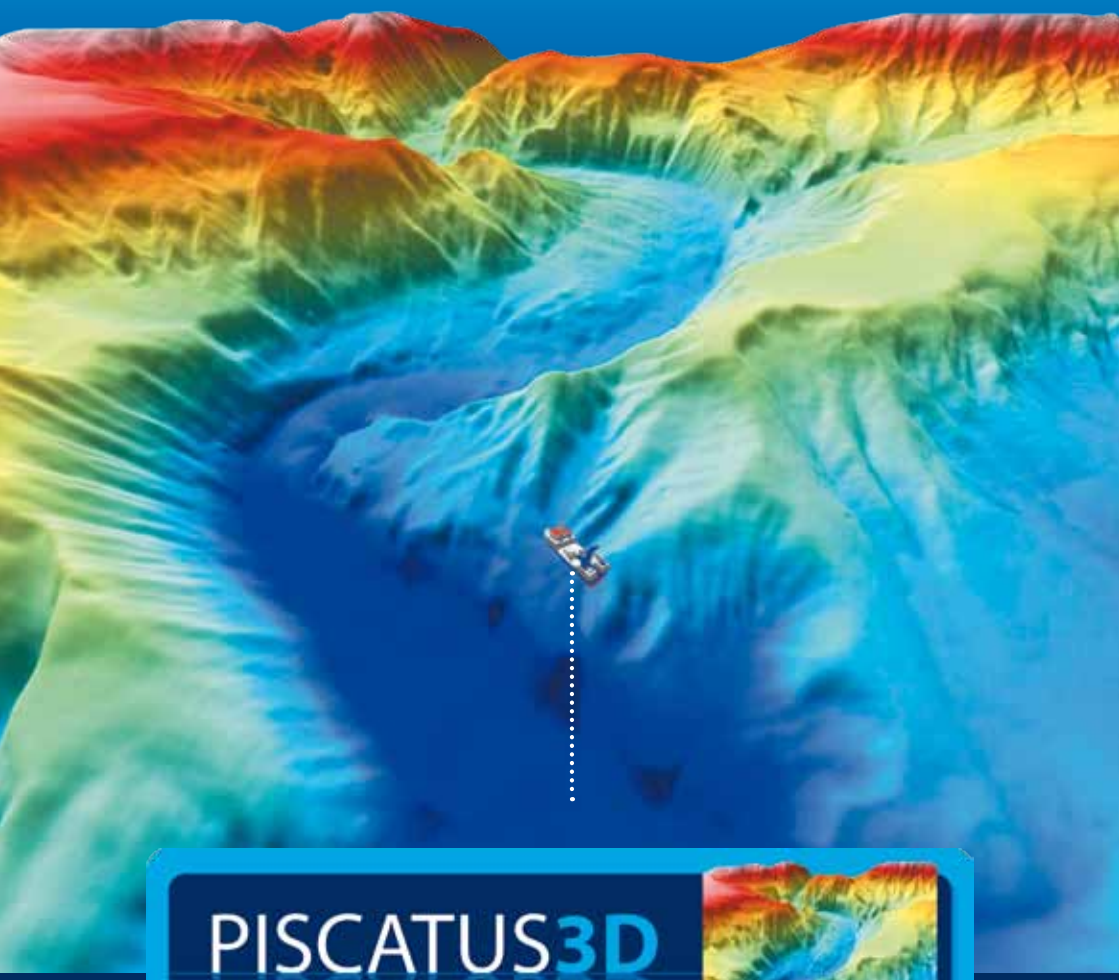
Version 5.0
User Guide



PISCATUS3D

SUPERIOR SEABED VISION

Piscatus3D delivers a real time 3D view of the ocean floor anywhere in the world, helping you to make the best decisions to catch more fish faster.

Version 5.0

User Guide

Congratulations on your purchase of Piscatus^{3D}

Piscatus^{3D} is a comprehensive 3-Dimensional fishing tool that displays in superior detail, exactly what is happening underwater in real-time as you fish. With an interface designed by fishermen for ease of use, view your underwater fishing grounds as never before. Piscatus^{3D} shows your boat, the seabed, the target fish and your fishing gear. Built on a stable and reliable technology platform, Piscatus^{3D} automatically saves your data as you fish. Piscatus^{3D} is available in three customised applications designed specifically for your fishing operations: Inshore Pro, Deep Sea Pro and Piscatus Classic.

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1.0 INTRODUCTION

1.1 What is Piscatus^{3D}

Piscatus^{3D} is a computer program that makes maps of the seafloor or lake bed for commercial and recreational fishermen. It has been designed to help fishermen catch more fish in less time. By connecting into a boat's GPS, sounder and seafloor discrimination device, a database can be built of the seabed's depth, hardness and roughness from the area the boat fishes. Depths are then used to build a model of the seafloor and hardness and roughness characteristics are overlaid. By getting accurate maps of the seafloor instantly, a fisherman can increase the boat's efficiency markedly.

PISCATUS Limited is run by ex-commercial fishermen and it is a policy that all our staff spend time at sea on commercial fishing boats. Our experience and close association with the commercial fishing industry helps us to make our products as useful as possible and easy to use for fishermen. We understand that fishermen want to catch fish and not learn about computers.

With this in mind, we have tried to make Piscatus^{3D} a useful tool that is easy to use. We always welcome feedback on our products so feel free to contact us or your dealer with suggestions that you feel may improve Piscatus^{3D}.

If you want to know more about how the software interacts with your electronic equipment or what the hardware configurations are, please consult the Piscatus^{3D} Installation guide. The rest of this manual gives a simple overview on how to use Piscatus^{3D} and what it can do for you.

1.2 How Piscatus^{3D} works – PISCATUS BathymetryNow™

PISCATUS BathymetryNow™ is a real-time dynamic mapping engine that integrates the supplied bathymetry database with GPS, echo sounding and seafloor discrimination device data from your vessel. To make the 3D maps, Piscatus^{3D} divides the area being mapped into a grid. As the boat passes over each grid cell, seabed data is stored in a database file called BATHYMETRY.FDB. Each time new data in a particular cell is found, that cell's depth, hardness and/or roughness value is updated and the area around it is redrawn.

In the example in Figure 1, we can see three tracklines (each ping from the sounder is marked as a red X) across an area and the resulting depth values assigned to each grid cell that the boat has crossed. The map from this grid would show a slope rising to the southwest. Hardness and roughness data are stored using the same process.

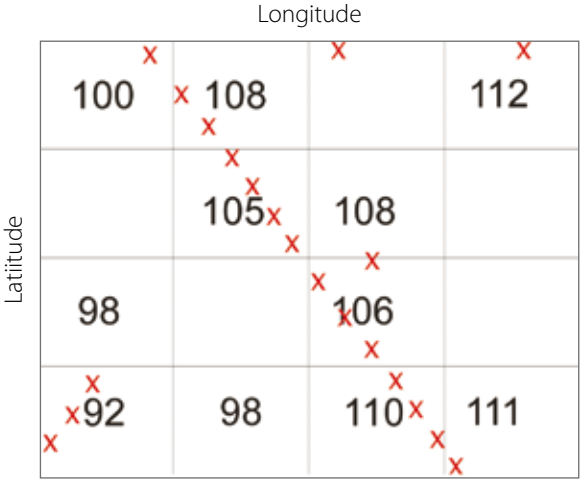


Figure 1. A sample grid with boat tracks across the cells

When working in a new area you can see the map being redrawn as new data comes in. Piscatus3D uses complicated interpolation algorithms to redraw the map with each new data point received. For this reason, as the boat moves forward you will see a 'square' around the boat being redrawn.

1.3 Piscatus3D modes

Piscatus3D is available in three different modes:

- Inshore-Pro (commercial fishing)
- Deepsea-Pro (commercial fishing)
- Classic (recreational fishing)

This guide describes in principle the operation and functionality of all three modes but the main focus is on the extended features of Inshore-Pro and Deepsea-Pro modes. It is important to understand the differences between these modes and how the modes overlap.

Some functionality described in this guide does not apply to Piscatus3D Classic. Please visit our website http://www.piscatus.co.nz/products.html#compare to compare all Piscatus modes and their features.

Inshore-Pro produces the highest detail of the seafloor because of its finer data resolution and depth accuracy. Deepsea-Pro is a more efficient system by storing less data it is able to maintaining bigger map sizes in deeper waters. For most vessels Inshore-Pro is the current choice, as it can give higher detail in shallow water but still stores data down to 3200 metres. Deepsea-Pro is recommend for vessels working almost constantly over 1000 metres or require 3D maps larger than 20 Nm.

Feature	***Inshore-Pro***	***Deepsea-Pro***
Data resolution	2.4 metres	20 metres
Depth accuracy	0.1 metres	1 metre
Minimum depth	0 metres	0 metres
Maximum depth	3200 metres	32000 metres
Minimum map size	1 Nm	5 Nm
Maximum map size	20 Nm	60 Nm
Best performance	< 1000 metres	> 1000 metres
< 1000 metres	High detail	Good detail
> 1000 metres	Small maps, detail same as Deepsea-Pro	High detail, larger maps

1.4 Built in data

1.4.1 Bathymetry data

Piscatus3D comes with a built in bathymetry dataset that covers the planet. This one nautical mile grid cell dataset of the planet is based on satellite altimetry and is kept separate from the boat's actual soundings. This dataset is a very useful tool when fishing new areas as it gives a good initial, low resolution picture of the overall bathymetry of an area. Once the boat collects real data however, this built in data is quickly enhanced.

1.4.2 Land data

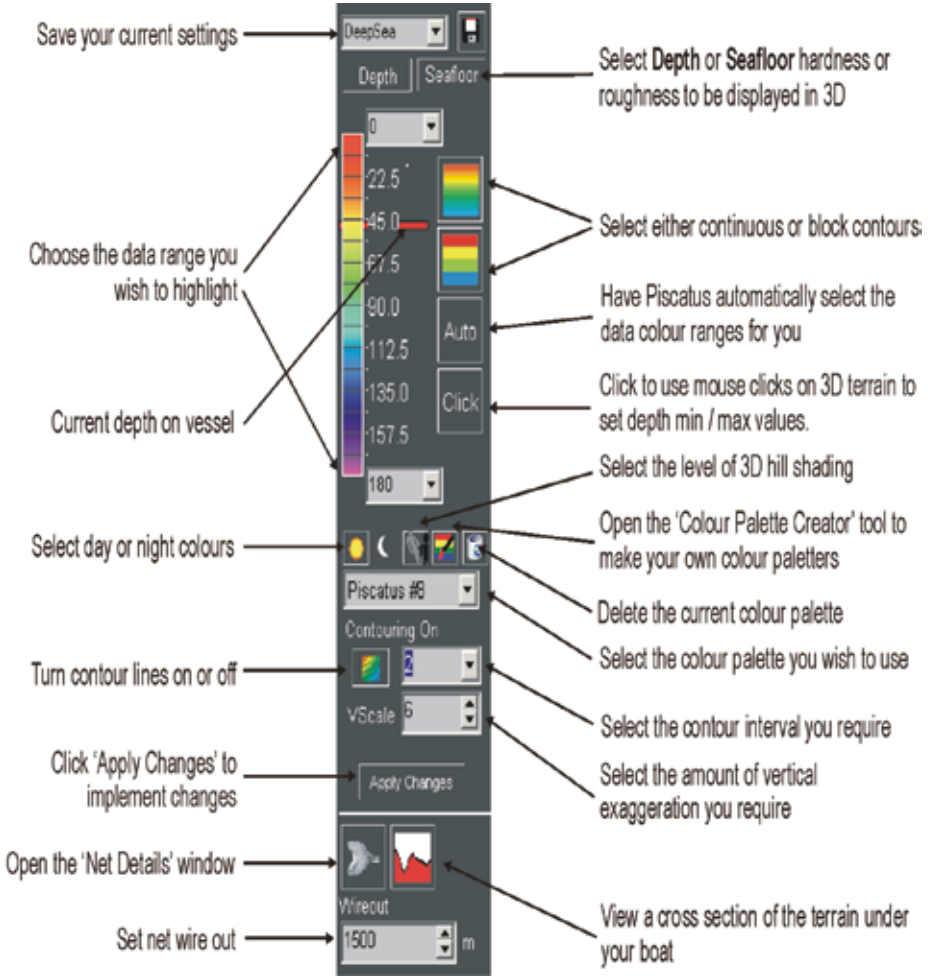
Land terrain models are also included for the area in which you fish. This data is based on NASA's Shuttle Radar Topography Mission data. Precision is approximately 90m.

2.0 Looking at your Piscatus3D map

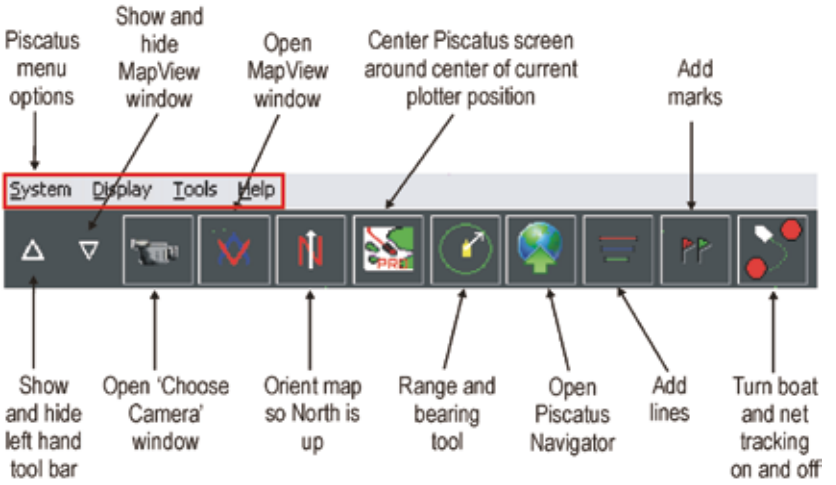
2.1 The Piscatus3D tool bars

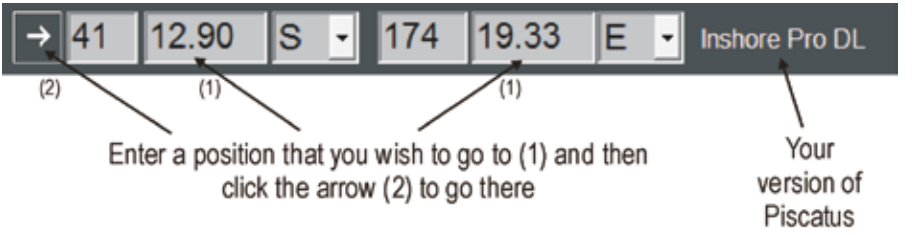
2.1.1 What the Piscatus3D tool bars do

Piscatus3D has been designed to be easy to use. The tool bar on the left side of the screen contains the tools for configuring how your 3D map looks.

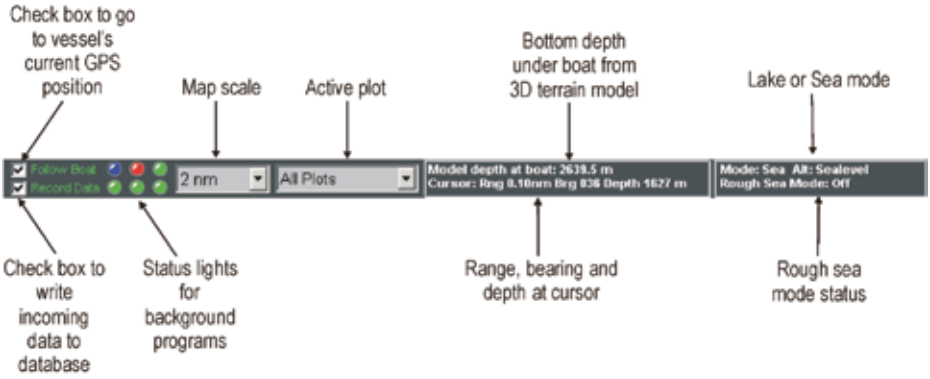


The tool bar at the top of the screen allows you to manipulate and navigate around your 3D map and to use the other Piscatus[3D] features including marks and lines, the range and bearing tool, boat and net tracking, and Piscatus[3D] Navigator.

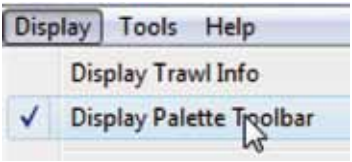




The tool bar at the bottom of the screen allows you choose how big an area you wish to view, what plot (if any) is active and whether incoming data is written to the database or not. It also gives an indication of the status of all the background programs that deliver the information from you electronics equipment to Piscatus[3D]



2.1.2 Turning the left hand Piscatus[3D] tool bar on and off



1. To toggle the display of the left hand Piscatus[3D] tool bar on and off select Display | Display Palette Toolbar from the Piscatus[3D] menu.

2. A tick next to 'Display Palette Toolbar' means the tool bar will be displayed, selecting this option to remove the tick will hide the tool bar.

3. You can also use the hide/show button on the top Piscatus[3D] tool bar to the same effect.

2.2 PISCATUS RealView™ - Viewing your 3D map from different angles

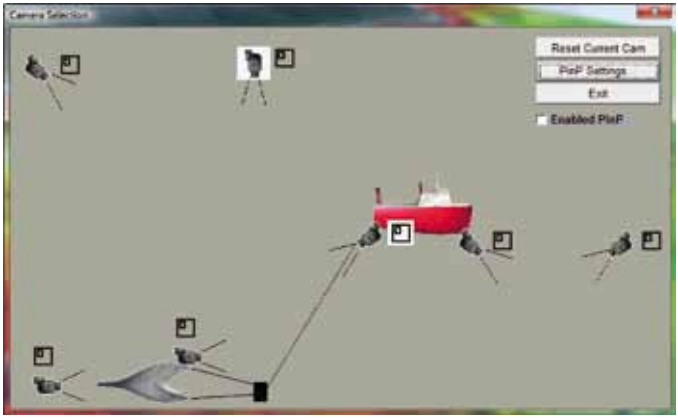
Piscatus[3D] makes a three dimensional model of the seafloor and, as such, can be viewed from any angle or position. PISCATUS RealView™ provides you with seven predefined camera locations which allow you to visualise what you want, the way you want.

With the release of version 5 a second camera location can be selected to display an additional static 3D map at the same time as the main 3D map using PinP (picture in picture).

2.2.1 Available cameras

1. To open the 'Camera Selection' window click the camera button on the top Piscatus[3D] tool bar or select Cameras | Camera Selector from the System drop down menu.

2. This will open the 'Camera Selection' window, as shown below.



Note - net cameras are only available when you have your net out.

2.2.2 Selecting the primary camera

Select a primary camera view by clicking any of the camera icons in the 'Camera Selection' window. This will cause the 'Camera Selection' window to close and the view of your 3D map will now be from the viewpoint of the camera that was selected.

2.2.3 Enabling the PinP camera

The control shown below found in the 'Camera Selection' window can be used to enable and disable the PinP camera view. The tick beside the control is present when the additional 3D window is enabled and not present when disabled.

2.2.4 Selecting the PinP camera

Select a PinP camera view by clicking any of the PinP icons as shown on the left. This will select this camera as the PinP camera and enable the PinP camera view if disabled.

2.2.5 Changing PinP settings

Click the button shown above to display the 'Picture in Picture Setup' window. In this window you can select the position and size of the PinP camera view.

2.2.6 Swapping between the primary and PinP camera

Double clicking the PinP camera view from the main Piscatus window will swap the primary and PinP camera selections.

2.2.7 Moving the cameras around

Using your trackball or mouse you can easily orient your 3D map to any particular viewpoint. The most common view is SkyView. This is the view from the camera that is directly overhead.

2.2.8 Rotating the 3D map

1. Position the cursor anywhere on the map.
2. Hold down the left button on the trackball or mouse. Wait for the cursor to change to a circular arrow.
3. Move the mouse or rotate the ball left or right and you will see your 3D map spin as you move the mouse or ball.
4. Release the left button when you have an angle you like.

2.2.9 Zooming in and out

1. Position the cursor on the center of the screen.
2. Hold down the right button on the trackball or mouse. Wait for the cursor to change to a magnifying glass.
3. Move the mouse or roll the ball forward to zoom in and backwards to zoom out.

4. Release the right button when you have the view you like.

2.2.10 Moving the map under the camera with the trackball or mouse

1. Hold down the middle button on the trackball or mouse. Wait for the cursor to change to a four-pointed arrow.

2. Move the mouse or roll the ball in the direction you wish to move your 3D map.

3. Release the middle button when you have the view you like.

Note – you will be able to move the map much faster if you can see the 'horizon' on your view. The computer must work much harder when the screen is full, so if you want to scroll around in your 3D map, tilt the map so the 'horizon' is visible.

Holding the shift key down on your keyboard increases the speed that the map moves.

2.2.11 Moving the map under the camera with the keyboard

1. Use the arrow keys on your keyboard to move the boat.

Note – you will be able to move the map much faster if you can see the 'horizon' on your view. The computer must work much harder when the screen is full, so if you want to scroll around in your 3D map, tilt the map so the 'horizon' is visible.

Holding the shift key down on your keyboard increases the speed that the map moves.

2.2.12 Keeping boat in view when in SkyView

SkyView is the camera directly above the boat - this is the most popular camera view in Piscatus3D. If you wish the camera to always be on the boat, go to the Piscatus3D menus and select System | Cameras and make sure 'Keep boat in view with sky cam' is ticked. This means if your boat 'sails' off the screen, the camera will automatically reposition itself on the boat.

If you are in SkyView and wish to look at another area within your current 3D map you can uncheck this option and then go and investigate another area. The camera will not automatically reposition itself back on the boat.

2.2.13 Refreshing the 3D map

While Piscatus3D is making its maps in real time it is working with the data received directly from the GPS, sounder and seafloor discrimination device. However, there has been no grooming or cleaning of this data as the map has just been locally updated immediately around the boat. Piscatus3D uses very complicated algorithms to make its maps and gives its best results when it can work with all the data for an area, not just what has recently come in from the sounder or seafloor discrimination device. For this reason, we have included a redraw function in the Piscatus3D menus. Selecting this option will force Piscatus3D to do an extract from its database and redraw the map using its cleaning and grooming routines and its more complex mapmaking routines.

We recommend you refresh the 3D map every hour or so if you have been collecting a lot of new data in a new area. For an area you already have a good map for, this function will not be needed.

1. To force Piscatus3D to redraw the current 3D map using all the data held in the database select Display | Refresh Terrain from the Piscatus3D menus.

2.3 Controlling how your map looks

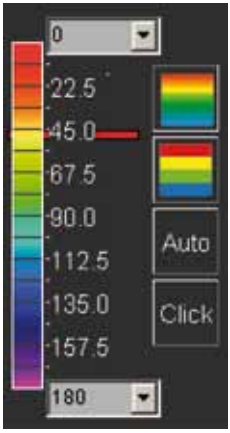
The controls for how your 3D map looks are on the tool bar on the left hand side of the Piscatus3D screen. From here you can control what type of data you are viewing, what depth range is highlighted with what colours, whether contours are on or off, the contour interval, the intensity of hill shading, the vertical exaggeration of your terrain and whether you wish to view day or night colours.

2.3.1 Setting the colour scale by mouse click on 3D terrain

Click on the 'Click' Button and then click on two locations on the 3D map. Piscatus3D will use the depth at these locations to set the depth min/max values.

2.3.2 Setting the colour scale manually

The depth range to be highlighted on screen is controlled by the colour scale bar on the left toolbar. Piscatus[3D] allows you to spread the colour scale over a large range of depths, or to really zoom in on an area of interest and get a detailed breakdown of the slope.



1. Select the shallowest depth you wish to look at from the top drop-down box or type it in directly from your keyboard.

2. Select the deepest depth you wish to look at from the lower drop-down box or type it in directly from your keyboard.

3. Click the 'Apply Changes' button.

4. This will set your 3D map to begin the colour scale at the bottom of the depth range and run through the colours to the top of the depth range. Using the colour palette shown in the picture to the left, all depths outside the range will be white (shallower) or blue (deeper).

2.3.3 Setting the colour scale automatically

To have Piscatus[3D] assign the colour palette for depth automatically, use the 'Auto' button. This button is designed to be a quick way of determining the range of depths present and applying an appropriate colour range over the 3D terrain model.

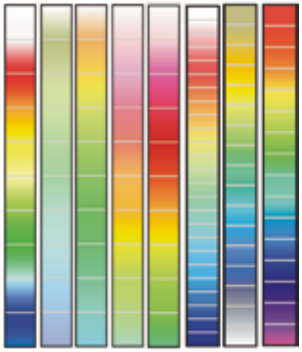
1. Click the 'Auto' button.

2. From the menu that pops up, select the area extent you would like Piscatus[3D] to apply a colour palette to, as shown on the left.

3. Piscatus[3D] will automatically redraw the 3D model to reflect any changes.

2.3.4 Changing the colour palette

Piscatus3D comes with eight different colour palettes preloaded. These palettes are shown below and provide different ways of looking at your 3D map.



1. Click the down arrow next to the colour palette drop down menu. This will display a list of palettes available to you.

2. Select the one you require by clicking on it, and Piscatus3D will apply it automatically to your 3D terrain.

2.3.5 Making your own colour palettes

Piscatus3D has a facility where you can create and save your own colour palettes.

1. Click the 'palette editor' button, as shown on to the left.

2. The 'Depth Palette Creator' window will open, as shown on the left.

3. With the left mouse or trackball button, click on the colours you wish to add to your palette (a maximum of 30 colours are allowed). As you select colours you will see them being added to the right hand side colour bar. You can select the colours from anywhere on the colour map. The colours you click first will represent the lower data values; the latter colours will represent the higher data values.

4. If you click the 'Continuous' check box and remove the tick, the colours will appear as separate colour blocks rather than grading into each other.

5. If you make a mistake, click the 'Clear' button and all colours will be cleared and you can start again.

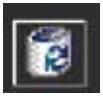
6. When you have finished adding colours, click the 'Save' button. You will be asked to give your colour palette a name. Enter a name and click the 'OK' button.

7. This palette will then be loaded as your current palette in Piscatus3D. It will also be saved and available in the drop down box of palette names.

8. To exit the 'Depth Palette Creator' without saving any of the palettes you have created, simply click the 'Cancel' button.

2.3.6 Deleting colour palettes

You can delete any of the colour palettes you make using the 'Depth Palette Creator' tool. You cannot delete any of the default Piscatus3D colour palettes (ie, those named Piscatus #1 to Piscatus #8).



1. To delete a palette, click the 'delete current palette' button, shown in the picture to the left.

2. The palette will be deleted from the list and 'Piscatus #1' will become the new palette.

Note - the palette deleted is always the current palette so if you want to delete a palette other than the current one, you will have to make it the current palette first.

2.3.7 Selecting continuous or block colours

Your 3D map can be viewed by a gradual change of colour through the data range selected, or it can be broken into quite definite colour bands for different data values.

1. To select continuous colours, click the continuous colours button. Piscatus3D will automatically blend the colours between the different data values.

2. To select block colours, click the block colours button. Piscatus3D will automatically divide the colour scheme into separate divisions for each colour.

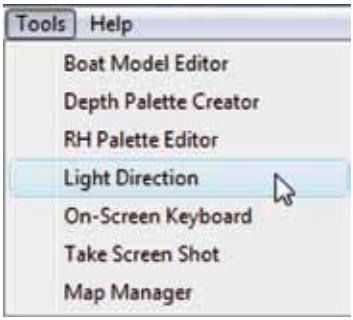
2.3.8 Changing the intensity of 3D shading

Piscatus3D allows you to control the level of shading on your 3D terrain. This gives greater control over the presentation of your data for more effective fishing. Less shading is normally used in flatter areas to remove a corrugation of the seafloor effect, or in rough bottom areas to give more of a planar 2D view. A greater intensity of shading is used when fishing ledges or drop offs, as these sections of the terrain are easier to see when throwing a shadow over them.

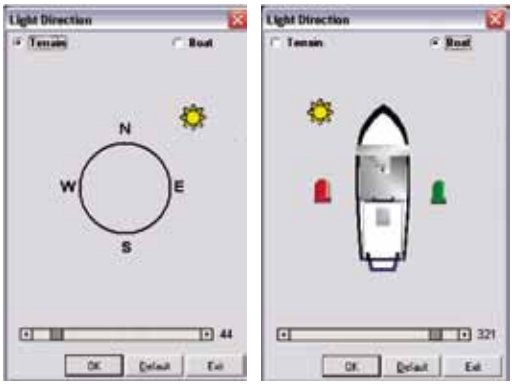
1. Click the shading button to display a list of available shading percentage values.
2. Select the intensity of shading you wish to apply to your 3D map, 200% is a high degree of shading, 1% is very little shading.
3. Your 3D terrain will automatically redraw to reflect the new shading value.

2.3.9 Controlling the light direction for 3D shading

By default, the light source is always positioned behind the boat so that the terrain in front of the boat is easy to see. This means that as the boat changes direction, so does the light. Furthermore, if the camera is not viewing forward from behind the boat, then the terrain of interest may be in shadow. The light direction can be changed to make the terrain of interest easier to see.



1. In the Piscatus3D menu options select Tools | Light Direction. This will open the 'Light Direction' control window, as shown over the page. This window allows you to change the light direction relative to the terrain or to the boat.
2. To adjust the light direction angle select either the 'Terrain' or 'Boat' option by clicking the appropriate option.



3. Click on the slider bar at the bottom of the window with the left trackball or mouse button and drag the slider left and right and watch the light direction change on your 3D map.

4. Stop dragging the slider when the desired light direction is found.

5. Release the left trackball or mouse button.

6. Clicking the 'Default' button will return the light source to directly behind the boat.

7. Click the 'OK' button to close the 'Light Direction' control window.

2.3.10 Setting the contour interval

Piscatus3D allows you to control how the contours look on screen, and if there are any showing at all.

1. To turn contours on or off, click the contours button.

2. When it is depressed contours will be shown and 'Contouring On' will show. When it is up, no contours will be shown and 'Contouring Off' will show.

3. To set the contour interval, click the down arrow to the right of the contours button. Select a value from the drop down box, or type a value in yourself, and then click the 'Apply Changes' button.

When working in a steep area of seafloor it is best to select a higher contour interval and when working on gentler slopes it is best to select a lower contour interval.

2.3.11 Understanding dynamic vertical exaggeration

Version 5 introduces dynamic vertical exaggeration. Previous versions of Piscatus[3D] used a static vertical exaggeration which meant that the value used had to be manually changed and did not adapt to how the 3D terrain was being viewed. Dynamic vertical exaggeration attempts to automatically meet user needs as their view of the 3D terrain changes. When the user is viewing the 3D in a top down view the vertical exaggeration is reduced to reflect how users want to view the map in more of a 2D perspective. As the user rotates to lower views on the 3D terrain the vertical exaggeration is increased to bring out the 3D shape of the seafloor.

Dynamic vertical exaggeration is the default setting but if you prefer the old static vertical exaggeration please read the section below.

Note: Dynamic vertical exaggeration only works on the sky and follow-boat cameras. All other cameras use a static vertical exaggeration.

2.3.12 Switching between dynamic and manual vertical exaggeration

As stated in the previous section Version 5 introduces dynamic vertical exaggeration.
But some users may prefer the old manual style vertical exaggeration.

The setting shown below controls the vertical exaggeration mode. This is available on the 'System' tab of the 'Piscatus setup' dialog. Please set this to 'Manual'. Set to 'Manual' for static vertical exaggeration or 'Automatic' for dynamic vertical exaggeration.

2.3.13 Setting the vertical exaggeration

Vertical exaggeration simply means that your vertical scale is larger than your horizontal scale. Vertical exaggeration is best used if you want to discern subtle topographic features. By increasing the vertical scale you 'exaggerate' the slope of an underwater feature and the land terrain. Just like a peak seems to have a steeper slope on your sounder if you travel over it at ten knots than if you travel over it at three knots, so vertical exaggeration changes the real slope of a feature.

1. To change the vertical exaggeration, use the arrows next to the 'VScale' button. Click the up arrow to increase the amount of exaggeration, or the down arrow to decrease it.

2. Click the 'Apply Changes' button.

Note - a vertical exaggeration value of 1.0 is true scale (ie, no exaggeration has been applied).

2.3.14 Switching between day and night colours

Piscatus3D has day and night settings that use preset colours for easy viewing in high and low light environments.

1. To change between night and day settings on the 3D map select the night or day colours button, shown in the picture on the left.

2. To change between light and dark interface settings, select System | Piscatus Setup from the Piscatus3D menus.

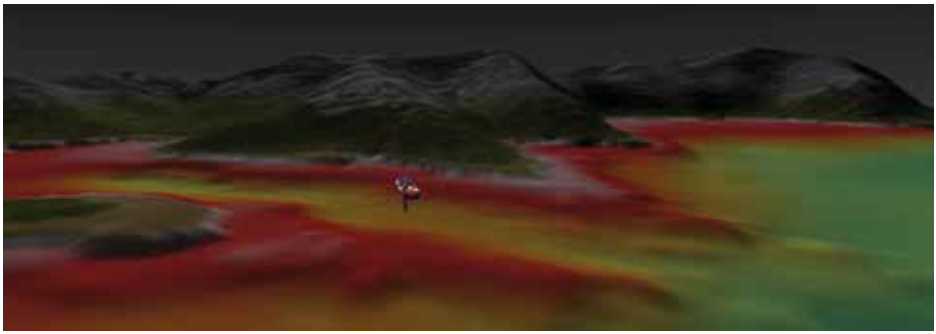
3. In the 'Piscatus Setup' window that opens, click on the 'System' tab and select one of the options in the 'Interface Colours' section.

4. The 'Alternate day and night' option uses the computer's clock to switch over modes based on time of day.

5. Click the 'OK' button.

2.3.15 Controlling the appearance of land data

Piscatus[3D] comes with high-resolution land data for the region you fish preloaded. You can turn off this land data if you do not wish to view it, doing so will speed up extraction and gridding times.



1. To turn the land data off, select System | Piscatus Setup from the Piscatus[3D] menus.

2. In the 'Piscatus Setup' window, click on the 'Map' tab and under the 'Land Detail' section, uncheck the 'Enable land rendering' tick box, as shown below.

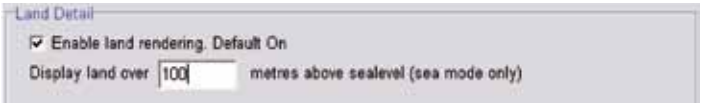
3. Click the 'OK' button to close the 'Piscatus Setup window.

You can also specify what height above sea level land data should begin to display at. For example, you may wish to display only that land over 100m.

1. Select System | Piscatus Setup from the Piscatus[3D] menus. This will open the 'Piscatus Setup window.

2. In the 'Map' tab, make sure the 'Enable land rendering' option is ticked in the 'Land Detail' section.

3. Enter 100 in the 'Display land over…' box as shown in the picture below.



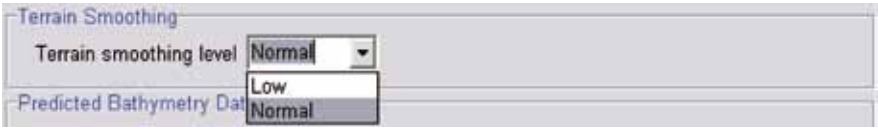
4. Click the 'OK' button to close the 'Piscatus Setup window.

2.3.16 Terrain Smoothing

Piscatus3D has a setting that allows you to choose the level of terrain 'smoothing' applied to the 3D bathymetry model. A 'Normal' terrain smoothing level averages out the terrain between data points to create a smooth surface. The 'Low' setting will show more detail but relies more on good data than the normal setting.

1. To set the level of terrain smoothing, select System | Piscatus Setup from the Piscatus3D menus. This will open the 'Piscatus Setup' window.

2. In the 'Map' tab, click the down arrow in the 'Terrain Smoothing' section and select either 'Low' or 'Normal' by clicking on the appropriate option, as shown below.



3. Click the 'OK' button to close the 'Piscatus Setup' window. Piscatus3D will automatically redraw its 3D terrain at the new level.

2.3.17 Turning off background bathymetry data

Piscatus3D has a function to turn on and off the background satellite altimetry data. When you are in an area for which you have no boat data Piscatus3D draws its map solely from this data. As you work the area, and depth soundings are added to the database, this background data is given less and less importance in defining your maps. It may still be useful to fill in the 'holes' where you do not fish to give a continuous terrain surface. However, you can turn it off altogether if you want.

1. Select System | Piscatus Setup from the Piscatus3D menus, this will open the 'Piscatus Setup' window.

2. In the 'Map' tab, click the 'Enable predicted bathymetry background data' option to tick the checkbox, as shown below.

3. Click the 'OK' button to close the 'Piscatus Setup window.

4. Your 3D and 2D maps will now be drawn based on boat data only.

2.3.18 Rough sea mode

Piscatus3D has a 'smoothing' function to take into account rough seas. When in this mode, Piscatus3D takes the average of the previous three depth readings and sends this value to its database. This is ideal for situations when the boat is in rough weather and getting variable depth readings.

1. To turn on the rough sea mode, go to the Piscatus3D menus and select System | Rough Sea mode.
2. A tick next to this option indicates it is turned on.
3. To turn off rough sea mode, click the option again to remove the tick.

Note - the other alternative in rough weather is to turn off data recording (see section 7.6).

2.3.19 Changing the dynamic regridding area

The dynamic regridding area in Piscatus3D is the area around the vessel that changes when new data is collected. This is set from the 'System' tab of the 'Piscatus Setup' window; there are 3 possible options. These are:

- Large (1/16)
- Normal (1/32)
- Small (1/64)

The fractional value shown next to the 3 options represents the size of regridded data relative to the current map size. Changing this value effects only the display of new data and not the accuracy of data loaded from the database.

2.4 Roughness and Hardness mapping

If you have a seafloor discrimination device, Piscatus3D can collect, store and display the incoming data. Seascan, Roxann and JRC JFC130 sounders are supported at present.

2.4.1 Enabling roughness and hardness display

In order to view roughness and hardness (RH) in the 3D map make sure the options to do so are enabled.

1. Select System | Piscatus Setup from the Piscatus3D menus. This will open the 'Piscatus Setup' window.

2. In the 'Seafloor' tab make sure 'Enable Roughness Hardness Mapping' is ticked, as shown below.

3. Click the 'OK' button to close the 'Piscatus Setup' window.

2.4.2 Selecting the area to view

You can choose the way you want Piscatus3D to display the results of the RH data. You can either display just the tracklines, leaving the areas of no data empty, or you can get Piscatus3D to fill in the gaps thus covering the whole 3D view using its interpolation techniques.

1. Select System | Piscatus Setup from the Piscatus3D menus. This will open the 'Piscatus Setup' window.

2. In the 'Seafloor' tab click the down arrow next to 'Display style' in the 'Roughness Hardness Settings' section. Select either 'Full area' or 'Trackline' from the list by clicking on it, as shown below.

3. Click the 'OK' button to close the 'Piscatus Setup' window.

2.4.3 Displaying roughness and hardness in 3D

Piscatus[3D] can overlay colours on the 3D terrain model representing the type of seafloor you are currently over, such as rock, sand or mud. These seafloor types are found by comparing the RH data values.

1. To display RH data, click the 'Seafloor 'button, as shown on the left.

2.4.4 Changing the display palette

The display of RH data is different to the display of depth data. The RH uses a 2D palette that compares RH data to find a seafloor type, such as rock, sand or mud. There are 2D palettes available by default in Piscatus[3D] that allow the display of only one type of data, eg, hardness or roughness.

1. To select a RH 2D palette, click the drop down arrow next to the palette menu and select the one you wish to use by clicking on it, as shown on the left.

2.4.5 What is a Roughness and Hardness 2D palette?

Shown below is the RoxAnn RH 2D palette installed with Piscatus[3D]. The Y values represent Roughness and the X values Hardness. Different combinations of RH data represent different seafloor types and each type is assigned a colour and a description.

Up to 30 different colour rectangles can be assigned to represent a level of roughness and hardness. If over lapping occurs the higher line number takes precedence.

This RH 2D palette is used to assign colours to your RH data collected. It is generally accepted that values output by RH systems are relative to the hardware used to collect the data for example. RH processor unit, echo sounder, and transducer all determine the ground type. Therefore it is possible default palette values will not necessarily fit each boat. This editor allows you to customize RH palettes to suit your data collected.

2.4.6 Understanding the roughness and hardness colour when in the 3D

When the 'Seafloor' option is selected and RH data in being display in the 3D, the colours used on the 3D terrain refer to the selected 2D palette. In the example shown on the left the RoxAnn 2D palette is selected.

When a 2D palette is selected the list of colours are shown and the description of the colour is shown next to each. These colours and descriptions are all built into the 2D palette. Therefore it is very important that the correct description is entered into the 2D palette.

Each 2D palette can contain up to 30 different seafloor types, but the list of types displayed on the Piscatus^{3D} main screen can only display a maximum of 13. If the selected palette contains more than 13 palettes you will need to use the scrollbar to view remaining seafloor types. But to reduce the number of seafloor types displayed on the Piscatus^{3D} main screen, only seafloor types used in the 2D palette are displayed.

2.4.7 Understanding the 2D palette lookup scale

Piscatus^{3D} stores all RH values on a 1-10000 scale, but uses two different methods when searching the 2D palette for a seafloor type. The default scale uses the raw RH value on a one-to-one basis, while the RoxAnn scale uses the square root of raw RH value. The lookup scale is selected on the 'Palette Details' tab.

Typical 'default' value range of 0 to 10,000

Typical 'RoxAnn' value range of 0 to 2.07

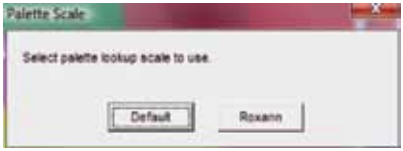
The 'X Max' and 'Y Max' values can be also changed to suit your system. For example, if your maximum hardness value only reaches 2000 then you can set the X axis (max hardness) value to 2000. This will spread the colours over a shorter range. Note, you may need to reassign colours if you change these limits.

2.4.8 How to create a new 2D Palette

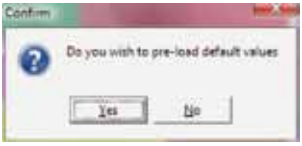
1. Click the 'Palette Editor' button to open the 'Roughness/Hardness 2D Palette' window.

2. In the 'Roughness/Hardness 2D Palette' window, click the 'Create New Palette' button.

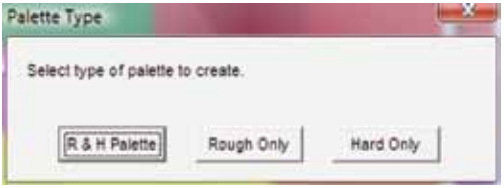
3. You will be displayed an option to select the palette scale you wish to use, as shown below. If you are using RoxAnn, we suggest you use the RoxAnn Scale. Click the option you wish to use.



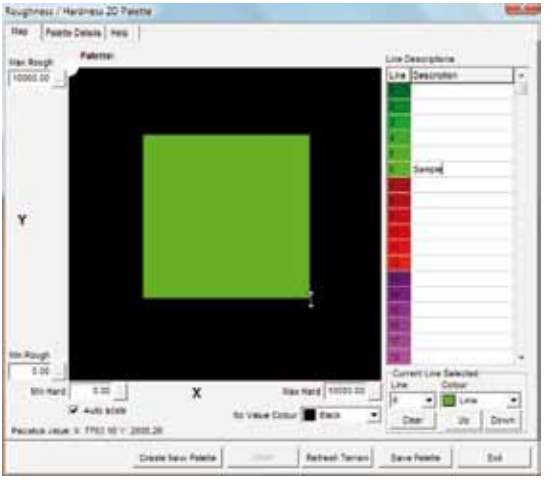
4. Next you will be asked if you wish to fill the 2D palette with pre-loaded default values. Default values will fill the palette with default colours used by Piscatus3D, which you can then edit later. If you wish to create a completely new palette it is best to select 'No' for this option.



5. If you selected 'Yes' from the previous step, you will be asked if you wish to use default values for both the roughness and hardness axis, roughness only or hardness only, as shown below.



6. To create the 2D palette select a colour on the map tab/line descriptions and use the mouse to drag out an area to paint. Descriptions can be added to each used colour and this description is shown beside the used colour on the Piscatus3D main window. On the next page is an example of one assigned colour area in a new 2D palette.



2.4.9 How to edit an existing 2D Palette

Existing 2D palettes can be edited and there are many editing options.

Adding an extra line or coloured area: Can be done in the 2D palette by selecting a line or colour on the map tab/line descriptions and use the mouse to drag out an area to paint.

Changing lines descriptions: Is done by double clicking on the line description list displayed and typing in the new description name.

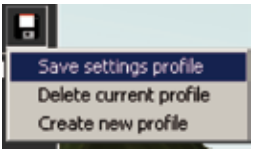
Deleting lines or coloured areas: To do this select a line or coloured area from the line description list and then clicking the 'Clear' button.

Changing the colour of a line or coloured area: To do this select a line or coloured area from the line description list and then select a new colour from the 'Current line selected' section of the 2D palette window. As shown below:

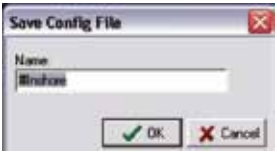
2.5 Saving and loading display settings

You can save the display settings (colour scale, colour palette, contour interval, night mode etc…) you find best for viewing the Piscatus3D map. With these settings saved they can be loaded back at anytime. This function could be used for saving the best settings for particular areas of the sea, or each user's favourite settings.

2.5.1 Saving display settings



1. Once you have selected the display settings you want to save, press the save button and select 'Save settings profile'.



2. A window like the one shown on the left will open. In this window enter the name you wish to give the settings you are saving and click the 'OK' button.

2.5.2 Loading display settings

1. To load a previously saved setting, click the down arrow to the right hand side of the saved settings drop down box and a list of all saved settings will appear.

2. Select the required setting from the drop down list.

3. Piscatus[3D] will automatically load the saved settings.

2.6 Setting the depth units

Piscatus[3D] can display depth values in feet, fathoms or meters.

1. To set the preferred units select System | Depth Units from the Piscatus[3D] menus, and then either meters, fathoms or feet.

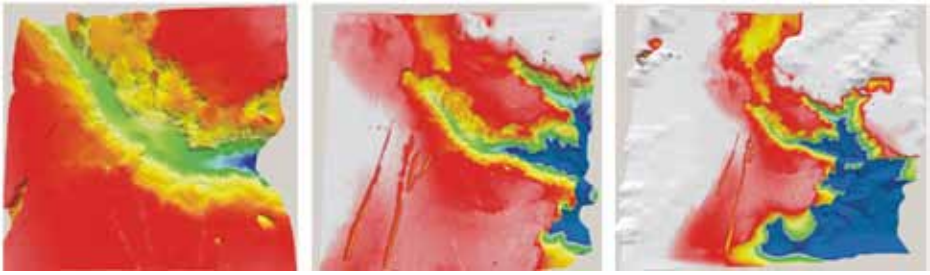
Note - while Piscatus[3D] can display in any units, the data written to the database is always stored in meters. Hence, when you are importing data into Piscatus[3D] via Map Manager from a non-Piscatus[3D] source (e.g., ASCII data), it is essential to make sure the depth values are in meters. Please refer to section 12 to learn about Map Manager.

2.7 Available map sizes

Piscatus[3D] DeepSea Pro and Inshore Pro both have six different scales (or resolutions) at which to view your data. These allow you to choose the amount of 3D terrain you wish to see. Piscatus[3D] DeepSea Pro has 5nm, 10nm, 20nm, 30nm, 60nm and 100nm resolutions available and Piscatus[3D] Inshore Pro has 1nm, 2nm, 5nm, 10nm, 20nm and 100nm available. Note 100nm view only uses background data to avoid overloading data points.

For example, a 60nm view in Piscatus[3D] DeepSea Pro would be useful for boats doing long tows as the whole tow can be seen on the one screen. A trade off from increasing the area on screen will be a decrease in the map detail as the terrain model is smoothed.

Examples of different map resolutions are shown below. These are taken from a Piscatus3D DeepSea Pro installation.



10nm 30nm 60nm

2.7.1 Changing Piscatus3D map size

1. To change the map size, use the drop down menu on the bottom Piscatus3D tool bar, as shown on the left.

2. Click the down arrow to display a list of resolutions and select the one you want.

3. Piscatus3D will automatically update your 3D view to the newly selected size.

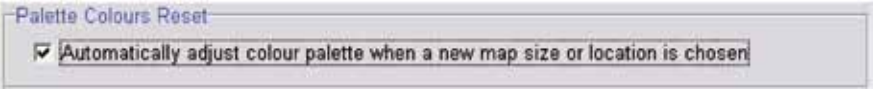
2.7.2 Reassigning the colour scheme when changing map size

When you change from one map size to another, Piscatus3D maintains its colour scale by default. This means that if red is 50m in the 5nm resolution of Piscatus3D Inshore Pro, it will still be red at 50m in the 20nm resolution. However, because you are now viewing a much larger area the range of data values you are seeing will have changed, your old colour scheme may not cover them adequately. Piscatus3D can be set to automatically reassign the colour scheme to cover the new range of data values it encounters when changing map size.

1. Select System | Piscatus Setup from the Piscatus3D menus.

2. In the 'Piscatus Setup' window that opens click on the 'Map' tab.

3. In the 'Palette Colours Reset' section, make sure that the 'Automatically adjust colour palette when a new map size or location is chosen' option is ticked, as shown below.



4. Then click the 'OK' button.

2.8 Using the cross section window

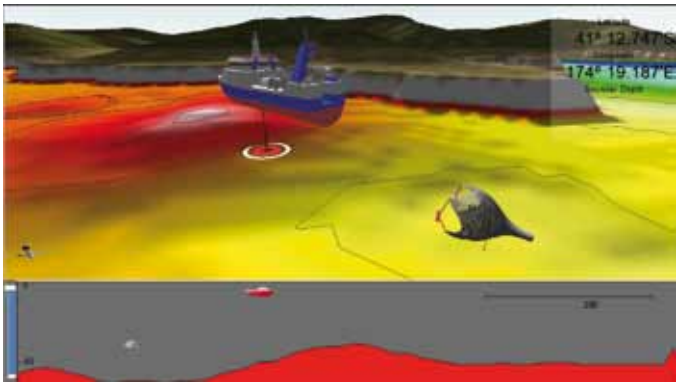
The Piscatus3D cross-section view gives you a unique look at the bottom. This view shows a cross section profile of the bottom *looking forward in the direction of the boat heading*. Current boat position and boat heading are used to determine where the profile will be taken. If you have a net out, the view shows a cross section profile of the bottom *looking forward in the direction of the net heading*. Current net position and boat heading are used to determine where the profile will be taken.

2.8.1 Showing a cross section view

1. To show the cross section view, click the cross section button so that it appears depressed.

2. This will bring up the cross section view at the bottom of your 3D terrain.

If you are using SmartNet™, Simrad ITI or PACHA, or you have an offset on your PISCATUS VirtualNet™, then the profile you are seeing is what is in front of the net – NOT what is behind the boat.



2.8.2 Removing a cross section view

1. To remove a cross section view, click the cross section button so that it no longer appears depressed.

2. The cross section view will close and your 3D map will return to occupying all available space.

2.8.3 Resizing the cross section view

You can resize the cross section window with your trackball or mouse simply by placing your cursor directly over the boundary with the 3D window and waiting for the cursor to change. Once it changes, click the left trackball or mouse button and holding it down, drag the boundary either up or down to increase or decrease the height of the window.

2.9 Boat Model Editor

Piscatus3D has a built in boat model editor that allows you to choose the model of your boat and what colours it should be.

2.9.1 Painting your boat

1. To open the 'Boat Model Editor' select Tools | Boat Model Editor from the Piscatus3D menus.

2. Click on any of the 'Colour' buttons to select a different the colour for the boat model.

3. Click the 'Reset Colours' button to return to the default colours.

4. Click the 'Save Changes' button to apply the new colour scheme you have created and close the 'Boat Model Editor' window.

2.9.2 Changing the boat model

1. To change the boat model, open the 'Boat Model Editor' window by selecting Tools | Boat Model Editor.

2. Click the 'Load Boat Model' button. This will bring up a list of other boat models you can choose from, select one from the list by clicking on it, and then click the 'Open' button.

3. Click the 'Make Boat Current' button and Piscatus3D will use the new boat model.

3.0 Navigating in 3D

3.1 Follow boat

With the 'Follow Boat' option ticked your map will always be based around your current GPS position. You can turn off 'Follow Boat' and type co-ordinates for a different location into the tool bar at the top of the screen and then click the arrow to go there.

To return to your current GPS position, simply click 'Follow Boat' and you will go there.

3.2 Orienting the map so North is up

1. Click the north up button. Piscatus[3D] will orient your current camera so it is looking due north.

3.3 Using the range and bearing tool

Piscatus[3D] has a 3D range and bearing tool.

1. To use this tool click the range and bearing button on the top Piscatus[3D] tool bar and then select either the 'Bearing From Boat' or 'Bearing From Net' option.

2. Once the tool is selected, clicking once on any area of your 3D map will give you a range and bearing to that location from either the boat or the net, along with the display of a dotted orange line from the boat or net.

3. To remove the range and bearing readings, click on the bearing marker.

Note: Unit of measure for range values can be changed on the System tab of the Piscatus setup dialog.

3.4 Displaying information readouts

3.4.1 Displaying information from cursor location

As you move the trackball or mouse cursor over your 3D terrain a range and bearing from the boat and a water column depth are shown on the bottom tool bar, as shown below.

3.4.2 Displaying on screen information

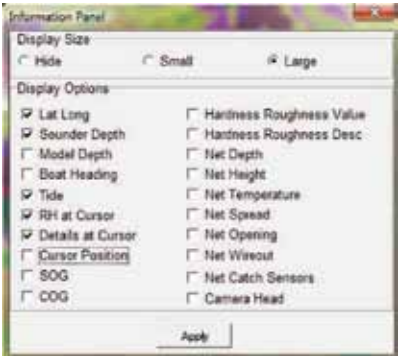
Piscatus3D can display an information panel detailing, among other things, boat position, heading, depth under boat, hardness and roughness and net depth and height.

1. To choose which items to display, and to toggle the display on and off, select Display | Infomation Panel Options from the Piscatus3D menus. This will open the 'Information Panel' window, as shown over the page.

2. Check the items you wish to display by clicking them.

3. Select the size of the information panel (the 'Hide' option will turn the display of the information panel off).

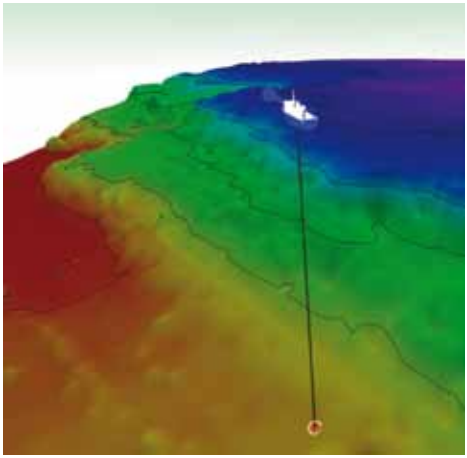
4. Click the 'Apply' button.



5. An information panel will appear on the right hand side of your screen detailing the items you selected. These values update in real time.

6. To turn the information panel off, click the 'Hide' button in the 'Information Panel' window.

3.5 Showing a terrain bulls eye and boat direction vector



A terrain bull's eye is useful when the terrain directly underneath your boat is of most importance. This option helps the skipper pin point the terrain of interest faster and easier.

The boat direction vector displays an arrow from the front of the boat making it easy the see the heading of the boat.

1. To apply a terrain bulls eye and/or the boat direction vector go to the Piscatus3D menu options and select System | Piscatus Setup. This will open the 'Piscatus Setup' window.

2. In the 'Boat' tab check or uncheck the 'Bulls eye' or 'Direction Vector' options as required by clicking on the check boxes. Additionally, specify a distance (in minutes) for the length of the direction vector by clicking the down arrow next to the 'Direction vector' box and selecting a value.

3. Click the 'OK' button.

3.6 Controlling the boat's vertical position

Piscatus3D gives you the ability to control the vertical position of your boat. You can set it either to sea level, or to a certain height off the bottom. Having the boat set to sea level will give you a realistic relationship between boat position and terrain contours, but in deep water this often makes the terrain hard to see. By setting the height of the boat off the bottom you can control the camera height thus allowing you to see your position over the terrain, and the terrain itself, more easily. Note that when you use this setup, the boat and camera will mimic the terrain and go up and down with it.

1. To control the boat's vertical position go to the Piscatus3D menu options and select System | Piscatus Setup. This will open the 'Piscatus Setup' window.

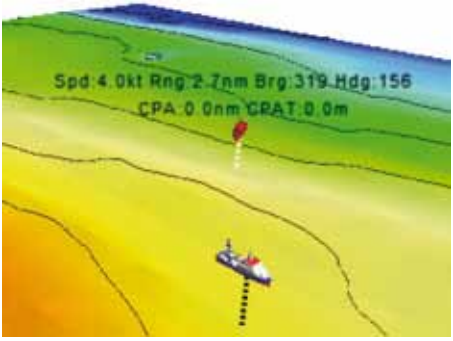
2. Go to the 'Boat' tab.

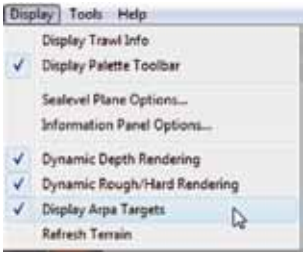
3. To have the boat always at sea level, select the option called 'Boat always at sea level'. To have the boat a set distance off the bottom, select the option called 'Control boat distance off bottom' and set that distance by dragging the slider bar up or down with the left trackball or mouse button until the correct distance is found, as shown below.

4. Click the 'OK' button.

3.7 Displaying ARPA targets

This section describes how to display ARPA targets and information about them in the Piscatus3D environment. This section does not describe now to set up SMISealog to received incoming data. For information on receiving data in SMISealog please refer to the 'Receiving APRA target data' section of the installation guide.





To enable APRA target display click the 'Display Apra Targets' options from the Display menu, as shown to the left. This option is enabled when there is a tick beside the option and disabled when there is no tick. Once this option has been enabled APRA targets will automatically be displayed.

3.7.1 Displaying information about an ARPA target

To display information about an APRA target right click on the APRA target inside the 3D, the menu shown to the left will be displayed. Select the option 'Display Target Data' from the menu. Only one target can display information.

3.7.2 Removing information displayed about an ARPA target

To display information about an APRA target right click on the APRA target inside the 3D, the menu shown to the left will be displayed. Select the option 'Clear Target Data' from the menu.

3.7.3 Changing the colour of an ARPA target

An APRA target's colour is always red by default but can be easily changed to any colour by right clicking on any APRA target within the 3D and selecting the menu option 'Change Colour'. Once this option is selected a colour selection dialog will be displayed, on this dialog select a colour and press the 'OK' button.

3.7.4 Refreshing ARPA targets

The way APRA targets are tracked in Piscatus3D they will not disappear if you stop tracking them on your radar. Selecting the 'Refresh all targets' option from the APRA target menu (accessed via right click on target in 3D) will cancel all targets and load new targets based on new data being received from radar.

4.0 Working with Piscatus3D Navigator

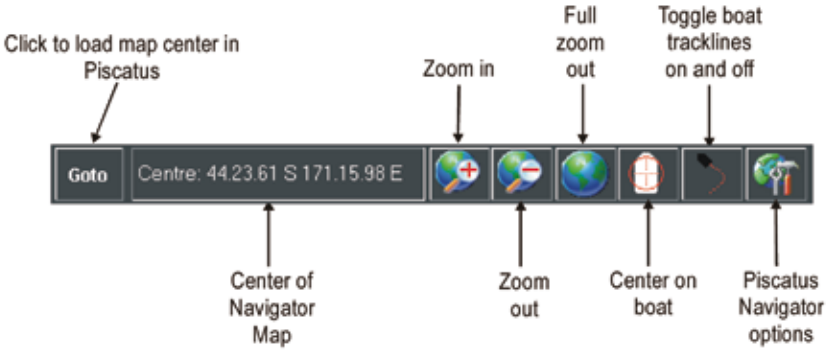
4.1 What is Piscatus3D Navigator

Piscatus3D Navigator is a utility built into Piscatus3D that gives you an overview of the world, the boat's position, coastlines, tracklines of boat movement and bathymetry for the globe. You can zoom in and out to any scale and location and turn on and off coastlines, countries and bathymetry.

4.2 Opening Piscatus3D Navigator

1. On the top Piscatus3D tool bar, click the Piscatus3D Navigator button.
2. Piscatus3D Navigator will open in its own window centered on your boat's current position.

4.3 The Piscatus3D Navigator tool bar



4.4 Navigating around the globe

It is very easy to move to different locations in the Piscatus3D Navigator view using the zoom and panning tools.

4.4.1 Zooming in and out

There are three different ways to zoom in and out of your Piscatus3D Navigator map.

The first way is to use the zoom buttons on the Piscatus3D Navigator tool bar. Clicking on these buttons will zoom either in or out from the center of your current display.

The second way is to use the 'Page Up' and 'Page Down' keys on your keyboard. These keys work in the same way as the zoom in and out buttons on the tool bar, 'Page Up' zooms in, 'Page Down' zooms out.

The third way is to use the right hand trackball or mouse button. Right click with your trackball or mouse and drag a rectangle over the area of the globe you wish to zoom into. Release the trackball or mouse button when you have selected the required area.

4.4.2 Zooming to full extent

1. To quickly return to the full spatial extent of the globe, click the full zoom out button on the Piscatus3D Navigator tool bar.

4.4.3 Panning and rotating

Use the left hand mouse or trackball button to move around the globe by panning without having to zoom in or out.

1. Hold down the left trackball or mouse button, click anywhere on the globe and drag in any direction.

2. Release the trackball or mouse button when you have the required area.

3. The arrow keys on your keyboard can also be used to pan or rotate the view.

4.4.4 Centering on a particular location

Double click with the left trackball or mouse button on any part of the globe and the view will be redrawn centering on that location. You can use this tool in conjunction with the zoom in button to quickly zoom in to an area of interest.

4.4.5 Centering on boat

1. To return your view to having the boat location at center, click the center on boat button.

4.5 Displaying overlays

Piscatus3D Navigator has separate coastline and bathymetry layers so you can turn these on and off depending on whether you want them displayed or not.

4.5.1 Turning coastlines on and off

1. To control coastline visibility click the Piscatus3D Navigator options button on the tool bar and select the 'Display Coastline' option.
2. When this option is ticked, coastlines will be displayed.
3. To turn coastlines off, click the 'Display Coastline' option again so the tick is removed.

4.5.2 Turning bathymetry on and off

1. To show background bathymetry click the Piscatus3D Navigator options button and select Maps | World.
2. When the 'World' option is ticked, the bathymetry will be displayed.
3. To turn off the display of the background bathymetry select Maps | None.

These bathymetric charts are compiled from the same under laying satellite altimetry data source that is built into Piscatus3D. Previous users of PISCATUS Ltd's paper Predicted Bathymetry charts may be familiar with these maps also. The depth scale is provided below (in meters).

4.6 Displaying boat tracklines

Piscatus3D Navigator has the ability to show a boat trackline generated from the last 100 positions the boat has recorded. Tracklines are only stored while Piscatus3D Navigator s open and cannot be saved.

4.6.1 Turning boat tracklines on and off

1. Use the Toggle boat-tracking button to turn boat tracklines on and off.

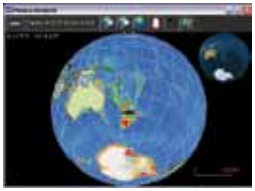
4.6.2 Setting trackline options

Trackline options can be found by clicking the Piscatus3D Navigator options button on the tool bar and selecting 'Trackline', as shown on the left. With these options you can reset the boat trackline and change its colour.

4.7 Changing the map projection

Piscatus3D Navigator displays the world in three different projections; these are shown in the pictures below.

Spherical



Mercator

Cartesian

1. To change the projection you are viewing, click the Piscatus3D Navigator options button, select 'Projection' and then choose one of the three map types.

4.8 Positioning Piscatus3D 3D view from Piscatus3D Navigator

1. To make your main Piscatus3D 3D window correspond to the area you are looking at in Piscatus3D Navigator, click the 'Goto' button on the Piscatus3D Navigator tool bar.

2. Piscatus3D Navigator will minimize and Piscatus3D will load the new position.

5.0 Using marks and lines

Piscatus3D has the facility to create, save and load marks and lines directly in the 3D environment. These can also be grouped together into plots.

5.1 Working with marks and lines

5.1.1 Creating marks

1. Click the marks button on the top Piscatus3D tool bar.

2. From the drop down menu, select a mark type and colour, as shown on the left.

3. Left click on the 3D terrain where you want the mark to be placed.

4. Your mark will now appear on your 3D map.

After you have created a new mark you will notice an information panel appears, as shown on the left. This area details the co-ordinates of the mark, when it was created, what plot it is part of and what depth it is placed at. There is also a text box where you can write a description or add notes related to the mark.

Note - new marks are added to the active plot.

5.1.2 Creating a mark at your current position

You can create a mark directly under the boat at your current position by selecting one of the 'Drop …' options in the drop down menu shown in 5.1.1, or by using F-key shortcuts. Each F- key relates to a different type of mark, the default settings are shown below.

F2 = Red Fish mark

F3 = Blue Fish mark

F4 = Green sphere

F5 = Red sphere

F6 = Blue cone

F7 = Green cube

F8 = Danger sign

5.1.3 Customizing the mark function keys

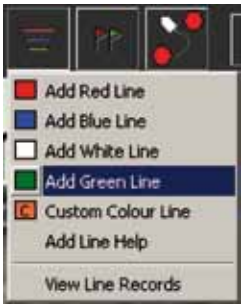
The F-key shortcuts can also be customised to different marks and mark colours on F-key press. To do so, follow the instructions below:

1. Go to the Piscatus3D menu options and select System | Piscatus Setup. This will open the 'Piscatus Setup' window.

2. Go to the 'Function Keys' tab.

3. Use the mark types combobox and the "Change Colour" button to customize each F- key.

5.1.4 Creating lines



1. Click the lines button on the top Piscatus[3D] tool bar.
2. From the drop down menu, select one of the 'Add…' options, as shown on the left.
3. Left click on the 3D terrain where you want the line to start.
4. Left click on the 3D terrain where you want the line to end.
5. Your line will now appear on your 3D map.

Note - multiple part lines can also be generated. To do this hold the 'Shift' key down on your keyboard and left click at each spot on the 3D terrain where the direction of the line must change. Release the 'Shift' key to complete the line.

6. After you have created a new line you will notice an information panel appears, as shown on the left. This area details the start co-ordinates of the line, when it was created, what plot it is part of and what depth it is placed at. There is also a text box where you can write a description or add notes related to the line.

Note - new lines are added the active plot.

5.1.5 Moving marks and lines

1. To move a mark or line, left click on the object in your 3D view to select it. When a mark or line is selected it will change colour to yellow.

2. Now hold down the left trackball or mouse button and move the mark or line to a new position and 'drop' it by releasing the trackball or mouse button.

3. Your mark or line will be repositioned.

4. To unselect the mark or line, left click on it and select 'Unselect' from the pop up menu, as shown on the left. Alternatively, click on the boat.

Note - a mark or line can only be moved within the boundary of its own height. When the edge of the height boundary is encountered, the mark or line is dropped and the computer gives out a beep to acknowledge this. The mark or line must be re-grabbed in order to move it again. Increasing the marks height will allow the mark to be moved to higher ground.

5.1.6 Locking marks or lines in place

You can lock marks and lines in place to prevent them being picked up and moved in your 3D view.

1. Double click on any mark or line in your 3D view with the left trackball or mouse button and bring up the mark or line information panel.

2. Click the padlock icon to lock all marks or lines in place. The icon will appear depressed.

3. If you want to move a mark or line you will have to click the padlock icon again to unlock it.

5.1.7 Deleting marks and lines

1. To delete a mark or line, right click on the object in your 3D view and select the 'Delete Mark' or 'Delete Line' option.

5.1.8 Displaying 3D marks and lines on your plotter

Marks and lines created in Piscatus^{3D} can be displayed on your plotter.
At present, plotters supported are SeaPlot Pro and C-Plot Pro.

1. Right click on the mark or line in your 3D view and select 'Display On Plotter'.

2. A tick next to this option means the mark or line is displayed on your plotter.

5.1.9 Removing 3D marks and lines from your plotter

1. To remove a Piscatus^{3D} mark or line from your plotter right click on the mark or line in your 3D view and select the 'Display On Plotter' option to remove the tick.

2. To remove all marks or all lines select the 'Remove all from Plotter' option.

5.1.10 Changing the mark or line colour

1. Double click on the mark or line to bring up its information panel.

2. In the information panel, click the  button. A 'Colour' window will pop up, select a new colour for the mark or line and click the 'OK' button.

3. The mark or line will be redrawn with the new colour.

4. Click the 'Save' button in the information panel window to save the changes and close the window.

5.1.11 Changing the mark or line display depth

You can vary the depth in the water column at which a mark or line is displayed at.

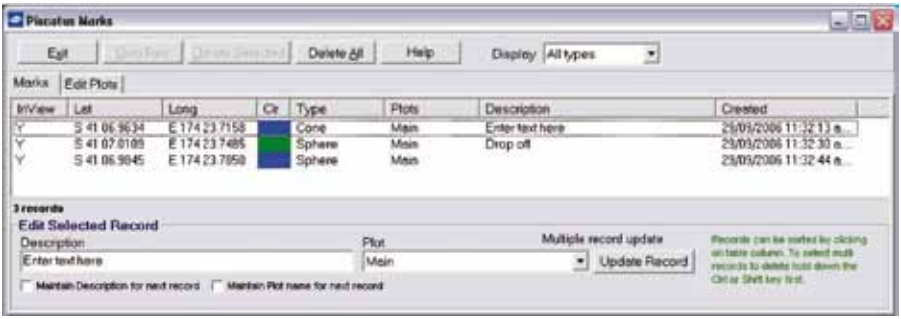
1. Double click on the mark or line to bring up its information panel.
2. In the information panel, click on the slider bar with the left trackball or mouse button and hold the button down.
3. Move the slider bar up and down to change the display depth. The range of depths covered is the same as the water column depth at that point.
4. Release the button when you have the desired depth. The mark or line will automatically redraw.
5. Click the 'Save' button in the information panel window to save the changes and close the window.

5.1.12 Viewing marks and lines records

You can view details about all your marks or lines in a separate text window.

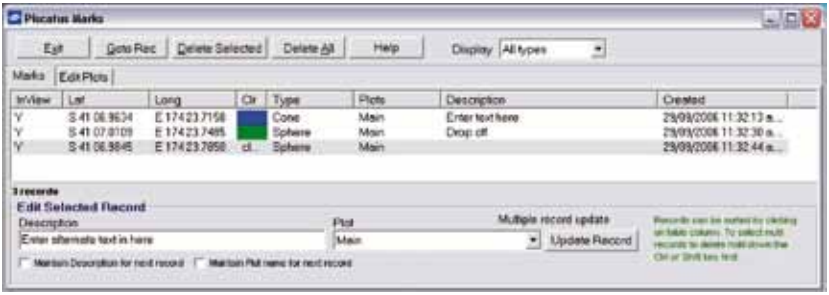
1. From the marks or lines tool drop down menu select 'View Mark Records' or 'View Line Records'.

2. A text window, like the one shown below, will pop up detailing all marks or lines, their location, type, creation date, what plot they are grouped in, and any notes associated with them.



3. From here you can delete unwanted marks and lines by clicking on a record to select it and then clicking the 'Delete Selected' button. To delete all marks or all lines, click the 'Delete All' button.

4. You can edit the description associated with a mark or line by clicking on a record to select it and then entering a new description in the text box at the bottom of the window, as shown in the picture below. Then click the 'Update Record' button to s ave your changes.



5. You can also view a mark or line in Piscatus[3D] by clicking on a record to select and then clicking the 'Goto Rec' button.

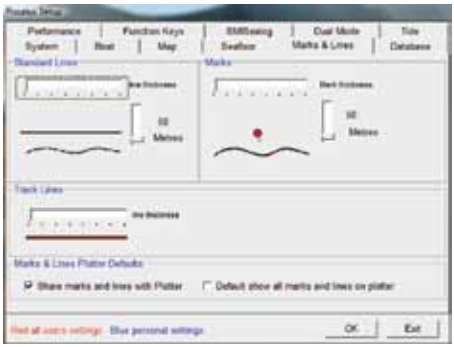
5.1.13 Sorting marks and lines

You can sort your marks or lines in the marks or lines text box window that has been described in 5.1.12. By default, marks and lines are sorted alphabetically, first by plot name and then by latitude. By clicking on any of the field headings in the 'Marks' tab or 'Lines' tab (ie, 'In View', 'Lat, 'Long', 'Type', 'Plots', 'Description' or 'Created'), you can sort into alphabetical or numerical order. Click once on the field heading to sort into ascending order (A-Z, 1-10).

5.1.14 Changing default mark and line options

You can change the default size of marks and the default line thickness of lines, as well as the default display depth of both marks and lines.

1. Select System | Piscatus Setup from the Piscatus3D menus



2. The 'Piscatus Setup' window will appear. Click on the 'Marks & Lines' tab, as shown on the left.

3. To change the default height above the bottom that a mark or line is displayed at when created, use the vertical slider bar tools in the 'Marks' or 'Standard Lines' sections. Left click on the slider bar and drag it up or down until you reach the desired depth. Release the trackball or mouse button and click the 'OK' button. The maximum display height for both marks and lines is 500m off the bottom.

4. To change the default thickness of lines when they are created, use the horizontal slider bar in the 'Standard Lines' section. Left click on the slider bar and drag it left or right until the desired thickness is found, then release the trackball or mouse button and click the 'OK' button.

5. To change the default size at which marks are created, use the horizontal slider bar in the 'Marks' section. Left click on the slider bar and drag it left or right until the desired size has been found, then release the trackball or mouse button and click the 'OK' button.

5.2 Working with plots

Piscatus3D allows you to group marks and lines together as plots. You can view, hide, create, rename and delete plots and move marks or lines between plots. When you create a new mark or line it is automatically added to the active plot. If no plot is active, the mark or line is added to the plot called 'Main'. The 'Main' plot is a system plot and cannot be deleted or renamed.

5.2.1 Creating a plot

New plots are created through the marks or lines text window.

1. To open this window click either the marks button and select 'View Mark Records' or click the lines button and select 'View Line Records'.

2. Click on the 'Edit Plots' tab. A list of available plots will be shown. The same plots are listed in both the marks and lines text windows.

3. To create a new plot, click the 'Add Plot' button.

4. Type a new name for the plot and click the 'OK' button.

5. Your new plot will now be listed in the 'Available Plots' area, as shown below. Click the 'Exit' button to close the marks or lines text window.

6. You will also see your new plot listed in the plot list drop down menu on the bottom Piscatus3D tool bar.

5.2.2 Deleting a plot

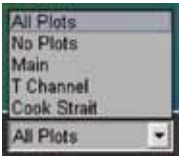
Plots are also deleted in the marks or lines text window.

1. To open this window click either the marks button and select 'View Mark Records' or click the lines button and select 'View Line Records'. Both these options will open the marks or lines text window.

2. Click on the 'Edit Plots' tab, as shown below. A list of available plots will be shown. Select the plot you wish to delete by clicking on it and then click the 'Delete Plot' button.

3. The plot will be deleted and removed from the 'Available Plots' list.

4. Click the 'Exit' button to close the marks or lines text window.



5. Your plot will also be removed from the plot list drop down menu on the bottom Piscatus3D tool bar.

Note - you cannot delete the 'Main' plot, as this is a system plot.

5.2.3 Renaming a plot

Once plots have been created they can be renamed through the marks or lines text window.

1. To open this window click either the marks button and select 'View Mark Records' or click the lines button and select 'View Line Records'. Both these options will open the marks or lines text window.

2. Click on the 'Edit Plots' tab, as shown below. A list of available plots will be shown. Select the plot you wish to rename by clicking on it and then click the 'Rename Plot' button.

3. Type a new name for the plot and click the 'OK' button.

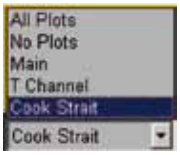
4. The name of your plot will change and the list of available plots will be updated to reflect this.

5. Click the 'Exit' button to close the marks or lines text window.

6. Your will also see your renamed plot listed in the plot list drop down menu on the bottom Piscatus3D tool bar.

Note - you cannot rename the 'Main' plot as this is a system plot.

5.2.4 Setting the active plot



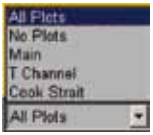
1. To set a plot to be the active plot, click the drop down arrow next to the plot list box on the bottom Piscatus3D tool bar. This will display a list of all available plots, as shown on the left.

2. Click on the one you wish to be active.

3. All marks and lines created from now on will be stored in this plot.

5.2.5 Hiding and showing plots

1. To hide all plots, click the drop down arrow next to the plot list box on the bottom Piscatus^{3D} tool bar
2. From the list select the 'No Plots' option.



1. To show all plots, click the drop down arrow next to the plot list box on the bottom Piscatus^{3D} tool bar.
2. From the list select the 'All Plots' option.

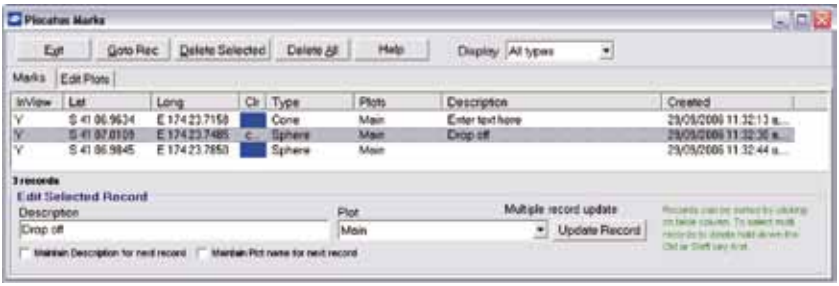
1. To show just one plot (ie, the active plot), click the drop down arrow next to the plot list box on the bottom Piscatus^{3D} tool bar.
2. From the list select the plot you wish to display.

5.2.6 Moving individual marks and lines between plots

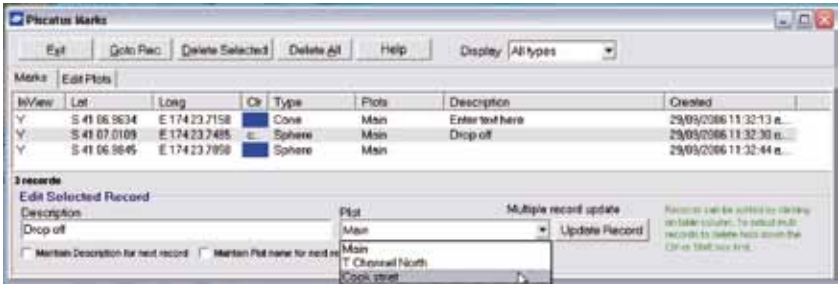
Marks and lines can be transferred to other plots, either individually or in groups. This is done through the marks or lines text window. The instructions below relate to moving individual marks one by one. If you wish to transfer lines the process is the same except you will open and use the lines text window.

1. To open the marks text window click the marks button on the top Piscatus^{3D} tool bar and select 'View Mark Records'.

2. In the 'Marks' tab there will be a list of all marks held in the Piscatus^{3D} database. Click on the mark you wish to transfer, as shown below.



3. Click the down arrow next to the 'Update Record' button at the bottom of the window. A list of all available plots will be displayed. Choose the one you wish to transfer the mark to and click the 'Update Record' button.



4. Your mark will transfer to the new plot.

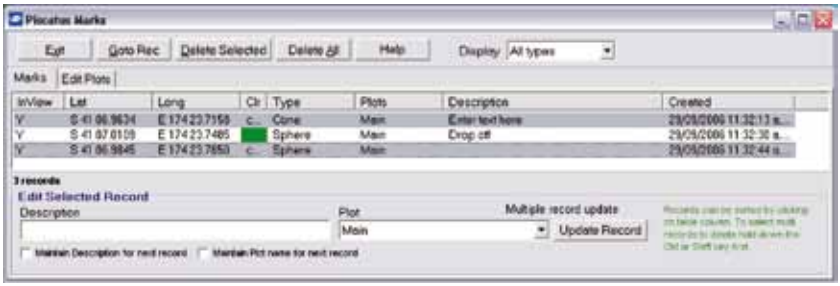
5. Click the 'Exit' button to close the marks text window.

5.2.7 Moving multiple marks and lines between plots

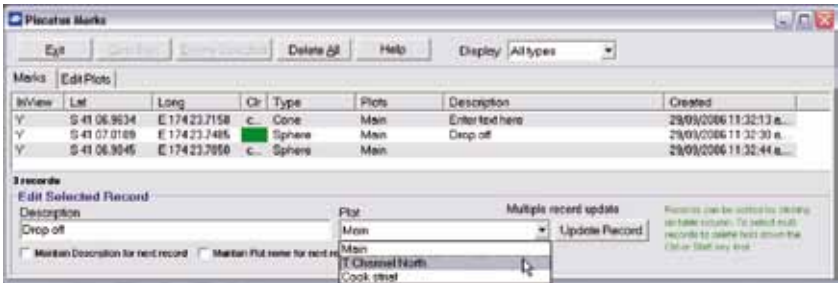
Marks and lines can be transferred to other plots in groups. This is done through the marks or lines text window. The instructions below relate to moving groups of marks in one go. If you wish to transfer groups of lines the process is the same except you will open and use the lines text window.

1. To open the marks text window click the marks button on the top Piscatus^{3D} tool bar and select 'View Mark Records'.

2. In the 'Marks' tab there is a list of all marks held in the Piscatus^{3D} database. Hold down the 'Ctrl' key on your keyboard and click on the marks you wish to transfer with the left trackball or mouse button. When you have selected all the marks, release the trackball or mouse button.



3. Click the down arrow next to the 'Update Record' button at the bottom of the window. A list of all available plots will be displayed, choose the one you wish to transfer the marks to and click the 'Update Record' button.



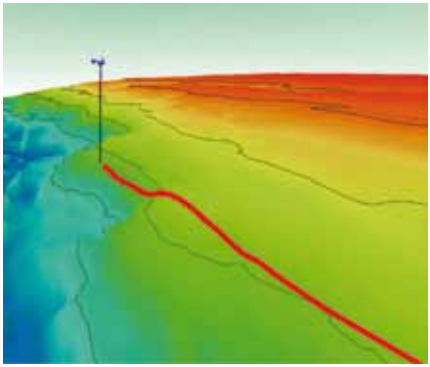
4. Your marks will transfer to the new plot.

5. Click the 'Exit' button to close the marks text window.

Note - if you wish to update subsequent mark or line records in the list, click the 'Maintain Description for next record' and/or 'Maintain Plot name for next record' boxes. Then click the 'Update Record' button for each subsequent record in the list you wish to update.

5.3 Using boat and net tracklines

Boat and net tracklines can be recorded and stored by Piscatus[3D] as a special type of line. Net tracklines are only available when there is a net out.



Tracklines are stored in the active plot when they are saved. However, unlike standard lines, they cannot be moved once created.

5.3.1 Displaying tracklines

Tracklines can be created for both the boat and the net. Both are created in the same way, the only difference being the option selected from the trackline menu. The example below is for creating a boat trackline.

1. To create a boat trackline, click the trackline button on the top Piscatus3D tool bar and select the 'Track Boat' option. When this option is ticked your boat trackline will be recorded and displayed.

2. The trackline will appear as a coloured line on the bottom of your 3D terrain.

Note - a shortcut F-Key is also available. Press the F9 key on your keyboard and boat tracking will be turned on. Press the F10 key on your keyboard and net tracking will be turned on.

5.3.2 Stopping and saving boat tracklines

Tracklines for both the boat and the net are stopped and saved in the same way, the only difference being the option selected from the trackline menu. The example below is for stopping and saving a boat trackline.

1. To stop the recording and display of a boat trackline, click the trackline button on the top Piscatus3D tool bar and select the 'Track Boat' option. This will remove the tick and Piscatus3D will stop tracking the boat.

2. When you stop a boat trackline you will be asked if you want to save the trackline. If you select 'No', the trackline will disappear. If you select 'Yes' the trackline will be saved as a line in the active plot. Long tracklines may take a while to save.

3. To view the details on a saved boat trackline double click on the trackline to bring up its information panel. The default description given is the date and time period the trackline was created over, as shown on the right.

4. Boat tracklines are treated the same as any other line with the one exception that you cannot move a trackline once it has been created. To see how to delete saved tracklines, change their colour, description, or what plot they are part of, please refer to the sections above relating to lines and plots.

Note - a shortcut F-Key is also available. Press the F9 key on your keyboard and boat tracking will be turned off. Press the F10 key on your keyboard and net tracking will be turned off.

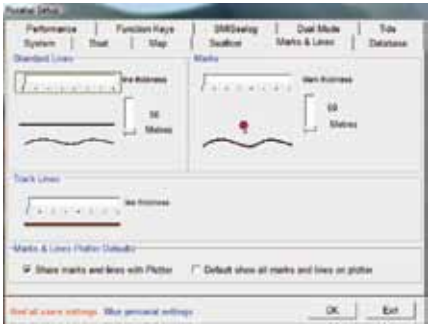
Note - tracklines are designed to track your fishing only, not the entire voyage of your boat. Due to memory limitations tracklines are only stored for a maximum of 200km. If you continue tracking the boat for more than 200km you will loose points from the beginning of the trackline in order to continue extending the end. In this event the trackline will turn green to indicate you are loosing points from the beginning.

5.3.3 Changing default trackline line thickness

You can change the default line thickness of tracklines in the 'Piscatus Options' window.

1. Select System | Piscatus Setup from the Piscatus[3D] menus.

2. The 'Piscatus Setup' window will appear. Click on the 'Marks & Lines' tab, as below.



To change the default thickness of tracklines when they are created, use the horizontal slider bar in the 'Track Lines' section. Left click on the slider bar and drag it left or right until the desired thickness is found, then release the trackball or mouse button

3. Then click the 'OK' button.

5.3.4 Setting the maximum length of tracklines

As mentioned above, tracklines are designed to track your fishing only, not the entire voyage of your boat. Boat and net tracklines are stored in memory before they are saved and system limitations mean a maximum of 2000 points can be stored. After 2000 points have been reached, a point is removed from the beginning of the track in order to add another at the end. This process cycles through as long as you leave the tracking on. To indi-

cate 2000 points have been reached and the start is 'dropping off', the trackline colour will change to green. Please stop and save your trackline if you do not want to loose information at the beginning.

Piscatus3D allows you to control the distance between each recorded trackline point, thus controlling how long the trackline can be. Options are 20m, 30m, 50m, 80m and 100m. Hence the maximum trackline length is 200km (100m x 2000 points).

1. To set the distance between points select System | Piscatus Setup from the Piscatus3D menus.

2. This will open the 'Piscatus Setup' window. Click on the 'Boat' tab.

3. Click the down arrow in the 'Boat Tracking' section and select one of the distance options from the list, as shown below.

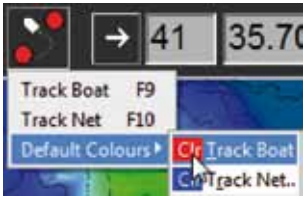
4. Click the 'OK' button.

5.3.5 Changing the default trackline colour

Both boat and net trackline default colours can be changed. To this do:

1. Click the trackline on the top Piscatus3D tool bar and select the 'Default Colours' option.

2. Inside the 'Default Colours' option select ethier 'Track boat' to change boat trackline colour or 'Track net' to change net trackline colour.



3. A colour selection window will appear where you can select a new default colour to use.

4. Click the 'OK' button.

6.0 Working with your plotter

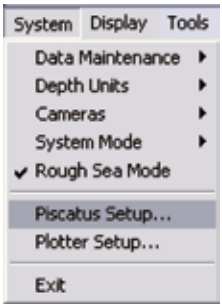
Piscatus3D can integrate and share information with your plotter.
At present C-Plot Pro and SeaPlot Pro are supported.

6.1 Genetic tools and options when working with plotters

Functions explained in this section will work the same way whether used with C-Plot Pro or SeaPlot Pro.

6.1.1 Ghost cursors

Piscatus3D has a feature called ghost cursors. This feature displays 'ghost cursor' is visible on the Plotter window as a cross, which is in the same lat/long position as the mouse cursor in Piscatus3D. Similarly, when the user moves the trackball or mouse over the Plotter window, a 'ghost cursor' is visible on the Piscatus3D window as a small icon representing the Plotter being used. This feature makes it easy to work between both programs and identify features and positions more readily. You can turn the feature on and off through the 'Piscatus Options' window.

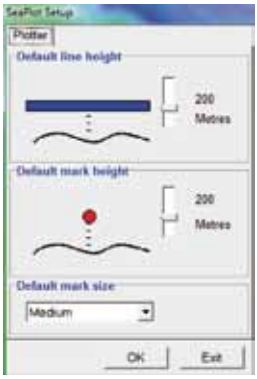


1. Select System | Piscatus Setup from the Piscatus3D menus.

2. This will open the 'Piscatus Setup' window. In the 'System' tab a tick in the check box next to the 'Show Ghost cursor with Plotter' option indicates this feature is enabled, as shown below.

3. To turn ghost cursors off, click in the check box to remove the tick and then click the 'OK' button to close the window.

6.1.2 Setting the height above the bottom marks and lines display at

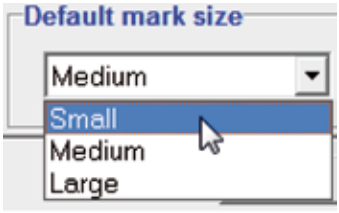


1. Select System | Plotter Setup from the Piscatus^{3D} menus. The Plotter window will open, as shown on the left.

2. To change the default height above the bottom that lines display at when they are transferred from the Plotter, use the slider bar tool in the 'Default line height' section. Left click on the slider bar and drag it up or down until you reach the desired depth. Release the trackball or mouse button and click the 'OK' button.

3. To change the default height above the bottom that marks display at when they are transferred from the Plotter, use the slider bar tool in the 'Default mark height' section. Left click on the slider bar and drag it up or down until you reach the desired depth. Release the trackball or mouse button and click the 'OK' button.

6.1.3 Setting the default display size of plotter marks



1. Select System | Plotter Setup from the Piscatus^{3D} menus. The Plotter window will open, as shown on the left.

2. Click the mark size combobox option as shown to the left and select the desire size.

3. Click the 'OK' button.

6.2 Working with C-Plot Pro

Piscatus^{3D} works closely with C-Plot Pro and the two programs enhance each other well. You can overlay your marks and lines from C-Plot Pro on to Piscatus^{3D} maps and vice versa. Ghost cursors are also available between the two programs.

Note - for all the features outlined below to be present you need C-Plot Pro Version 8 or later.

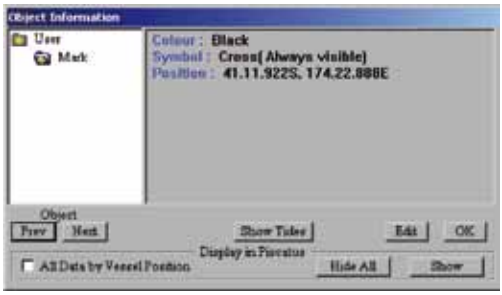
6.2.2 Showing the same area on C-Plot Pro and Piscatus[3D]

1. On C-Plot Pro, go to the area or plot you wish to look at

2. On Piscatus[3D], click the C-Plot Pro button. Piscatus[3D] will now position the middle of your 3D map in the same place as the middle of your C-Plot Pro screen.

6.2.3 Showing a C-Plot Pro mark on Piscatus[3D]

1. Right click on C-Plot Pro and then place your cursor directly over the mark you wish to show on Piscatus[3D] and left click. This will pop up a window like the one on the left.

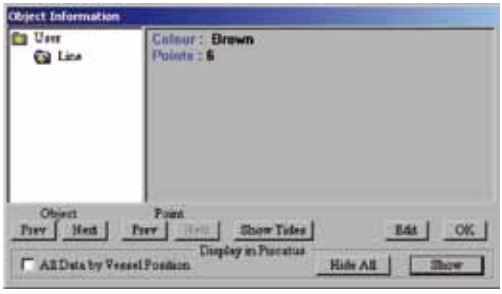


2. Click the 'Show' button in the 'Display in Piscatus' area at the bottom of the window.

3. This mark will now be visible on your Piscatus[3D] screen.

6.2.4 Showing a C-Plot Pro line on Piscatus[3D]

1. Right click on C-Plot Pro and then place your cursor directly over the line you wish to show on Piscatus[3D] and left click. This will pop up a window like the one on the left.

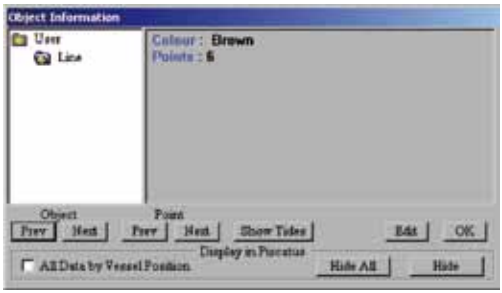


2. Click the 'Show' button in the 'Display in Piscatus' area at the bottom of the window.

3. This line will now be visible on your Piscatus[3D] screen.

6.2.5 Removing a C-Plot Pro mark or line from Piscatus[3D]

1. Right click on C-Plot Pro and then place your cursor directly over the mark or line you wish to remove from Piscatus[3D] and left click. This will pop up a window like the one on the left.

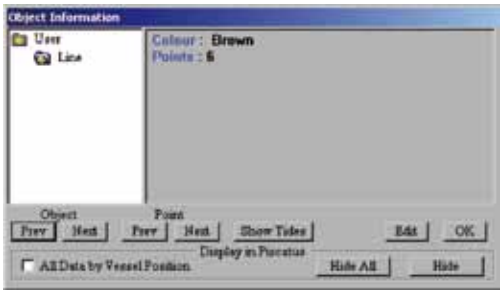


2. Click the 'Hide' button in the 'Display in Piscatus' area at the bottom of the window.

3. This mark or line will now be removed from Piscatus[3D].

6.2.6 Removing all C-Plot Pro marks or lines from Piscatus[3D]

1. Right click on C-Plot Pro and then place your cursor directly over the mark or line you wish to hide on Piscatus[3D] and left click. This will pop up a window like the one on the left.



2. Click the 'Hide All' button in the 'Display in Piscatus' area at the bottom of the window.

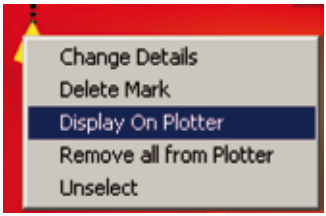
3. All marks and lines will now be removed from Piscatus[3D].

6.2.7 Showing a Piscatus[3D] mark or line on C-Plot Pro

1. In your 3D view, click on the mark or line you wish to display on your plotter with the right trackball or mouse button.

2. From the menu that pops up, select the 'Display on Plotter' option. This will place a tick next to the option indicating it is displayed on your plotter.

6.2.8 Removing a Piscatus3D mark or line from C-Plot Pro



1. In your 3D view, click on the mark or line you wish to remove from your plotter with the right trackball or mouse button.

2. You will see a tick next to the 'Display on Plotter' option indicating this mark or line is visible on your plotter. Select this option to remove the tick.

3. Your mark or line will be removed from your plotter.

6.2.9 Removing all Piscatus3D marks or lines from C-Plot Pro

1. In your 3D view, click on any mark or line with the right trackball or mouse button.

2. From the menu that pops up, select the 'Remove all from Plotter' option.

3. All marks or all lines will be removed from your plotter depending what object type you clicked on initially.

6.3 Working with SeaPlot Pro

Piscatus3D works closely with SeaPlot Pro and the two programs enhance each other well. Piscatus3D can provide bathymetry contours to SeaPlot Pro and you can overlay marks and lines from SeaPlot Pro on to Piscatus3D maps and vice versa. Ghost cursors are also available between the two programs.

Note - for all the features outlined below to be present you need SeaPlot Pro Version 1.05b6 or later.

6.3.1 Showing the same area on SeaPlot Pro and Piscatus3D

1. On SeaPlot Pro, go to the area or plot you wish to look at

2. On Piscatus3D, click the SeaPlot Pro button. Piscatus3D will now position the middle of your 3D map in the same place as the middle of your SeaPlot Pro screen.

6.3.2 Showing a SeaPlot Pro mark on Piscatus3D

1. On SeaPlot Pro place your cursor directly over the mark you wish to show on Piscatus3D and click the right trackball or mouse button. This will pop up a menu like the one on the left.

2. Select the option 'Display on Piscatus'.

3. The mark will now be visible on Piscatus3D.

6.3.3 Showing a SeaPlot Pro line on Piscatus3D

1. On SeaPlot Pro place your cursor directly over the start point of the line you wish to show on Piscatus3D and click with the right trackball or mouse button. This will pop up a menu like the one on the left.

2. Select the option 'Display on Piscatus'.

3. This line will now be visible on Piscatus3D.

6.3.4 Removing a SeaPlot Pro mark or line from Piscatus3D

1. On SeaPlot Pro click the line or mark you wish to remove from Piscatus3D with the right trackball or mouse button. This will pop up a menu like the one on the left.

2. Select the option 'Display on Piscatus' to remove the tick next to it and to remove that one line or mark.

6.3.5 Removing all SeaPlot Pro marks or lines from Piscatus3D

1. On SeaPlot Pro click any line or mark displayed on Piscatus3D with the right trackball or mouse button. This will pop up a menu like the one on the left.

2. Select the option 'Remove All from Piscatus'. This will remove all the marks or lines from Piscatus3D.

6.3.6 Showing a Piscatus3D mark or line on SeaPlot Pro

1. In your 3D view, click on the mark or line you wish to display on your plotter with the right trackball or mouse button.

2. From the menu that pops up, select the 'Display on Plotter' option. This will place a tick next to the option indicating it is displayed on your plotter.

6.3.7 Removing a Piscatus3D mark or line from SeaPlot Pro

1. In your 3D view, click on the mark or line you wish to remove from your plotter with the right trackball or mouse button.

2. You will see a tick next to the 'Display on Plotter' option indicating this mark or line is visible on your plotter. Select this option to remove the tick.

3. Your mark or line will be removed from your plotter.

6.3.8 Removing all Piscatus3D marks or lines from SeaPlot Pro

1. In your 3D view, click on any mark or line with the right trackball or mouse button.

2. From the menu that pops up, select the 'Remove all from Plotter' option. All marks or all lines will be removed from your plotter depending what object you clicked on initially.

7.0 Working in MapView

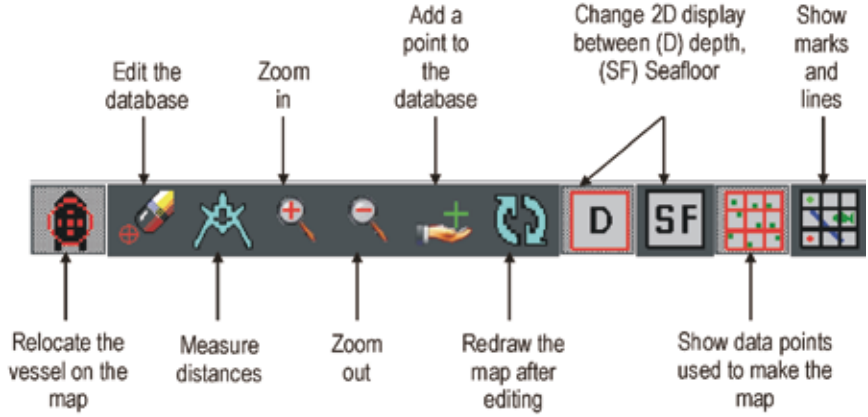
MapView gives a traditional 2D look at your current fishing area. It is a zoomed out map of where you are currently working over which you can display your marks and lines. It also allows you to look at your depth, hardness and roughness data, edit these data, relocate the boat easily and measure distances.

7.1 Opening the MapView window

1. Click the MapView button on the top Piscatus[3D] tool bar to open the MapView Window.

7.2 The MapView tool bar

The MapView window has the following tools:



7.3 Viewing depth, hardness or roughness data

MapView can display depth or RH values at any one time by overlaying a colour palette on the 3D terrain model that reflects the data values. Click the D (Depth) or SF (Seafloor) button on the MapView toolbar to select which data type will be displayed. The button will appear depressed to indicate what data type is displayed.

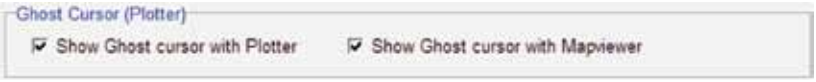
Note - the type of data displayed in MapView can be different from what is displayed in the 3D. However, adjustments to the data's colour palette can only be done in the main 3D window.

7.4 Ghost cursors

When you run your cursor over the MapView screen a 'ghost cursor' will mimic the movement on your 3D terrain. Similarly, when you move your cursor over your 3D terrain, a 'ghost cursor' will mimic the movement on the MapView window. This feature is designed to improve the ease of matching up locations between the 2D and 3D screens.

1. To turn ghost cursors on, select System | Piscatus Setup from the main menus. This will open the 'Piscatus Setup' window.

2. In the 'System' tab, make sure the 'Show Ghost cursor with Mapviewer' option is ticked by clicking it.



3. To turn off ghost cursors, click the option again to remove the tick.

4. Click the 'OK' button to close the 'Piscatus Setup' window.

7.5 Refreshing the map from the database

While Piscatus^{3D} is making its maps in real time it is working with the data received directly from the GPS, sounder and seafloor discrimination device. However, there has been no grooming or cleaning of this data as the map has just been locally updated immediately around the boat. Piscatus^{3D} uses very complicated algorithms to make its maps and gives its best results when it can work with all the data for an area, not just what has recently come in from the sounder or seafloor discrimination device. For this reason, we have included a redraw button on the main tool bar. Clicking this button will force Piscatus^{3D} to do an extract from its database and redraw the map using its cleaning and grooming routines and its more complex mapmaking routines. Click this button every hour or so if you have been collecting a lot of new data in a new area. For an area you already have a good map for, this function will not be needed.

7.5.1 Redrawing the map using all the data from the database

1. Click the redraw button and Piscatus[3D] will extract the data from the database and redraw your current map.

7.6 Stopping and starting data recording

The Piscatus[3D] database has no capacity problems so you do not need to worry about starting and stopping the database in case of hard disk failure as with other systems. However, at any time you can suspend database updates from the GPS, sounder and seafloor discrimination device. This may be in very bad weather or when you have a map you are very happy with and feel it is now complete.

7.6.1 Stopping data being recorded in the database

1. Click the 'Record Data' check box on the bottom Piscatus[3D] tool bar to remove the tick. This means you are NOT recording the data from the GPS, sounder and seafloor discrimination device to the database.

7.6.2 Restarting data recording in the database

1. Click the 'Record Data' check box so it is ticked. This means that the incoming data is being written into your database.

7.7 Moving around the map

7.7.1 Zooming in on MapView

1. Click the zoom in button.

2. Move the cursor to the area you wish to look at. Click and hold down the left trackball or mouse button and drag a box around the area you wish to examine. Release the trackball or mouse button.

3. The MapView window will zoom into this area.

7.7.2 Zooming out on MapView

1. Click the zoom out button.
2. The MapView window will zoom out to the maximum view.

7.7.3 Relocating your boat position

1. Click the relocate boat button.
2. Move the cursor to wherever you want to move the boat to.
3. Click the left trackball or mouse button once and the boat will be repositioned to that spot.

Note - by holding down the left trackball or mouse button when you click on the map and rolling the ball or mouse forward and backward you can control the boat's heading.

7.8 Measuring distances on MapView

1. Click the measuring tool button.
2. Move the cursor to the point from where you wish to measure.
3. Click once with the left trackball or mouse button and move the cursor in the direction you wish to measure.
4. A line will be drawn across the map and the distance will appear (in nautical miles) on the bottom of the MapView window.
5. Left click with the trackball or mouse to change direction of the line and start a new leg if required.
6. To end the line measurement, double click the left trackball or mouse button.

7.9 Viewing marks and lines

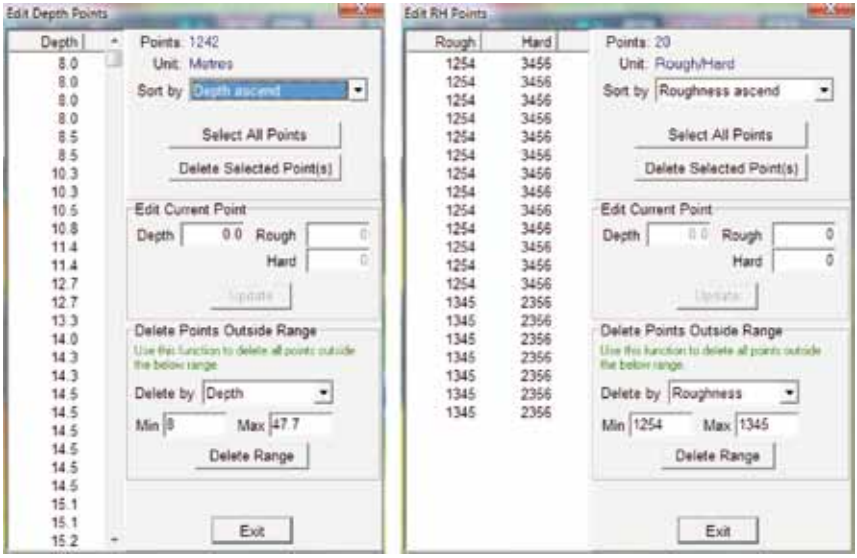
1. Click the Marks and Lines button to show any lines and marks in the current area.
2. Click the button again to hide them.

7.10 Editing and controlling your data

Piscatus[3D] maintains a very complex database in the background. Data is filtered on the way in for obvious errors – for example, the sounder coming off the bottom. Additional to these filters Piscatus[3D] performs its own grooming and cleaning of data to give you the most accurate picture of the seafloor available. There will still be times however, when you will want to manually control the data in the database. Piscatus[3D] gives you very simple, straightforward methods to control your data.

Editing is done through MapView and it is easier to edit data by zooming in close to the area to be edited.

Note – the instructions in this section refer to the display and editing of depth data. Hardness and roughness data are displayed and edited in a very similar way, but hardness and roughness data is shown together while depth is shown on its own. Because of this the edit data point window is slightly different for each data type, but the steps to edit data are the same. Below is an example of the edit data point window with depth data and with hardness and roughness data:



7.10.1 Displaying data points

1. To display data points, click the data button.

2. This will show all the data that has been used to make the map on the MapView window.

7.10.2 Deleting a single data point

1. Click the edit data button.

2. Place the cursor over a point to be deleted and click the trackball or mouse button.

3. This will bring up the 'Edit Depth Points' window, as shown on the right.

4. The number in the window is the depth value of the point you clicked. Click this number so that it is selected.

5. Click the 'Delete Selected Point(s)' button to delete the point.

6. When prompted about deleting the record, click 'Yes'.

7. Click the 'Exit' button to close the 'Edit Depth Points' window.

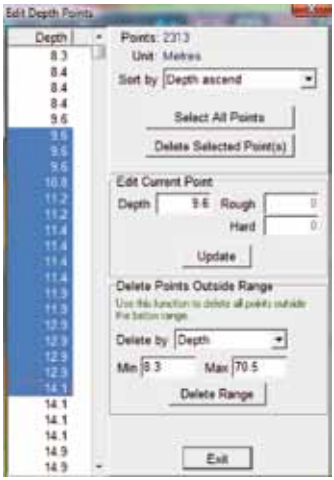
8. To redraw the map, click the redraw button -  and Piscatus^{3D} will redraw your map without the deleted point.

7.10.3 Deleting multiple data points

1. Click the edit data button.

2. Click the left trackball or mouse button, hold it down and drag a box over the area where the erroneous point is. Release the trackball or mouse button to end the area selection.

3. This will bring up the 'Edit Depth Points' window listing all the points in the area you dragged the box around, as shown on the right. The data is automatically sorted from shallowest to deepest but you can reverse this sort order by changing the 'Sort by' option to 'Depth descend'.



4. To select more than one point to delete hold down the 'CTRL' key on your keyboard and click on each point. To delete a block of points, click on the first point, hold down the 'Shift' key on your keyboard and click on the last point. All points in between will be selected and you may then delete them all in one go.

5. Once you have selected your points, click the 'Delete Selected Point(s)' button.

6. When prompted about deleting the records, click 'Yes'.

7. Click the 'Exit' button to close the 'Edit Depth Points' window.

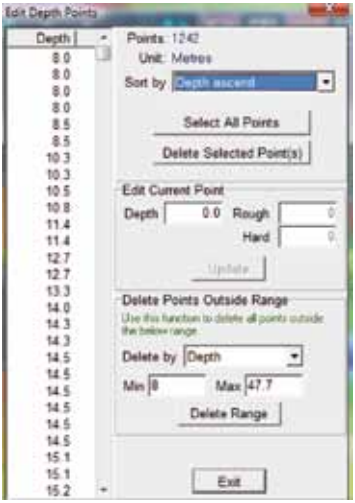
8. To redraw the map, click the redraw button -  and Piscatus3D will redraw your map without the deleted points

7.10.4 Deleting all unwanted data points

1. Click the edit data button.

2. Click the left trackball or mouse button, hold it down and drag a box over the area where the erroneous point is. Release the trackball or mouse button to end the area selection.

3. This will bring up the 'Edit Depth Points' window listing all the points in the area you dragged the box around, as shown on the right. The data is automatically sorted from shallowest to deepest but you can reverse this sort order by clicking changing the 'Sort by' option to 'Depth descend'.



4. In the area labeled 'Delete Outside Range' there is a 'Min' and 'Max' value. By default this is the minimum and maximum value of the points in your list. This tool deletes all points outside this range. The example on the right shows that the user will delete all values in the list less than 8m and greater than 47.7m. Please enter the acceptable minimum and maximum values in these boxes.

5. Click the 'Delete Range' button.

6. When prompted about deleting the records, click 'Yes'.

7. A message box will pop up detailing how many records were deleted. Click 'OK' to dismiss this box.

8. Click the 'Exit' button to close the 'Edit Depth Points' window.

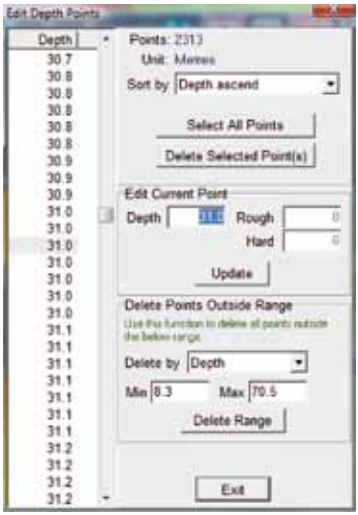
9. To redraw the map, click the redraw button -  and Piscatus3D will redraw your map without the deleted points.

7.10.5 Editing the depth value of a data point

Instead of deleting a data point, you can edit its value.

1. Click the edit data button.

2. Click the left trackball or mouse button, hold it down and drag a box over the area where the erroneous point is. Release the trackball or mouse button to end the area selection.



3. This will bring up the 'Edit Depth Points' window, as shown on the left.

4. Find the erroneous data point and select it from the list. This point value will now be shown in the 'Edit Current Point' section of the window. Edit the value displayed in this section.

5. Click the 'Update' button.

6. Click the 'Exit' button to close the 'Edit Depth Points' window.

7. To redraw the map, click the redraw button - and Piscatus3D will redraw your map with the edited depth value.

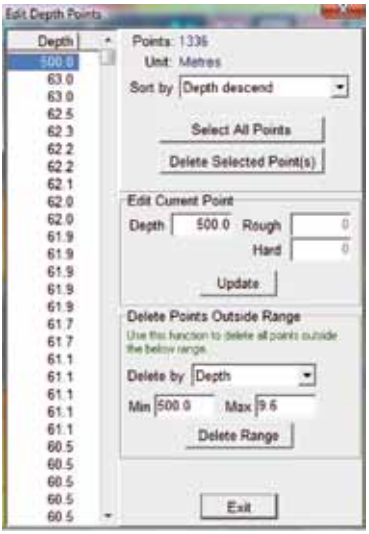
7.10.6 Finding an erroneous point amongst dense data

Sometimes you will have very dense data for an area and it will be difficult to work out which point is causing the error. Piscatus3D makes it easy to find this point.

1. Click the edit data button.

2. Click the left trackball or mouse button, hold it down and drag a box over the area where the erroneous point is. Release the trackball or mouse button to end the area selection.

3. This will bring up the 'Edit Depth Points' window listing all the points in the area you dragged a box around, as shown on the right. The data is automatically sorted from shallowest to deepest but you can control the sorting order. The erroneous point should then be very obvious.



4. Click the point you wish to delete so it is selected.

5. Click the 'Delete Selected Point(s)' button to delete the point you selected.

6. When prompted about deleting the records, click 'Yes'.

7. Click the 'Exit' button to close the 'Edit Depth Points' window.

8. To redraw the map, click the redraw button - and Piscatus3D will redraw your map without the deleted point.

7.10.7 Adding a data point

1. Click the add point button.

2. This will bring up the 'Manual Point Entry' window, as shown below.

3. Enter the latitude and longitude location of the depth point you wish to create. These values need to be in decimal degrees NOT degrees and minutes (e.g., 174.75 NOT 174°45'E).

4. Enter the depth value of the point you wish to create. Be sure to specify the units from the drop down list (metres is the default).

Note – Enter a negative depth value if you wish to add a land point.

5. Click the 'Add point' button. This new depth point will be added to the Piscatus[3D] database.

6. Optionally add the roughness and hardness value for the point and click the 'Add point' button to the right of these values.

7. Click the 'Refresh' button to redraw the map using the new depth value.

8. Click the 'Exit' button to close the 'Manual Point Entry' window.

8.0 Allowing for tidal differences

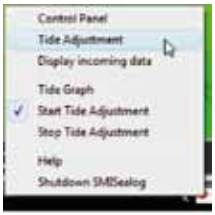
Piscatus3D Tide is a separate utility built into Piscatus3D that uses data from tide stations around the world to calculate the tide. Corrections can then be applied to depth data stored in the Piscatus3D database. The tide station used to calculate the current tide is the closest station within range of the boat's position. This range is 40,000m (40km) by default, but it can be changed in Piscatus3D. Once the tide station is found, the GPS date/time (or, if unavailable, your computer's date/time) is used to calculate the tide.

The Piscatus3D Tide utility is part of the SMISealog program that is shown as a square white and red icon in the Windows system tray in the bottom right corner of the screen, as shown on the left.

8.1 Accessing Piscatus3D Tide

You can access the Piscatus3D Tide program and view the status and properties of tide adjustment from the 'SMISealog Control Panel' window. This window can be accessed either from SMISealog or from within Piscatus3D itself.

8.1.1 Accessing Piscatus3D Tide from SMISealog



1. Right click the SMISealog icon in the Windows system tray and select the 'Tide Adjustment' option, as shown on the left.

2. This will open the 'SMISealog Control Panel' on the 'Tide Adjustment' tab, as shown below.

The main 'Current Tide' tab details the status of tide adjustment (ie, either active or turned off), what tide station is currently being used, what the station range is, boat position, current tide value (in metres) and the time being used to determine the tide adjustment.

8.1.2 Accessing Piscatus3D Tide from within Piscatus3D

1. Select System | Piscatus Setup from the Piscatus3D menus to open the 'Piscatus Setup' window.

2. In the 'Piscatus Setup' window, click on the 'SMISealog' tab and then click the 'Open SMISealog' button, as shown below.

3. This will open the 'SMISealog Control Panel' window. In here click on the 'Tide Adjustment' tab and then the 'Current Tide' tab.

4. This tab details the status of tide adjustment (ie, either active or turned off), what tide station is currently being used, what the station range is, boat position, current tide value (in metres) and the time being used to determine the tide adjustment.

8.2 Starting and stopping the tide adjustment

You can start and stop tide adjustment from SMISealog, or from within Piscatus3D itself.

8.2.1 Starting and stopping the tide adjustment from SMISealog

1. Right click the SMISealog icon in the Windows system tray to access the pop up menu, as shown on the left.

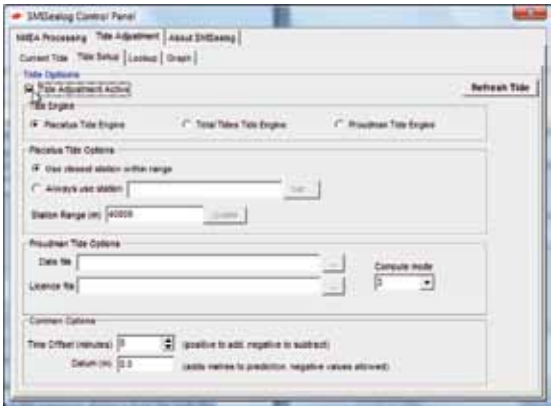
2. A small tick is shown beside the 'Start Tide Adjustment' option if the tide adjustment is running or beside 'Stop Tide Adjustment' if it is not.

8.2.2 Starting and stopping tide adjustment from within Piscatus[3D]

1. Select System | Piscatus Setup from the Piscatus[3D] menus to open the 'Piscatus Setup' window.

2. In the 'Piscatus Setup' window, click on the 'SMISealog' tab and then click the 'Open SMISealog' button.

3. This will open the 'SMISealog Control Panel' window. In here click on the 'Tide Adjustment' tab and then the 'Tide Setup' tab and make sure the 'Tide Adjustment Active' option is ticked in the 'Tide Options' section at the top of the window.



4. When tide adjustment is active you will see a green status message at the top of the 'Current Tide' window reading 'Tide Adjustment Active'. If tide adjustment is not active you will see a red status message reading 'Tide Adjustment Not Active'.

8.3 Changing the tide station lookup range

The tide station lookup range is the maximum distance from the boat that Piscatus[3D] Tide will look for a tide station.

1. Open the 'SMISealog Control Panel' window to the 'Tide Adjustment' tab and then the 'Tide Setup' tab.

2. Enter a value (in metres) in the 'Station Range (m)' box and click the 'Update' button. The lookup range will change to reflect the new distance entered.

8.4 Using the tide lookup function

The tide lookup function allows you to see what tide stations are available within the current lookup range.

1. Open the 'SMISealog Control Panel' window and click on the 'Tide Adjustment' tab, as described in 8.1.

2. Click on the 'Lookup' tab.

3. A list of tide stations within the current lookup range is listed, as shown on the left.

8.5 Selecting the tide station to use

8.5.1 Selecting the tide station automatically

You can set Piscatus3D Tide to automatically access the nearest tide station within its lookup range from its database of tide station locations. Should your boat move into an area where a different tide station is closer, then Piscatus3D Tide will automatically switch to the closer station.

1. Open the 'SMISealog Control Panel' window to the 'Tide Adjustment' tab and then the 'Tide Setup' tab.

2. In the ' Piscatus Tide Options' section make sure 'Use closest station within range' is selected, as shown below.

3. Piscatus3D will automatically detect and update tide stations for you.

8.5.2 Selecting the tide station manually

You can set Piscatus[3D] Tide to always use a specific tide station of your choice (Option not available when using TotalTide or Proudman).

1. Open the 'SMISealog Control Panel' window to the 'Tide Adjustment' tab and then the 'Tide Setup' tab.

2. In the 'Piscatus Tide Options' section click the 'Always use station' option, then click the 'Set' button.

3. A message will pop up asking you to select the tide station to use, dismiss this message by clicking the 'OK' button. You will automatically be taken to the 'Lookup' tab of Piscatus[3D] Tide.

4. In here, click the drop down arrow to the left of the 'Set as default station' button and from the list select the tide station you wish to use by clicking on it, as shown below.

5. Click the 'Set as default station' button.

6. You will be returned to the 'Current Tide' tab and you will notice that the tide station you just selected is now displayed in the 'Always use' box.

7. Close the 'SMISealog Control Panel' window by clicking the x button in the top right hand corner.

8.5.3 Creating your own tide station

If there are no appropriate tide stations within the lookup range you wish to use, you can create your own one. This is based on an existing tide station to which an offset can be applied and then saved as a new tide station (Option not available when using TotalTide).

1. In the 'Lookup' tab of the 'Tide Adjustment' tool described in 8.4 click the 'Create New Station' button.

2. This will open the 'New Tide Station' window, as shown below. In here you can specify the parameters for your new tide station.

3. Specify the existing tide station to modify. By default, the current tide station you are accessing will come up.

4. Enter a name for the new station you are about to create.

5. Enter a time zone (leave this box empty if you want the new tide station to match the time zone of the existing station).

6. Enter a location for the new tide station in decimal degrees (south and west values should be negative, e.g., 41°45'S should be written as -41.75).

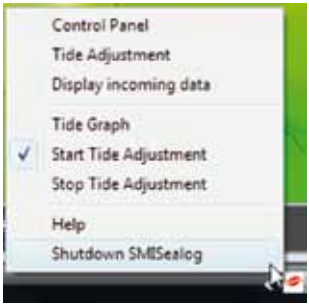
7. Enter the maximum tide time offset, the maximum tide height offset (in metres) and the maximum tide multiplier from the existing station.

8. Enter the minimum tide time offset, the minimum tide height offset (in metres) and the minimum tide multiplier from the existing station.

9. Click the 'Create Station' button when you have finished. A new tide station with the name you specified will be added to the tide station database.

10. After you have created a new tide station you will need to close and then restart SMISealog or reboot your PC and then set the tide station to the newly created station in order for the changes to take place.

11. To stop SMISealog, right click on the SeaLog icon in the Windows system tray and select 'Shutdown SMISealog', as shown below. When prompted for confirmation to close down SMISealog, select 'Yes'. SMISealog will now close and the icon will disappear from he system tray. To restart SMISealog, go to the 'Start' menu and select Programs | Piscatus | SMISealog. SMISealog will open and the icon will reappear in the system tray.



12. You now have to go back into SMISealog and set the tide station to the new station you just created. Follow the instructions in 8.1 to access the 'Tide Adjustment' tab within SMISealog, and then click on the 'Lookup' tab. In here click the down arrow to the left of the 'Set as default station' button to display a list of available tide stations. Select the new station you just created by clicking on it and then click the 'Set as default station' button.

13. Piscatus[3D] Tide will now access the new tide station.

8.6 Viewing tide cycles

You can view a graphical representation of the tide data for any tide station.

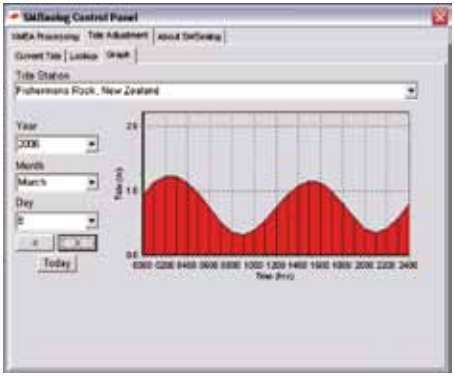
1. Right click the SMISealog icon in the Windows system tray and select 'Tide Graph' from the pop up menu, as shown on the left.

2. This will open the 'SMISealog Control Panel' window and it will show the 'Graph' tab of the 'Tide Adjustment' section.

3. In the 'Graph' tab, click the down arrow to the right of the 'Tide Station' text box and select the tide station you wish to query from the list by clicking on it.

4. Specify the date you wish to query, alternatively click the 'Today' button to view today's tide information.

5. You can < > use the buttons to scroll backwards and forwards through the days.



6. A graphical representation of the tide cycle showing heights (in meteres) and times will be displayed, as shown on the left.

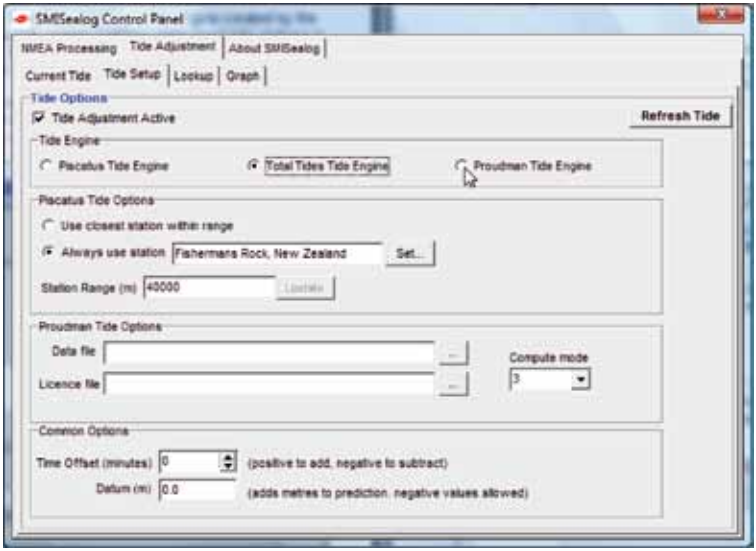
8.6 Using TotalTide and Proudman

Piscatus[3D] is configured to use Proudman and TotalTide tide engines. TotalTide is a tide engine created by the UK Hydrographical Office. This tide engine contains many more tide stations in the UK and European areas, but has updated tide stations for the entire world. Proudman and TotalTide must be purchased separately from respective dealers.

Using Proudman and TotalTide is easy, but does not allow all the normal functionality of Piscatus Tide. To activate Proudman or TotalTide tide calculation in Piscatus[3D];

1. Open the 'SMISealog Control Panel' window to the 'Tide Adjustment' tab and then the 'Tide Setup' tab.

2. In the 'Tide Engine' section at the top of the window, click the 'TotalTide Tide Engine' or 'Proudman Tide Engine' option.



9.0 Using Piscatus[3D] lake mode

Piscatus[3D] has a built in 'lake mode' allowing it to work on lakes by treating the lake surface as sea level regardless of it's elevation. For the lake you are working on you need to specify a lake altitude (in metres) and position.

9.1 Using Piscatus[3D] in lake mode

1. To run in lake mode select System | System Mode from the Piscatus[3D] menus.

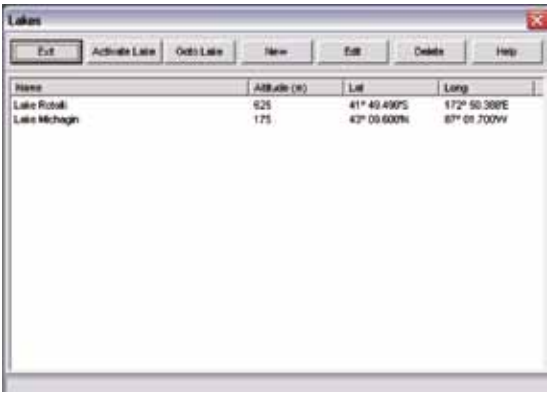
2. Click the 'Lakes…' option so that it is ticked. Piscatus[3D] will now operate in lake mode.

3. The 'Lakes' window will open. In here you add, edit, delete, activate and go to the lakes you work on.

4. Click the 'Lakes' option again to remove the tick and Piscatus[3D] will return to the normal sea level operating mode.

9.2 Adding a new lake

For every lake you wish to use Piscatus[3D] on you will need to specify the lake elevation (in metres) and a general position. Piscatus[3D] will then interpret the lake level at the given position as 'sea level' and alter the vertical datum accordingly.



1. To add a new lake, select System | System Mode | Lakes… from the Piscatus[3D] menus.

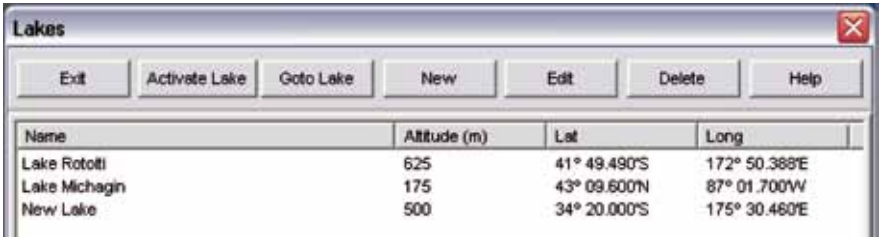
2. This will open the 'Lakes' window as shown on the left.

3. Click the 'New' button. This will open the new lakes window. In here specify a name for the lake, it's altitude above sea level (in metres), and it's general position, as shown on the next page.

Note – the position you enter for the lake location needs to be one point on the lake surface only and can be any location the lake covers.

4. Then click the 'Add Lake' button.

5. The lake will appear in the list of available lakes in the 'Lakes' window, as shown below.



6. Click the 'Exit' button to close the 'Lakes' window.

9.3 Activating a lake

1. To activate a lake, open the 'Lakes' window by selecting System | System Mode | Lakes… from the Piscatus^{3D} menus.

2. Select a lake from the list by clicking on it and then click the 'Activate Lake' button. This will tell Piscatus^{3D} what elevation to use as 'sea level'.

3. Click the 'Exit' button to close the 'Lakes' window.

Tip! The lake altitude can be found by viewing the area in sea mode and positioning the mouse cursor on the lakes edge and reading the depth value. Most likely a negative depth reading which you then can enter as a positive altitude in metres. You can change lake altitude to suit anytime as depths are recorded in Piscatus database as depth value below surface, hence raising the altitude (surface) will raise all data points displayed.

9.4 Editing a lake entry

1. To edit a lake entry, open the 'Lakes' window by selecting System | System Mode | Lakes… from the Piscatus^{3D} menus.

2. Select the lake you wish to edit by clicking on it and then click the 'Edit' button.

3. This will bring up the details of the particular lake, change them as required and click the 'Update' button.

4. Click the 'Exit' button to close the 'Lakes' window.

9.5 Deleting a lake entry

1. To delete a lake entry, open the 'Lakes' window by selecting System | System Mode | Lakes… from the Piscatus^{3D} menus.

2. Select the lake you wish to delete by clicking on it and then click the 'Delete' button.

3. This will remove the lake from the list.

4. Click the 'Exit' button to close the 'Lakes' window.

9.6 Using the 'Goto Lake' tool

1. To have Piscatus[3D] automatically take you to the location of one of your lakes, open the 'Lakes' window by selecting System | System Mode | Lakes… from the Piscatus[3D] menus.

2. Select the lake you wish to go tot by clicking on it and then click the 'Goto Lake' button.

The 'Lakes' window will automatically close and Piscatus[3D] will reposition the 3D map at the location given for the lake you selected.

10.0 Working with your net

Piscatus[3D] allows you to bring up your net in your 3D map. Your net model is shown in real time, in scale, and in the right position. Piscatus[3D] works with Furuno CN22/24, Simrad ITI, Scanmar, NOTUS, Marport and Wesmar equipment. In fact, any equipment that gives an NMEA 0183 signal can be used. If you have equipment that does not get picked up by Piscatus[3D], please let your dealer know.

10.1 Using PISCATUS VirtualNet™

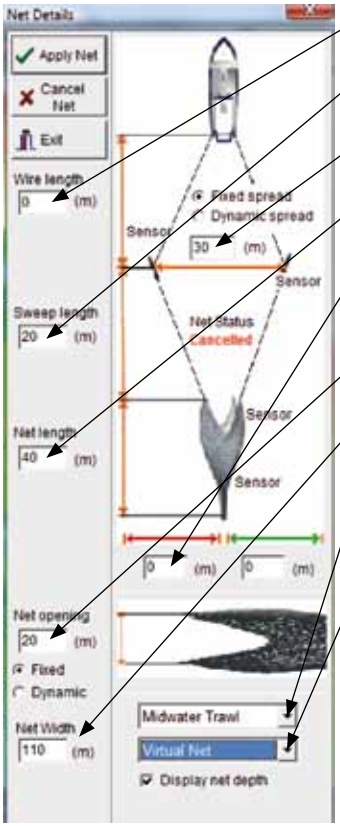
Piscatus[3D] provides a unique facility to help you visualise where your net is on screen. By entering details such as how much wire is out and how long your sweeps are, Piscatus[3D] can show you where your net most likely is on your 3D map.

This 'virtual net' is displayed in real scale with the surrounding seabed. So, if you enter 250m of sweeps this is how long the sweeps are on screen.

PISCATUS VirtualNet™ can show a midwater trawl, bottom trawl or a twinrig trawl. For a bottom trawl, include the bridle length in your sweep length.

10.1.1 Locating a PISCATUS VirtualNet™ on screen

1. Click the net button on the left Piscatus[3D] tool bar. This will bring up the 'Net Details' window as shown over the page.



2. Enter the amount of wire you have out here.
3. Enter the length of your sweeps here.
4. Enter the distance between your doors here.
5. Enter the length of your net here.
6. If you believe there is a starboard or port offset, enter the distance for that here.
7. Enter the net opening here.
8. Enter the net width here.
9. Click the drop down arrow and select a midwater, bottom or twinrig trawl.
10. Click the drop down arrow and select 'Virtual Net'.
11. Click 'Display net depth' to show the depth of the gear in the water column on screen. This value is taken from the Furuno CN22/24.
12. Click the 'Apply Net' button.
13. Your gear will now appear on your 3D map.

10.1.2 Controlling the amount of wire out

Piscatus3D makes it easy to keep your virtual net's parameters up to date. Once the gear has been shot away, the only thing that will change is the amount of wire that is out.

1. Once you have a PISCATUS VirtualNet™ up and going, a new control will appear at the bottom of the left tool bar. This box shows you how much wire you told Piscatus3D was out.

2. Increase the amount of wire out by clicking on the up arrow, or reduce it by clicking the down arrow.

3. The amount of wire out can also be adjusted using the - and + on your keyboard number pad.

4. Piscatus[3D] will automatically reposition the net for you to reflect any changes in the wire out length.

10.1.3 Removing your PISCATUS VirtualNet™

1. Click the net button on the left Piscatus[3D] tool bar. This will open the 'Net Details' window.

2. Click the 'Cancel Net' button and the net will be removed from the 3D display.

10.1.4 Notes about your PISCATUS VirtualNet™

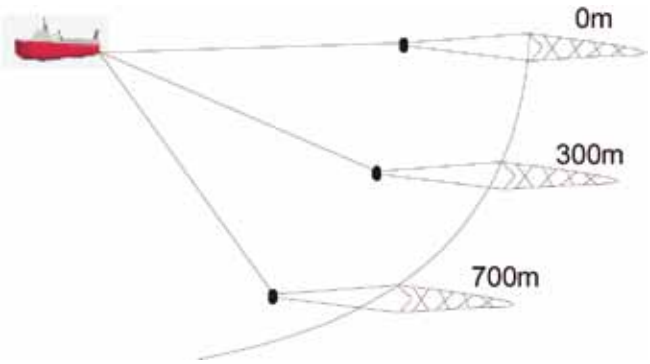
The position of the PISCATUS VirtualNet™ is governed by the details you entered into the 'Net Details' window, and the depth reading from the Furuno CN22/24. If you entered, say, 1400m of wire to shoot a 700m hill, Piscatus[3D] will position the net directly behind the boat along the arc of 1400m distance from the boat.

Piscatus[3D] takes into account what you entered for the net length and sweep length and positions the headline at the position along the arc generated using the Furuno CN22/24 depth reading.

When fishing down slopes where the amount of wire out is changing, you need to use the wire out tool and change the amount of wire that is out.

The gear will always take the same heading as the boat. If you are not using a gyro to get heading, but rather GPS, then the gear may appear to swing about a lot. This is due to the irregular heading that comes from GPS, particularly when traveling very slowly.

Please note, PISCATUS VirtualNet™ is only designed to give you an idea of where your gear is behind you. It is not absolute, and is just another tool to assist in helping your fishing.

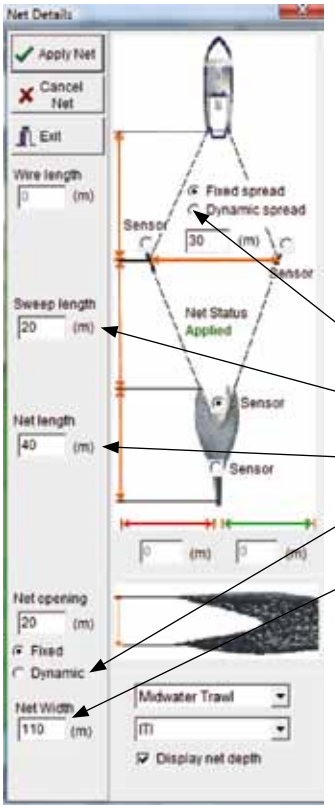


10.2 Using a SIMRAD ITI system

Piscatus3D works with the SIMRAD ITI system. Please confirm with your dealer that the software has been configured to work with Simrad ITI. Simrad ITI will position the net in your 3D map exactly where it is behind the boat.

10.2.1 Locating your net with Simrad ITI

1. Click the net button on the left Piscatus3D tool bar. This will bring up the 'Net Details' window as shown below.



2. From the dropdown box at the bottom of the window click the down arrow and select 'ITI' from the list by clicking it.

3. A message will pop up asking you to choose which sensor to use. Click which sensor you are using for position with your Simrad ITI system. This allows Piscatus3D to position your net correctly with respect to door spread and sweeps.

4. Select fixed or dynamic spread

5. Enter the length of your sweeps here.

6. Enter the length of your net here.

7. Select fixed or dynamic net opening

8. Enter net width

9. Click the 'Apply Net' button.

10. Your net will now pop up on the 3D display from the Simrad ITI position.

Note - if your Simrad ITI net flashes red it means bad depth data have been received and rejected by Piscatus3D.

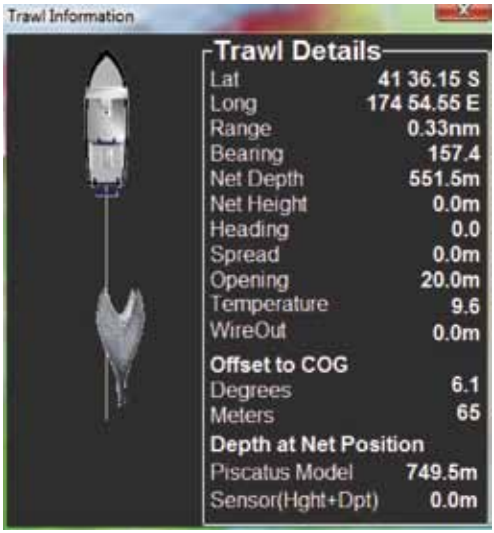
10.2.2 Removing your Simrad ITI net

1. Click the net button on the left Piscatus[3D] tool bar. This will bring up the 'Net Details' window.

2. Click the 'Cancel Net' button and the net will be removed from the 3D display.

10.3 Viewing information about your trawl

Piscatus[3D] has a 'Trawl Information' window that displays information about the net position.



1. To display the 'Trawl Information' window select Display | Display Trawl Info from the Piscatus[3D] menus.

2. To close the 'Trawl Information' window, click the x button in the top right hand corner.

Note - the bottom section of the 'Trawl Information' window titled 'Depth at Net Position' relates to the Piscatus[3D] SmartNet™ net positioning system. Please refer to section 11.6 below for an explanation of these figures.

11.0 SmartNet™

The Piscatus[3D] SmartNet™ system is designed to show a skipper where the trawl is behind the boat when fishing. By matching seafloor depths received from the net sounder with depths on Piscatus[3D], we can judge where the net is most likely to be.

SmartNet™ is a separate module that can be added on to any existing Piscatus[3D] installation. Please contact your dealer for more information about the SmartNet™ system.

11.1 How SmartNet™ works

Figure 2 shows a simple view of a boat fishing at the top of a canyon. Your boat position is known from GPS and your trawl position is behind the boat and generally within 15 degrees of either side of the boat's centerline. Piscatus[3D] calculates the distance your trawl is astern, based on the amount of wire that is out. There are many other parameters that SmartNet™ uses, but, for simplicity in this example, we'll just use these.

Once the net sounder has a bottom signal, SmartNet™ builds a history of its soundings and then uses these to generate a model of the seafloor under the trawl (Figure 3).

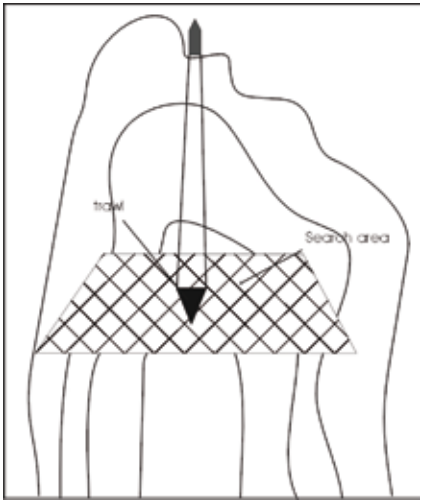


Figure 2. A schematic view of the potential location of a net astern of a boat

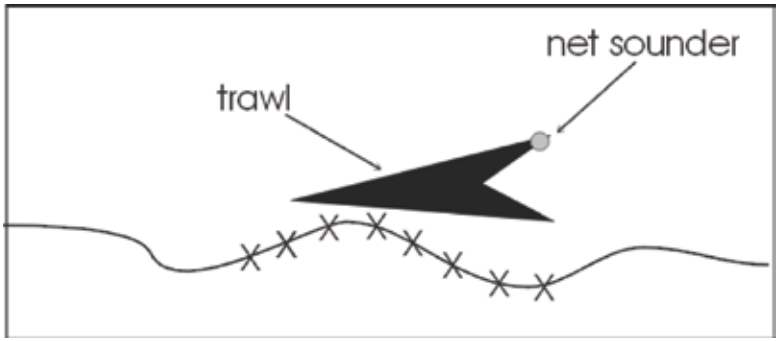


Figure 3. A schematic view of bottom soundings with a net sounder

SmartNet™ then compares this model with your Piscatus3D map of the area to find the same shape in the search area behind the boat. Once it finds a match, it positions the trawl on screen.

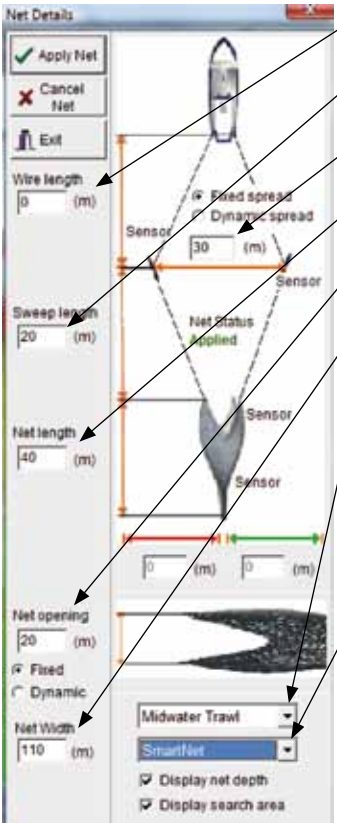
Once a position has been established, SmartNet™ then runs some checks to make sure that it is maintaining the trawl in the right position on screen. It does this by checking what it expects the next sounding to be by looking at your 3D map on Piscatus3D.

There are two basic requirements for the SmartNet™ system to work effectively. You must have a good bottom signal from your net sounder and you must have a well defined 3D map in Piscatus3D of the area you're working.

11.2 Applying the net

Note - be sure that the net sounder is giving a good bottom signal before applying the SmartNet™ net.

1. To apply the SmartNet™ net positioning system click the net button on the left Piscatus3D tool bar. This will bring up the 'Net Details' window as shown over the page.



2. Enter the amount of wire you have out here.
3. Enter the length of your sweeps here.
4. Enter the doorspread here.
5. Enter the length of your net here.
6. Enter the net opening here.
7. Enter the net width here.
8. Click the down arrow and select a midwater, bottom or twinrig trawl.
9. Click 'Display Depth' to show the depth of the gear in the water column on screen. This value is taken from the Furuno CN22/24.
10. Click the down arrow and select 'SmartNet™'.
11. Click the 'Apply Net' button.
12. SmartNet™ will now position your net on your 3D map.

11.3 Controlling the amount of wire out

Once you have a SmartNet™ net on screen, a new control will appear on the left tool bar.

This box shows you how much wire you told Piscatus3D was out. As you adjust the amount of wire out on the winches, ensure you make some changes here. This is very important for the system to work well.

1. Increase the amount of wire out by clicking on the up arrow, or reduce it by clicking the down arrow.

2. The amount of wire out can also be adjusted using the - and + on your keyboard number pad.

11.4 What the net colours mean

As you use SmartNet™ you will notice the colour of the outside of the net may change. The colour changes are linked to the functioning of the SmartNet™ system and are described below.

Grey:
The current net position is correct to all incoming data and has been for some period of time. This colour means the system is working correctly.

Flashing green:
When the net is flashing green, it means that the system has found a new path in the search area that is a better match for the data coming from the net sounder. It has moved the net to there and it flashes for five seconds to let you know this.

Orange:
The net had a good position (Grey) but bad data has caused a positioning problem. The current net position is being predicted from the last known good position with the boats speed and heading being taken into consideration. Net position is being calculated using dead reckoning.

Red:
The system is receiving bad data and cannot match it to anywhere in the search area. In this instance, SmartNet™ will put the net directly behind the boat based on wire out and net depth.

The more the net is grey, the better the system is working. It will mostly be grey and sometimes flashing green. If this is the case, then your SmartNet™ system is working well.

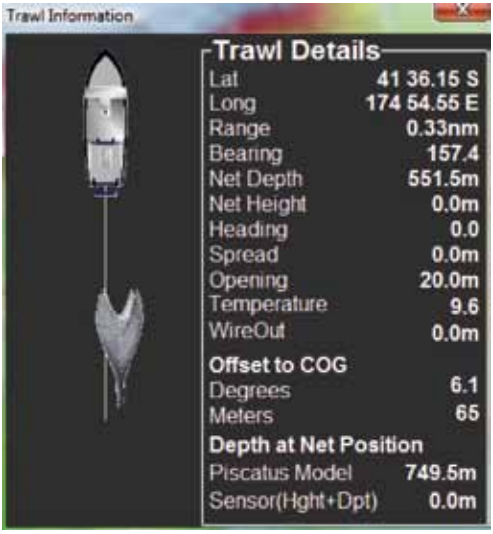
11.5 Getting the most accurate data from your net sounder

The incoming data has to be correct for this system to work. See the picture over the page. The 'Headline Depth' should be compared to the depth shown on the net sounder monitor. The 'Height' should be compared to the distance from the headline line to the seafloor on the net sounder monitor. The net height value will only appear when the net sounder is receiving a return echo off the sea floor.

Most net sounders are set up to look 160m down, meaning 160m is the maximum distance of the ground net height data can be received and the SmartNet™ system can work. Net sounders can be set up to look down to 320m, but there are drawbacks. At the 160m range, the net monitor receives a ping every 1 - 2 seconds. By using the 320m range, it will receive a ping every 2 - 4 seconds.

As the system depends on your net sounder to work, you should ensure that your net sounder is correctly calibrated.

11.6 Viewing information about the trawl



Piscatus3D has a 'Trawl Information' window that displays information about the net position.

1. To display the 'Trawl Information' window select Display | Display Trawl Info from the Piscatus3D menus.

2. To close the 'Trawl Information' window, click the x button in the top right hand corner.

The bottom section of the trawl information window titled 'Depth at Net Position' relates to the Piscatus3D SmartNet™ net positioning system. This displays two depth values, the top depth is the depth of the water column at the net position according to the Piscatus3D terrain model; the second is the actual water column depth according to the data from the Furuno CN22. When SmartNet™ is working best these numbers will be very close.

12.0 PISCATUS DataSafe™

12.1 What is PISCATUS DataSafe™

PISCATUS DataSafe™ is the data sharing component of Piscatus3D and allows the moving around of data between different installations of Piscatus3D within the same company to facilitate sharing of information across the fleet. There are two components - Fleet Manager and Map Manager, both of which act as 'add ons' to Piscatus3D. Both use encryption procedures when moving the data around.

Fleet Manager has been designed to act as the overall 'corporate' database. It is intended to be a shore-based installation with the database containing all the company's depth, hardness and roughness data for its various boats. At the end of each trip a boat can download the data it has collected to disk and it can then be imported into the Fleet Manager database, thus building up a complete picture of the company's fishing grounds. You can then export data from the Fleet Manager system and load it onto a boat's Piscatus3D system through Map Manager. In this way, data can be shared amongst the fleet.

Map Manager is the version found on boats. It allows importing of data - from Fleet Manager, or from other sources such as C-Plot Pro, SeaPlot and SeaPlot Pro. Data can also be exported in a variety of formats.

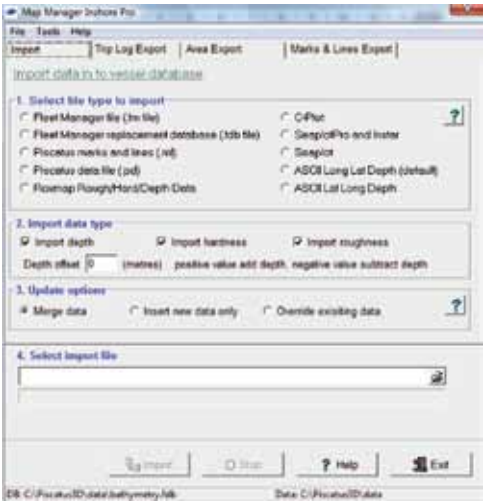
Marks and lines can also be exported and shared amongst the fleet.

12.2 Using Map Manager

Map Manager is the data sharing component of Piscatus3D that is found on boats.

12.2.1 Opening Map Manager

1. To start Map Manager, go to the Start menu and select Programs | Piscatus | MapManager. This will open the 'Map Manager' window, as shown over the page.



2. The first time you open Map Manager you will be asked to set the export protection password. Some of the data exports from Map Manager are not encrypted, hence we have added a password for security reasons.

3. Enter a password and click the 'OK' button. It must be between 6 and 20 characters long.

4. You will now be able to access the data export and import functions of Map Manager

Note - Piscatus[3D] and Map Manager cannot run at the same time so make sure you close one before opening the other.

12.2.2 Changing the export protection password

If you have a Piscatus3D Inshore Pro installation then Map Manager allows you to export your data to Piscatus3D format unencrypted data files. These files can be opened and read by any other Piscatus3D installation. This functionality has been added to Map Manager to allow sharing of data between inshore operators and has been password protected for security reasons.

1. To open Map Manager, go to the Start menu and select Programs | Piscatus | MapManager.

2. In the 'Map Manager' window, select File | Change Export Password from the menu options.

3. This will open the 'Export Protection' window. In here, enter the current export protection password and click the 'OK' button, as shown below.

4. In the next window, enter a new password and click the 'OK' button. Remember passwords must be between 6 and 20 characters long.

5. Your export protection password will be changed.

6. Next time you do a .PE export, you will be asked for this password.

7. Click the 'Exit' to close the 'Map Manager' window.

12.2.3 Enabling trip logging

In order for Piscatus[3D] to share information with Fleet Manager you must make sure Trip Logging is enabled. Trip logging basically means all information coming into the computer from your electronics equipment is written to a password protected encrypted text file, which Fleet Manager can access at a later date.

1. To turn on trip logging, select System | Piscatus Setup from the Piscatus[3D] menus. This will open the 'Piscatus Setup' window.

2. In the 'System' tab, make sure the 'Enable trip logging' option is ticked by clicking it, as shown below.

3. To turn off trip logging, click the option again to remove the tick.

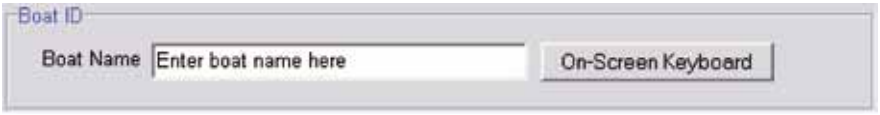
4. Click the 'OK' button to close the 'Piscatus Setup' window.

12.2.4 Setting your Boat ID

If sharing information with Fleet Manager, you can enter the name of your boat into your Piscatus[3D] system so that Fleet Manager can recognise what boat any shared data comes from.

1. To enter a boat name, select System | Piscatus Setup from the Piscatus[3D] menus. This will open the 'Piscatus Setup' window.

2. In the 'Boat' tab, enter a name in the 'Boat Name' section, as shown below.



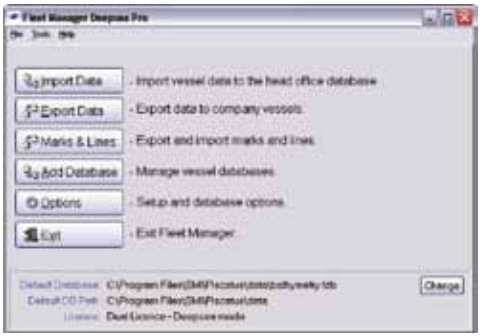
3. Click the 'OK' button to close the 'Piscatus Setup' window.

12.3 Using Fleet Manager

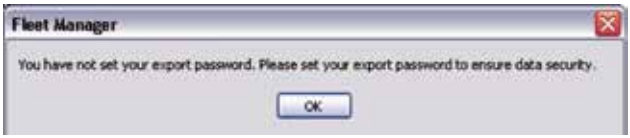
Fleet Manager is the data-sharing component of Piscatus3D that is used at your company's Head Office. In order for it to receive and share data from the fleet, it needs to know what boats are in the fleet. This is because of the encryption routines Piscatus3D employs when moving data around.

12.3.1 Opening Fleet Manager

1. To start Fleet Manager, go to the Start menu and select Programs | Piscatus | Fleet Manager. This will open the 'Fleet Manager' window, as shown below.



2. The first time you open Fleet Manager you will be asked to set your export protection password. Some of the data exports from Fleet Manager are not encrypted, hence we have added a password for security reasons.



3. Enter a password and click the 'OK' button. It must be between 6 and 20 characters long.

4. You will now be able to access the data export and import functions of Fleet Manager

Note - Piscatus3D and Fleet Manager cannot run at the same time so make sure you close one before opening the other.

12.3.2 Adding vessels to Fleet Manager

1. To open Fleet Manager, go to the Start menu and select Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Options' button. This will open the window shown below.

3. Click the 'Vessels' button. This will open the 'Map Manager – Add Boat' window, as shown below. Use this window to add, remove or edit the vessels in your fleet that have Piscatus[3D] installed on them.

4. To add a vessel, click the 'New Vessel' button. In the 'New Vessel' window that opens, type the name of the vessel and its 32 digit Piscatus[3D] code. Then click the 'OK' button. Do this for each boat that has Piscatus[3D].

5. To delete a vessel you have added, use the  and  buttons in the 'Map Manager – Add Boat' window to scroll through the lists of vessels until you find the one you wish to delete, then click the 'Delete Vessel' button. You will be prompted if you want to delete the vessel, select 'Yes'. The vessel will be removed from your list.

6. To edit a vessel you have added, use the  and  buttons in the 'Map Manager – Add Boat' window to scroll through the lists of vessels until you find the one you wish to edit, then click the 'Edit Vessel' button. The details for that vessel will appear in another box, edit the vessel name or it's Piscatus^{3D} code, and then click the 'OK' button. The vessel's details will be updated.

7. Click the 'Exit' button to close the 'Map Manager – Add Boat' window.

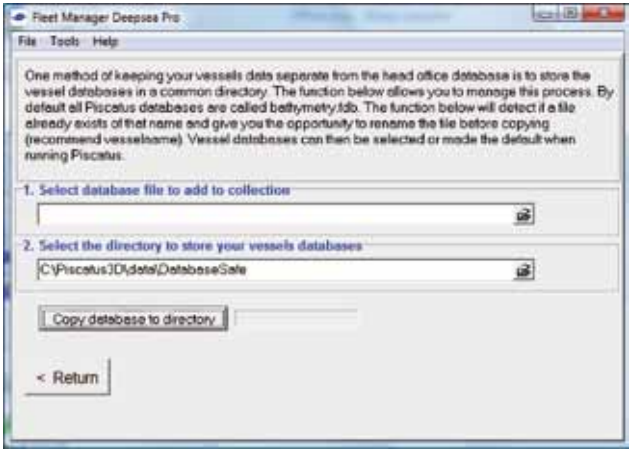
8. Click the 'Return' button to go back to the main 'Fleet Manager' window.

12.3.3 Adding databases to Fleet Manager

By default Fleet Manager stores all it's data in a database file called bathymetry.FDB (as do all installations of Piscatus[3D]). One method of keeping your vessel's data separate from the head office database is to store the vessel database in a separate directory with different file names (we suggest the file name correspond to the vessel name). Vessel databases can then be selected or made the default when running Piscatus[3D].

1. To add a database to the Fleet Manager database collection, open Fleet Manager by going to the Start menu and select Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Add Database' button. This will open the window shown below.



3. In section 1, click the file finder button -  and navigate to the location of the database file you wish to add.

4. In section 2, specify the folder you wish to add the database to. We suggest you use the default location.

5. Click the 'Copy database to directory' button.

6. Click the 'Return' button to return to the main Fleet Manager window.

12.3.4 Adding Partners to Fleet Manager to enable data sharing

Piscatus[3D] has a function that allows importing of data from other company's installations of Piscatus[3D]. This functionality requires the use of special access codes so please contact you dealer if you wish to access this tool.

1. To open Fleet Manager, go to the Start menu and select Programs | Piscatus | Fleet Manager.

2. This will open the 'Fleet Manager' window, in here click the 'Options' button.

3. In the new window, click the 'Partners' button. This will open the window shown over the page.

4. Enter the supplied 22-digit code in the 'Access Code' text box.

5. Enter the other company or boat name in the 'Company or boat Name' text box.

6. Click the 'Add' button.

7. The other company will be added to the list.

8. To delete a company, select it from the list by clicking on it, then click the 'Delete' button. It will be removed from the list.

9. Click the 'Exit' button to close the window.

10. You will now be able to access the data in the other company's database.

12.3.5 Changing the export protection password

Fleet Manager allows you to export your data to an unencrypted text file that can be opened and read by anyone. This functionality has been added to Fleet Manager to allow sharing of data between software applications and has been password protected for security reasons.

1. To open Fleet Manager, go to the Start menu and select Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Options' button.

3. Click the 'Password' button. This will open the 'Export Protection' window. In here, enter the current export protection password and click the 'OK' button, as shown below.

4. In the next window, enter a new password and click the 'OK' button. Remember passwords must be between 6 and 20 characters long.

5. Your export protection password will be changed.

6. Next time you do a .PE or .XYZ export, you will be asked for this password.

7. Click the 'Return' button to go back to the main 'Fleet Manager' window.

12.3.6 Setting default paths

You can change the default database path locations to point to another location.

1. To open Fleet Manager, go to the Start menu and select Program Files | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Options' button.

3. In the new window that opens up, click the 'Default Paths' button.
   This will open the window shown below.

4. Click the file finder button -  and specify the new location for the default database you wish Piscatus[3D] to use.

5. Click the 'default' button to the right of this option to return to the default database path.

6. Optionally specify a new location for the default data folder.

7. Click the 'default' button to the right of this option to return to the default data folder.

8. Click the 'Return' button to close the window.

12.3.7 Returning database statistics

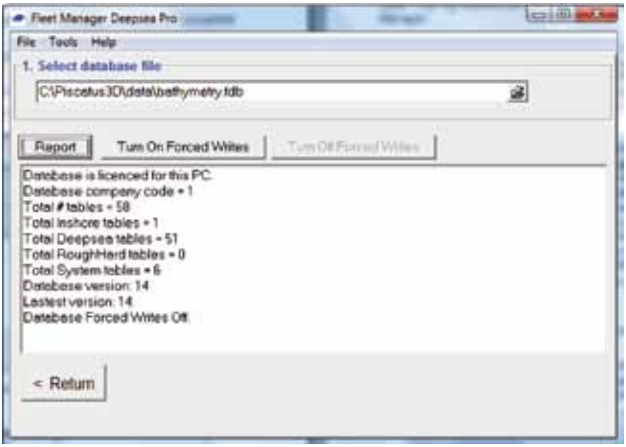
Piscatus[3D] can give you a readout of database statistics of the current default database.

1. To open Fleet Manager, go to the Start menu and select Program Files | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Options' button.

3. In the new window that opens, click the 'DB Stats' button.

4. Click the 'Report' button, this will return a list of database statistics, as shown below.



5. Click the 'Return' button to close the window.

12.4 Exporting data from Map Manager

There are two ways to export data from Map Manager:

- Exporting data by date (encrypted).
- Exporting data by area (encrypted).

You can also export marks and lines through Map Manager.

12.4.1 Exporting data by date (trip logs)

Note – trip log exports can only be read and imported into Piscatus[3D] Fleet Manager.

As well as data being feed directly into Piscatus[3D] and stored in its database, it is also stored in encrypted and password protected trip log files on your computer. New trip log files are created at the beginning of every 24-hour period and have the name format yymmdd.log (e.g., 060224.log contains data collected during 24 Feb 2006). You can use these files to do data exports on the basis of date.

When the trip logs are exported each record in the log is validated against the corresponding location in the Piscatus[3D] database to ensure its value is valid.
The data stored in the trip logs does not undergo the same grooming and cleaning routines as the data stored in the Piscatus[3D] database does, hence the addition of the data validation process. This validation reduces the risk of bad data points being shared back to Fleet Manager and ensures clean data is then shared out amongst the fleet. Validation is time consuming and does slow down data exports, so there is an option to skip validation if required. Exported trip logs cannot be directly imported into another Piscatus[3D] system running on a boat, they must go through Fleet Manager first.

1. To open Map Manager go to the Start menu and select Programs | Piscatus | MapManager.

2. In the 'Map Manager' window, click on the 'Trip Log Export' tab. All available trip log files will be listed. Select the ones you wish to export by clicking the associated check box, as shown below.

3. The 'Validate data against your database' is checked by default. This will slow down the export. You can turn this option off by clicking the check box to remove the tick.

4. If you are collecting and sharing hardness and roughness data (RoxAnn data) it is best to export the log files with a copy of the 2D palette file which you view this data with. This allows FleetManager to convert the data to a standard calibration for sharing amongst the fleet. To do this place a check in the "Export with a copy of the RoxAnn 2D palette" option and use the file browser below to location the 2D palette file.

5. Specify a name for the data file you will create. Exported trip logs should have an .mm file extension.

6. Click the 'Export' button.

7. If you wish to stop the export before it has completed (e.g., if it is taking too long), click the 'Stop' button.

8. Click the 'Exit' button to close Map Manager.

   Note - once a trip log export has been done, all log files (exported or otherwise) are moved to a backup folder. This feature has been added to prevent the list of log files in the window getting too long (remember a file is created every 24 hours).

   If you wish to export a trip log that has been moved to a backup folder, click the 'Backup directory' button in the 'Trip Log Export' tab. This will then list all log files found in the backup directory.

12.4.2 Exporting data by area

You can specify an area of data to export by providing latitude and longitude coordinates, or you can export all data stored in the database. Both these modes of exporting extract the data stored within the Piscatus3D database (bathymetry.FDB).

1. To open Map Manager go to the Start menu and select Programs | Piscatus | MapManager, and click on the 'Area Export' tab.

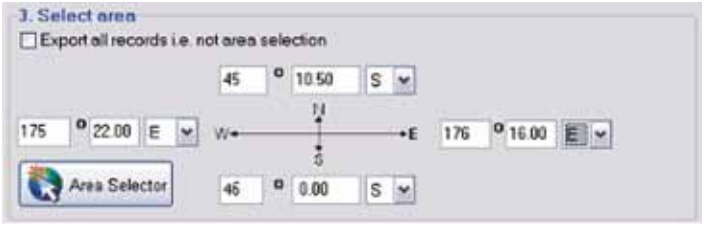
2. In section 1, select the type of export file you wish to create. The Fleet Manager file (.fm) is encrypted and can be read only by your company's Fleet Manager installation. The Piscatus data file (.pd) is unencrypted and can be read by any other installation of Piscatus[3D] Inshore Pro. For this reason, this feature has been password protected.

   Note – Piscatus[3D] DeepSea Pro does not have the ability to export to a .pd file due to concerns about security. In Piscatus[3D] DeepSea Pro you can only export data to your company's Fleet Manager installation.

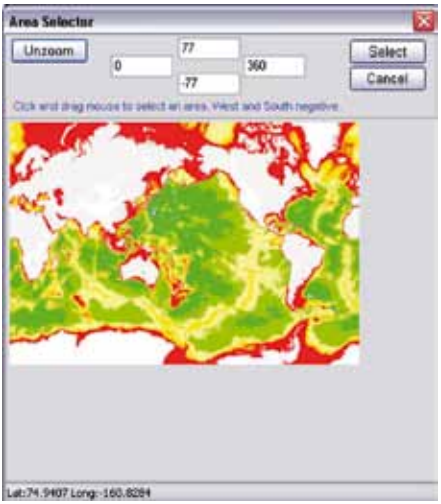
3. In section 2, select what type of data – depth, hardness, roughness - you wish to export by clicking the relevant box(es).

4. In section 3, specify the area you wish to export. If you want all data from the database, make sure the 'Export all records i.e. not area selection' option is checked by clicking it.

5. If you are interested in a specific area only, enter the north/south/east/west co-ordinates in degrees and minutes in the appropriate boxes.



6. You can also select the area of interest graphically by dragging a box over a map. Click the 'Area Selector' button. This will open the 'Area Selector' window, as shown on the next page.



7. Click on the map with your left trackball or mouse button, hold down the button and drag a rectangle over the area you are interested in. When you have covered the area, release the trackball or mouse button. The map will zoom to the area you selected,
and the coordinate boxes will change to reflect the boundaries of your selected area. Zoom in further if required.

8. Click the 'Unzoom' button to return to the full map extent and redefine the area.

9. Once you have the desired area, click the 'Select' button to confirm these coordinates and close the 'Area Selector' window. You will be returned to the main Map manager window.

10. In section 4, enter a file name for the date file you will create.

11. Click the 'Export' button. Some extracts can take a long time; you will be warned of this.

12. If you are doing a .pd export the data is unencrypted. For this reason, this feature is password protected. Please enter you password in the 'Export Protection' window when it pops up and click the 'OK' button.

13. If you wish to stop the export before it is finished (e.g., if it is taking too long), click the 'Stop' button.

14. Once the export has completed successfully you will see a message box detailing how many data records have been written to the file, along with the name and location of the file.

15. Click the 'Exit' button to close Map Manager.

12.4.3 Exporting marks and lines

Map Manager and Fleet Manager both allow the user to export marks and lines stored in the Piscatus3D database. You can export individual plots, all marks, all lines, or all marks and lines.

1. To open Map Manager go to the Start menu and select Programs | Piscatus | MapManager and click on the 'Marks & Lines Export' tab.

2. In section 1, click the down arrow to the right of the 'Export from plots' option. A list of export options will appear, along with a list of available plots. Select one of these options by clicking on it, as shown below.

3. In section 2, enter a file name for the export file you will create, as shown to the left. Exported marks and lines should have an .ml file extension.

4. Click the 'Export' button. You will be warned that the export may take a long time.

5. If you wish to stop the export before it has finished (e.g., if it is taking too long), click the 'Stop' button.

6. Click the 'Exit' button to close Map Manager.

12.5 Exporting data from Fleet Manager

There are five ways of exporting data from Fleet Manager:

- Exporting data to a replacement database for a vessel in your fleet (encrypted and secure).
- Exporting data by area for a vessel in your fleet (encrypted and secure).
- Exporting data by area to any other vessel with Piscatus^{3D} installed (no encryption).
- Exporting data to standard XYZ format for use in other software packages (no encryption).
- Exporting marks and lines.

12.5.1 Exporting data to a replacement database

This option creates a new database to replace the existing Piscatus^{3D} database on one of your vessels. The database will only work on the vessel it is created for.

1. Start Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

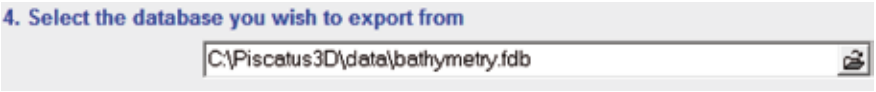
2. In the 'Fleet Manager' window, click the 'Export Data' button.

3. The 'Fleet Manager – Export Data' window will open. In section 1, select the 'New Database' export option by clicking it. Specify a file name for the export file you will create. Exported databases should have an .fdb file extension.

4. Section 2 will appear grayed out as this function only permits the export of depth data, and not hardness or roughness data.

5. In section 3, use the  buttons to scroll through the list of vessels. Select the vessel the database is intended for by clicking on it, as shown below.

6. In section 4, select the Piscatus[3D] database you wish to export from by specifying its location. The default Piscatus[3D] database location is C:\Piscatus3D\data\bathymetry.fdb.



7. Section 6 will appear grayed out as it is not applicable in this case as you are exporting the entire database.

8. Click the 'Export' button. Some extracts can take a long time, you will be warned of this.

9. You will be notified once the export has completed successfully.

10. Click the 'Exit' button to close Fleet Manager.

12.5.2 Exporting data by area

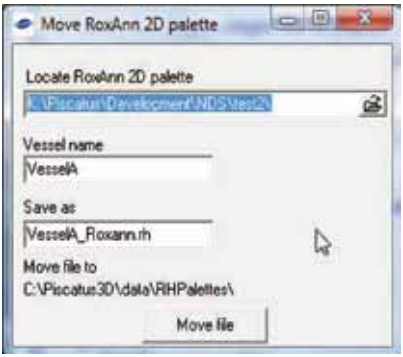
This option creates an area of data that can then be imported into one of your vessel's existing Piscatus[3D] database. The file can only be read and imported by the vessel(s) it is created for.

1. Start Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

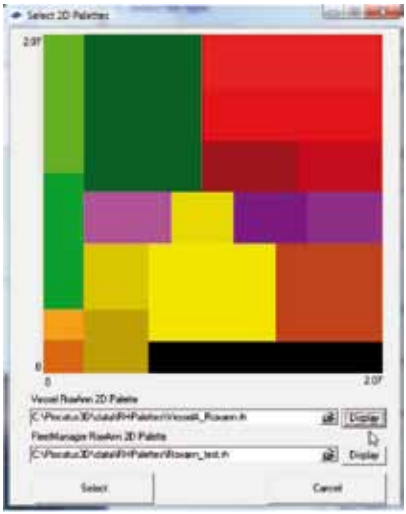
2. In the 'Fleet Manager' window, click the 'Export Data' button.

3. The 'Fleet Manager – Export Data' window will open. In section 1, select the 'FM Export' option by clicking it. Specify a file name for the data file you will create. Exported area files should have an .fm file extension.

4. In section 2, select what type(s) of data you wish to export by clicking the options so they are ticked.



5. If you are exporting a RoxAnn Palette you will see the window displayed to the left once the export starts. Use the control at the top of the window to locate the RoxAnn Palette. Next you must name the palette file as saved on the FleetManager computer. There are two options to do this 1) enter the vessel name and FleetManager will create a palette name, or 2) enter the 'save as' palette file name directly. Press 'Move file' to complete export.



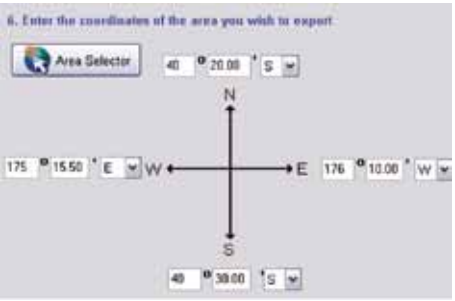
6. If you are converting data across palettes you will see the window displayed to the left. You must locate both the vessels and FleetManagers palette files so the system can calibrate the vessels data into a standard. First, locate both files using the controls at the bottom of window. Once located you can press each locations 'Display' button to display the palette – the display include all colours in palette and min/max value of hardness and roughness. Once you have the correct files located press the 'Select' button.

7. In section 3, use the  buttons to scroll through the list of vessel. Select the vessel the data extract is intended for by clicking on it, as shown below.

If you want the area extract to be made available to all boats in the fleet, make sure the "Allow export data for all company boats' option is ticked instead of specifying a boat, as shown below.

8. In section 4, select the Piscatus3D database you wish to export from by specifying its location. The default Piscatus3D database location is C:\ Piscatus3D\data\bathymetry.fdb.

9. In section 5, select the Piscatus3D mode you wish to export from – either DeepSea Pro or Inshore Pro – by clicking the appropriate option.



10. In section 6, enter the north/south/east/west co-ordinates in degrees and minutes of the area you are interested in, as shown on the left.

11. You can also select the area of interest graphically by dragging a box over a map. Please refer to 12.4.2, steps 7 to 9, for instructions on how to do this.

12. After you have set the area to export, click the 'Export' button. Some extracts can take a long time, you will be warned of this.

13. You will be notified once the export has completed successfully.

14. Click the 'Exit' button to close Fleet Manager.

12.5.3 Exporting data for other Piscatus3D users

This option creates an area of data that can then be imported into any other installation of Piscatus3D on a vessel. The file is not encrypted and can therefore be read by any Piscatus3D installation. This feature is password protected.

1. Start Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Export Data' button.

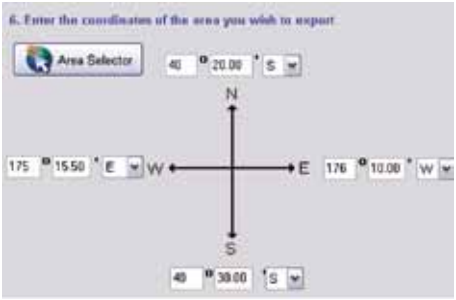
3. The 'Fleet Manager – Export Data' window will open. In section 1, select the 'Piscatus Export' option by clicking it. Specify a file name for the export file you will create. Unencrypted area extracts should have a .pd file extension.

4. In section 2, select what type(s) of data you wish to export by clicking the options so they are ticked.

5. Section 3 will appear grayed out as this export option is not encrypted for a specific boat.

6. In section 4, select the Piscatus3D database you wish to export from by specifying its location. The default Piscatus3D database location is C:\Piscatus3D\data\bathymetry.fdb.

7. In section 5, select the Piscatus3D mode you wish to export from – either DeepSea Pro or Inshore Pro – by clicking the appropriate option.



8. In section 6, enter the north/south/ east/west co-ordinates in degrees and minutes of the area you are interested in, as shown over the page.

9. You can also select the area of interest graphically by dragging a box over a map. Please refer to 12.4.2, steps 7 to 9, for instructions on how to do this.

10. After you have set the area to export, click the 'Export' button. Some extracts can take a long time, you will be warned of this.

11. This feature is password protected as the data exported is unencrypted. Please enter you password in the 'Export Protection' window when it appears and click the 'OK' button.

12. You will be notified once the export has completed successfully.

13. Click the 'Exit' button to close Fleet Manager.

12.5.4 Exporting data to XYZ

This option creates an XYZ text file containing all data from a specific area. The file is not encrypted and can be opened by any text editor program and used in numerous other mapping and database programs. This feature is password protected.

1. Open Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Export Data' button.

3. The 'Fleet Manager – Export Data' window will open. In section 1, select the 'Export XYZ' option by clicking it. Specify a file name for the export file you will create. Text files should have a .txt file extension.

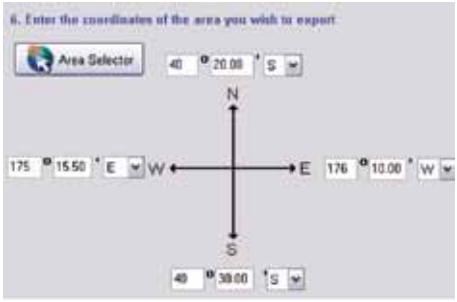
4. In section 2, select what type(s) of data you wish to export by clicking the options so they are ticked.

5. Section 3 will appear grayed out as this export option is not encrypted for a specific boat.

6. In section 4, select the Piscatus[3D] database you wish to export from by specifying its location. The default Piscatus[3D] database location is C:\ Piscatus3D\data\bathymetry.fdb.

7. In section 5, select the Piscatus[3D] mode you wish to export from – either DeepSea Pro or Inshore Pro – by clicking the appropriate option.

8. In section 6, enter the north/south/east/west co-ordinates in degrees and minutes of the area you are interested in, as shown below.



9. You can also select the area of interest graphically by dragging a box over a map. To do this, click the 'Area Selector' button. Please refer to 12.4.2, steps 7 to 9, for instructions on how to do this.

10. After you have set the area to export, click the 'Export' button. Some extracts can take a long time, you will be warned of this.

11. This feature is password protected as the data exported is unencrypted. Please enter you password in the 'Export Protection' window when it appears and click the 'OK' button.

12. You will be notified once the export has completed successfully.

13. Click the 'Exit' button to close Fleet Manager.

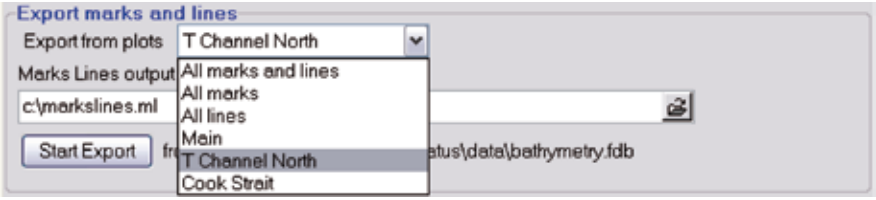
12.5.5 Exporting marks and lines

Map Manager and Fleet Manager both allow the user to export marks and lines stored in the Piscatus[3D] database. You can export individual plots, all marks, all lines, or all marks and lines.

1. Open Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Marks & Lines' button.

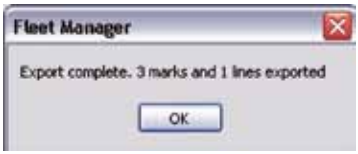
3. In the 'Export marks and lines' section, click the down arrow to the right of the 'Export from plots' option. A list of export options will appear, along with a list of available plots. Select one of these options by clicking on it, as shown below.



4. Enter a file name for the export file you will create, as shown below. Exported marks and lines should have an .ml file extension.

5. Click the 'Start Export' button.

6. You will be notified when the export has completed successfully and how marks and/or lines have been exported.



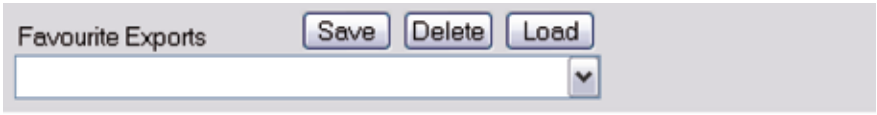
7. Click the 'Return' button to return to the main Fleet Manager window.

12.5.6 Using 'Favourite' exports

If you do frequent exports of the same area, you can save the co-ordinates of the area to a file and this can be loaded later on to save you having to re-enter the co-ordinates.

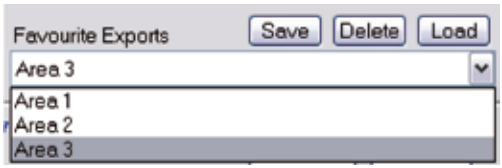
1. In the 'Fleet Manager – Export Data' window select the type of extract you wish to do and enter the appropriate co-ordinates.

2. To save these co-ordinates click the 'Save' button to the right of 'Favourite Exports' at the bottom of section 6.



3. The 'Input Box' window will open, enter a name for the area and click the 'OK' button.

4. To load a previously saved favourite setting, click the down arrow under the 'Load' button to display a list of saved areas. Select the area you wish to load by clicking it. Then click the 'Load' button. The co-ordinates of the selected area will be loaded and you can proceed with your export.



5. To delete a favourite area, click the down arrow under the 'Load' button to display a list of saved areas. Select the area you wish to load by clicking it. Then click the 'Delete' button. The area will be removed from the list.

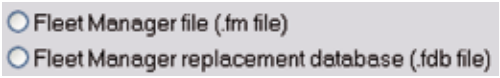
12.6 Importing Data

12.6.1 Data types and formats

Map Manager and Fleet Manager support a number of different data formats for depth, hardness and roughness data that can be imported into the Piscatus3D database. Following is a brief outline of these formats.

Data exported from Fleet Manager (.fm and .fdb files)
Note – in order to utilise this option your company must have a Fleet Manager installation of Piscatus3D.

Data can be exported from Fleet Manager – either as an area extract (which creates a file with a .fm extension), or as a replacement database (which creates a file with a .fdb extension). Both these files are encrypted and can be imported into any of the company's vessels via Map Manager.



Fleet Manager area extracts (ie, a .fm file) allow you to import depth, hardness and roughness data. Replacement database files (ie, a .fdb file) only allow you to import depth data.

Note also that a replacement database file (ie, a .fdb file) will overwrite and replace the current database in your Piscatus3D installation and you will loose all depths stored in it. You have the option of keeping, replacing or merging marks and lines.

Piscatus marks and line (.ml files)
This is an export from Map Manager of Piscatus3D lines and marks. This is a password protected export as the file is unencrypted and can be imported by any Piscatus3D installation.

Piscatus data file (.pd files)
This is an export from Map Manager of depth, hardness and roughness data. This is a password protected export as the file is unencrypted and can be imported by any Piscatus installation. Piscatus3D DeepSea Pro does NOT have the option to export to a .pd file due to concerns about security.

C-Plot Pro format
Note – depth data only is supported for this format.

Trackline data exported to a text file is supported.

SeaPlot Pro or Instar formats
Note – depth data only is supported for this format.

SeaPlot Pro and Instar depth soundings exported to sppdepth.txt and ecdepth.txt respectively are supported. The format of the file should look like this:

S 37 49.653 E 175 11.383	694.00 Tue Aug 21 10:55:19 2001
S 37 51.368 E 175 22.479	609.00 Tue Aug 21 10:55:19 2001
S 37 49.763 E 175 11.597	705.00 Tue Aug 21 10:55:19 2001
S 37 51.217 E 175 22.300	614.00 Tue Aug 21 10:55:19 2001

SeaPlot 5 format
Note – depth data only is supported for this format.

SeaPlot 5 depth soundings exported to spdepth.txt file format are supported.
The format of the file should look like this:

4 S 51 02.151 E 161 31.669	964.00
4 S 51 02.154 E 161 31.783	956.79
4 S 51 02.158 E 161 31.902	954.79

ASCII Long Lat Depth (default)
XYZ text files need to be space delimited longitude - latitude - depth with no text qualifiers (ie, the values should not be enclosed in double or single quotes) and one record per line. The co-ordinates must be decimalised with wests and souths recorded as negative numbers. Depths must be in metres regardless of what units your Piscatus3D system is set to. Select whether depths are positive or negative through the Map Manager File menu. The format should look like this:

170.49890 -45.45277 391.8

170.49480 -45.45282 394.8

-170.58980 -45.87996 1165

ASCII Lat Long Depth
Similar to above format, expect Longitude and Latitude in different order.
Format should look like this:

-45.45282 170.49480 394.8

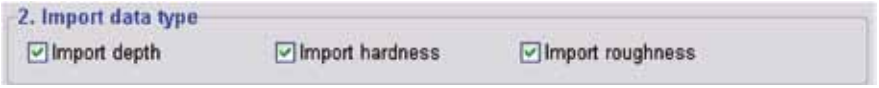
12.6.2 Importing data into Map Manager

1. Open Map Manager by clicking the Start menu and selecting Programs | Piscatus | MapManager

2. In the 'Map Manager' window, click on the 'Import' tab.

3. In section 1, select the type of data you want to import by clicking on the appropriate option. (For more information on the different file formats Piscatus[3D] will accept, refer to 12.6.1).

4. In section 2, select the type of data you wish to import by clicking the appropriate options so they show as ticked. You can select more than one option for import.



Note – not all file types support hardness and roughness data – refer to 12.6.1 for more details.

5. In section 3, select the data update method to use by clicking the appropriate option so it is ticked.

The 'Merge data' option means all data from the input file will be written to the Piscatus[3D] database. If a point exists at the same location in both the Piscatus[3D] database and the input file, the value found in the Piscatus[3D] database will be updated to represent an average of the two values.

The 'Insert new data only' option means only those areas in the input file that are not already represented in the Piscatus3D database will be written. Any locations in the input file that already have data in the Piscatus3D database will be ignored.

The 'Override existing data' option means all data from the input file will be written to the Piscatus3D database. If a point exists at the same location in both the Piscatus3D database and the input file, the value found in the Piscatus3D database will be overwritten with the value found in the input file.

6. In section 4, specify the location of the input file. Click the open file finder button -  In the window that pops up, navigate to the location of the file you wish to import, select the file name by clicking on it, and click the 'Open' button to close the window.

7. Click the 'Import' button.

8. You will be prompted about whether or not you want to create a backup of your existing Piscatus3D database before the import starts. In the event that the database becomes corrupted or your input file was not what you thought it was, this gives you the option of going back to the existing database. We recommend you select 'Yes'.

9. A progress bar will indicate the status of the importing procedure. Files containing many tens of thousands of records can take some time to import and tie up computer resources for that time. When the import has successfully completed you will get a message indicating how many records have been read in, how many written to the Piscatus3D database, and the latitude/longitude position of the first and last records.

10. If you wish to stop the import before it has finished (e.g., if it is taking too long), click the 'Stop' button.

11. Click the 'Exit' button to close Map Manager.

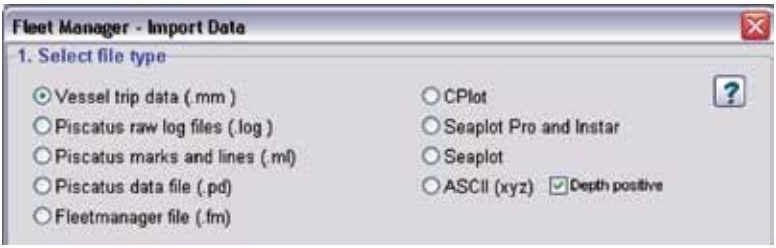
12.6.3 Importing data into Fleet Manager

1. Open Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Import Data' button.

3. The 'Fleet Manager – Import Data' window will open.

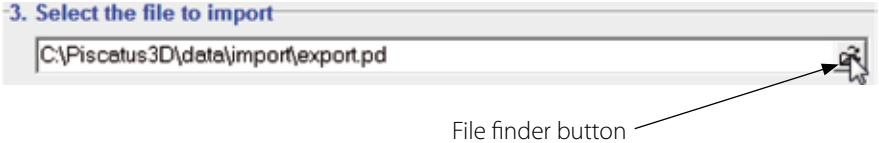
4. In section 1, select the type of data you which to import by clicking the appropriate option, as shown below.



5. In section 2, select the type of data you wish to import by clicking the appropriate options so they show as ticked. You can select more than one option for import.

Note – not all file types support hardness and roughness data – refer to 12.6.1 for more details.

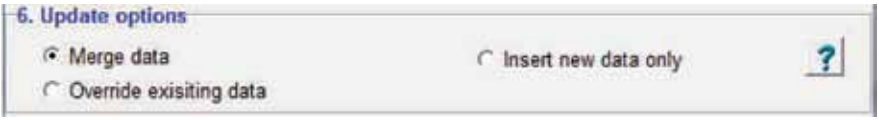
6. In section 3, specify the location of the input file. Click the open file finder button that is identified below. In the window that pops up, navigate to the location of the file you wish to import, select the file name by clicking on it and click the 'Open' button to close the window.



7. In section 4, select the Piscatus3D database you wish to import the data in to. The default Piscatus3D database location is C:\Piscatus3D\data\bathymetry.fdb.

8. In section 5, select the Piscatus3D mode you wish to import the data to by clicking the appropriate option. Remember that Piscatus3D DeepSea Pro and Piscatus3D Inshore Pro cannot access each other's databases. If you want the data to be imported into both databases, simply run the import procedure a second time.

9. In section 6, select the data update method to use by clicking the appropriate option so it is ticked.

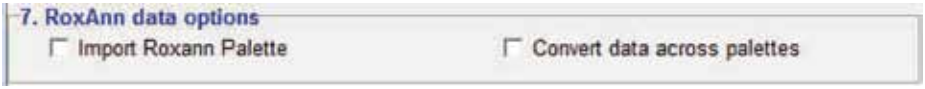


   The 'Merge data' option means all data from the input file will be written to the Piscatus3D database. If a point exists at the same location in both the Piscatus3D database and the input file, the value found in the Piscatus3D database will be updated to represent an average of the two values.

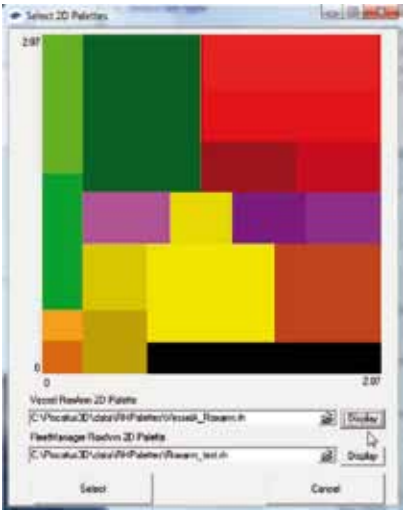
   The 'Insert new data only' option means only those areas in the input file that are not already represented in the Piscatus3D database will be written. Any locations in the input file that already have data in the Piscatus3D database will be ignored.

   The 'Override existing data' option means all data from the input file will be written to the Piscatus3D database. If a point exists at the same location in both the Piscatus3D database and the input file, the value found in the Piscatus3D database will be overwritten with the value found in the input file.

10. If you are importing hardness and roughness data (RoxAnn data) from vessels then you will need to convert the data into a calibration standard. If this is the first time you have imported this type of data from any vessel you must import the vessels RoxAnn Palette. To do this check the 'Import RoxAnn Palette' option shown below. Once the RoxAnn Palette has been imported once it does not need to be again. With all imports you will want to check the 'Convert data across palettes' option shown below. This option will convert the data from the vessel calibration into a shared standard calibration. How to use both of this options is described on the following page.



11. If you are importing a RoxAnn Palette you will see the window displayed to the left once the import starts. Use the control at the top of the window to locate the RoxAnn Palette. Next you must name the palette file as saved on the FleetManager computer. There are two options to do this 1) enter the vessel name and FleetManager will create a palette name, or 2) enter the 'save as' palette file name directly. Press 'Move file' to complete import.



12. If you are converting data across palettes you will see the window displayed to the left. You must locate both the vessels and FleetManagers palette files so the system can calibrate the vessels data into a standard. First, locate both files using the controls at the bottom of window. Once located you can press each locations 'Display' button to display the palette – the display include all colours in palette and min/max value of hardness and roughness. Once you have the correct files located press the 'Select' button.

13. Click the 'Import' button.

14. You will be prompted about whether or not you want to create a backup of your existing Piscatus[3D] database before the import starts. In the event that the database becomes corrupted or your input file was not what you thought it was, this gives you the option of going back to the existing database. We recommend you select 'Yes'.

15. A progress bar will indicate the status of the importing procedure. Files containing many tens of thousands of records can take some time to import and tie up computer resources for that time. When the import has successfully completed you will get a message indicating how many records have been read in, how many written to the Piscatus[3D] database, and the latitude/longitude position of the first and last records.

16. If you wish to stop the import before it has finished (e.g., if it is taking too long), click the 'Stop' button.

17. Click the 'Exit' button to close Map Manager.

12.6.4 Importing marks and lines into Fleet Manager

1. Open Fleet Manager by clicking the Start menu and selecting Programs | Piscatus | Fleet Manager.

2. In the 'Fleet Manager' window, click the 'Marks & Lines' button.

3. In the 'Import marks and lines' section, click the file finder button and navigate to the location of the file you wish to import. Select the file by clicking on it, and then click the 'Open' button to close the window.

4. Click the 'Start Import' button.

5. You will be notified when the import has completed successfully and how marks and/or lines have been imported.

13.0 Piscatus[3D] Database Management

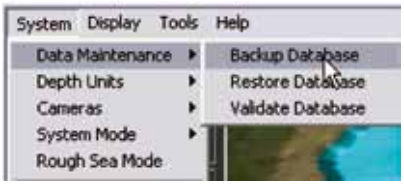
13.1 Piscatus[3D] Using Database Manager

It is strongly recommend you regularly back up your Piscatus[3D] database as fluctuations in power supply can lead to a corrupt database. Piscatus[3D] has a database backup and restore function called 'Database Manager'. The last three backups are stored by the Database Manager, thus ensuring that in any situation a good backup is available.

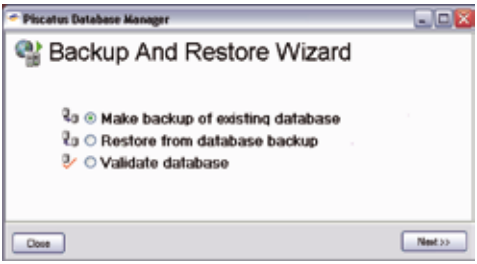
Note - using Windows Explorer to copy an active database can corrupt the database. If you wish to do a file copy please stop the background 'Firebird Server' service before doing so, and then restarting the service after you have finished the copy. Likewise for restoring a database via Windows Explorer.

Piscatus[3D] Database Manager uses the recommended gbak tool for safely backing up an active database. We do not take responsibility for any loss of data due to reasons mentioned above.

13.1.1 Making a Piscatus[3D] database backup



1. To start the Piscatus[3D] Database Manager select System | Data Maintenance | Backup Database from the Piscatus[3D] menus, as shown on the left. Alternatively, you can click the Start menu and select Programs | Piscatus | Database Manager.



2. The 'Piscatus Database Manager' window will open, as shown on the left. It is a simple wizard designed to take you through the steps of creating a database backup.

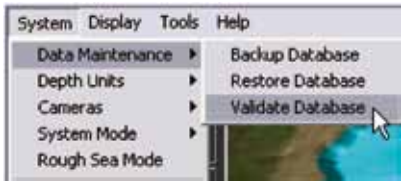
3. Select the option 'Make backup of existing database' by clicking it and click the 'Next' button.

4. A backup file of your database will be made that includes all depth, hardness and roughness data, as well as your marks and lines. You will be notified when the backup has finished by a message displaying on your screen.

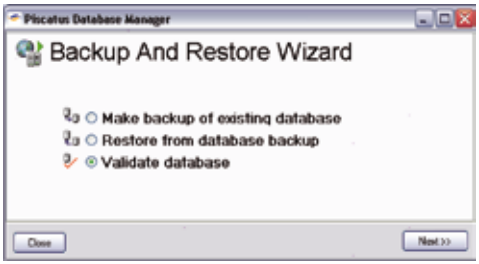
5. Click the 'Return to Start' button to return to the main 'Piscatus Database Manager' screen or click the 'Finish' button to close the window.

13.1.2 Verifying a Piscatus[3D] database

The Piscatus[3D] Database Manger can verify a Piscatus[3D] database to ensure it is valid.



1. To start the Piscatus[3D] Database Manager select System | Data Maintenance | Backup Database from the Piscatus[3D] menus, as shown on the left. Alternatively, you can click the Start menu and select Programs | Piscatus | Database Manager.



2. This will open the 'Piscatus Database Manager' window as shown on the left. It is a simple wizard designed to take you through the steps of verifying a database.

3. Select 'Validate database' and click the 'Next' button.

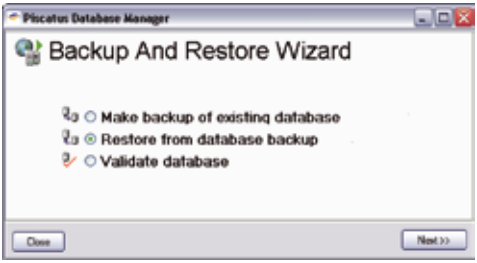
4. Verification of your database will begin. Piscatus[3D] has to close in order to run the verification. You will be notified when the verification has finished by a message displaying on your screen. Click the 'OK' button to dismiss the message.

5. Click the 'Close' button on the 'Piscatus Database Manager' window to exit the program.

13.1.3 Restoring from a database backup

The Piscatus[3D] Database Manager can also restore from database backups.

1. To start the Piscatus[3D] Database Manager select System | Data Maintenance | Backup Database from the Piscatus[3D] menus, as shown on the left. Alternatively, you can click the Start menu and select Programs | Piscatus | Database Manager.



2. This will open the 'Piscatus Database Manager' window as shown on the left. It is a simple wizard designed to take you through the steps of restoring a Piscatus[3D] database from one of its backups.

3. Select the option 'Restore from database backup' and click the 'Next' button.

4. Piscatus[3D] keeps several backup copies of its database, each having a time stamp on it corresponding to when the backup was performed. Select the backup you which to restore from, and click the 'Next' button.

5. You will be prompted whether you want to replace your existing database with one of the backups, select 'Yes'.

6. Restoring your database will begin. Piscatus[3D] has to close in order to run the restore. You will be notified when the database restore has finished by a message displaying on your screen.

7. Click the 'Finish' button to exit the program.

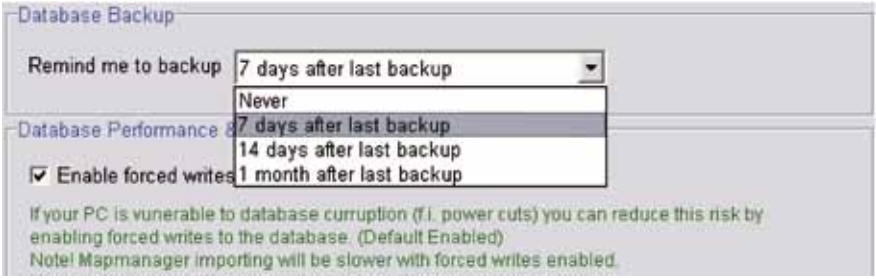
Note - database copies and backups that the user has moved from their default folder, or made secondary backups of, can also be restored by selecting the 'Other' option on the restore page.

13.2 Using the Auto-Backup reminder function

You can set Piscatus3D to periodically remind you to back up your database. Database backups do not happen automatically.

1. Select System | Piscatus Setup from the Piscatus3D menus. This will open the 'Piscatus Setup' window.

2. In the 'Database' tab, click the down arrow in the 'Database Backup' section and select one of the reminder options by clicking on it, as shown below.



3. Click the 'OK' button.

Note - this function is a reminder only. Once you see the reminder please use the 'Piscatus Database Manager' program to create a backup.

13.3 Turning on forced writes

As data comes in to your Piscatus3D system it is stored in the computer memory until it reaches a certain number of records and then these are written to Piscatus3D database stored on the hard disk drive. If there is a power cut before Piscatus3D has had a chance to write these records to the database, the data will be lost and the database may become corrupt.

Forced writes means that all incoming data is written to the database as it comes in, rather than being stored in memory and written in blocks. This is a much more reliable way of operating, but it does slow down performance of your computer. It may be especially noticeable when you are doing large imports of data through Map Manager.

1. To turn of forced writes, select System | Piscatus Setup from the Piscatus^{3D} menus. This will open the 'Piscatus Setup' window.

2. In the 'Database' tab, make sure 'Enable forced writes' is ticked by clicking it. Forced writes will now be turned on.

3. To turn off forced writes, click the option again so that the tick is removed.

4. Click the 'OK' button.

13.4 Setting the database update mode

You can set the type of database update you want Piscatus^{3D} to perform on data coming in from your sounder and seafloor discrimination device.

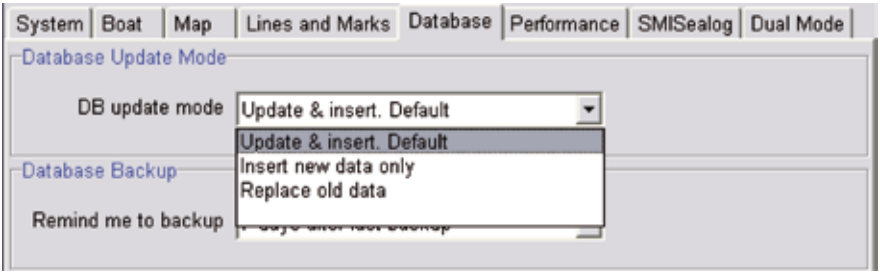
1. Select System | Piscatus Setup from the Piscatus^{3D} menus. This will open the 'Piscatus Options' window.

2. In the 'Database' tab, click the down arrow in the 'Database Update Mode' section and select one of the update options by clicking on it, as shown over the page.

   The 'Update & insert' option means all incoming data will be written to the Piscatus^{3D} database. If a point already exists at the same location in the Piscatus^{3D} database, the value found in the Piscatus^{3D} database will be updated to represent an average of the two values.

   The 'Insert new data only' option means only those incoming points that are not already represented in the Piscatus^{3D} database will be written. Incoming data from locations already represented in the Piscatus^{3D} database will be ignored.

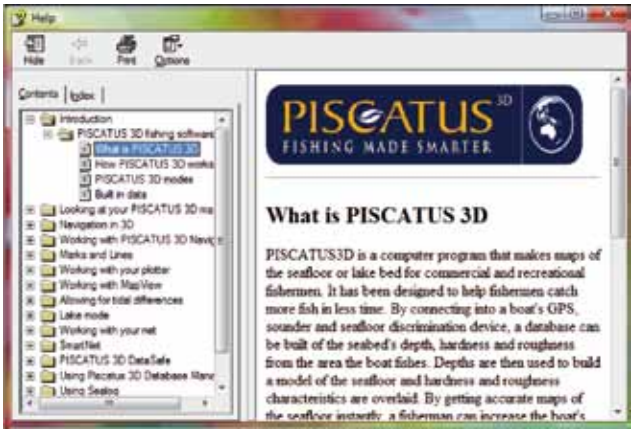
The 'Replace old data' option means all incoming data will be written to the Piscatus3D database. If a point already exists in the Piscatus3D database it will be overwritten with the incoming value.



3. Click the 'OK' button.

14.0 Trouble Shooting

14.1 Using the Piscatus3D help system



The Piscatus3D help system is identical to this manual but provides quick searching facilities and is available to the user at any time. To open the Piscatus3D help system select Help | Help from the Piscatus3D menus. A window like the one shown on the left will appear.

This help system is similar to using the Internet, green text represents a link to another page and clicking on it will take you to another help topic.

14.2 Technical support

It you require technical support from either your dealer or Seabed Mapping, please have ready the Piscatus3D version you are running. You may also be asked to provide the Piscatus3D error log to help identify the problem.

14.2.1 Determining your Piscatus3D version

1. To view the version of Piscatus3D you are running, select Help | About from the Piscatus3D menus.

2. This will open an information window detailing your Piscatus3D version as well as other information that you may be asked for such as your licence type, screen resolution and your Computer Identity code.

14.2.2 Viewing and emailing the Piscatus3D error log

Piscatus3D keeps a record of all errors that occur within it. We can use this error log at Seabed Mapping to quickly diagnose problems. Please send this error log via email to support@piscatus.co.nz and include any extra information about what you and/or the computer were doing at the time the problem occurred. Basically, the more information

you can send us, the quicker we can track down the issue. This error file can be accessed in two ways, either from within the Piscatus3D help menu, or directly from Windows Explorer.

From the Piscatus3D help menu

1. The Piscatus3D error log can be accessed and viewed from inside Piscatus3D by selecting Help | Support | View Error Log.

2. The error log will open in Windows Notepad.

3. To send Seabed Mapping the log use Notepad's 'Save As' function in its 'File' menu and save a copy to floppy disk.

4. Then move this disk to a computer that has email and send the file to support@piscatus.co.nz

From the Piscatus3D folder in Windows Explorer

1. The Piscatus3D error log can also be accessed and viewed from outside Piscatus3D. This is done by opening the file called 'Piscatus.elf' in the Piscatus directory (C:\Piscatus3D\). Open the file in Windows Notepad.

2. To send us this log use Notepad's 'Save As' function in its 'File' menu and save it to floppy disk.

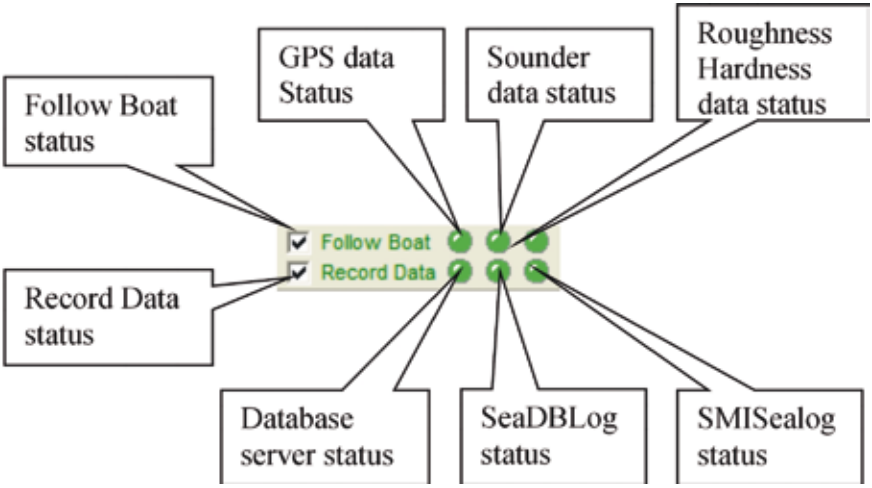
3. Then move this disk to a computer that has email and send the file to support@piscatus.co.nz

14.3 Emergency procedures

Many errors can be fixed by restarting Piscatus3D and/or the computer. If the problems are related to getting incoming data or storing received data, check the Piscatus3D services are all running. However, sometimes the computer may not be responding to your actions, and in this event try closing Piscatus3D using task manger and then restarting Piscatus3D as normal. Restarting the computer is your next option - doing this will free all processes happening in the background and flush memory. If all these fail the error is probably being caused by bad data from a corrupt database and must be repaired.

14.3.1 Checking the Piscatus[3D] processes are running

There are six LEDs displayed at the bottom left hand corner of Piscatus[3D] that are used to indicated the current state of a Piscatus[3D] process operating in the background. A green light indicates an OK state, a red light indicates the process or data coming in is invalid.



GPS Status
This light represents the status of incoming GPS data for position. If the light is red, check your GPS system is functioning correctly and set up correctly in SMISealog.
It is not uncommon for this light to sometimes flash red and then return to green when bad data is returned by the GPS.

Sounder Status
This light represents the status of incoming sounder data. If the light is red, check your sounder equipment is functioning correctly and set up correctly in SMISealog. It is not uncommon for this light to sometimes flash red and then return to green when bad data is returned by the sounder.

Roughness Hardness Status
This light represents the status of incoming roughness and hardness data. If the light is red, check your hardware for measuring hardness is functioning correctly and is set up correctly in SMISealog.

Database Server Status
This light represents the status of the database server. If the light is red a reboot of your computer may be necessary to restart the service.

SeaDBLog Status
This light represents the status of the background task recording incoming data to the Piscatus3D database. If the light is red, a reboot of your computer may be necessary to restart the service.

SMISealog Status
This light represents the status of the process responsible for collecting the incoming data from the comm port. If the light is red, a reboot of your computer may be necessary to restart the process.

Follow Boat Status
This option should always be ticked to instruct Piscatus3D to follow the current position of the incoming GPS data. Viewing other areas in Piscatus3D may cause this option to become unticked.

Record Data Status
This option should always be ticked to allow incoming data to be recorded to the database. If you do not wish incoming data to be recorded to the Piscatus3D database, for example in bad weather, untick this option.

14.3.2 Using Task Manager to close Piscatus3D

If Piscatus3D has locked up, your first option is to try closing and restarting the program. If you cannot close Piscatus3D from the File | Exit menu you can use Windows Task Manager.

1. To access Task Manager press the Ctrl + Shift + Esc buttons on your keyboard all at the same time.

2. The 'Task Manager' window will open, as shown over the page. In the 'Applications' tab is a list of all currently running programs and their status.

3. If a program is listed as 'Not Responding' you can click on it to select it, and then click the 'End Task' button.

4. A window may pop up saying that the program could not be closed, in this event click the 'End Now' button to close it.

14.3.3 Restarting the computer

Sometimes restarting Piscatus[3D] may not fix the problem and the whole computer must be restarted.

1. To do this, go to the Start menu and select 'Shut Down'.

2. If Windows is not responding and you cannot access the Start menu, you can shut down the computer by pressing the Ctrl + Alt + Delete buttons on your keyboard all at the same time.

3. From the window that appears click the button called 'Shut Down…' and in the next window that appears select shut down from drop-down box and click 'OK'.

4. If all these fail, press the reset button on the front of your computer. This is a last option and should only be taken in an emergency. Turning the computer off like this can cause Windows and database problems.

14.3.4 Restoring Piscatus[3D] back to an empty database

Version 5 introduces an easy way of doing this.

1. Your old database must first be removed from the system, to do so please delete or rename this file on the computer 'C:\Piscatus3D\Data\Bathymetry.fdb' using Windows Explorer.

2. Start Piscatus[3D] without a database. Piscatus[3D] will detect that there is no database and display a message asking if you would like to start the system with an empty database. If you press the 'Yes' option on the message box and new empty database will be created for Piscatus[3D] to use.

14.4 Common issues and problems

There are several issues and problems with Piscatus3D that crop up regularly with our users. We have put together some of the more common issues and possible solutions that may sort you out. If you can't solve a problem from some of the ideas listed below, please contact your dealer.

Why can't I see my data in MapView?
Check what resolution you are in. In Piscatus3D DeepSea Pro and Piscatus3D Inshore Pro, the 100nm resolutions draw the 3D terrain from the background satellite data only, not any of your boat data. Try selecting a smaller area to view - 60nm for Piscatus3D DeepSea Pro and 20nm for Piscatus3D Inshore Pro - these draw the 3D terrain from the actual boat data.

Why is my 3D terrain all white or all blue?
First double check you are current viewing depth data and not seafloor (roughness/hardness) data. Next, On the Piscatus3D tool bar, check the colour scale and its associated values. If your 3D terrain appears all white it means your terrain is much shallower than the minimum depth specified on the colour bar and you need to reduce it. Likewise, if your terrain appears all blue it means your terrain is much deeper than the maximum depth specified on the colour bar and you need to increase it.

Note: If you are using a different colour palette to the default one, you won't necessarily see an all-white or all-blue terrain; it may be some other colour.

Why can't I see my 3D terrain?
Check that Piscatus3D is running off the correct monitor and graphics card. To check this you need to open the Piscatus3D 'System Information' window by selecting Help | Support | System Information from the Piscatus3D menus. This window is shown on the left. At the bottom of the window the graphics card used is listed. This needs to be an nVidia card no older than a GeForce 6 series video card. If it is not your GeForce card, try swapping the monitor cables around so Piscatus3D runs off your other monitor.

Why isn't my boat tracking across the screen?
Refer to the configuration section of the installation manual.

Why can't I see my net?
Check what resolution you are in - Piscatus3D Deepsea-Pro at 100nm and Inshore-Pro at 100nm resolution do not allow you to view your net or user data. All the other resolutions do.

Why can't I use SmartNet™?
SmartNet™ is a separate component that adds on to Piscatus3D, and as such, you will need a special licence code. If you wish to purchase SmartNet™ please contact your dealer.

Why can't I record my net trackline?
Net tracklines can only be recorded when you have your net out and net data is coming into Piscatus3D.

Why does my net look so small in relation to the terrain and boat?
Net models are scaled to true dimensions; the boat models are not. If you are at a large map size (say 60nm resolution) it may be hard to see your net as it will be quite small. Try decreasing your map size to a 20nm or 30nm resolution.

Why is performance so slow after rendering?
If your computer is running slowly after rendering has completed it may be due to heavy contouring running in the background. After rendering has completed and your 3D terrain has redrawn, the contours will be drawn. Contouring is CPU intensive so if you are viewing a large area and/or have a small contour interval, your system may run very slowly until contouring has completed. Try decreasing the area viewed or increasing the contour interval.

Note - there are also performance settings accessible via 'System'/'Piscatus Setup' from the Piscatus3D menus and then in the 'Performance' tab. These options allow Piscatus to run on lower powered computers by lowering graphics detail and also allow higher detail settings from users with more powerful computers.

Why is new data I collect being lost when the map redraws/reloads
It is possible your database has become corrupt, this can happen during a power failure on the vessel. To repair you are best to export all data from the system in *.pd format and re-import data back into an empty database.

Improve your fishing experience and results with Piscatus^{3D}

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