER is able to operate with some map data files located on the hard disk and some located on the CDs. This type of configuration is intended for advanced users only. The Raster Viewer Configurator tool is provided to configure how the software locates map data files.

Installing other NATMAP Raster 2003 products

If, for example, you have purchased Mapsheets 2003, and then purchased Mosaic 2003 (or vice versa), **you do NOT need to reinstall the Viewer**. The registry keys that are installed as part of the installation process include keys for ALL layers - all you need to do is use the Raster Viewer Configurator to enable the Viewer software to locate the maps from the other product - the same process you would use if you had installed the software from the CD and then copied the maps to your hard drive. This is only applicable to the 2003 releases.

Registering your NATMAP Raster product

You are no longer required to register the geoMAP 250K DVD-ROM and the NATMAP Digital Maps 250K 2008 (formerly NATMAP Raster). Information on using Geoscience Australia Products.

Uninstalling the new Viewer

To remove the software, run Start > Settings > Control Panel > Add/Remove Software. Select NATMAP RASTER VIEWER, then Add/Remove. The uninstallation software will then remove the files, registry entries and Start menu items. Any maps or layers you have copied to your hard drive will not be uninstalled.

Starting the Viewer

Via Start Menu

The Viewer is started by selecting the **NATMAP RASTER VIEWER** item available via the Start menu. This may be done by selecting Start > Programs > NATMAP RASTER VIEWER (or the name provided by the user on installation) > NATMAP RASTER VIEWER.

Via Windows Explorer / Command Prompt

This Viewer may also be started by executing the **RasterViewer.exe** file located in the **Html** directory of the path to which the Map Viewer was installed.

Via Internet Explorer

If you are already using Internet Explorer, the Map Viewer can be loaded through the File|Open dialog box. **Note:** Only the html page **RasterViewer.html** should be loaded in this manner. Attempting to load other pages will fail as they are designed to work only as part of a whole, and cannot be accessed separately.

Via the Desktop icon

A desktop icon will be created at installation. Double-clicking on this icon will launch the NATMAP Raster Viewer. Please note that a desktop icon will not be created on some network systems with restricted security privileges for users.

Using the Raster Configurator

Configurator overview

Warning: incorrect use of this tool may render the NATMAP Raster Viewer inoperative. Please spend time reading and understanding these instructions before making modifications to the default configuration.

NATMAP Raster Viewer can view maps and layers located in different places - on different CDs, on your computer's hard drive, or on a shared computer through a network. When you install the NATMAP Raster software, the Viewer will only search for maps in one of the above locations (which one depends upon from where you ran the Setup program and whether you have installed the Viewer from the Mapsheets or Mosaic products).

The Configurator is a tool that helps you manage where your maps and layers are located, and tells the Viewer where to look for maps to load. This is especially useful when you have moved the location of your maps (for example copying some maps from the CD to your hard drive).

You can use the Configurator to:

- search for maps in more than one location
- add search paths for new layers
- change a search path for a layer.

The viewer searches for a required map data file in the order and location specified by each element of the search path until the required map data file is found or the search path is exhausted. The default configuration provides only one element in the search path. Hence, map data can only be found in one location. Adding a new element to the search path for a particular map series will configure the viewer to look in two or more locations. The configurator provides the ability view, change, add, re-order and delete map search paths for each map series, and for each release version of the viewer software.

Administrators of computer networks or XP machines should read this important notice on using the Configurator over a computer network with restricted administrative privileges for users.

I've changed the location of my maps, or added a new location, using the Configurator. The changes don't appear in the Viewer.

If you make changes in the Configurator, make sure you have closed the Viewer so that changes will update properly. As the Viewer runs in an Internet Explorer window, any changes you make to map layers will not be re/freshed in the window. The Viewer needs to be closed and restarted for changes to be activated.

Check that you have selected the correct folder.

Running Raster Viewer Configurator

The NATMAP RASTER VIEWER Configurator is automatically installed when you install the NATMAP RASTER VIEWER.

You can run the Configurator from the Start menu by selecting Programs > NATMAP RASTER VIEWER > Raster Viewer Configurator. Or, using Windows Explorer, you can double click on the **RasterViewerConfigurator.exe** file located in the Tools directory of the path to which NATMAP RASTER VIEWER was installed.

The Raster Viewer Configurator program will start and you will be presented with the main window:

- Adding a search path for a map layer
- Removing a search path for a map layer
- Modifying a search path

Selecting Maps Using the Raster Viewer

 Search by Index Map

The Index Map is an intuitive way to locate a particular map, allowing you to simply browse to a region of Australia and load the corresponding map.

When the Index Map is first activated the screen displays an image of Australia with a grid detailing how it is broken up into map sheets. The following image shows an example of this screen.

The index map can be zoomed and panned using the tools shown on the top left side of the index map frame. The operation of the map viewer tools is described in Moving around a map.

To select a particular map, use the panning tool (hand) or zooming tool (magnifying glass) to pan and zoom the map. (For help using the map display tools, see Moving around a map). Once you are satisfied that you can see the feature you're looking for, or the grid lines are clear enough to place the mouse within the rectangle for the desired map, then select the arrow tool and click the mouse in that region. At the bottom right of the index map page, the name and number of the map corresponding to the location selected is displayed.

The following image shows the display after clicking on Albany in Western Australia.
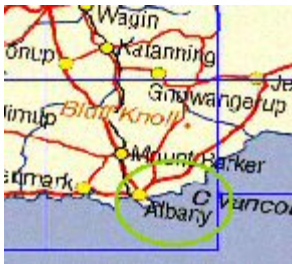
Currently selected map is: MOUNT BARKER SPECIAL ED1 - 1994 SI50-11 Load

To view this map click the **Load** button.

In order to improve image clarity, the index map used in NATMAP Raster 2003 does not show 1:100 000 scale maps.

Why do the lines showing the 1:250 000 scale map boundaries disappear?

Depending upon the scale the Index Map is zoomed to, some of the map boundary lines may disappear. This is due to the Viewer resampling the image in order to fit the area you've zoomed to onto your monitor. As the lines are only a few pixels wide, sometimes they are not resampled. If you change your zoom scale slightly, the lines will reappear.

Viewing Maps using the NATMAP Raster Viewer

Viewing a map - Overview

The following image shows the appearance of the **view a map** screen.

The screen contains windows, buttons and text boxes. This section provides an overview of the screen. Subsequent sections provide more detail about each button, text box, etc.

The screen is divided into two broad areas: the right pane that displays the map, and the left pane that contains controls. These are called the *map pane* and the *tools pane* respectively.

The map pane contains:

- the main image of the map
- a blue cross hair that marks the centre point of the map
- two overlay windows: the *Locator window* and the *Magnifier window*
  (the three other overlay and popup windows - Map Information, Legend, and Climate - are not shown in the example). More information about these windows is available in the Map Windows page
- the current map name and sheet number displayed at the top right of the screen for the appropriate layer you are viewing. Note that the Satellite Image layer in the Mosaic displays the 1:250 000 scale map name and number
- the icons for the pan, zoom, click-pan, and zoom-to-extents tools at the top left of the screen.

The tools pane is split into vertical sections.

At the top is the *select-a-map* graphic that allows you to return to the Select Map mode.

In the middle of the left pan are a series of buttons and text boxes. From top to bottom these are:

- buttons to show or hide the locator, magnifier or map information window, and the centre marker
- buttons that select the type of position information: latitude/longitude or grid; its format: decimal degrees or degrees/minutes/seconds; and the datum for the co-ordinate system: GDA or AGD for lat/long, MGA or AMG for grid
- text boxes to display the position information
- buttons to export or print the entire map or the current map view.

To maximise the clarity of the map, check that you have optimised your screen colour settings. You should also refer to the note on image clarity for other tips on improving the display of the map.

 The Map Pane toggle button

The fraction of the screen used by map image can be increased by hiding the left pane. To hide the left pane of the map screen, click on the icon at the top left side of the map screen.

The icon acts as a toggle: one click hides the left pane. Another click un-hides the left pane.

Moving around a map

At the top left side of the map pane are four buttons with icons. These buttons are used to select particular modes. When the cursor is over the map display area, its shape is determined by which mode has been selected.

 The Zoom to Extents tool

The **Zoom to Extents** button will cause the map to be redisplayed showing its full extents. The map sheet will fill the map display window.

 The Hand-Pan Tool

Clicking on this tool selects **Hand-Pan** mode. To pan the map, place the mouse over the map, press and hold down the left mouse button. Drag the mouse in the direction you wish the map to pan. To complete the pan, release the left mouse button.

Notes

- It is possible to drag the map completely off the screen. To relocate the map into the viewable area, use the Zoom to Extents button described below
- This tool only allows panning on a single map sheet. To move to another map sheet, use the click-pan method described below, or select the desired map using the select map methods.

You can switch from Pan mode to Zoom mode temporarily by pressing both the left and right mouse buttons simultaneously, or by pressing the shift key followed by the left mouse button.

 The Zoom Tool

Clicking on this tool selects **Zoom** mode. To increase the zoom of the map, place the mouse over the map and press and hold down the left mouse button. Move the icon towards the bottom of the screen. As the mouse moves the map will zoom. When the map has been zoomed enough, release the mouse button. The map will now refresh itself and show greater detail. There may be a short pause as additional image data is read from the CD and decompressed. To zoom out drag the icon towards the top of the screen.

Note that even in zoom mode, the map will recentre onto the position you clicked.

You can switch from Zoom mode to Pan mode temporarily by pressing both the left and right mouse buttons simultaneously, or by pressing the shift key followed by the left mouse button.

This style of Zoom tool is standard to all ER Mapper applications. No Zoom Box tool, which is the more common style of Zoom tool used in Windows applications, is available as yet with the standard ER Mapper software developers kit which was used in developing the NATMAP Raster Viewer. At some point in the future ER Mapper may include the Zoom Box tool in their software developers kit, in which case it will be added to the NATMAP Raster Viewer.

 Click-Pan and panning from map to map

Clicking on this icon selects **Pointer** mode, which is used to:

- obtain the position of locations on the map
- click-pan mode.

In **Click-Pan** mode, clicking on the map will cause the map to be panned so that the clicked point is now the centre of the map (as indicated by the blue cross hair).

In Mapsheets, if you click on a point that is beyond the edges of the current map region then a new map will be loaded that contains the clicked location. The new map will be at the same zoom level as the previous view and will be centred on the clicked point. There is no difference between the Click-Pan tool and the Hand-Pan tool for Mosaic images, as there is only one image to be loaded.

Click-Pan is intended to make it easy to pan the map to follow a feature such as a road or river. Simply click on a point on the road or river you wish to follow and the map will be centred over the clicked position. For Mapsheets layers, if the river or road moves off the current map simply click on the blank spot next to the current map and the neighbouring map will be loaded in the position that you clicked.

Click-Pan is also provided by the Locator and Magnifier windows. Clicking on the maps within the Magnifier and Locator windows causes the map that matches the clicked point's location to be loaded in the main map view, centred on the clicked point. In this way the magnifier and locator windows can be used to select and load a new map.

How to access on-line and help documents

In the bottom left-hand corner of your screen, there are four links to on-line and help documents:

	Clicking on the BASIC HELP text will open a new window with the Quick Help Guide. This page contains an overview of basic searching and viewing tools.
	Clicking on the USER GUIDE text will open a new window with this User Guide.
	Clicking on the BUY MAP text will open a new window which links to the on-line NATMAP Retailers page on the Geoscience Australia website. You can find your nearest NATMAP retailer using this tool. You will need an Internet connection for this tool to work.
	Clicking on the NATMAP logo will take you to the Geoscience Australia web site. You will need an Internet connection for this tool to work.

Viewing Maps Using the NATMAP Raster Viewer

Coordinate display

For more information on the coordinate systems used in NATMAP Raster 2003, please refer to the Coordinate Systems section.

Whenever the map is panned (either using the pan tool, or using click-pan) the co-ordinates of the centre point of the map are displayed on the left pane as shown in the following image:

The type and format of the location displayed depends on the values of the buttons immediately above the location values. Locations can be display as either latitude/longitude or as grid.

Latitude and Longitude Coordinates

To display the centre location in latitude and longitude click the 'LAT/LONG' button. Values can be displayed in either decimal degrees (as shown in the example above) or Degrees, Minutes and Seconds, eg. Lat: 32° 26' 12" S, Long: 148° 35' 54" E. The reference datum for the latitude and longitude can be selected as either Geocentric Datum of Australia (GDA) or Australian Geodetic Datum (AGD). Using the mouse, simply left click on the appropriate button to select the format you require. Latitudes and longitudes referenced to GDA are directly compatible values from GPS receivers.

Grid Coordinates

To display the centre location in grid coordinates click the 'GRID' button. This will hide the latitude and longitude and display the current position in Easting/Northing/Zone format. The reference datum for the Easting and Northing can be selected as either Map Grid of Australia (MGA) or Australian Map Grid (AMG). Simply click on the appropriate button to select the format you require. Note that MGA is the default reference datum for grid coordinates. The Decimal and DEG buttons are disabled when in Grid mode as they are irrelevant.

The image below illustrates the centre coordinates displayed in grid mode.

Note on disabled buttons: When in GRID mode, you will not be able to select the DECIMAL or DEG buttons as they are disabled, although a tool tip will still appear when you hover the mouse over the button. You need to select LAT/LONG mode first, and then select either DECIMAL or DEG.

About NATMAP Raster

- Versions
- Components
- Map Layers
- Coordinates
- Creation Process
- Map Image Specifications

Versions

2003 - Mapsheets and Mosaic

In 2003 two versions of NATMAP Raster were released. The differences are outlined below.

- **Mapsheets**: all 513 1:250 000 scale NATMAPs plus three map insets are included as separate ECW files. The 1:250 000 scale maps use the Map Grid of Australia as their projection, meaning that the coordinates of the maps are measured in metres and the maps can be used for measuring distances and areas. Pixel size is 31.75m
- **Mosaic**: all 513 1:250 000 scale NATMAPs plus three map insets are joined together in one ECW file. The coordinates are latitude/longitude, which are ideal for interfacing with GPS software, but are not suitable for measuring distances or areas. The pixel size in metres varies depending where you are in Australia. Mosaic also includes a single map image of all 1:1 million NATMAPs and a Landsat Satellite Image Mosaic of Australia, both of which use latitude/longitude coordinates.

More information on coordinate systems and why the different products are suited to different applications is found in the Coordinate Systems.

Updated features for 2003
- Inclusion of over **150 new maps**
- All 1:250 000 scale maps are created to the same specification (i.e. have the same look and feel)
- Mosaic version - all 1:250 000 scale NATMAPs joined together into one image
- Inclusion of 1:1 million and Landsat satellite imagery (Mosaic only)
- Popup windows for legend and climate graphs
- More comprehensive User Guide, troubleshooting and Basic Help.

Features retained in 2003 from 2002
- Updated maps from 2002
- Image resolution of 200dpi
- Access to grid coordinates
- Improved georeferencing
- Raster Viewer Configurator tool
- Bulk exporting
- Available on Windows 95, 98, 2000, XP, Me or NT4
- User interface via IEv5.5 or higher
- Map loading via latitude and longitude
- Panning from map to map
- Finding the latitude and longitude coordinates of a point on the map
- Printing the entire map or the current view
- Exporting the entire map or current view; JPEG, BMP, PNG, TIFF and GeoTIFF image formats are supported
- Online help file that can be read on screen or printed as needed.

All other components in the two products are the same as in previous versions.

Are upgrades available?

At this stage no - if you want updated maps and/or Viewing software, you need to buy the new version.

Previous releases

Name and Version	Released	Images	Cell Size	CDs	Production Method	Coords
AUSLIG GEODATA Raster-250K v1.0	May 97	LZW compressed 8-bit TIFF	150dpi	7	Scanned	None
AUSLIG GEODATA Raster-250K 2000 v1.1	Oct 00	ECW with exporter	150dpi	2	Scanned Geocoded	Lat/long AGD66
AUSLIG GEODATA Raster-250K 2000 Release 2 v1.2	Jul 01	ECW with exporter	150dpi	2	Scanned Geocoded	Lat/long AGD66
NATMAP Raster 250K Mapsheets 2002 v1.3	Sep 02	ECW with exporter	200dpi	2	EPS graphics file conversion (70%) Scanned (30%) All images rectified	Easting & Northing; MGA Zone number
NATMAP Raster Mapsheets v1.4 - 2003 Edition	Sep 03	ECW with exporter	200dpi	2	EPS graphics file conversion All images rectified	Easting & Northing; MGA Zone number
NATMAP Raster Mosaic v1.4 - 2003 Edition	Sep 03	ECW with exporter	200dpi	2	EPS graphics file conversion All images rectified	Lat/long GDA94

Product components

NATMAP Raster products are made up of the following components:

- this Product User Guide and associated documentation
- **digital map images (*.ecw format)**. These are organised into **layers**, with each layer equivalent to a specific map series, scale or product. The number of map images you receive will depend upon which particular NATMAP Raster product you have purchased. Further information on the images that make up each layer may be found in Map Layers and Image Specifications
- **software for viewing, exporting and data management**. The NATMAP RASTER VIEWER is the software in this package that is used for selecting and viewing maps. The stand-alone RASTER EXPORTER can be used to export the ECW map images into other graphic formats such as GeoTIFF, TIFF, JPEG, Windows Bitmap and PNG. The RASTER CONFIGURATOR allows you to manage where your maps are stored, so you are not restricted to storing all maps in the one location.

Map layers

Landsat 7 Satellite Image of Australia (Mosaic only)

Layer ID in the Raster Viewer: "Satellite Mosaic"

The Landsat 7 Picture Mosaic of Australia was produced by the Australian Greenhouse Office (AGO) as part of their National Carbon Accounting System. The mosaic is comprised of 369 individual Landsat satellite scenes acquired between July 1999 and September 2000. For more information on the Landsat 7 satellite, refer to the Satellite Remote Sensing pages on the Geoscience Australia website.

1:250 000 scale topographic map series (Mapsheets and Mosaic)

Layer ID in the Raster Viewer: "250K Maps" (Mapsheets); "250K Mosaic" (Mosaic)

The NATMAP 1:250 000 scale maps included in this NATMAP Raster product have been produced by Geoscience Australia's National Mapping Division and its predecessor, the Australian Surveying and Land Information Group (AUSLIG), in conjunction with the private sector. This is the largest scale at which published topographic maps cover the entire continent. The maps have been revised using a variety of data sources, including SPOT and Landsat satellite imagery, other government agency information, and data supplied by private companies and individuals. Production of the new NATMAP series began in the early 1990s, and concluded in 2003.

For more information, please refer to the 1:250 000 scale NATMAP legend explanation. Additional information on map specifications, new maps and the current status of NATMAP revision can be found on the Topographic Mapping pages on the Geoscience Australia website.

1:1 million scale topographic map series (Mosaic only)

Layer ID in the Raster Viewer: "1M Mosaic"

The International Map of the World (IMW) Australia series was Australia's contribution to a common effort by many international mapping agencies to map the world at 1:1 million scale. It was initially conceived for planning economic development but has been used as the basis for many other maps including aeronautical charts and thematic mapping. The series was completed in 1978 and was revised regularly until the mid-1980s.

Small scale reference maps (Mapsheets and Mosaic)

Layer ID in the Raster Viewer: "5M Map"

The smaller scale general reference maps provide a general overview of Australia, but still contain similar information to the larger scale maps. These maps have been regularly revised since the mid-1990s, and revision information is sourced from the same sources as the 1:250 000 scale maps. The Locator map used here is derived from GEODATA TOPO-10M, which is freely available from the Geoscience Australia website. The 1:5 million scale General Reference Map of Australia is used for the 5M Map layer and the Magnifier map.

Topographic Map Index (Mapsheets and Mosaic)

The NATMAP Map Index shows which maps cover which areas. The version of the NATMAP Map Index used in NATMAP Raster is slightly different from the printed version. The version included here does not show 1:100 000 scale maps and combines the 1:1 million and 1:250 000 scale maps into the one map in order to make viewing easier. The 1:9 million Compact Reference Map has been used as a base.

Coordinate systems

Information on coordinate systems can be found in the coordinate system pages.

Creation process

The images used in this version of NATMAP Raster are derived from the most current edition of the respective maps available from Geoscience Australia's Map Sales as at August 2003. full list of the currency of all layers and individual maps in the NATMAP Raster product is included in this User Guide.

"Raw" raster images were created from the digital EPS files used to produce the new NATMAP paper map series. Where digital EPS files were not available, the paper map was scanned to generate the "raw" raster images. Each "raw" raster image was transformed to be positionally accurate and encoded with coordinates and projection information before being compressed in the final ECW image.

Why are some maps marked with an asterisk (*) in the drop-down menus and in the Map Currency list?

The content of some 1:250 000 scale maps may differ from the printed map. Maps marked with an asterisk (*) after the edition number in any drop-down menu have been created from digital data that has not fully met NATMAP specifications; however, the content and structure of these maps are close enough to final specifications

to be included in this product. Maps covering Tasmania have been produced from digital data; however, printed versions of these maps are not yet available.

Maps which may differ from the final printed version are:

- SD51-12 MONTAGUE SOUND SPECIAL
- SD51-16 PRINCE REGENT
- SE52-11 BININDUDU
- SE52-14 BILLILUNA
- SF51-06 PATTERSON RANGE
- SF51-07 SAHARA
- SF51-11 TABLETOP
- SF51-14 GUNANYA
- SF52-01 CORNISH
- SF52-02 LUCAS
- SF52-06 STANSMORE
- SK55-20 TASMANIA NORTH-WEST (including KING ISLAND)
- SK55-21 TASMANIA NORTH-EAST
- SK55-22 TASMANIA SOUTH-WEST
- SK55-23 TASMANIA SOUTH-EAST

Why are some features not shown on 1:250 000 scale NATMAPs?

Some features on maps, especially small scale maps, are subject to what is known as *cartographic generalisation*. It refers to a group of techniques used by map makers which allow the level of information to be retained, while the amount of data shown on the map is reduced.

These techniques include:

- pre-selection
- reshaping or smoothing lines
- removing small features
- aggregating many small features into a few large features, eg showing a group of buildings as a single building
- selecting certain features that maintain an overall shape, eg reducing the number of streams in a stream network without losing the overall pattern of drainage
- enlarging important features which may otherwise be too small to show
- moving features relative to each other *(displacement)*.

More on displacement

Features may be located on the earth's surface in such a way that they cannot be separated at the scale of the map. To make sure that the map is readable, one feature is kept in its true position, and the rest are displaced.

In NATMAPs, the following features may be displaced when one or more are adjacent.

The higher a feature is on the list, the more likely that it has been held in the correct position over those lower on the list.

- hydrographic lines such as coastlines, watercourses and lakes
- railways
- principal roads
- secondary roads
- minor roads
- tracks
- buildings
- vegetation boundaries.

If two features need to be offset to one another and neither is listed, the position of the feature with greater landmark value will be maintained.

For example, if a railway and road are coincident at the scale being produced, the road would be displaced. Where two or three features are close and adjacent, one may be displaced by up to 225 metres at 1:250 000 scale. In

the worst case when all these features are close together, one may be displaced by up to 675 metres at 1:250 000 scale. However, any features that have been displaced must maintain their relative position. See the picture below.

This extract from the Wangaratta 1:250 000 scale NATMAP (SJ55-02) shows displacement of the Murray Valley Highway from its true position. The blue line is a GPS track showing the highway's true position, but the highway, railway and the Hume Freeway (red/yellow double line) have all been displaced for clarity. Compare this to the Landsat 7 ETM+ satellite image of the same area, where you cannot clearly distinguish between the three features. The relative position of the highway, the railway and the freeway have been maintained.

Generalisation is not a completely automatic process and some human judgement is required. Decisions are usually based upon the significance of the feature at the scale of the map being produced, how many other similar features there are nearby, and the purpose of the map itself.

One major impact of generalisation is when using maps with global positioning systems (GPS). When a GPS track is overlaid on a map, the track may not match the road as it is shown on the map because of the displacement described above. This isn't an error in the position of the road as such, but one of the consequences of trying to make a map clear and readable.

Feature Masking

To make printing easier many features do not mask out other features. For example, if you have a close look at any of the new NATMAPs you would see that most rivers can be seen "underneath" or "on top of" the roads. The digital process used to manufacture the map images in NATMAP Raster can only show one layer in each pixel of the image, hence some features will be masked. The order in which the layering occurs is fixed, and in some maps may have produced some illogical results or effects that will not appear on the paper map. Significant illogical effects (such as canals covering roads) have been edited but may be incomplete.

Map Rotation in the Mapsheets product

The map images in Mapsheets appear tilted because they are georeferenced to the Map Grid of Australia (MGA).

Each map's boundaries are based on latitude and longitude, but these boundaries do not always correspond to MGA gridlines. In order to match the map image to MGA, the image has to be rotated and stretched. Note that the blue MGA gridlines on the map are orientated vertically and horizontally in the Viewer, whilst lines of latitude and longitude will be shown at an angle.

Join lines

The Landsat Satellite image is made up of 369 individual images, or scenes. Most of these scenes are cloud free, and in order to achieve this images were taken at different times of the year. Whilst every effort is made to colour match the images, in some cases image matching is not perfect because of differences in ground conditions or time of year that the images were taken.

Join lines will be visible in the 1:1 million scale Mosaic as individual maps in this image were made to different sets of specifications.

Bleed edges/overlaps

New NATMAPs are produced with what is known as a *bleed edge*. This is the overlap area along the top and right-hand side of the map which allows a map user to overlay neighbouring maps easily. These edges remain in the maps in the Mapsheets product, but have been removed in the Mosaic product. This was decided upon to reduce processing time and the likelihood of features and text being cut off, and improve joining. In some cases, this may mean that slightly older information has been retained in these areas; however, this has only occurred in a handful of places around the country.

Note on improving image clarity

The map images in NATMAP Raster have been compressed. Images that are compressed are like files that have been "zipped" - information has been removed from the image using a particular technique or algorithm to reduce the file size.

Depending upon the compression technique, some information may be lost from the image altogether when it is compressed. This is called *lossy* compression. ECW, JPEG and MrSID are common lossy compression techniques. LZW is a *lossless* compression (i.e. information is not lost when an image is compressed); however, file sizes are not reduced as much.

The images in this product use ECW compression. This will mean that some features will lose some of their clarity; in particular, very thin lines such as tracks and watercourses may become blurry. Colours may also not be uniform within areas (e.g. forest areas shown as green on the paper map may, on the image, contain traces of other colours). These effects are called *artefacts*.

The resolution or cell size of an image also affects its clarity. Map images with a resolution of 150 dots per inch (dpi) will not be as clear as maps with 200 or 300dpi as there are less pixels in each image. As a result, text or other features in map images with lower resolutions will appear pixellated or blocky.

Other factors affecting image clarity include your monitor specifications, the software being used to view the map images (if not using the Raster Viewer), and the the zoom scale. If viewing in other software packages often there is an option to "zoom to raster resolution"; this zoom level will give the clearest view of the image. Zooming in too far will cause pixellation and artefacts will appear to be very significant; clarity is also reduced if zooming out too far. For best results, you should set your zoom to around the same level as if you were looking at the paper map version at

Whilst every effort has been made to minimise the number and extent of artefacts within each map image, users should be aware that artefacts exist as a result of fitting all of the NATMAP 1:250 000 scale maps onto 2 CDs at an affordable price. The map images in this product are not intended to be exact replicas of the paper map in terms of quality, but do contain the same information as shown on the paper version.

The number of artefacts may be minimised by exporting the map image to TIFF or GeoTIFF; however, these will produce very large file sizes and will not remove all artefacts, and cannot be viewed using the Raster Viewer. For more information, refer to the FAQ on the size of exported files.

Map image specifications

File Naming Convention: all images in the 250K Sheet layer in the Mapsheets product are named to the corresponding six digit NATMAP 250K map number. Where a map does not have a NATMAP 250K map number, such as North West Tasmania, a number was created for that tile. Mosaic or individual map images are named according to scale; that is 250K.ecw, 1M.ecw, 5M.ecw, 20M.ecw. The Landsat 7 satellite image mosaic of Australia is named ls7_mosaic.ecw

Positional Accuracy: each identifiable coordinate pixel should be within 4 pixels of the calculated position. The production of maps involves cartographic generalisation of features which adds additional inaccuracies into the images. A full listing is below.

Dataset	Image Resolution	Positional Accuracy
250K Sheets (Mapsheets only)	32m	127m

250K Mosaic (Mosaic only)	0.00033 degrees	0.0012 degrees
1M Mosaic (Mosaic only)	0.00116 degrees	0.0047 degrees
5M Sheet	0.0056 degrees	0.022 degrees
20M	0.024 degrees	0.096 degrees
Satellite Mosaic (Mosaic only)	0.00045 degrees (approx 50m)	0.0018 degrees

Note: the size of a pixel in metres for any of the Mosaic layers varies with the degree of latitude.

Location	250K	1M	5M	20M	Satellite
Torres Strait (Qld)	35m	127m	615m	2.6km	44m
Darwin (NT), Weipa (Qld)	35m	126m	610m	2.6km	44m
Cairns (Qld), the Kimberleys (WA)	34m	124m	600m	2.5km	43m
Townsville (Qld), Tennant Creek (NT), Port Hedland (WA)	33m	121m	586m	2.5km	42m
Rockhampton (Qld), Alice Springs (NT), Carnavon (WA)	32m	118m	570m	2.4km	41m
Brisbane (Qld), Oodnadatta (SA), Leonora (WA), Geraldton (WA)	31m	114m	551m	2.3km	39m
Newcastle (NSW), Broken Hill (NSW), Port Augusta (SA), Perth (WA)	30m	109m	530m	2.2km	38m
Adelaide (SA), Albury (NSW)	29m	104m	505m	2.1km	36m
King Island (Tas)	27m	99m	478m	2.0km	34m
Hobart (Tas)	26m	93m	450m	1.9km	32m

Coordinate System: Refer to the Coordinate Systems pages.

Currency: Refer to the map currency pages for the reliability dates for each standard map sheet area.

Legends:

1:250 000 scale [JPEG image, 71KB]
Expanded 1:250 000 scale
1:1 million scale [JPEG image, 64KB]
1:5 million scale [JPEG image, 26KB]
Landsat Satellite Image Mosaic of Australia [JPEG image, 20KB]
Gazetteer of Australia (used in Place Name Search)

CD layout

Your NATMAP Raster product is organised on the CDs as follows:

	CD1	CD2
Mapsheets	Maps for WA and NT 1:5 million map* 1:20 million map* Map Index* Raster Viewer Software and installation files User Guide	Maps for Qld, NSW, Vic, SA, ACT and Tas.
	1:1 million scale map mosaic	1:250 000 scale map mosaic

Mosaic	Landsat Satellite Image 1:5 million map* 1:20 million map* Map Index* Raster Viewer Software and installation files User Guide

Maps labelled * are part of the installation files, and become usable upon installation to your hard drive where they are visible in your chosen installation directory.

The maps (except for those labelled * in the table above) are stored in the **Rasters** folder on both CDs in both products. Within this folder is another folder which will be named with the appropriate layer name. See the table below.

	CD1	CD2
Mapsheets	**Rasters** > 250K-Sheets > cd1	**Rasters** > 250K-Sheets > cd2
Mosaic	**Rasters** > 1M-Mosaic > cd1 **Rasters** > Satellite-Mosaic > cd1	**Rasters** > 250K-Mosaic > cd2

The Raster Configurator

Modifying the order of your search paths

1. Select Raster Viewer Version to change (most users will only have one version, the current one).
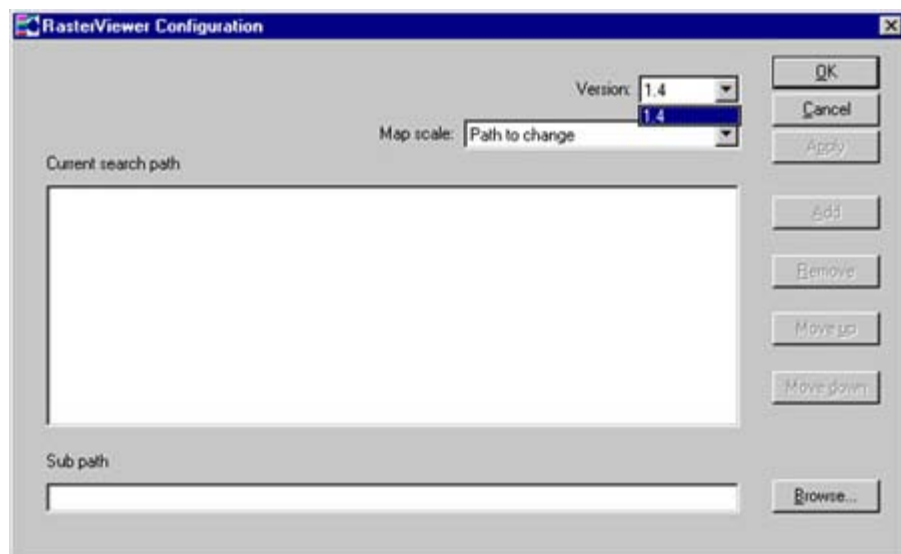
2. Select the map series whose path you wish to change.
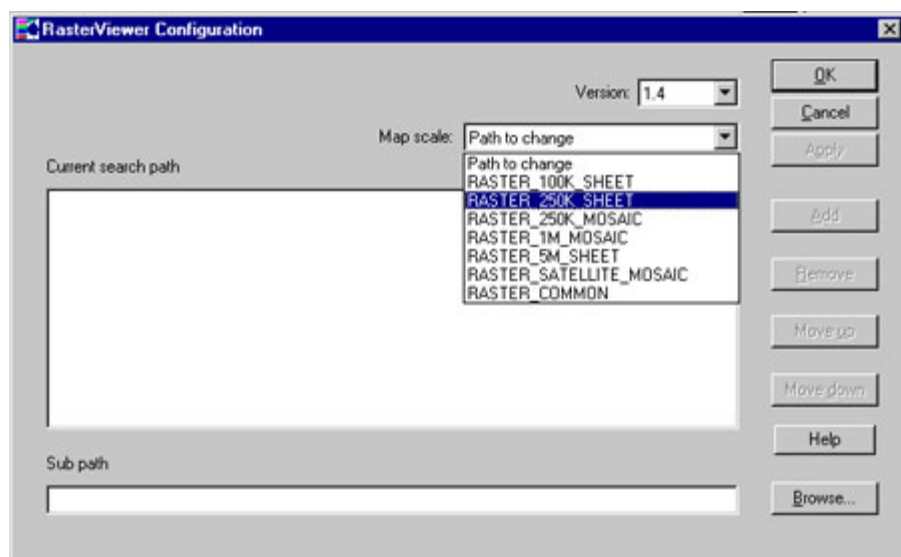
3. Click on the search path whose order you wish to modify.

4. Click the 'Move Up' button to move the search path up in the list, or Click the 'Move Down' button to move the search path lower in the list.

5. Click the 'Apply' button to save these changes.

Important note when adding or modifying a search path

When you add (or modify) a search path, you need to select the folder **above** the folders containing the maps. The Configurator works by using information in a file in this location, rather than by pointing directly to the 'cd1' or 'cd2' folders.

Viewing Maps Using the NATMAP Raster Viewer

Other map windows

All map windows described here can be turned on and off using the Map Window control buttons.

Locator and Magnifier Overlay Windows

The Locator and Magnifier windows provide a convenient indication of the location of the current map in relation to Australia, and the region surrounding the current location. The Locator window displays a map of Australia, with a blue cross hair marking the centre point of the current location of the viewed map. The Magnifier window displays a magnified view of the current location.

These windows can be repositioned simply by holding the left mouse button down over the window's title bar and dragging the window to a new position by moving the mouse, then releasing the mouse button. The windows can be closed by either clicking the X in the top right corner of the window; or by clicking on the Show Locator button to close the locator, on the Show Magnifier button to close the magnifier, or on the Show Info button to close the Map Information window.

Clicking on the maps within the Magnifier and Locator windows causes the map that matches the clicked point's location to be loaded in the main map view. In this way the magnifier and locator may be used to search and load a map. Note that the magnifier and locator maps cannot be panned or zoomed.

Map Information Window

The Map Information window lists the map name, NATMAP map number and datum; the spheroidal distances in the N-S and E-W directions on the part of the map displayed on screen (in kilometres); and the top left and bottom right coordinates (lat/long and easting/northing) of the part of the map displayed on screen. Changing the zoom level will affect the spheroidal distances and the coordinate values shown in the Map Information window.

Note on distance measurement

In the 2003 release, there is no separate distance measuring tool. It may be included in future releases. You can use the distances in the Map Information window as a start, and there are distance measuring tools in many other freely available and commercial GIS, CAD, graphics and GPS products that will read NATMAP Raster map images.

Note: It is possible for these three windows to be dragged entirely off the screen. If this happens, simply press the Show button twice. This will reposition the matching window so that it is partially visible on the right side of the screen.

The Legend Window

The Legend window shows the legend for the map series currently being displayed. For 1:250 000 scale map images, there is also an option to view an expanded legend which explains the definition of features and the criteria used to determine whether a feature should be shown on the map.

The Show Climate graph Window

The Show Climate graph window shows the climate graph for the map currently being displayed. It uses the climate graph that would normally appear in the marginalia of the 1:250 000 scale NATMAP.

There will be either one or two Climate Graphs appearing in the popup window depending on the geographic location of the sheet. Those maps representing areas subject to different regional climatic variations will have two graphs.

The bottom of the graph is divided into squares representing each month. Temperature is measured along the left axis, and rainfall on the right.

The average maximum and minimum temperatures for each month are shown as two curved lines separated by a red band. Average rainfall is represented by a single blue line.

Climate graphs will only be displayed for 250K Maps, 250K Mosaic and the Satellite Mosaic layers. Some 1:250 000 scale maps do not have climate graphs available as at time of release - if you select a climate graph for one of these maps, the following graph will appear in the Show Climate window:
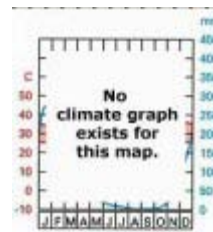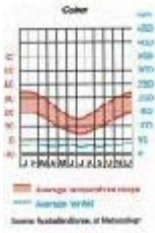
Please note that there is a minor bug in this function - a workaround is now available..

Viewing Maps Using the NATMAP Raster Viewer

Export entire map or current view

EXPORT ENTIRE MAP

EXPORT CURRENT VIEW

This option allows you to save either the entire current map sheet or the current map view as an image file. A range of image formats are supported: JPEG, BMP, PNG, TIFF and GeoTIFF. You may also export to ECW format when exporting the current view (however there is a bug with ECW exporting). Selecting Export Current View will save only the portion of the map that is currently visible.

1. To export an image, click on the appropriate button in the left hand side panel
2. You will be presented with a standard Save As window where you can enter the name of the image file you wish to create, and select the format in which the image is to be saved. For example :
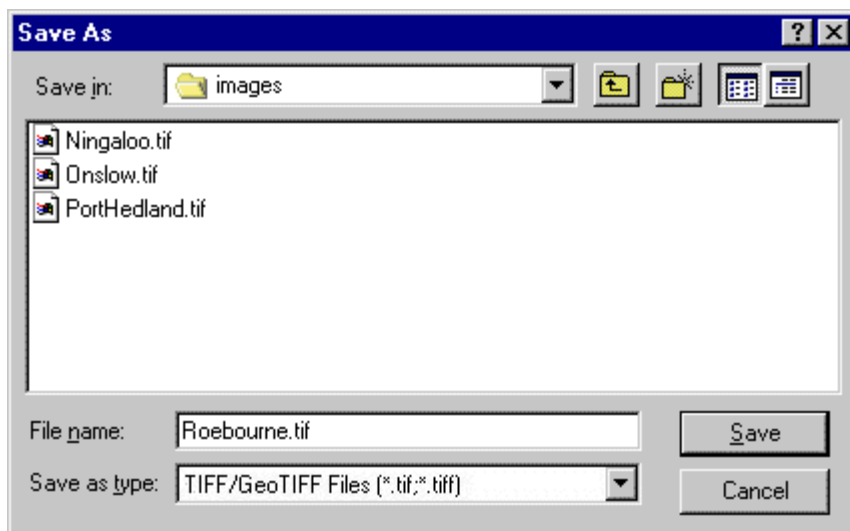
Once you have entered the name of the image you want to create and selected the type of file, click on the Save button.

3. If the image is being saved in TIFF format you will be presented with the following window asking you to select either TIFF format or GeoTIFF format, and whether you wish to use LZW compression.
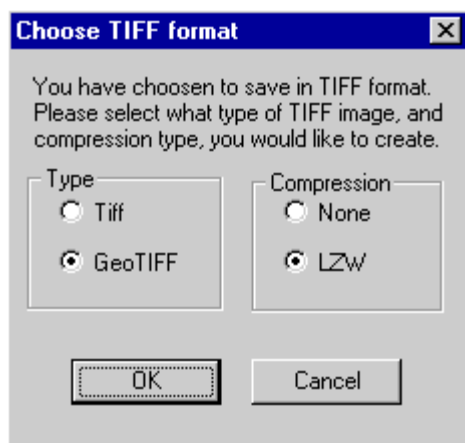
Select which TIFF format and compression you require and click on OK.

4. You will then be presented with a window asking for the required resolution of the output image.
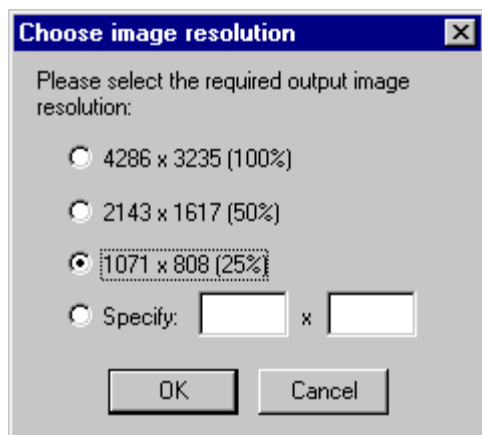
Select or enter the output resolution you require and click on OK. Depending upon the size of the image, you may get a warning pop-up (see below).

Limitations on exporting

If you are exporting an entire image from the Mapsheets product or a large region from the Mosaic product, maintaining the original resolution (100%) will require significant amounts of memory (~40MB) and may take over 30 minutes to complete. Also, depending on the output format, very large image files (30 to 100MB) may be produced.

You also cannot export areas that are larger than about 10000x10000 pixels - the actual figure depends upon your computer. Computers with very large RAMs may be able to export slightly larger files than this. If you attempt to export an area larger than this figure, you will get the following warning message:

You may also get a virtual memory warning as well as this error.

In general, exporting areas of this size is done most reliably with TIFF/GeoTIFF format - exporting to other formats at this size may crash your system.

Exporting the current view as an ECW file has a 700MB output limit.

If you want to export larger areas than this, you will either need to export smaller areas and join them together, or use other software. (Free software such as ER Viewer is available from the Downloads page on the ER Mapper website.)

Note on exporting high resolution map images

NATMAP Raster map images have a resolution of 200dpi. (The size of a pixel on the ground in metres varies with your location in Australia.) This resolution was chosen as a compromise between image quality and size so that all map images could fit onto 2 CDs.

The RasterExport and RasterConvert utilities can export map images up to 100% of their original size. These utilities cannot increase the resolution of the output image and any compression artefacts existing in the ECW file will also exist in any exported file.

A user could increase the resolution of an exported image in another software package; however, this would just produce a very big file with no improvement in image quality.

If you want to produce a higher resolution image, then you should contact the Copyright officer.

About NATMAP Raster

Coordinate systems

Overview of coordinate systems

Coordinates are numbers which describe the position of a point. These numbers are always given relative to a system of lines or angles ("coordinate system"). There are two main types of coordinate systems used in mapping:

Geographic coordinate systems. Position is defined by angles measured from the centre of the earth and is usually measured in degrees. This is ideal for measuring position on a globe.

Latitude is the angle measured north or south from the Equator. East-west lines have the same latitude. Lines of latitude are always parallel.

Longitude is the angle measured east or west from an imaginary north-south line - often a line called the Greenwich meridian is used which passes through the Greenwich observatory east of London. Lines of longitude are called meridians. All meridians meet at the North and South Poles.
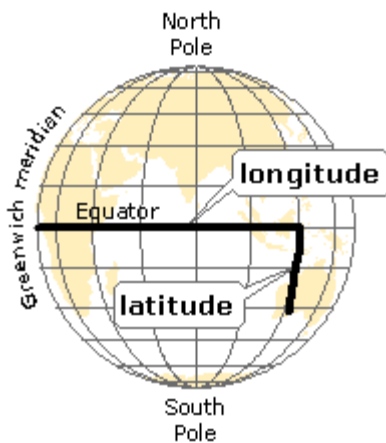
The closer you get to the Poles (i.e. the larger the latitude value), the distance between meridians gets closer and closer. This means that one degree of longitude actually represents a smaller distance the closer to the Poles you are. For example, at the latitude of Darwin (about 12 degrees S), one degree of longitude is about 106km, but at Hobart (about 43 degrees S), one degree of longitude is only 79km. In the diagram below, the red line at Darwin is longer than the blue line at Hobart, yet they both measure 10 degrees of longitude.
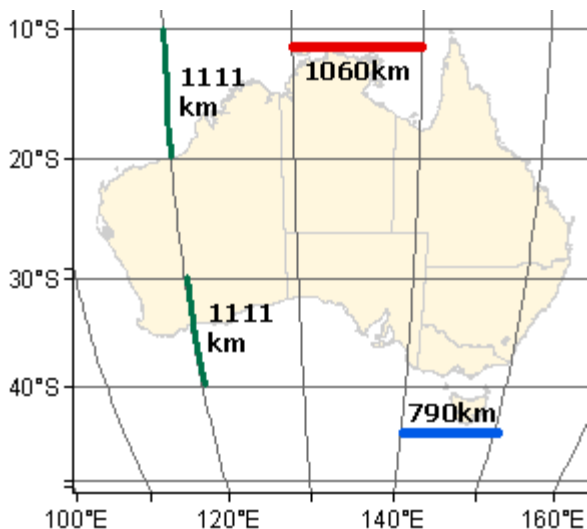
Note that one degree of latitude is basically the same no matter where you are on the Earth (depending upon the type of datum you are using as the basis for your coordinate system).

Cartesian or rectangular coordinate systems. Position is defined by a linear distance from an origin point. This is best for measuring position on a flat surface such as a piece of paper or a computer screen. In mapping, *eastings* are the X-coordinate (the vertical lines that divide the map from west to east), and get larger to the east; *northings* are the Y-coordinate (the horizontal lines that divide the map from north to south), and get larger to the north. Together, these are called *grid coordinates*. On 1:250 000 scale maps, these lines are 10 000 metres or 10km apart. You can accurately measure distances between points using a ruler on these maps.
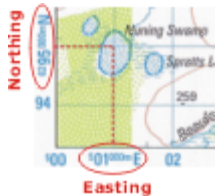
Map projections

It is not easy to convert the round earth to a flat map. If you peeled an orange and tried to lay the skin out flat, the skin would tear or distort. The same thing happens when you try to convert latitude and longitude into rectangular coordinates using a mathematical formula called a *projection*.

Some particular properties of the globe, whether it is shape, area or distance, will be distorted. However, you can stop or minimise distortion for one of these properties depending upon which projection is used, and this will work well depending upon what the map will be used for. This is explained below.

What is a datum?

A datum is a mathematical figure that best fits the shape of the Earth. The simplest datum is a globe. All datums have a certain size, and a centre point or *origin* somewhere in space, as well as other properties not explained here.

Before GPS, NATMAPs used a datum called the **Australian Geodetic Datum**, or AGD. NATMAPs used a version of AGD called AGD66. This datum was used as it best represented the shape of the earth over Australia.

From the year 2000, all Australian mapping authorities are using a new datum called the **Geocentric Datum of Australia 1994**. This datum is based on a mathematical surface that best fits the shape of the Earth as a whole, with its origin at the Earth's centre of mass (hence the term *geocentric*).

The main reason for this change is the widespread use of satellite-based navigation systems such as the Global Positioning System (GPS), which is based on a geocentric datum known as the World Geocentric System 1984 (WGS84). For most practical purposes, WGS84 and GDA94 are the same.

A major implication of this change is that GDA coordinates (both latitude/longitude and easting/northing) differ from their AGD predecessors by approximately 200 metres in a north-easterly direction.

Datum used for 1:1 million scale maps

Note that the lines of latitude and longitude shown on the 1:1 million scale maps in the Mosaic product are shown relative to AGD66 - however, the map images have been projected to GDA94. Therefore, the lines of latitude and longitude shown on the 1:1 million maps differ from their true position by around 200m (about 5") in a north-easterly direction.

For more information on coordinate systems and datums, please refer to the Geoscience Australia Geodesy & GPS pages.

Coordinate systems and map projections used in NATMAP Raster

All layers in NATMAP Raster use rectangular coordinates, and use the GDA94 datum. However, the main difference

between the Mapsheets and the Mosaic products is the map projection used.

The maps in NATMAP Raster Mosaic uses what is known as an Equirectangular map projection. This assumes that one degree of latitude equals one degree of longitude. The maps use degrees as the unit of measurement. (Note: when a map is said to be "on GDA94", this means that it uses latitude and longitude as coordinates based on the GDA94 datum.)

Globe   Equirectangular
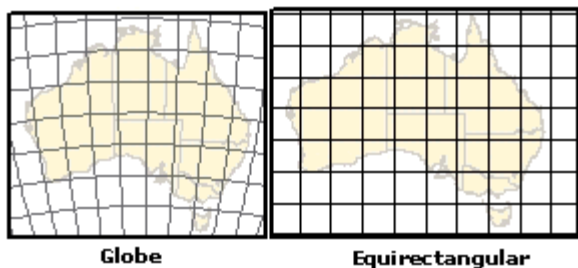
It is simple to make maps using this projection, and is popular for using in conjunction with GPS or computer mapping applications. However, as described above one degree of latitude does not equal one degree of longitude in reality, and this means that shapes and areas of features become very distorted and most distances are incorrect. As you can see in the above diagram, the shape of Tasmania is severely distorted from its true shape using this map projection. A scale bar does not make sense as the units of measurement (degrees) are angles, not straight line units such as metres.

Therefore, **maps in NATMAP Raster Mosaic should only be used in conjunction with GPS or computer mapping applications. They should never be used for measuring distances or areas.** If you need map images for measuring, then you should use NATMAP Raster Mapsheets.

The maps in NATMAP Raster Mapsheets uses a projection known as *Universal Transverse Mercator* or UTM. In this projection, the world is divided onto 60 zones, and within each zone shapes of features are preserved and distances are accurate enough for topographic mapping. Mainland Australia and Tasmania fall into seven of these zones.
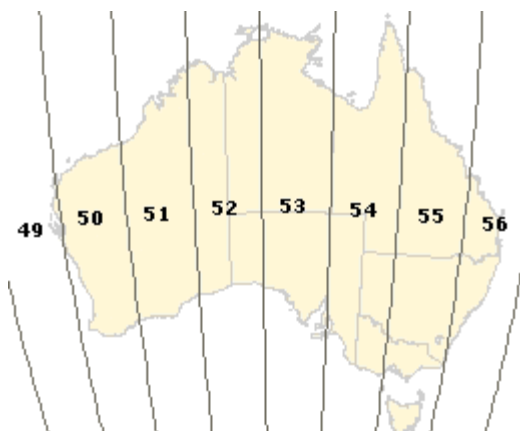
Within each zone, there is a rectangular coordinate system that uses Eastings and Northings in metres.
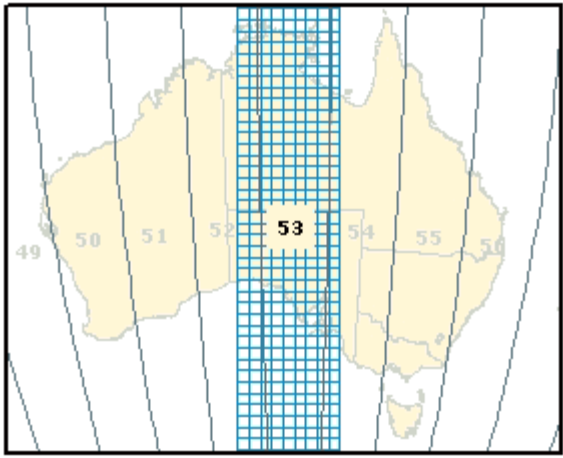
UTM Zone 53 grid

The main problem with UTM maps is that you can measure outside a zone boundary by about 80km without too much trouble, but beyond this, distortion becomes so bad that measurements will be significantly inaccurate. This also means you cannot join maps together that lie in different zones.

The name of the coordinate system used for these maps is the *Map Grid of Australia*, or MGA. This means that a UTM projection was used to convert GDA94 geographic coordinates to grid coordinates. Older NATMAPs use a coordinate system called the *Australian Map Grid* (AMG), which used a UTM projection to convert AGD66 geographic coordinates to grid coordinates.

Summary of coordinate systems used in NATMAP Raster

Product	Layer	Coordinate System │ CD Layout	Default Units
	250K Maps	Map Grid of Australia (MGA94)	Easting & Northing (metres)
Mapsheets	5M Sheet	Geocentric Datum of Australia (GDA94)	latitude & longitude (degrees)
	20M		
	Map Index		
Mosaic	Satellite Mosaic	Geocentric Datum of Australia (GDA94)	latitude & longitude (degrees)
	250K Mosaic		
	1M Mosaic		
	5M Sheet		
	20M		
	Map Index		

NATMAP Raster Viewer has the ability to convert between MGA and AMG grid coordinates, and GDA94 and AGD66 geographic coordinates, for display purposes within the Viewer only. All maps will keep the GDA94 datum (and MGA grid coordinates for maps in NATMAP Raster Mapsheets) when used outside the Viewer.

NATMAP Raster 2003 Consumer Information

- Contact Information
- National Mapping Division
- Acknowledgements
- Conditions of Use
- Accuracy and Reliability of Data

Contact information

Up-to-date information on NATMAP Raster products can be found on the NATMAP Raster product pages.

Geoscience Australia welcomes feedback on any aspect of its products or services.

Please direct your comments or any queries regarding this document or data to us via any of the methods below. If you are submitting a bug report, please read this first.

Email	General Queries, NATMAP Raster product feedback, bug reports
	Topographic map errors and omissions
	Place Name Search errors and omissions
	Satellite imagery queries, errors and omissions
	Copyright, commercial applications, external users
Phone	Freecall 1800 800 173 (within Australia)
	(02) 6249 9966 or overseas +61 2 6249 9966
Fax	(02) 6249 9960 or overseas +61 2 6249 9960
Mail	Map Sales Geoscience Australia GPO Box 378 CANBERRA ACT 2601

About Geoscience Australia's national mapping division

Geoscience Australia is the national agency for geoscience research and spatial information. It serves government and supports the community through its output areas of geoscience for urban centres, oceans and coasts, and regional and rural areas.

The National Mapping Division within Geoscience Australia undertakes national mapping, geodetic, remote sensing, and land information coordination activities in support of Australia's economic and social development.

The National Mapping Division was formerly known as the Australian Surveying and Land Information Group (AUSLIG), Australia's national mapping agency. In September 2001, AUSLIG merged with the Australian Geological Survey Organisation (AGSO - Geoscience Australia) to form Geoscience Australia, the national agency for spatial information in Australia.

Acknowledgements and contributions

Data Acknowledgements

Geoscience Australia's National Mapping Division gratefully acknowledges contributions to map content. Information is supplied by Commonwealth, State, Territory, and local government agencies as well as private sector agencies and individuals. A comprehensive list of contributors is available on the Topographic Mapping pages on the NATMAP website.

The place name data contained within this product is from the Gazetteer of Australia. Copyright of the Gazetteer of Australia resides with the relevant State, Territory and Commonwealth Governments and Australia Post © 2002.

The Landsat Satellite Mosaic of Australia was created by GeoImage Pty Ltd for the Australian Greenhouse Office as part of the National Carbon Accounting System. Scenes were acquired by the Australian Centre for Remote Sensing (ACRES), Geoscience Australia. Copyright Commonwealth of Australia 2001.

Software acknowledgements

The NATMAP RASTER VIEWER software was developed by Geoscience Australia and CSIRO Mathematical and Information Sciences to provide easy access to the images contained in NATMAP Raster products. NATMAP RASTER VIEWER provides a set of tools for selecting, displaying, printing and exporting maps.

The following products were used in the development of NATMAP RASTER VIEWER:

- ERMapper ECW SDK license and Web page
- ImageMagick license and Web page
- LibDES license and email author
- LibTiff license
- LibGeoTiff license and Web page.

Conditions of use

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Commonwealth Spatial Data Access and Pricing Policy

The NATMAP Raster products, along with the other NATMAP paper products, does not fall under the Spatial Data Access and Pricing Policy. The policy covers selected digital datasets. For more information, refer to the Commonwealth Office of Spatial Data Management Spatial Data Policy web site.

Accuracy and reliability of data

The map images used in NATMAP Raster products are constructed from digital topographic data or scanned from paper maps with a basic horizontal accuracy of approximately +/- 140 metres. The images have been computer post-processed to re-project and georeference the images to the Map Grid of Australia (MGA) for the Mapsheets product and the Geocentric Datum of Australia (GDA94) for the Mosaic product, and have undergone subsequent validation. Therefore, the accuracy of positions reported by the software should approach that of the original paper map.

Topographic information included in the map images have been checked from multiple sources including SPOT imagery. Maps have not been field checked, so some information may not be accurate or up-to-date. An example of rapidly changing features are telecommunication towers which proliferate at an an ever-increasing rate. Homestead names are also subject to regular change and are difficult to keep up-to-date.

Every effort has been made to make the map images a useful reference, but feedback from map users is very valuable. If you discover errors or omissions on the map, please contact NATMAP customer support or send your annotated map to us (we will replace your map with the corresponding current edition). We value your assistance for the next edition.

Reliability of individual map sheets can be found here.

More information on the maps themselves can be found in the About NATMAP Raster pages.

The custodians of the Gazetteer of Australia data used in the Place Name Search and Geoscience Australia do not warrant that the data is free from errors or omissions. Also, the custodians and Geoscience Australia shall not be in any way liable for any loss, damage or injury suffered by the licensed user of the data or any other person or organisation consequent upon or incidental to the existence of errors or omissions in the data.

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Using NATMAP Raster in Other Applications

- Using with GIS/CAD or graphics programs
- Using with GPS

Using NATMAP Raster Maps in GIS, CAD or graphis programs

The simplest method for using the NATMAP Raster images as a backdrop within a GIS environment or a graphics package is to obtain the appropriate ECW plugin for the software you are running from the ER Mapper web site. Geoscience Australia does not take any responsibility for the use of these plug-ins. For more information or support, please contact ER Mapper.

If you don't want to use the ECW format, then the images will need to be exported using the Raster Exporter for Mapsheets or the exporting tool in the Viewer for Mosaic and/or Mapsheets. You can convert map images to GeoTIFF (to retain coordinate information) or TIFF, JPEG, BMP or PNG files.

If you want to access the vector information from which the NATMAP Raster images are made, then you will need to obtain GEODATA TOPO-250K data for your area of interest.

How do I reproject maps in NATMAP Raster for use in other applications?

NATMAP Raster does not have the functionality to reproject maps. You need to use a third-party imaging or GIS software (such as ER Mapper, ERDAS Imagine, or ESRI ArcGIS) to reproject the maps.

Using NATMAP Raster maps with GPS

NATMAP Raster maps are an ideal set of base maps for use in conjunction with Global Positioning Systems (GPS). To use NATMAP Raster with a GPS you will require a GPS receiver and probably some additional software and a portable computer. Because NATMAP Raster has not been specifically designed to work with any particular GPS system, the integration of NATMAP Raster images into each system will be different. You should fully investigate what is required to make such a system work.

A quick option to see what is available in the way of software that will integrate GPS and NATMAP Raster, is to search the Internet for the category **GPS,mapping,software** and review the range of products on offer from different suppliers. Two major Australian software vendors who support NATMAP Raster images in their software are OziExplorer and Advantech Design (producers of TrackRanger). Alternatively, you could visit your local specialist map shop or GPS distributor for advice.

Many additional GPS software programs such as OziExplorer require additional calibration files in order to read the NATMAP Raster maps. Check with the software vendor for these; often, they are freely available.

Viewing Maps Using the NATMAP Raster Viewer

Print entire map or current view

PRINT ENTIRE MAP

PRINT CURRENT VIEW

This option allows you to print either the entire current map sheet or the current map view on your printer. Selecting Print Entire Map will produce a printed version of the whole map sheet. This will be printed in landscape mode if the dimensions of the map sheet fit better that way. Selecting Print Current View will print only the visible portion of the map. Other information such as the map sheet name and number, the coordinates of the region, and a scale bar will also be printed out.

1. To print an image, click on the appropriate button in the left hand side panel
2. A window asking you to select the desired print quality is displayed. Printing either the entire map sheet or a large region at high quality will require large amounts of memory (~40MB) and generate large print spool files (~40MB). Selecting Average Quality generally has little or no visible effect on the print quality for full map sheets or large images since the image must be reduced in scale even when printed on an A3 page. Click OK to continue.
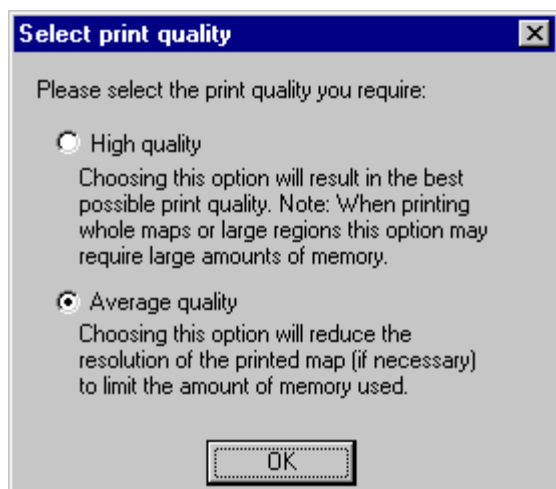
3. Next, the standard Print dialogue is shown.
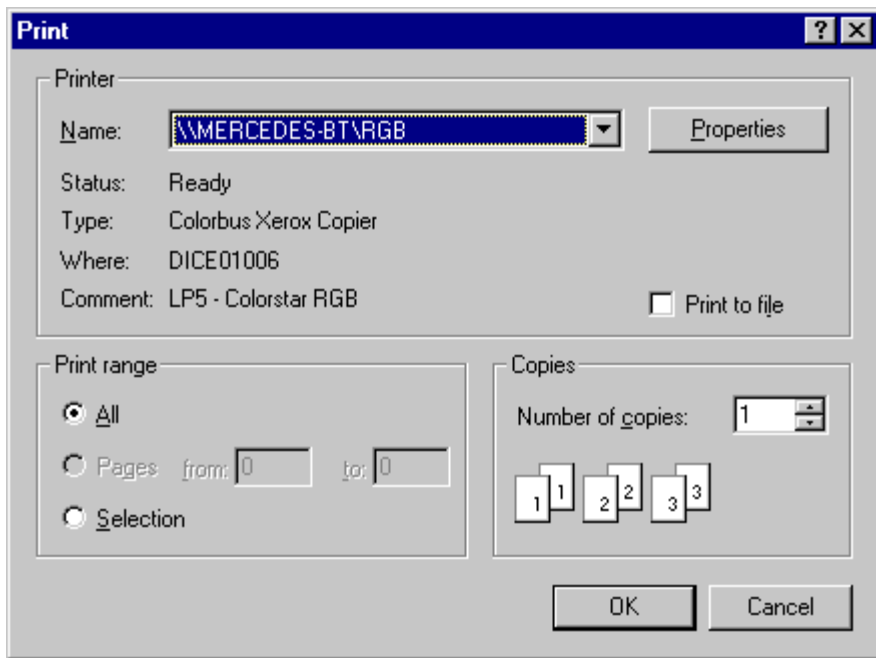
4. Select the required printer options and click OK.
5. The map will now be printed.

Note: Some black and white printers may produce poor quality results. This occurs because these printers (and associated drivers) are unable to convert the colour map images to simulated greyscales (this is called dithering). If this is the case for your printer, then export the map you wish to print to an image file and use another program to print it. For example, you can save the map in JPEG format and then use Internet Explorer to open and print the .JPG file.

Warning when printing Mosaic layers

The following message will appear on any print-out of any Mosaic layer:

> **'WARNING: This printout uses a map projection that is designed for use with GPS and computer mapping. It is not suitable for measuring long distances and large areas. A full explanation is in the NATMAP Raster User Guide. Please use the maps from NATMAP Raster Mapsheets for accurate measurements of distances and areas.'**

No scale bar will appear either.

This is because of the map projection used for the Mosaic images.

NATMAP Raster Licence

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NATMAP 1:250 000 Scale Legend

Feature descriptions

- Roads
- Railways
- Road and Railway associated features
- Population centres
- Aircraft facilities
- Cultural features
- Relief
- Vegetation
- Hydography
- Offshore and Coastal features
- Boundaries

Feature capture guide

In predominantly wet and/or heavily developed regions, features such as fences, windpumps, tanks and bores proliferate and therefore lose their significance as a feature at 1:250 000 scale and are not shown on maps that fall within the dark area in the diagram below. These features are identified in the legend explanation with an asterisk (*).

Map and Data Production

NATMAPs and their companion GIS digital data product, GEODATA TOPO 250K Series 3 are produced in parallel. The digital data is the source for continuous revisions of map and data products as well as on-line products at 1:250 000 scale. Geo-referenced satellite imagery is used to plot the position of features, together with information from a wide variety of sources. All products have adopted the Geocentric Datum of Australia 1994 (GDA94) - for more information on GDA94 please refer to the Geoscience Australia Geodesy and GPS pages.

Specifications

Full Specifications can be viewed on the Topographic Mapping pages on the Geoscience Australia website.

Names on the Map

Inclusion of names on the map does not imply approval by the relevant Geographic Names Board. The National Gazetteer is the primary source used on products. Refer to the Place Name Search on the Geoscience Australia website.

Map reliability

1:250 000 scale NATMAPs are not field checked, which means that some included information may not be accurate or up to date. Many other sources of information, including recently captured satellite imagery, have been used to identify change in an effort to make the product a useful reference. The date which is shown in the map marginalia as the map reliability date is the date of the latest imagery used during the production of the NATMAP.

Minimum size criteria

Certain types of features depicted on NATMAPs often have minimum size criteria applied. This is a generalisation technique which is applied to maintain map clarity.

Length and/or height criteria may apply to linear features such as levees or vertical features such as towers. This criteria will not apply to features that join two or more features in the same network at each end.

Area criteria may apply to area type features.

The minimum area indicated for polygon features is the minimum area for the whole feature regardless of how many maps it falls on. Likewise, for linear features the minimum length applies to the whole feature, not just that part of the feature which falls on the map.

Unless identified as an exception, or confirmed to be no longer in existence, all features sourced from previous data or printed maps will be included regardless of their compliance to size criteria stated in the specifications for the product. All additional features captured from any other source must comply with the size criteria as stated in the map specifications (these are listed below in the table).

NATMAP 1:250 000 Scale Legend

- ▼ Roads
- ▼ Railways
- ▼ Road and Railway associated features
- ▼ Population centres
- ▼ Aircraft facilities
- ▼ Cultural features

- • Relief
- • Vegetation
- • Hydography
- • Offshore & Coastal features
- • Boundaries
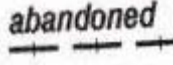
Roads

Road surface (sealed and unsealed) is indicated by the use of full or broken line symbology. Classification is based on function, not road width. Access, particularly via minor roads and vehicle tracks may be subject to private property access restrictions, variable weather conditions, changes to surface quality and locked gates.
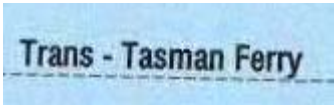
	Dual carriageway	Divided highway, freeway, tollway or other major road with separated carriageways.
	Principal road	Highways and major through-routes as well as major connecting roads
	Secondary road	Connecting road between major roads and/or population centres.
	Minor road	Scale may dictate that only some of these local area access roads can be shown in settled areas and built-up areas (BUA) and only some are named.
	Vehicle track	Public or private roads with minimum or no construction. Where fences and farm tracks are side by side, only one of these features may be shown.

Railways

Some railway lines as well as railway stations may not be shown within built-up areas.

	Multiple track; Single track	Indicated by double or single bar symbology.
abandoned	Abandoned railway	Non-operating but are not dismantled. Dismantled lines are not shown on NATMAPs.
	Light railway	A lightly constructed line, eg cane railway, scenic railway or monorail.
	Railway station or siding	A recognised stopping place for trains for passengers or freight. Abandoned stations on operational and abandoned lines are shown (on operational lines these may be labelled 'frmer rwy stn', 'abandoned' or 'aband'). Abandoned stations on dismantled lines may be shown as a locality.

Road and Railway associated features

	Bridge	A structure erected over a depression or obstacle carrying road or rail traffic. Only significant features are shown.
	Tunnel	An underground or underwater passage carrying a road or railway. The underground section of road or railway is not drawn, only the transition points.
	Causeway	An embankment of earth or masonry erected across open water or area subject to inundation and carrying a railway or road. Only features longer than 500m are shown.
	Gate	An opening in a fence or wall for the passage of vehicles, people or animals and which may contain a device to limit passage. Only shown on vermin proof fences and at State borders.
	Kilometric distance indicator & associated distance	A symbol used to indicate points between which road distances are given. Distances along major through routes are calculated from the mapping road data and therefore may not reflect roadside signage.
	National & State route marker	The symbol printed over a road indicating a national or state route. Markers are positioned on a map at sufficient intervals to enable the map user to identify a highway for its whole length.
	Ferry Route	A route across a river, lake, reservoir or sea used by a vessel for the regular transport of vehicles or passengers from one terminal point to another. Only vehicle-carrying routes are shown.
	Ford	A shallow or flat portion of the bed of a watercourse or lake where a crossing may be effected. Only features longer than 750m are shown.

Population centres

	Built-up area (BUA)	An area where buildings are close together and have associated road and other infrastructure. A selection of suburbs may be named in larger BUAs if space allows.
	Locality	A named place with a population of more than 200 people. Places with fewer than 200 people are not symbolised but a place name may be shown.

Aircraft facilities
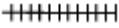
A paved or cleared strip on which aircraft take off and land. Information is provided by Airservices Australia, Aircraft Owners and Pilots Association Australia, Royal Flying Doctor Service, and other sources. The direction of runways are shown.

	Airport	An aircraft facility labelled as 'licenced' according to Airservices Australia.
	Landing ground	An aircraft facility not listed in Airservices Australia information or listed as 'unlicensed'.
	Heliport	Not shown within BUAs or other aircraft facilities.

Cultural features

	Powerline	Wire or wires supported on poles, towers or pylons, used for the transmission of high voltage electricity. Only lines of 110 kilovolts or greater are shown. Parallel powerlines closer than 1mm at map scale are symbolised by one line. Powerlines are not shown within built-up areas.
	Substation	A feature associated with the generation or distribution of electricity.
	Pipeline (water, gas and oil)	A pipe used for carrying gases and/or liquids. They may be above, on, or under the ground. Parallel pipelines closes than 1mm at map scale are symbolised by one line.
	Storage tank	Large vessel for storage of liquids or gas (not water) often associated with refineries or chemical plants.
	Water tank*	A construction on or below ground level used for water storage. This feature is only shown on selected 1:250 000 scale NATMAPs - refer to the Feature Capture Guide.
	Homestead/Outstation*	A residence or large building in a rural area. This feature is only shown on selected 1:250 000 scale NATMAPs - refer to the Feature Capture Guide.
	Building/s*; Ruin	A permanent walled and roofed construction or the ruin of such a construction. A group of buildings that cannot be shown individually may be shown by a representative pattern. Only significant buildings are shown within built-up areas. Very large buildings may be drawn to scale.
	Landmark	Man-made permanent features having landmark value or useful for navigation. Structures taller than 45m are labelled if a height is known. Includes: • cooling towers, microwave towers, masts, and other towers • lookouts and monuments • silos, smokestacks, and chimneys • solar panels and wind turbines • weather stations.
		A yard is a small area of land enclosed by a fence and

□ ———————	Yard*; Fence*	generally used for confining stock. A fence is a structure which encloses, bounds or divides a property or part thereof. Vermin proof fences are labelled. Property fences are omitted when parallel with a road or track.
++++++++++	Levee	A wall higher than 2 metres used for restraining floodwaters or containing irrigation water.
⬭ ⚒	Open cut quarry; Mine	A mine is an excavation for the extraction of minerals. An open cut/mining area or a quarry is an excavation made by the removal of stone, gravel, clay or mineral from the ground for commercial or industrial purposes and tailings dumps from mining operations. Open cut mines with an area greater than 14ha are shown using the symbol on the left. The point symbol may be used to indicate a small group of mines. Abandoned mines are labelled 'abandoned', 'aband', or 'ab'. Small quarries and scrapes may not be shown.
(green dotted area)	Parkland	An area of land greater than 140ha developed for recreation purposes. Golf courses, ovals and cemeteries are labelled.

There are a number of features not listed above which may appear on the maps, including:

- aerial cableway (a conveyor system in which carrier units run on wire cables strung between supports)
- conveyor (a continuous belt or series of belts mounted on rollers and used to move large quantities of goods, especially grain or ore)
- gas or oil well (a pipe sunk in the ground for the purpose of obtaining subterranean oil or gas)
- seismic or cleared line (a graded line in a straight path).

These features have an accompanying descriptive label or are named features.

- Relief
- Vegetation
- Hydography
- Offshore & Coastal features
- Boundaries

NATMAP 1:250 000 Scale Legend

- Relief
- Vegetation
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- Roads
- Railways
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Relief Features

	Contour with value; Depression contour	Contours are lines representing an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum. The 1:250 000 scale NATMAPs shown contours at intervals of 50 metres.
	Horizontal control point	A point on the ground determined by geodetic survey. Only prominent points are shown.
• 904	Spot height/Elevation	A selection of spot elevations are made that best show terrain, change of slope and the high and low points. The highest spot elevation on the map is shown in large type
✳	Pinnacle	Significant tall slender spire shaped rock. May be labelled.
⋒	Cave or sinkhole	The mouth of a subterranean chamber.
	Cliff	A high, steep, significant or overhanging face of rock. Only features higher than 25m are shown.
	Sand	Areas greater than 39ha predominantly covered by sand and devoid of vegetation.
	Sand dunes	Areas greater than 39ha where mounds of crescent shaped loose sand exist that are usually at right angles to the prevailing winds.
	Sand ridges	Sand drifts (longer than 250 metres) in long ridges tending parallel to and elongating in the direction of the prevailing winds. The average height of the sand ridges above the surrounding terrain is shown.
	Distorted surface	Area larger than 39ha characterised by fractures, joints, faults, gilgai or broken stone that is difficult or impassable for vehicles.
	Rocky outcrop	Area larger than 39ha of large rocks or boulders.

Craters may be shown as a labelled feature only.

Vegetation

	Forest or scrubland	An area greater than 25ha with greater than 20% canopy cover of trees or scrub.

	Rainforest	An area greater than 39ha of dense mixed forest generally in excess of 25m high and having greater than 85% ground cover.
	Windbreak	A line of trees or scrub longer than 1.25km positioned to break the force of the prevailing wind.
	Pine plantation	Coniferous trees planted in an orderly pattern. Area is greater than 39ha.
	Orchard, Vineyard, Plantation other than pine	Orderly planting of trees, bushes or vines greater than 39ha.

Hydrographic Features

	Watercourse	A natural channel along which water may flow from time to time. The rainfall graph in the map marginalia is provided to assist map users to assess the likelihood of water.
	Canal or drain	An artificial watercourse used for inland navigation, irrigation or drainage.
	Perennial lake or Reservoir; Non-perennial lake	A lake is a naturally occurring body of mainly static water surrounded by land. A reservoir is a body of water collected and stored behind a constructed barrier (**dam**) for some specific use (i.e. artificial). Features that hold water for 1 whole year for at least 9 years out of ten are classed perennial. Reservoirs less than 39ha and lakes less than 6ha use the tank point symbol.
	*Bore or *well; *tank or *small dam; *Windpump	Man-made water and associated features. Only selected features are shown in some areas - see the Feature Capture Guide. • Bore or well: a small diameter hole in the ground for the purpose of obtaining subterranean water by natural flow or mechanical pumping • Tank or small dam: a feature constructed on or below the ground for the storage of water Reservoirs less than 39ha and lakes less than 6ha which do not lie on a watercourse may be shown using this symbol • Windpump: A tower fitted with a wind-driven pump. Where a windpump and other water features are situated together, only the windpump is shown as it usually has the greater landmark value.
	Waterhole or Spring	Naturally occurring water features. A waterhole is a natural depression which holds water, within a non-perennial watercourse or a non-perennial lake. Lakes less than 6ha in size which lie on non-perennial watercourses may be shown using this symbol. A spring is a place where water issues from the ground naturally (i.e. not in a watercourse or lake).
	Land	An area of land greater than 140ha regularly covered
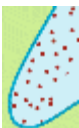
	subject to inundation	with floodwater for short periods.
	Swamp	An area of land greater than 156ha that is so saturated with water that it is not suitable for agricultural or pastoral use.

There are a number of features not listed above which may appear on the maps, including:

- lock (an enclosure in a waterbody with gates at both ends to raise or lower the water level to enable vessels to pass from one level to another)
- rapids (an area of broken, fast flowing water in a watercourse, where the slope of the bed increases, or where a gently dipping bar of harder rock outcrops above the water
- spillway (a channel or duct formed around the side of a reservoir past the end of a dam, to convey flood discharge from the watercourse above the reservoir into the watercourse below the dam)
- settling pond (shallow beds, usually segmented by constructed walls, for the treatment of sewage or other wastes, or used for aquaculture)
- waterfall (a sudden descent of water over a step or ledge in the bed of a watercourse.

These features have an accompanying descriptive label or are named features.

Offshore & Coastal Features

	Saline coastal flat	A nearly level tract of land between mean high water and the line of highest tide. Area is greater than 39ha.
	Foreshore flat	Seabed or estuarine area greater than 39ha between mean high water and the lowest tide.
	Wreck	Visible wrecks, as well as submerged features which are a danger to shipping and those of historic significance.
	Lighthouse	Building or structure housing a light used as a navigation aid. Lighthouses are shown for their landmark value and may not be operational.
	Mangrove	An area of land greater than 39ha, between low and high water vegetated with mangrove plants.
	Reef; shoal	A reef consists of rock or coral exposed between mean high water and approximate lowest tide; a shoal consists of rock, mud or sand just below approximate lowest tide. Both features are visually prominent or a hazard to shipping. Reefs and shoals shown at 1:250 000 scale are greater than 39ha.
	Sea wall	Structure longer than 250m used to prevent erosion by the sea.
	Breakwater	A solid structure longer than 250m used to break the force of the waves to protect an anchorage.
	Wharf, jetty or pier	Structure used as a promenade or platform for loading passengers or cargo.
	Rock, bare	A hazard to shipping

	or awash	

There are a number of features not listed above which may appear on the maps, including:

- dry dock (a structure or basin providing support for a vessel and from which water can be removed so that the bottom of the vessel is exposed)
- boat ramp (a sloping construction to facilitate launching or retrieving vessels from water)

These features have an accompanying descriptive label or are named features.

Boundaries

▬ ▬▬ ▬ ▬▬ ▬ ▬▬	State / territory border	Borders that do not follow physical features are drawn according to the surveyed monuments on the ground.
▬ ▬▬ ▬ ▬▬ ▬▬	International border	May be shown as the line of seabed jurisdictions. Refer to the Maritime Boundaries pages on the Geoscience Australia website. The line is thicker than the State Border line.
▬▬▬▬▬▬	Reserve area	Public land reserved for forestry, conservation of native species, fossils, aboriginal areas, historic mining areas etc. Information is provided by the relevant State authorities. Small reserves may be amalgamated to improve map legibility.
▬ ▪ ▬ ▪ ▬ ▪ ▬	Prohibited area	Area where permission is likely to be required for entry.

- Roads
- Railways
- Road and Railway associated features
- Population centres
- Aircraft facilities
- Cultural features

Selecting Maps Using the Raster Viewer

 Search by NATMAP name or number

In this search window, all the maps available are listed according to their map sheet name and map sheet number for the appropriate scale. To load a map using its name or number, simply click on the appropriate selectable list. The correct map may then be selected by scrolling through the list, highlighting an entry, and pressing **Load Map**. The following image shows the screen when selecting the ADELAIDE SPECIAL 1:250 000 scale map by name...

...or by map number.

These lists can be searched quickly by using the keyboard to enter the first letter of the entry (map name or map number) for which you are searching. For example, pressing Y on the keyboard when the list of map names is opened will cause the list to jump to the first entry starting with Y. Subsequently pressing a letter will scroll through the entries starting with that letter, one by one.

Changing the map scale using the pop-up menu at the bottom left corner of the screen will automatically update these lists.

Please note that if you are using this option with Mosaic data, the area that will be displayed is approximately the same as the area shown on the standard map sheet.

There is a minor bug with this search mechanism - a workaround is available.

Selecting Maps Using the Raster Viewer

 Search by coordinates

By latitude and longitude

The Map Viewer can load a map given a location's latitude and longitude. These are coordinates of a point on the earth measured relative to the equator and the Greenwich Meridian (an imaginary line passing through London), and are measured in degrees. For more specific information, refer to the Geodesy and GPS pages on the Geoscience Australia website.

The latitude and longitude can be specified in two ways: as decimal degrees or as Degrees, Minutes and Seconds. If any field is left blank, the value of that field is assumed to be 0.

In either case, the **latitude should be entered as a value South of the equator,** and the **longitude as a value East of Greenwich**. Thus, these values will never need to be negative for locations within Australia.

The following image illustrates these two ways. The example shows how to enter the latitude and longitude for Sydney Airport (latitude 33.94 S, longitude 151.18 E). Pressing **Load Map** next to either of these sections will display a map of Sydney centred on the airport.

Note: The example shows values entered for the position in **both** decimal degrees and degree/minutes/seconds. You only need to enter one or the other for this search tool to work.

By grid coordinates

The Map Viewer can load a map that contains a specific location, given by its grid coordinates. The grid coordinates include the Easting, the Northing and the Zone.

The Zone refers to the Universal Transverse Mercator (UTM) Zone. In the UTM system, the world is divided into 60

zones, each 6 degrees wide. The maps in NATMAP Raster lie in Zones 49 through to 56. Easting coordinates are referenced to the centre line of the zone known as the central meridian. Northing coordinates are measured relative to the equator. The units of grid values are metres. To ensure that all coordinates are positive in a zone, the central meridian is given a 'false' easting coordinate of 500 000 and in the southern hemisphere the equator is given a 'false' northing coordinate of 10 million.

The example shows how to enter the latitude and longitude for Sydney Airport (Easting: 331805, Northing: 6242637, Zone: 56). Pressing **Load Map** next to this section will display a map of Sydney centred on the airport (as shown in the 'By Latitude and Longitude' section).

Grid Coordinates (MGA):

Easting: 331805   Northing: 6242637   Zone: 56   Load Map

Selecting Maps Using the Raster Viewer

Search by Place Name

The Place Name Search uses the Gazetteer of Australia database of place names in Australia and their matching locations. The search facility enables you to quickly find locations anywhere in Australia and show the map of the select location.

The Place Name Search database provided with your NATMAP Raster product is derived from the Gazetteer of Australia 2008 with information about each location reduced to State, Location Name, Generalised Feature Codes, Latitude and Longitude. Postcode information is available for selected towns, homesteads and localities. Elevation for selected spot heights and mountains is also available.

The locations identified in the gazetteer have been provided by the relevant State and Territory geographic names board (or equivalent body). The Postcodes are derived from Australia Post's Postcode Database. For more information, please refer to the Consumer Information pages in this User Guide.

General Place Name searching

1. Select the **Place Name Search** tool in the top left part of your screen
2. Enter the first few letters of the place name and click the Search button. The database is searched and any place names that **start** with the letters entered will be displayed. The following image shows the screen after the letters 'bartle' have been entered and the Search button pressed.

Place Name Search using the Gazetteer of Australia 2002

Place Name: bartle   State: ANY ▼

Place Type: ANY ▼   Search

Search Results Place Name = **bartle** produced **31** results.

Name	State	Code	Latitude	Longitude	Postcode	Elevation
BARTLE FRERE	QLD	TOWN	-17.43333	145.75		
BARTLE FRERE	QLD	TOWN	-17.46041	145.89638	4861	
BARTLE FRERE (NORTH PEAK)	QLD	HILL	-17.3818	145.81776		
BARTLE FRERE (SOUTH PEAK)	QLD	HILL	-17.4	145.81667		1622
BARTLE REEFS	WA	REEF	-30.22139	114.98444		
BARTLET ROCKS	SA	HILL	-37.47141	139.98382		
BARTLETS CREEK	NSW	WATC	-28.2985	153.4679		
BARTLETT BLUFF	WA	MISC	-29.08806	124.61444		
BARTLETT BORE	WA	WATP	-26.23611	121.04111		
BARTLETT CLOSER SETTLEMENT ESTATE	SA	PARK	-35.1708	139.42337		

Clicking on any of the localities displayed will load the appropriate map, centred on the place selected. If the list of names is large, scroll bars will appear. It may be necessary to scroll through the list to find the place name you had in mind.

Restricting a search to a State or to a Place Type

You may restrict a search to a particular state or to a particular Place Type. Restrict the search to a state by selecting the appropriate state from the State drop down menu. Restrict the search by Place Type by selecting the desired Place Type from the Code drop down menu.

The image below shows the screen using the same search term as above, 'Bartle', but the search results have been restricted to be in Queensland ('QLD') and of Place Type *Hills and Mountains*.

Place Name Search using the Gazetteer of Australia 2002

Place Name: `bartle`   State: `QLD ▾`

Place Type: `Hills & Mountains ▾`   `Search`

Search Results Place Name = **bartle** State = QLD Code = HILL produced 3 results.

Name	State	Code	Latitude	Longitude	Postcode	Elevation
BARTLE FRERE (NORTH PEAK)	QLD	HILL	-17.3818	145.81776		
BARTLE FRERE (SOUTH PEAK)	QLD	HILL	-17.4	145.81667		1622
BARTLEYS HILL	QLD	HILL	-27.43333	153.05		

Explanation of Place Types used in the Place Name Search

	PLACE TYPE (full description)	PLACE TYPE (abbreviated)		FEATURES AND INCLUDED TERMS
Administrative	ADMN		• Agricultural area, County, District, Local Government Area, Parish, Region • Continent • County • Parish • State	
Airfields	AIRF		• Aerodrome, Airfield, Airport, Landing ground, Airstrip	
Bathymetric	BATH		• Bank, Basin, Canyon, Discordance, Escarpment, Fracture zone, Gap, Guyot, Knoll, Plain, Reef, Ridge, Rise, Saddle, Seamount, Shelf, Shoal, Spur, Terrace, Trench, Trough • Offshore channel • Ledge • Ocean • Sea	
Bays & Gulfs	BAY		• Bay • Bight • Cove, Inlet • Gulf	
Bores, Tanks & Waterpoints	WATP		• Bore, Well • Native well, Soak, Soakage • Rockhole, Gnamma hole • Spring, Pool spring, Hot springs, Mineral spring	

		• Tank
Built Structures	BLDG	• Agricultural establishment, Asylum, Barn, Chalet, Coal depot, Guard house, Hotel, Inn, Institute, Museum, Observatory, Rest house, Sanatorium, Shelter, Tavern, Telephone exchange, Tower, Town hall, Warehouse, Abbey, Hut, Bell tower, Chapel, Church, Convent, Brewery, Factory, Plant, Power station, Steel works, Tannery, Winery, Works, Hospital, Prison, Pumping station, Pump, Police station, Stadium, Telegraph office, Telephone office, Fire station, Abattoir, Barracks, Busway station, Battery, Roadhouse, Mill, Sawmill, Mission, Post office • Broadcasting station (radio and television) • Campsite, Camp • Commune, Community centre • Historical site • Homestead, Outstation, Outcamp, Woolshed, Aboriginal outstation • Railway station • Ruin • School, College • Special purpose farm, Research establishment • Yard
Caves	CAVE	• Cave, Blowhole, Cavern , Grotto
Coastal Features	CSTL	• Bank, Bar, Sandbar • Beach • Beacon, Light, Buoy • Breakwater, Groyne, Levee, Mole • Entrance • Estuary • Lighthouse • Shoal, Shallows, Patches • Sound • Strait • Wreck
Dams & Locks	DAM	• Dam, Weir , Catchment, Barrage • Lock
Forests & Agriculture	FRST	• Forest, Wood, Thicket, Scrub, Copse, Brushwood, Glade, Grove • Garden, Vineyards • Plantation
Hills & Mountains	HILL	• Hill, Knoll, Knob, Mesa, Sugarloaf, Lookout, Butte, Hillock, Kopje • Mountain, Peak • Mountain peak, Summit, Point (inland), Rock column, Butte • Pass, Passage, Gap, Col • Range, Mountain range, Hills, Mountains • Ridge • Slope, Hillside, Terrace

Islands & Reefs	REEF	• Archipelago • Breaker • Island, Island group, Cay, Isle, Islet, Clumps • Reef
Landmarks	LAND	• Bench mark, Cairn, Column, Marker, Monument, Obelisk • Tower • Tree
Mine & Fuel Sites	MINE	• Gasfield (Well), Oil well • Mine, Goldfield, Opalfield, Shaft, Mining centre • Quarry
Other Landforms	OTHR	• Claypan, Clayhole, Clay pit, Clay flat • Bluff, Cliff, Breakaway, Escarpment, Jumpup, Precipice, Buttress • Boulder, Crag, Needle, Rock, Pillar, Pinnacle, Rock formation, Rocks (offshore), Rocks (on land), Tor • Desert • Dunes • Plateau, Tableland • Plain, Downs, Prairie, Flat , Heath, Field • Salt pan
Parks & Reserves	PARK	• Cemetery • Reserve, Park, National park, Conservation park, Common
Points, Capes & Peninsulas	CAPE	• Cape • Isthmus, Neck • Peninsula • Point, Head, Headland, Spit, Ness, Promontory, Bill • Sandspit
Ports & Docks	PORT	• Anchorage • Dock, Basin, Wetdock, Dry dock • Harbour, Haven, Roadstead, Marina • Pier, Wharf, Landing, Quay • Port
Roads & Trails	ROAD	• Bridge, Culvert • Crossing, Ford • Gate, City exit • Racetrack, Auto track, Cycle racing track, Velodrome • Stock route • Track (walking), Path (bridle), Trail • Tunnel
Towns & Localities	TOWN	• Locality (bounded), Town, Village, Local government town, Town site (no population) • Locality (unbounded), Place name, Road corner, Road bend, Corner, Meteorological station, Ocean place name, Surfing spot • Suburb

		• Urban area, City
Trig Stations	TRIG	• Trig. Station
Valleys & Depressions	VALY	• Crater • Depression, Basin , Donga • Gorge, Ravine, Canyon, Glen, Chasm • Valley, Dale, Dell, Vale
Water Bodies	WATB	• Intermittent lake • Lagoon • Lake, Tarn, Loch, Lough • Reservoir, Pondage, Pond, Artificial Lake • Swamp, Marsh, Morass, Saltmarsh, Wetland • Waterhole, Lagoon, Hole, Pool, Billabong, Oxbow, Washpool
Water Courses	WATC	• Bend, Loop, Meander • Canal, Waterway, Aqueduct, Bore drain, Channel • Drain • Glacier • Reach, Arm • Stream, Brook, Watercourse, Anabranch, Backwash, Backwater, Run, Creek, River, Gully, Rivulet, Beck, Backwater, Burn • Waterfall, Cascade, Cataract, Falls, Rapids

Understanding the results of a search

To make it easier to find the desired locality, the following attributes are displayed in the Search Results frame:

- the full name
- a two- or three-letter State Code
- a four-letter abbreviated Place Type. Clicking on each 4-letter code will link to the list of Place Types
- Use your Backspace key to go back to the Search Results frame;
- latitude, in decimal degrees
- longitude, in decimal degrees
- postcode, if available
- elevation, if available. Note that currently elevation values exist for only 500 mountains, hills, peaks, and trigonometric stations. Elevations values for other localities will be progressively added into future revisions.

More information on the following can be found in the Troubleshooting page:

- multiple results for the same place name, type and state
- alternate names or missing names
- place names in the wrong location
- results have been cleared after going back to the Place Name Search.

Search limitations

Only place and locality names that **start** with the given search letters are displayed. For example, searching for 'BART' will find Bart Creek and Barton's Gully, but will not find Hobart. Similarly, a search on 'KOSCIUSKO' may not return any results, but 'MOUNT KOSCIUSKO' will.

To improve performance the number of search results that are displayed at once is limited to 500. If searching for a particular string returns an error complaining that there are too many matches, simply re-try the search with a more specific search string - that is, a string that contains more letters.

Viewing Maps Using the NATMAP Raster Viewer

Overlay window control buttons

| Icon	Description
	If the 'Show Locator' button is pressed, as it is in the image, the Locator is visible. Clicking this button will hide the Locator window and display the non-highlighted button seen below.
	If the 'Show Locator' button is raised, the Locator is hidden. Clicking this button will display the Locator window and highlight the 'Show Locator' button.
	If the '''Show Magnifier' button is pressed, as it is in the image, the Magnifier is visible. Clicking this button will hide the Magnifier window and display the non-highlighted button seen below.
	If the 'Show Magnifier' button is raised, the Magnifier is hidden. Clicking this button will display the Magnifier window and highlight the 'Show Magnifier' button.
	If the '''Show Info' button is pressed, as it is in the image, the Map Information window is visible. Clicking this button will hide the Map Information window and display the non-highlighted button seen below.
	If the 'Show Info' button is raised, the Map Information window is hidden. Clicking this button will display the Map Information window and highlight the 'Show Map Information' button.
	If the 'Unmark Centre' button is highlighted, the blue centre cross hairs, marking the centre of the main map view, are visible. Clicking on this button will hide the cross hairs and display the non-highlighted 'Unmark Centre' button shown below.
	If the 'Unmark Centre' button is not highlighted the blue cross hairs for the main map view are hidden. Clicking on this button will display the cross hairs marking the centre of the map view and highlight the 'Unmark Centre' button.
	Clicking on this button launches the Show Legend window.
	When the Show Legend button looks like this, the Show Legend window is open. Clicking on this button closes the Show Legend window.
	Clicking on this button launches the Show Climate graph window.

The Raster Configurator
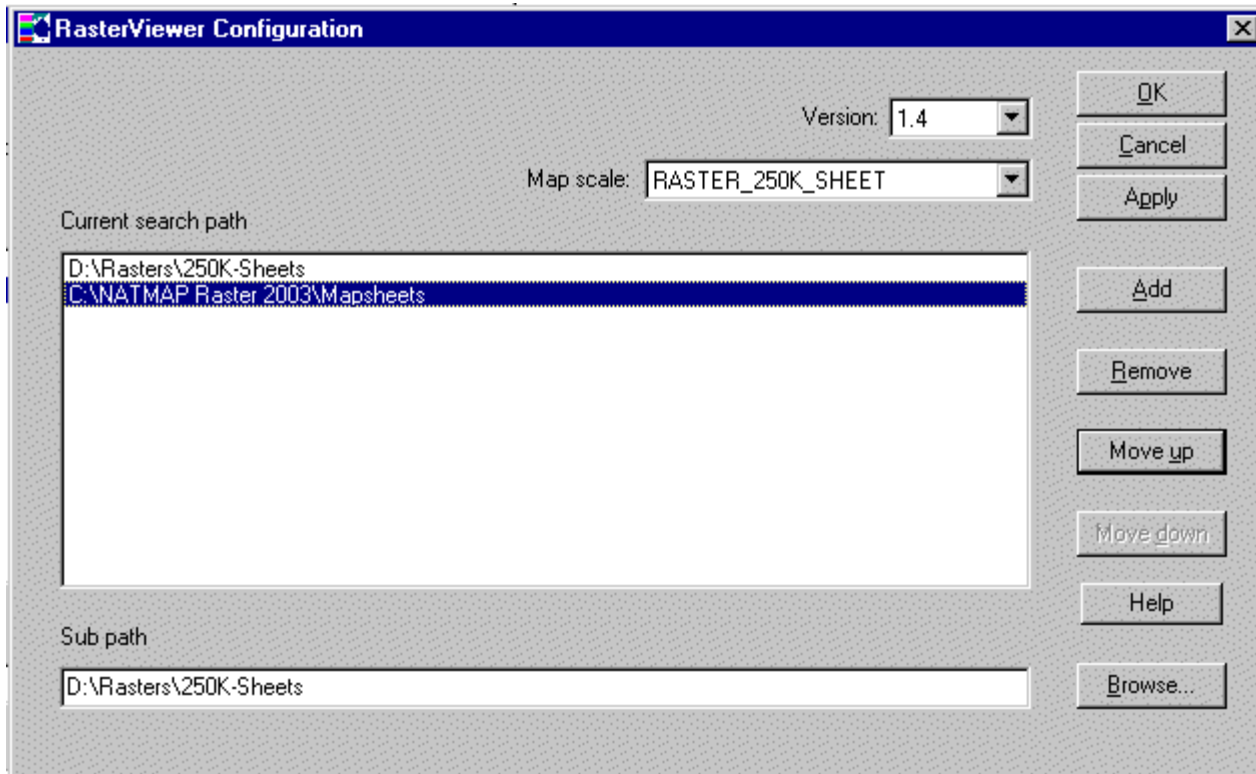
Removing a search path for a map layer

1. Select Version to change (most users will only have one version, the current one).
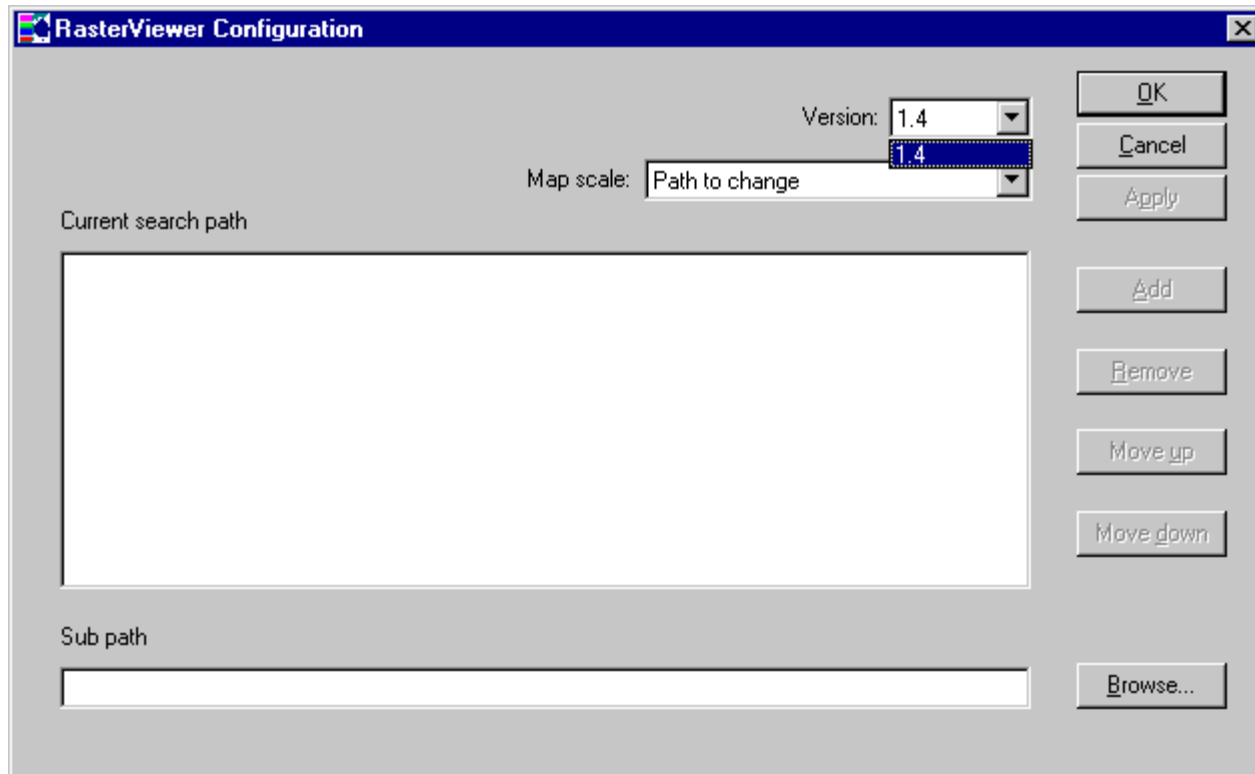
2. Select the map scale series whose path you wish to change. (For example, select RASTER_250K_SHEET.)
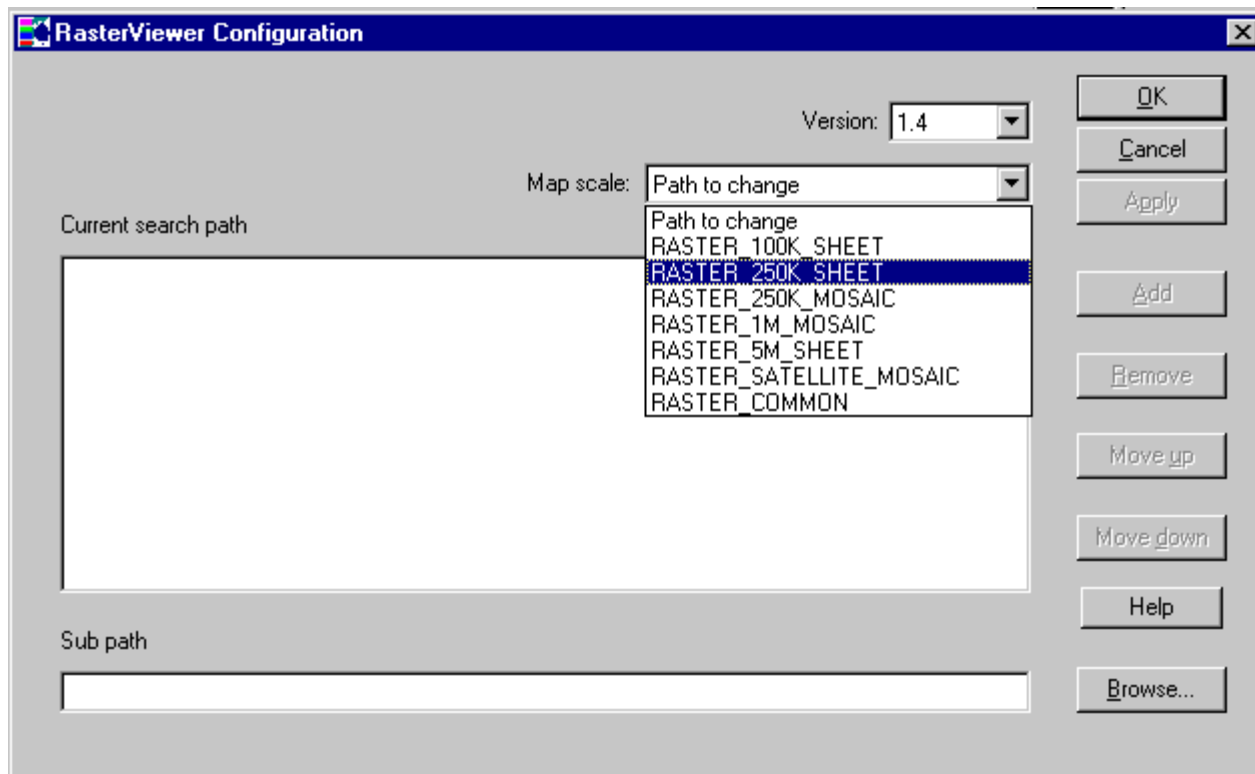
3. Click to highlight the search path you wish to remove.

4. Click the Remove button.

The search path should no longer be in the list of search paths.

5. Click the 'Apply' button to save these changes.