Importing SES Files into a SonarWiz Project

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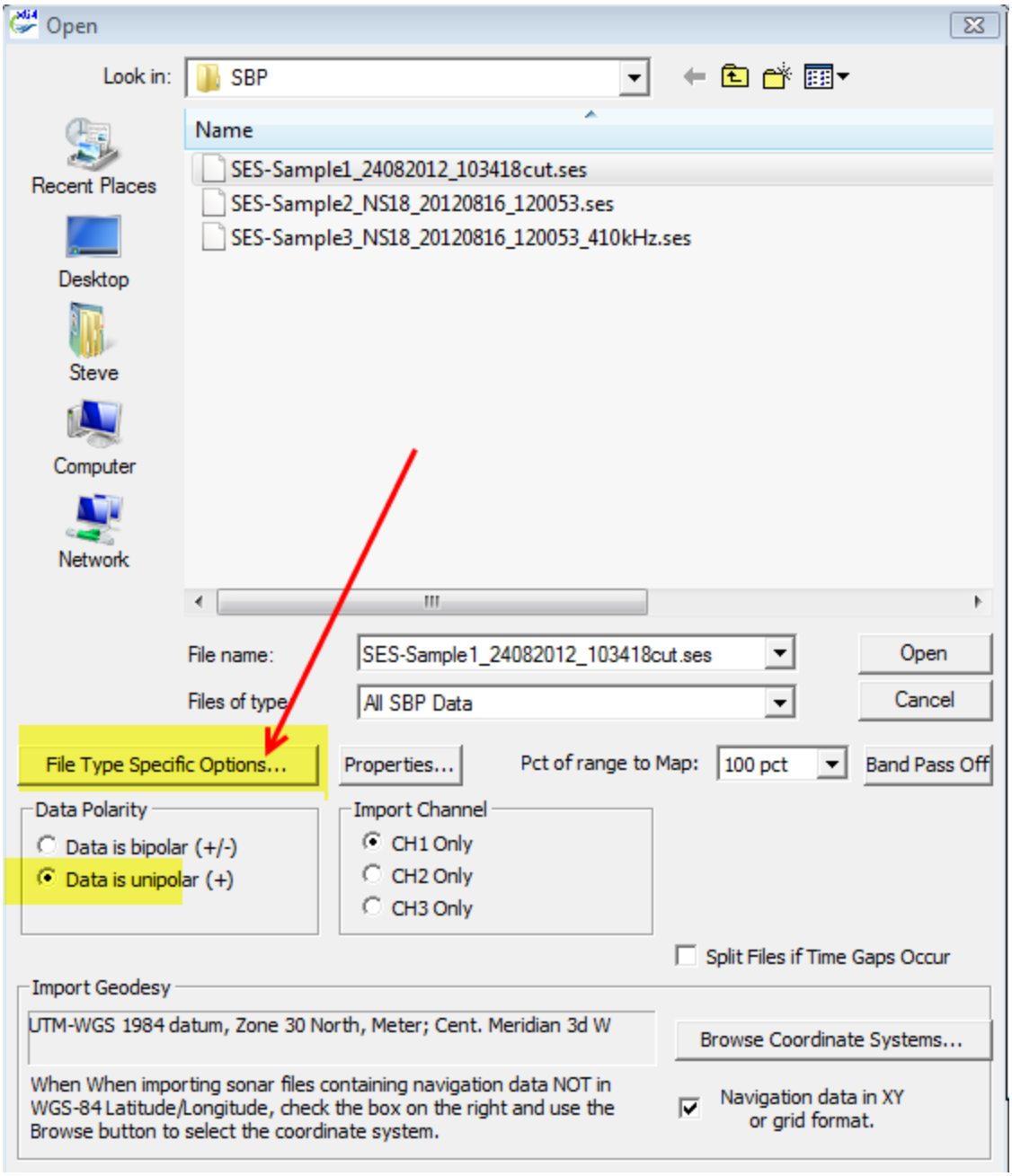
1 Importing SES Files into SonarWiz

This technical note describes the recommended technique for importing Innomar SES files containing sub-bottom sonar data into a SonarWiz project. Start by setting up your project with CREATE PROJECT or NEW and setting up the project location (latitude, longitude) and choose the coordinate system.

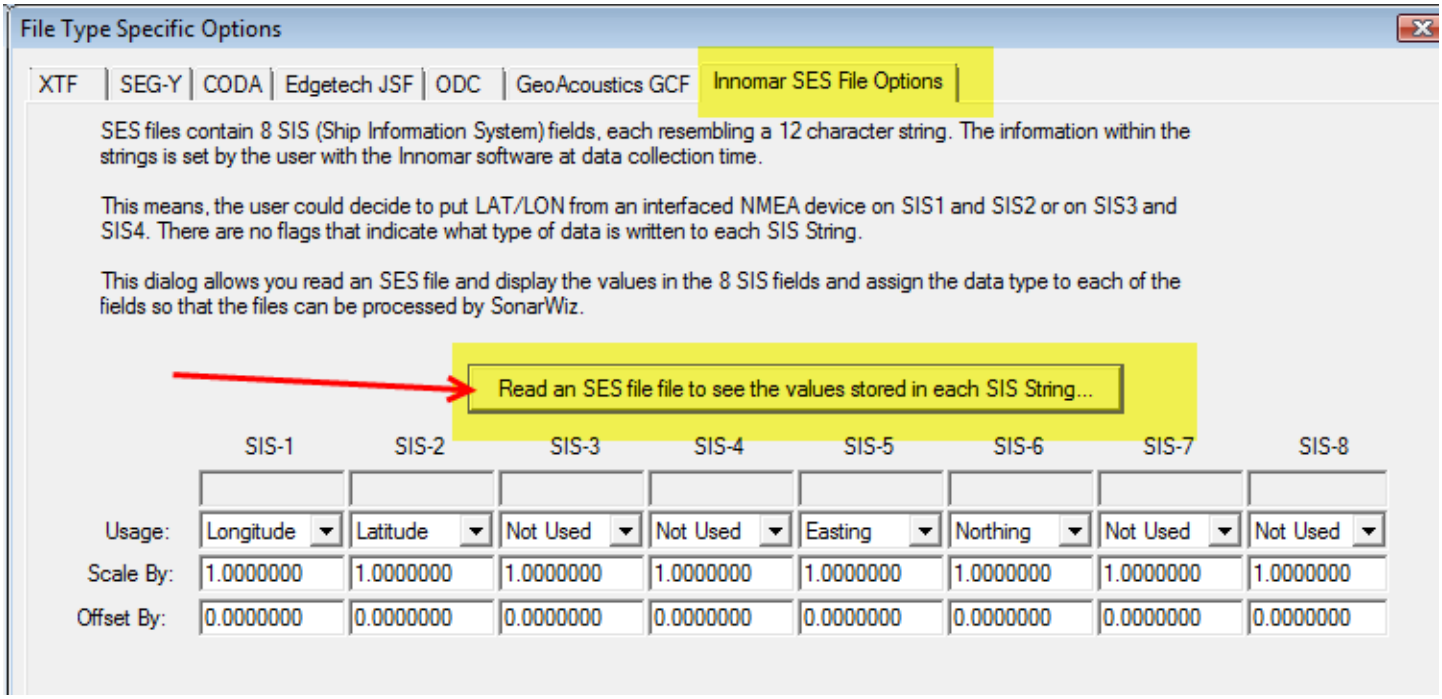
1.1 OPEN -> PEEK Plan

Next up you will try an IMPORT -> OPEN then choose FileTypeSpecificOptions and PEEK into the SES file, to see what it's got inside, and deal with it. This is an Innomar SES SB profiler file import example:



We recommend UNIPOLAR import for SES SB files in SonarWiz 6.04 and 6.05.

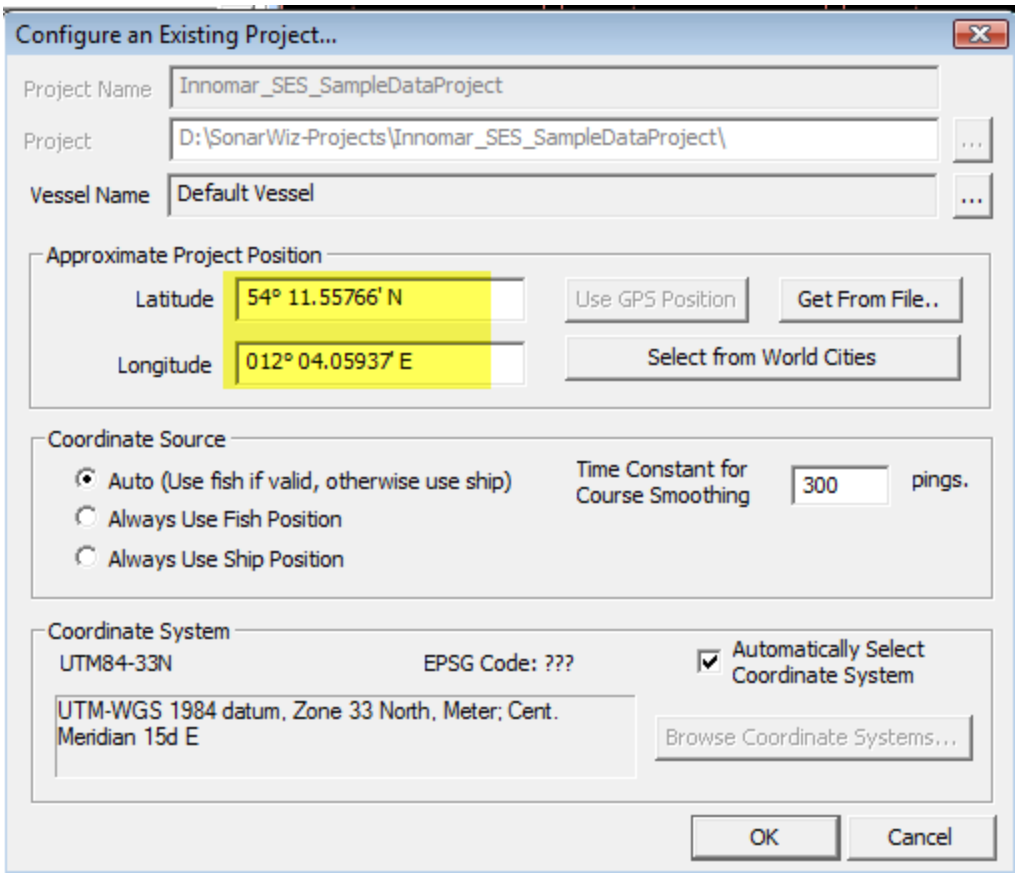
The FileTypeSpecificOptions for SES looks like this (6.05.0010 example):



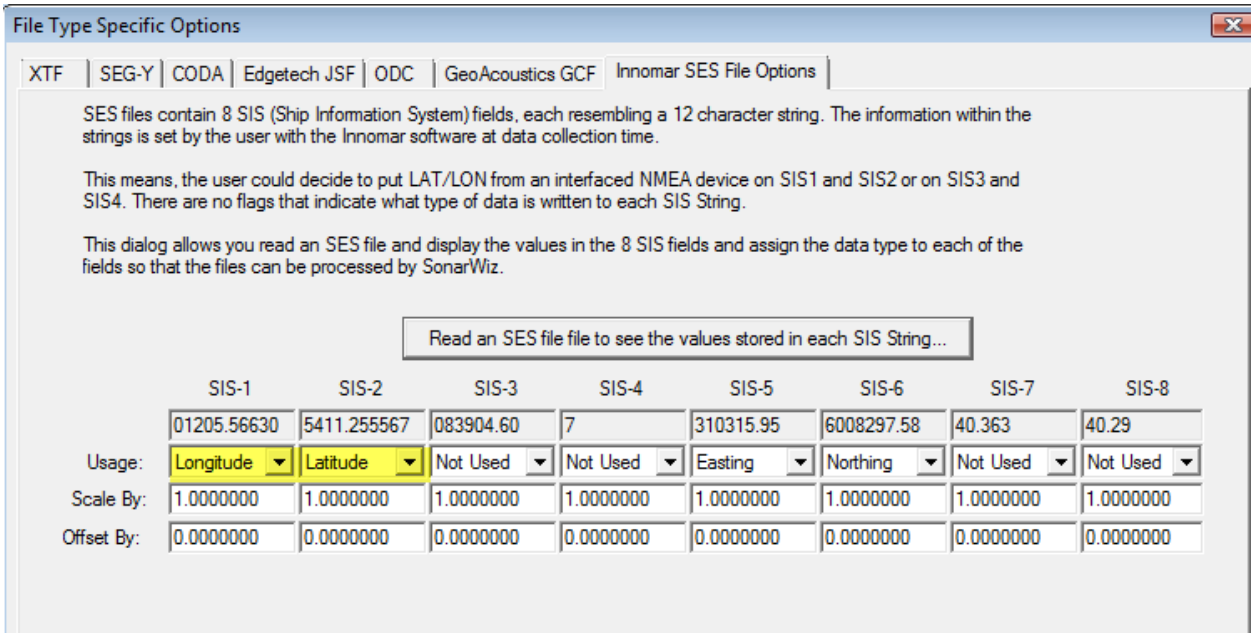
This is how the INNOMAR file import is unique and special - this is the only file type needing the user to fully choose the latitude/longitude positions up front. We have no automated way to do it.

1.2 Read an SES file - Example Data

His example file came from a European survey here:



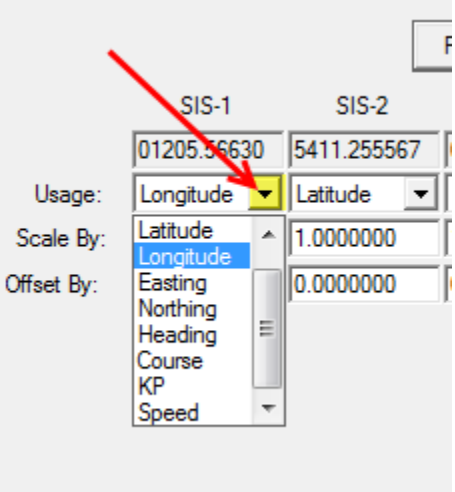
When we do the READ button, we get these results:



Note that the left-hand number 01205.56630 is to be interpreted as x100 with 12.0556630 as the actual LONGITUDE, but we know it should remain POSITIVE (see section below), since it is EAST LONGITUDE. No scaling is needed in this case.

Similarly for 5411.255567 we divide by 100 in our minds, to get the actual value of 54.11255567 LATITUDE, which should match the project position.

You job in each case is to use the drop-menu arrow selection to choose what label will be put on each number, telling SonarWiz how to interpret SIS-1 and SIS-2 from the SES file header data:



Once you have a pair of choices that match the known project location, and the CREATE PROJECT position values and coordinate system, your import should work.

1.3 Coordinate Polarity and Scaling

Note that the polarity of coordinates will be like this, the actual numbers SonarWiz needs, in each hemisphere:

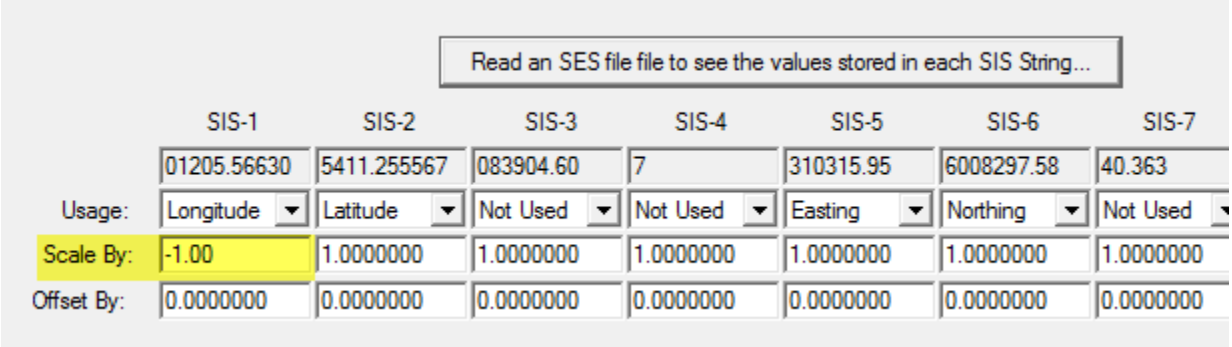
North and East = **POSITIVE** and South and West = **NEGATIVE**.

Innomar does things their own way. Most vendors will record a position like this:

POSITION	LATITUDE sign	LONGITUDE sign
NORTH, EAST	**+**	**+**
NORTH, WEST	**+**	**-**
SOUTH, EAST	**-**	**+**
SOUTH, WEST	**-**	**-**

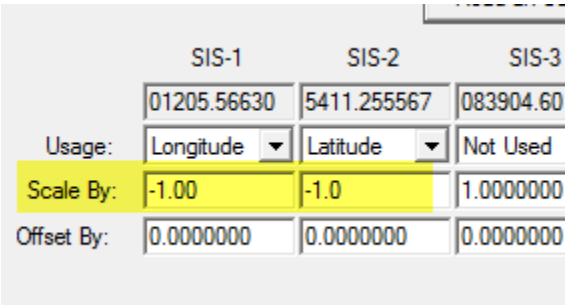
In an Innomar fire though, you may find uniform positive polarity, no matter where the data were recorded. So we support SCALING factors for latitude and longitude import.

If for example, these data were really from 12 deg SOUTH LATITUDE, just put in a scaling factor of -1.00 for that field:



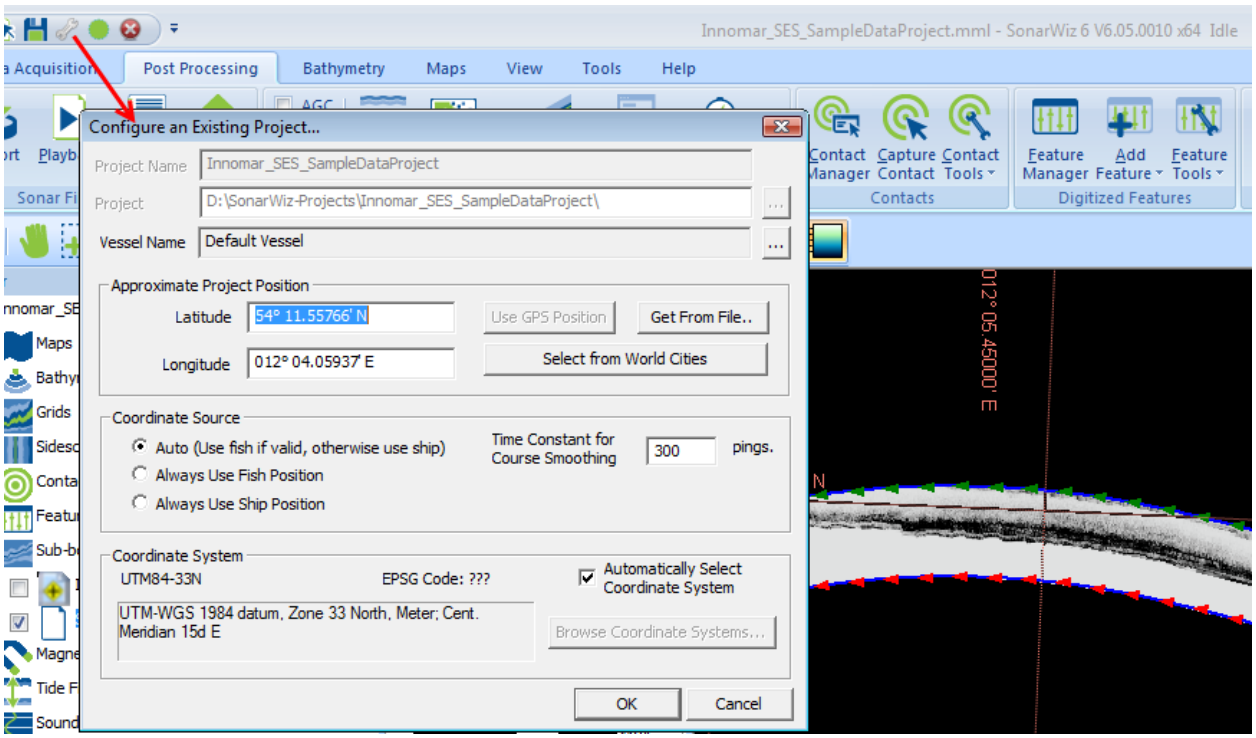
Similarly, if the LATITUDE is WEST and you know that from the project position, but the LATITUDE values read form the file are positive, add a -1.0 scaling factor there too.

So for a project at -12 longitude, -54 latitude (south, west), your scaling factors would look like this:



1.4 Correcting Your Project Location

You can do the INNOMAR file PEEK first, then go back to the main SonarWIz GUI and select the WRENCH icon to open CONFIGURE EXISTING PROJECT:



if you need to correct the position - and do this BEFORE importing the files.

1.5 Import Polarity - SB - UNIPOLAR Recommended

We have another full reference on Sub-bottom import tips for 6.04 / 6.05 SonarWiz here:

http://www.chestech-support.com/download/ctisupport/Sonarwiz_6/UserDocs/Sub-bottomImport_6.04_6.05_Advice.pdf

In the table in section 2.4 in that document, we recommend this:

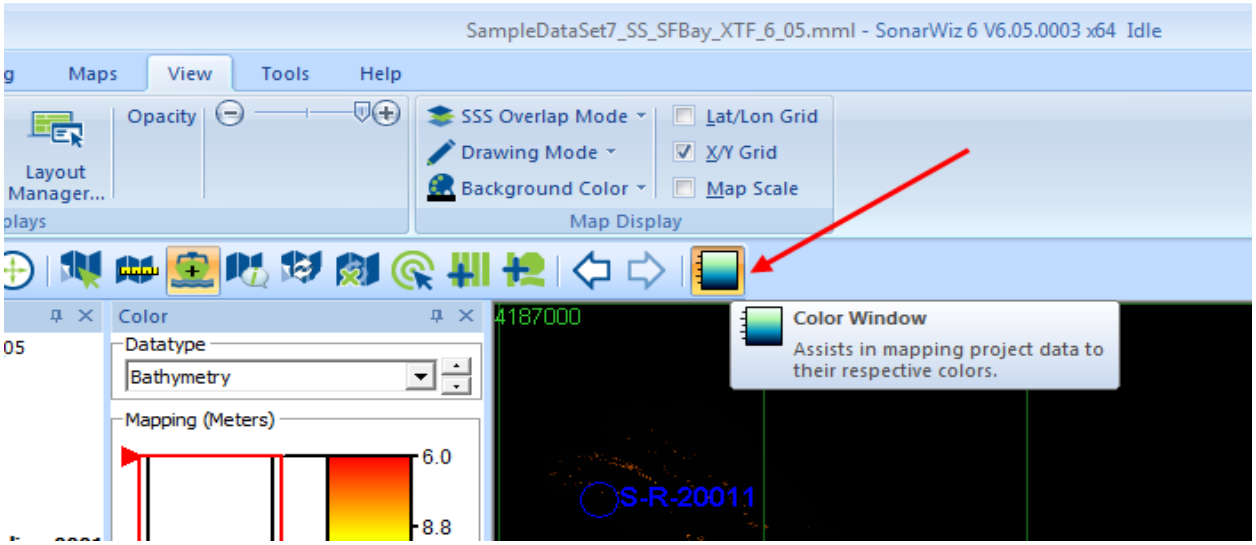
Here are the typical data types you will be able to import in SonarWiz for sub-bottom data, and their recommended settings:

Sonar Type - FileType	Polarity Typical
Analog system - SEG	bipolar
Digital Chirp system - SEG, TRA	unipolar
Digital Chirp systems: GCF, JSF, KEB, ODC, RAW, SDF, SES, V4LOG, XTF	unipolar
CODA Systems: COD	bipolar (use -2048 offset to make it bipolar)
GPR: RAD	bipolar

Please refer to that document to get good advice about using the color palette matching your data polarity, and using the COLOR WINDOW and HISTOGRAM to scale the colors to your data. A brief summary on the same topic, follows here.

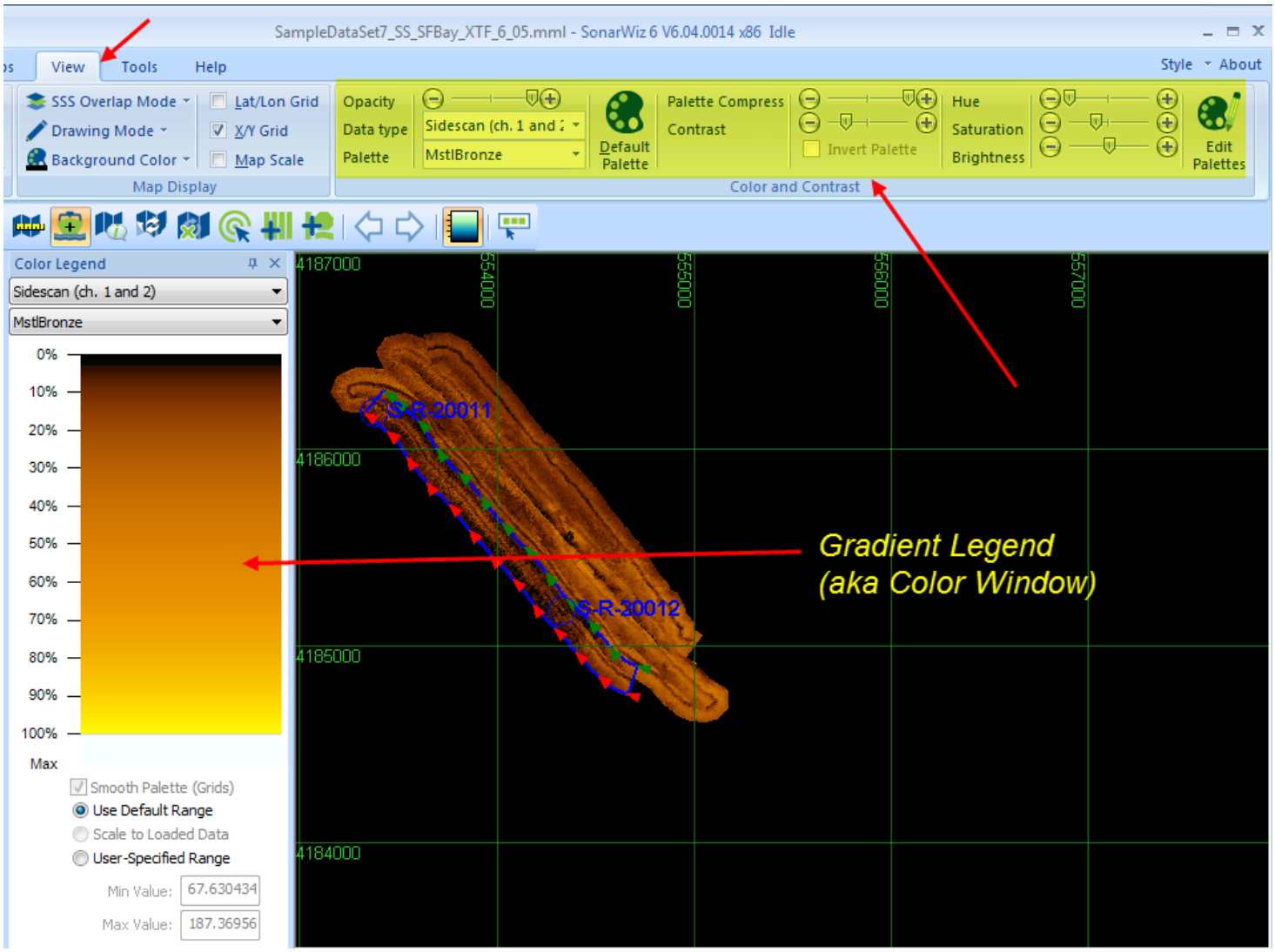
2 SonarWiz 6.05 Versions - COLOR WINDOW and HISTOGRAM use

This section explains how to use the 6.05-series SonarWiz versions to modify sidescan, bathymetry, or sub-bottom data display, using the new COLOR WINDOW tool available in the map menu bar.



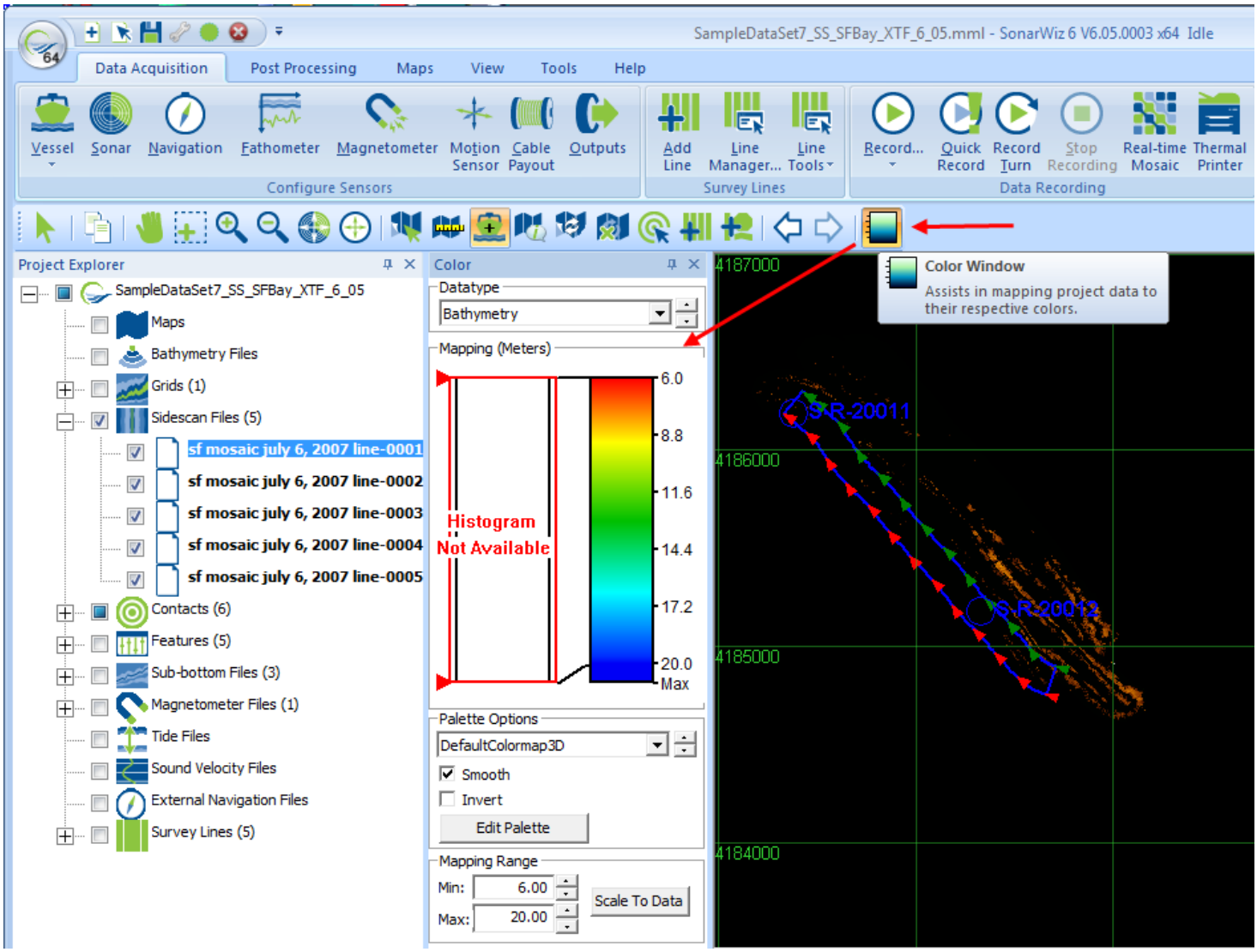
2.1 SonarWiz earlier versions - COLOR WINDOW - Gradient-Legend Type

SonarWiz 6.04 series, and earlier versions of SonarWiz, had display color, hue, brightness, and palette compression available at the top level of the SonarWiz GUI, like this:



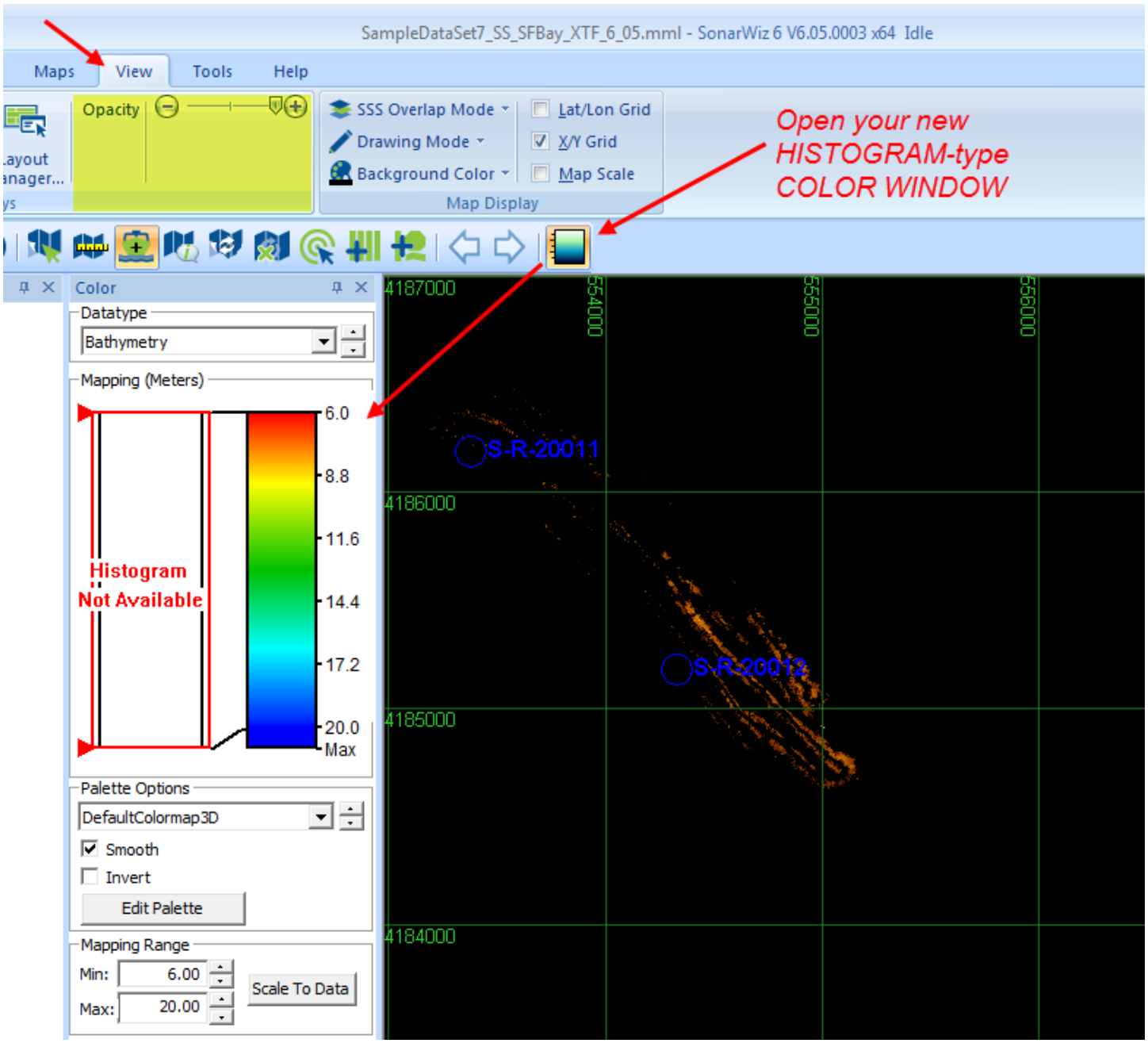
2.2 Opening your COLOR WINDOW for use

Since Sonarwiz 6.05.0001, these available controls changed significantly. Note that the COLOR WINDOW button can be pressed in the MAP TOOL BAR, if yours is not showing, to enable the tool, and you can DOCK it left-side of your map-view:

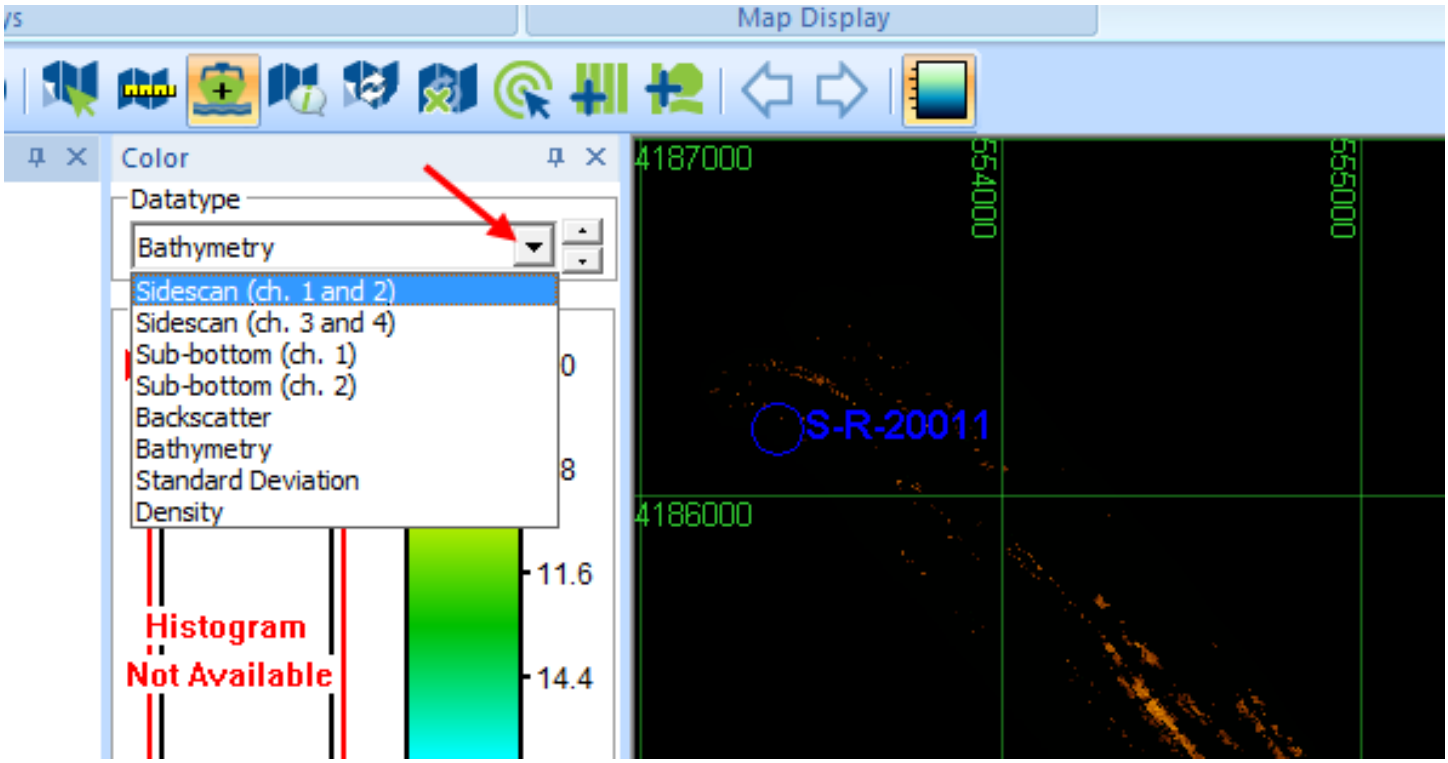


2.1 SonarWiz 6.05.0001++ - new HISTOGRAM type COLOR WINDOW

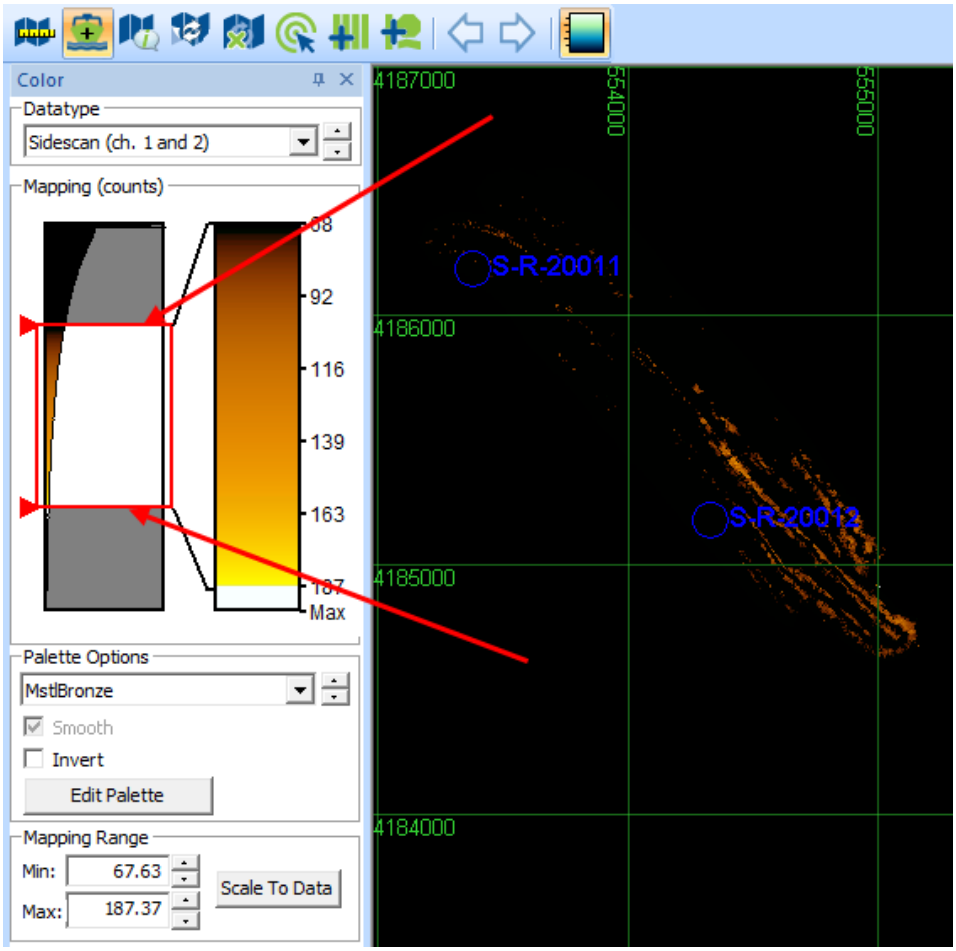
In SonarWiz 6.05.0001 and later versions, the VIEW options for color control are gone from the GUI top, because the COLOR WINDOW (gradient legend) has radically changed for the better - with a HISTOGRAM control:



If you see NO HISTOGRAM AVAILABLE, chances are (like this demo GUI), the Datatype selected in the COLOR WINDOW just does not match the data displayed in your map view. (Our says BATHYMETRY, but In this case it is a SIDESCAN project). So the first thing to do here is change the DATATYPE to Sidescan channels 1-2.:

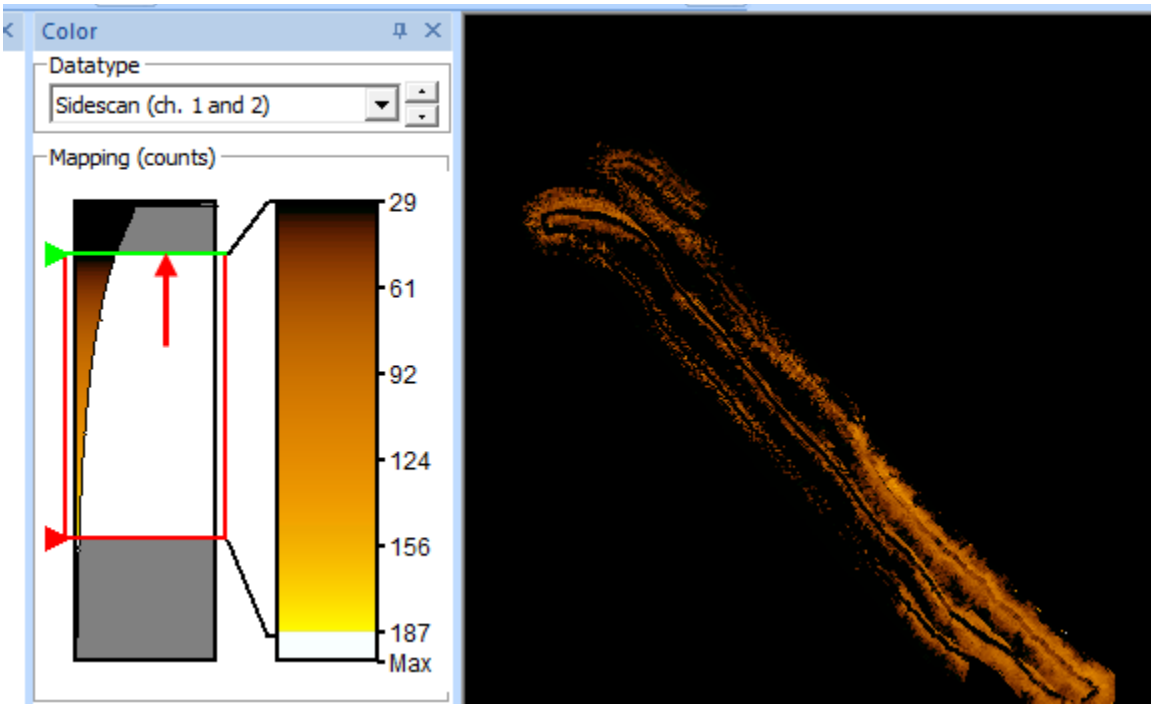


This will result in a histogram-presentation representing a frequency-histogram display of the data values in your sidescan data:

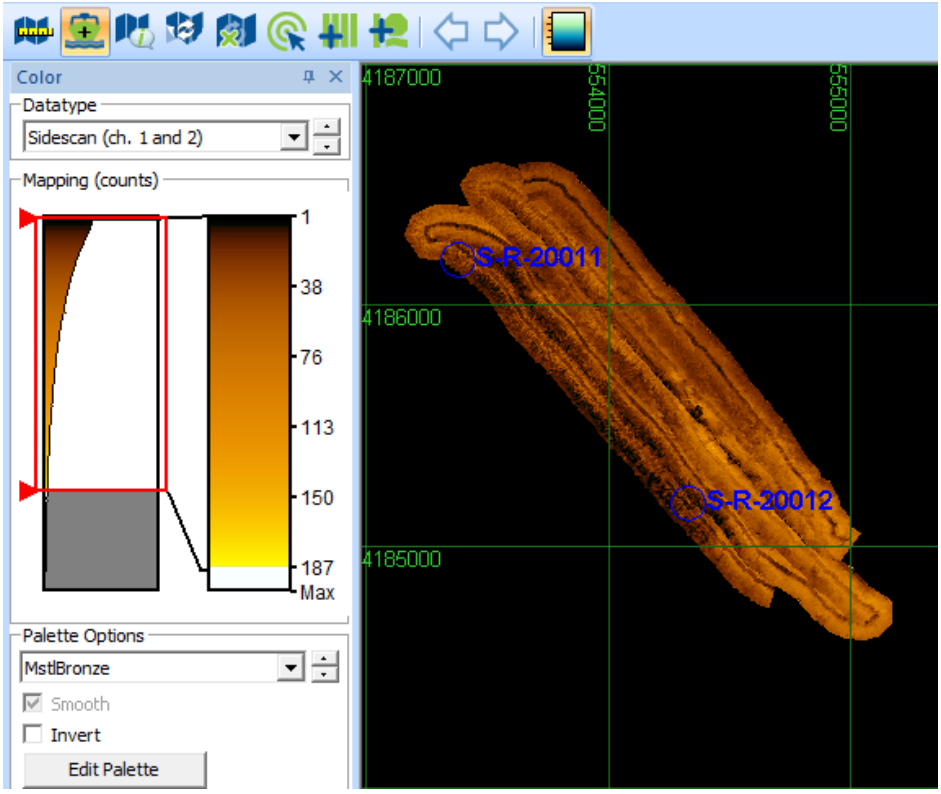


Now you can change the way color maps to data values, by left-clicking and dragging the upper and lower limit bars in the histogram. Ours currently eliminates a majority (upper portion) of the data values, so we will move the upper limit UP to see a better view of the data:

Hover over the LIMIT BAR and it turns YELLOW:



Releasing the left-click when the limit bar is where you want it makes it turn RED again and the data will be adjusted:



2.1 Tutorial Video - HISTOGRAM-type COLOR WINDOW Explained

To see a recent Did You Know? type tutorial video explaining the COLOR WINDOW, and a few other recent sidescan enhancements in SonarWiz, here are a few viewing options:

DYK SS Mosaic - New Options - 6.05.0001 - tutorial video (4 min 50 secs)

(1) color window - histogram control design (time 0:00 - 1:14)

(2) nadir replacement filter demonstration (time 1:15 - 2:57)

(3) Grids -> Create Grid -> CSF Sidescan - new gridding option (time 2:58 - 4:50)

https://www.youtube.com/watch?v=AHt4pftReHI&feature=youtu.be

or ...

MP4 download link:

https://sonarwiz.box.com/s/8lu07vv6ccg3hvhfdzt4zhnkhm0l479q

The color-window tips there apply equally to sub-bottom data presentation.

3 Document History

Rev 1.0, 3/16/2017 - New document - special tips for SES import in SonarWiz 6.05