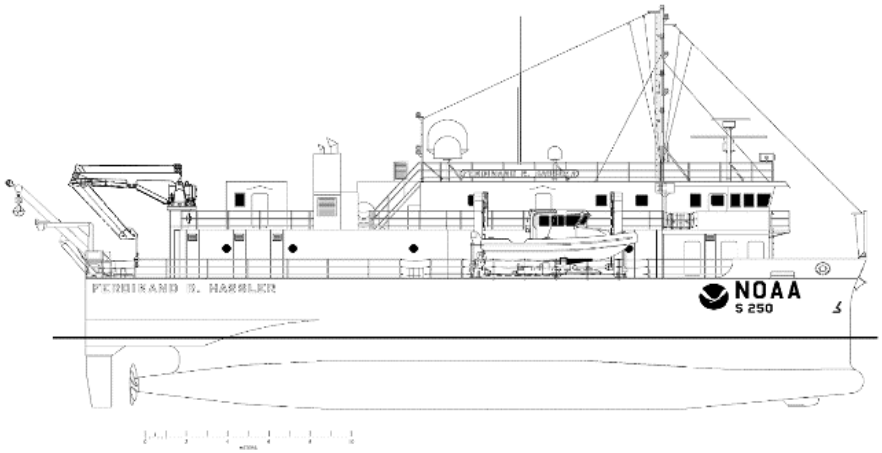
Ferdinand R. Hassler Sheet Planning in Caris:

Sheet Limits, Bottom Samples, Assigned Feature File

Standard Operating Procedures



Revision History

Date	Revision Description (Reason/What)	Updated by
07/14/2020	Original from NOAA Ship TJ	HST Arboleda
05/21/2021	General Review and Update for FH	ST Tigges
11/19/2023	Reviewed	LT Debroisse

1. Overview and Scope

This SOP is for sheet managers who are ready to start creating a plan for their sheet. This document outlines the procedures for examining and exporting sheet limits, bottom sample locations, and assigned features for a sheet using the PRF and CSF provided with the Project Instructions.

This SOP only outlines one way to do all of these things. If you have personal preferences for ways to sheet plan, feel welcome to do what you want! Additionally, if there is a better or more efficient way of doing these procedures, please let someone know or update this SOP to reflect the best practice!

2. Procedure Inputs and Outputs

Inputs: Essentially anything having to do with the OPR project and the sheet--ENCs, PRF, CSF, Project Instructions, and anything else that you think is relevant or helpful.

Outputs: A sheet limit file to be used for line planning, a bottom sample plan, and an assigned feature file.

3. Procedure

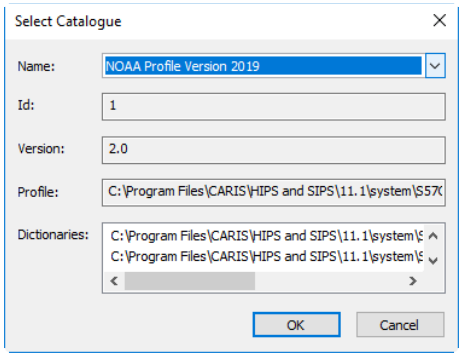
Reading the Project Instructions

0. **Read through the Project Instructions.**

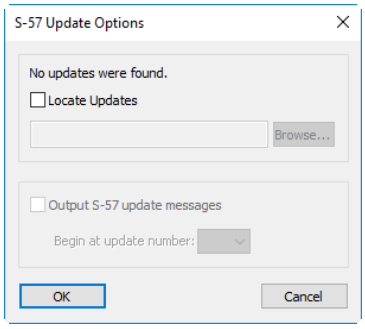
Always start by reading through the Project Instructions to get an overview of the project and to set yourself up for success as a sheet manager! Take note of the general project area, where the sheet is located within the project area, and anything that you will have to plan for or investigate (bottom samples, ATONs, etc.).

Loading a Chart into Caris and Setting the Correct Projection

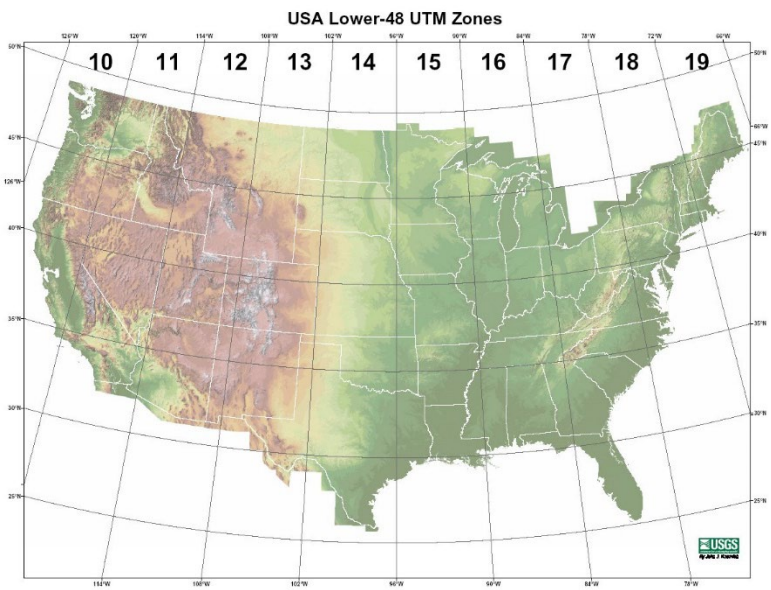
1. **Open your chart in CARIS.**
    a. If you already have charts downloaded for the project, great! If not, you can find and download the charts for your project area at https://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml. Save the charts in P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Working_Project_Files\00_Charts.
    b. Open Caris and drag and drop your chart files in. Drop in the USXXXXXX.000 file.
    c. Make sure that the catalogue is set correctly (NOAA Profile Version 20XX), then hit *OK*.

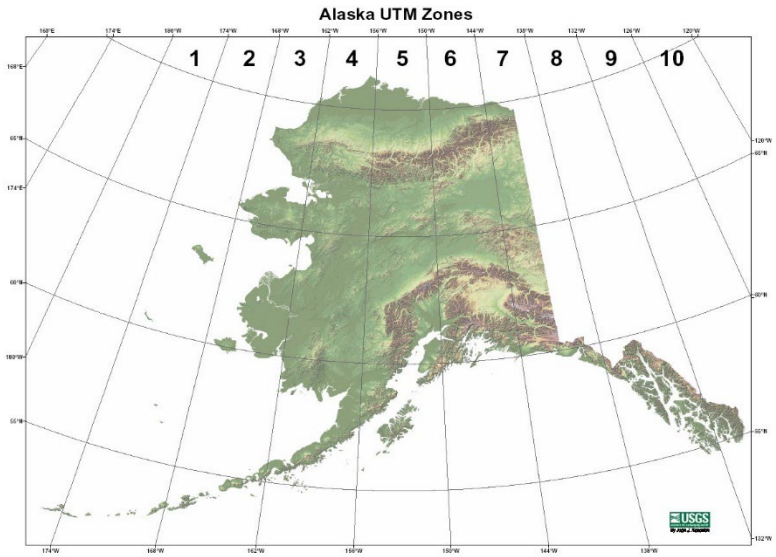


    d. Hit *OK* for the S-57 Update Options.

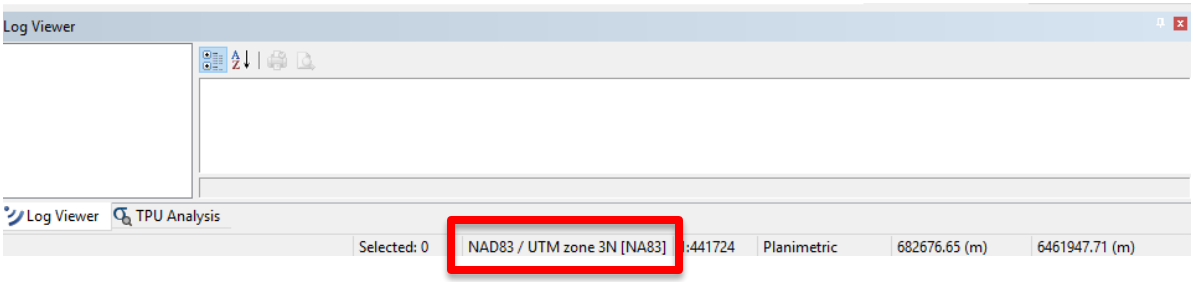


    e. Ensure that you are in the correct projection (typically NAD83 and the correct UTM zone for the area) by looking at the projection that is displayed in the bottom bar on the right. If it's correct, good! If not…

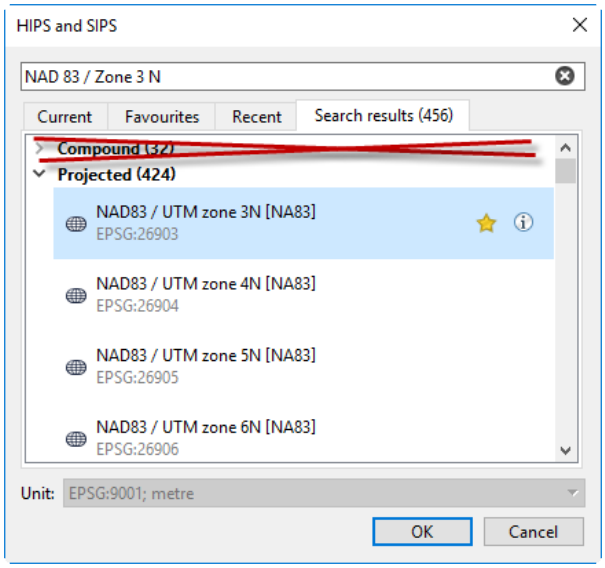




f. To change projection, click the currently displayed chart projection in the lower right corner of the screen. The *Select Coordinate Reference System* window will pop up.



i. In the search bar, type the name of reference system you need (typically NAD83), select the option with the correct UTM zone, and hit *OK*.



ii. Note: Do NOT select your reference system from the **Compound** section. Select it from the section labeled **Projected.**

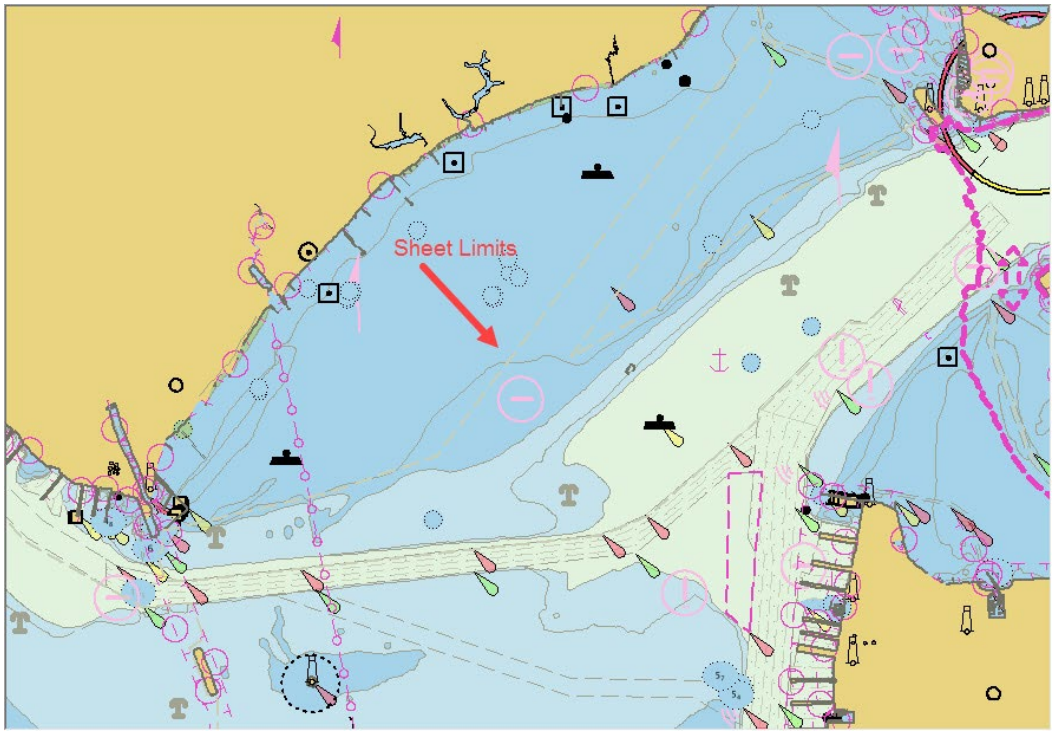
iii. You can also click the star next to the projection to add it to your favorites to make it easier to find next time. You can then find it in the *Favourites* tab when you look for it next!
iv. **Pro tip:** The chart can be really hard to see through all of the information. Right click on the chart in the layers tab, navigate to 'Add Layer(s)', and then select 'Unique Feature Acronym'. This will create a layer where you can uncheck all of the information you are not interested in looking at.

Exporting the Sheet Limits As a .hob and .shp

The Project Reference File (PRF) and the Composite Source File (CSF) for the project will be located at P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Project_Files\GIS Files.

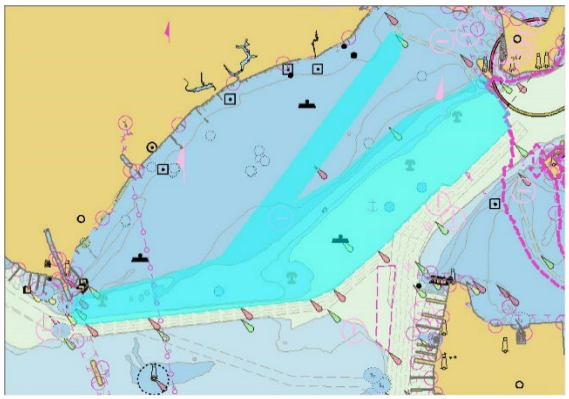
The PRF contains the sheet limits and assigned bottom sample locations. The CSF contains the assigned features.

2. To open the sheet limits for the project, open the Project Reference File (PRF) OPR-XXXX-FH-YY_PRF.000 by dragging and dropping it into Caris.
    a. The light grey lines are the sheet limits. They can be difficult to see, but there isn't really anything on the chart that looks too much like them. If you are having difficulty finding them, turn off the chart in the layers tab, find your sheet limits with just the PRF visible, and then turn the chart back on.

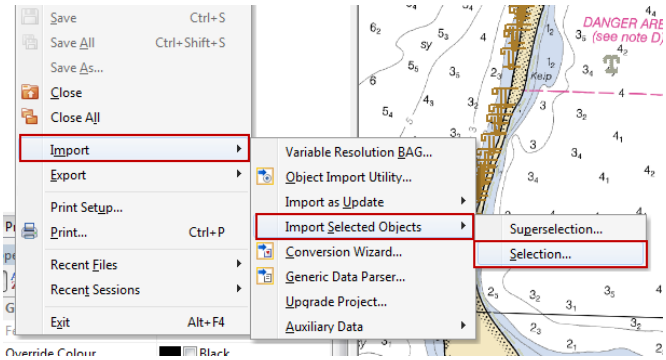


3. Create a new Feature Layer either by clicking *File* > *New* > *Feature Layer* in the main toolbar or by clicking the *New Feature Layer* icon .
    a. Name the new Feature Layer based on your sheet number (HXXXXX_Sheet_Limits).

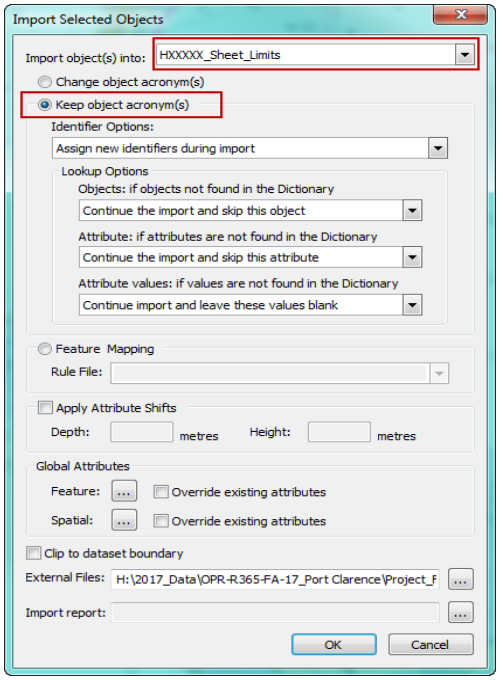
4. Next, highlight/click on your PRF layer in the *Layers* pane and select (click on or drag a box) your sheet. It should highlight with light blue.



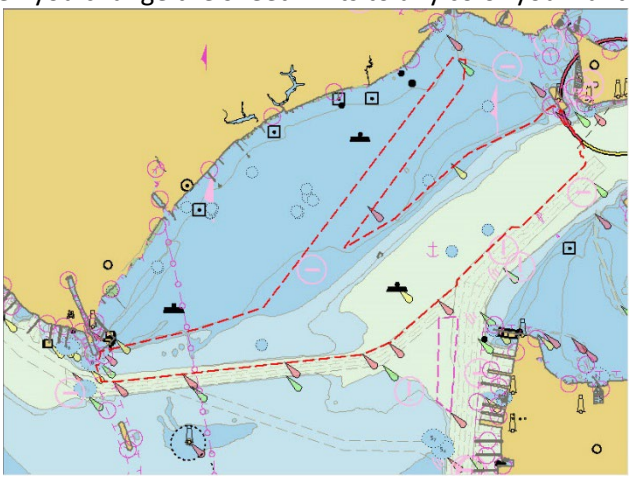
5. Once the sheet has been highlighted blue, go to *File > Import > Import Selected Objects > Selection* in the main toolbar.



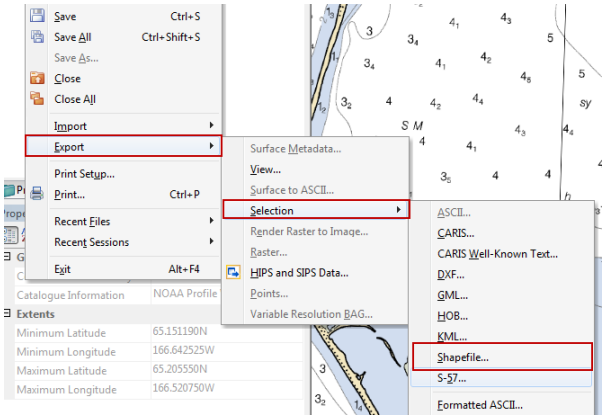
6. Select your new feature layer from the dropdown next to *Import object(s) into*. Then, select *Keep object acronym(s)*. Click *OK* to proceed.



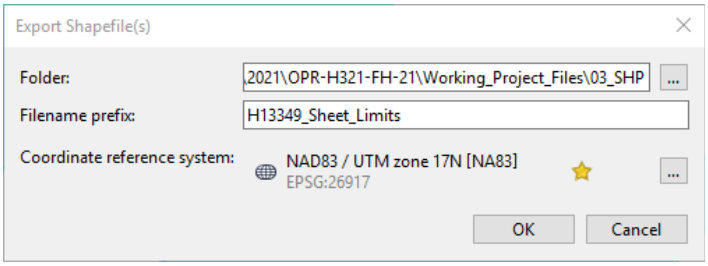
7. Save your sheet limits as a .hob file to your working folder in P:\Survey_Storage\00_PROJECTS\YYYY\OPR-H321-FH-21\Working_Project_Files\02_HOB. To do this, highlight the HXXXXX_Sheet_Limits Feature Layer in the *Layers* pane. Then, in the main toolbar, click *File* > *Save* > *Save Active Layer*.
    a. Now, you should be able to turn the PRF layer off and still have your sheet limits visible.
8. To make the lines easier to see, you can change the color using *Override Colour* in the *Properties* pane. Check this box and then you change the sheet limits to any color you want.



9. You will also need to export the sheet limits as a Shapefile (.shp) to be able to load them into Hypack. To export the sheet limits as a Shapefile, highlight the HXXXXX_Sheet_Limits Feature Layer in the *Layers* pane and press Ctrl+A or click the icon  to select all of the objects in the layer. The sheet limits should highlight blue again. Then click *File* > *Export* > *Selection* > *Shapefile* in the main toolbar.



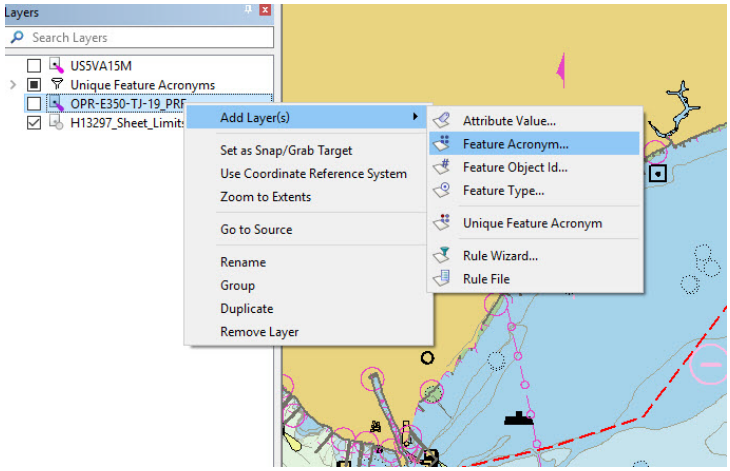
Save the shapefile to P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXXX-FH-YY\Working_Project_Files\03_SHP. Double check that the reference system is correct, then hit *OK*.



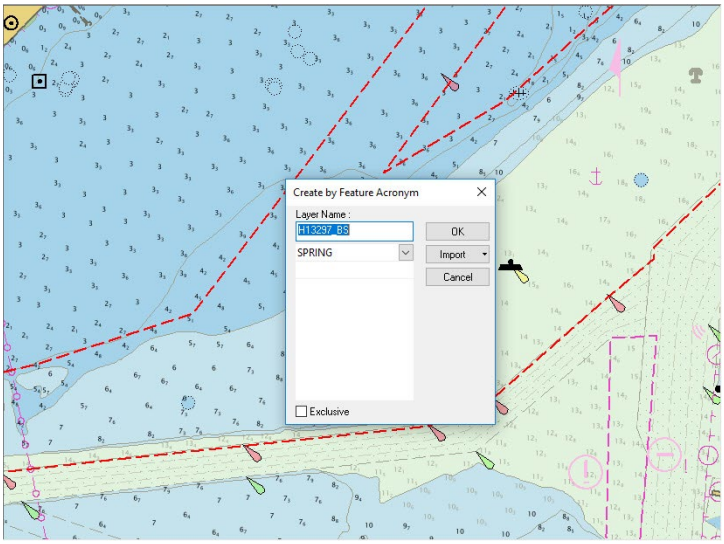
Exporting Bottom Sample Locations As a .hob and .shp

This is essentially the same procedure that was used for the sheet limits. Assigned bottom sample locations are also found in the PRF for the project.

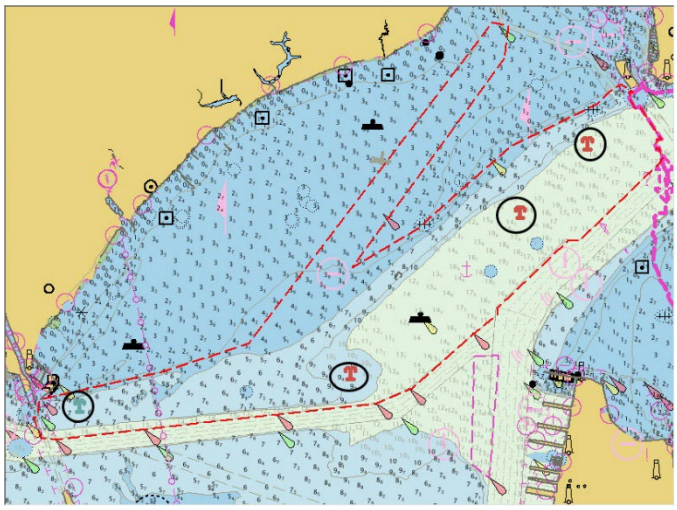
1. As described in the previous section, open the appropriate chart in Caris. Make sure that the catalogue is set correctly and that you are using the correct projection.
2. To open the bottom samples for the project, open the Project Reference File (PRF) .000 located in P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Project_Files\GIS Files. (You can just drag and drop the file into Caris to open it.)
3. You will need to create a new layer of just the bottom sample locations by right clicking the PRF layer in the *Layers* pane and then selecting *Add Layer(s)> Feature Acronym.* The *Create by Feature Acronym* window will pop up.



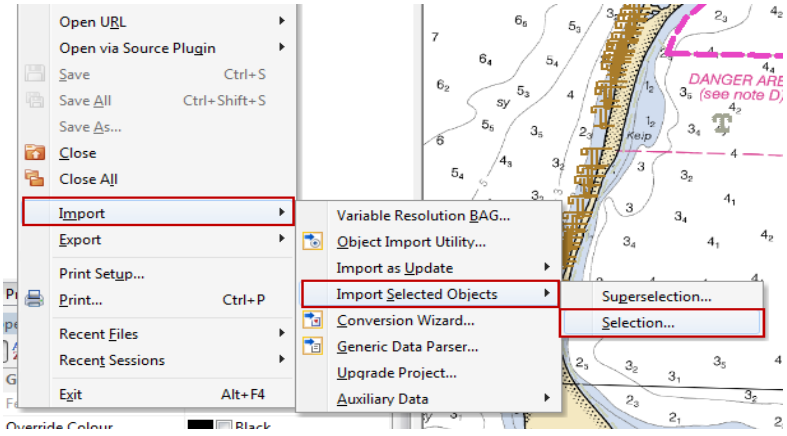
4. Name the layer HXXXXX_BS, select the appropriate acronym for the bottom sample objects (typically SPRING), and hit *OK*. The bottom samples layer should then appear in the *Layers* pane under the general PRF layer.

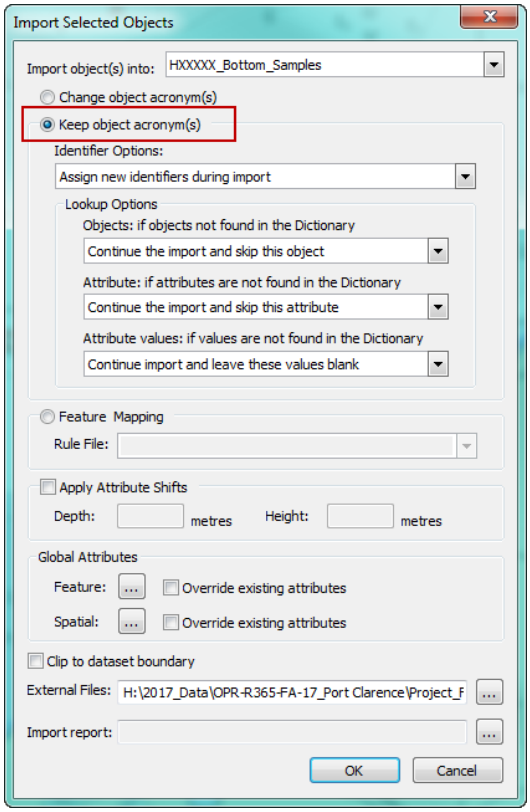


5. Create a new Feature Layer either by clicking *File > New > Feature Layer* in the main toolbar or by selecting the *New Feature Layer* icon  . Name the layer based on your sheet number (HXXXXX_Bottom_Samples).
6. Now highlight the HXXXXX_BS layer in the *Layers* pane and select all the little SPRING symbols within your sheet limits. (Ctrl+A can be used, however this will select ALL the bottom samples in the project. It is best to just manually hold Ctrl and draw a box with your cursor to select the ones in your sheet specifically.)



7. Just like with the sheet limits procedure, go to *File > Import > Import Selected Objects > Selection***.** Choose the HXXXXX_Bottom_Samples layer from the *Import object(s)* into dropdown menu. Then, select *Keep object acronym(s)* and hit *OK***.**



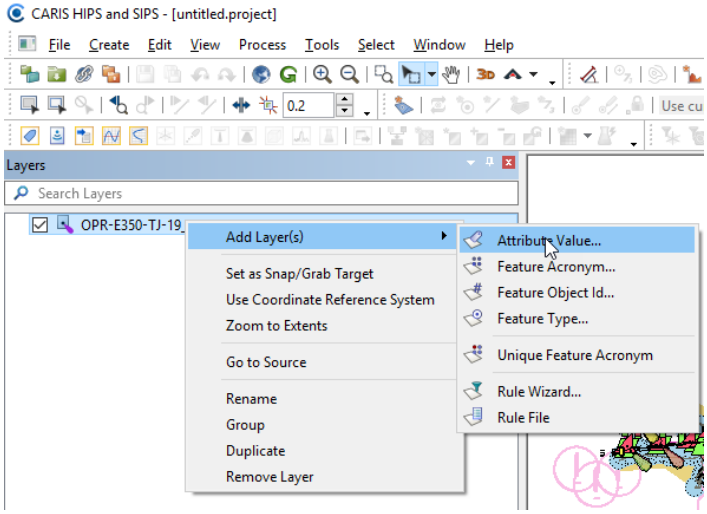


8. Now, save your bottom samples as a .hob file to P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Working_Project_Files\02_HOB. To do this, highlight the HXXXXX_Bottom_Samples Feature Layer in the *Layers* pane. Then, in the main toolbar, click *File* > *Save* > *Save Active Layer*.
    a. Now, you should be able to turn the PRF layer off and still have your bottom samples visible.
9. You will also need to export the bottom samples as Shapefile (.shp) to be able to load them into Hypack. To export as a Shapefile, highlight the HXXXXX_Bottom_Samples in the *Layers* pane and press Ctrl+A or  to select all. The spring symbols should highlight blue again. Then select File > Export > Selection > Shapefile. Save the shapefile to P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Working_Project_Files\03_SHP. Double check that the reference frame is correct before hitting *OK*.

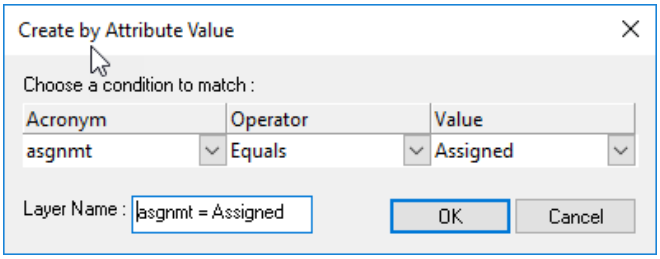
Creating an Assigned Feature File

All features for the project are stored in the Composite Source File (CSF) .000 that is included with the project instructions. Make sure you have the chart and your sheet limits up and in the correct projection before you open the CSF.

1. Drag and drop the project's CSF file into Caris. The CSF can be found at P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Project_Files\GIS Files.
2. Within the *Layers* pane, right click on the CSF and select *Add Layer(s)* > *Attribute Value*.

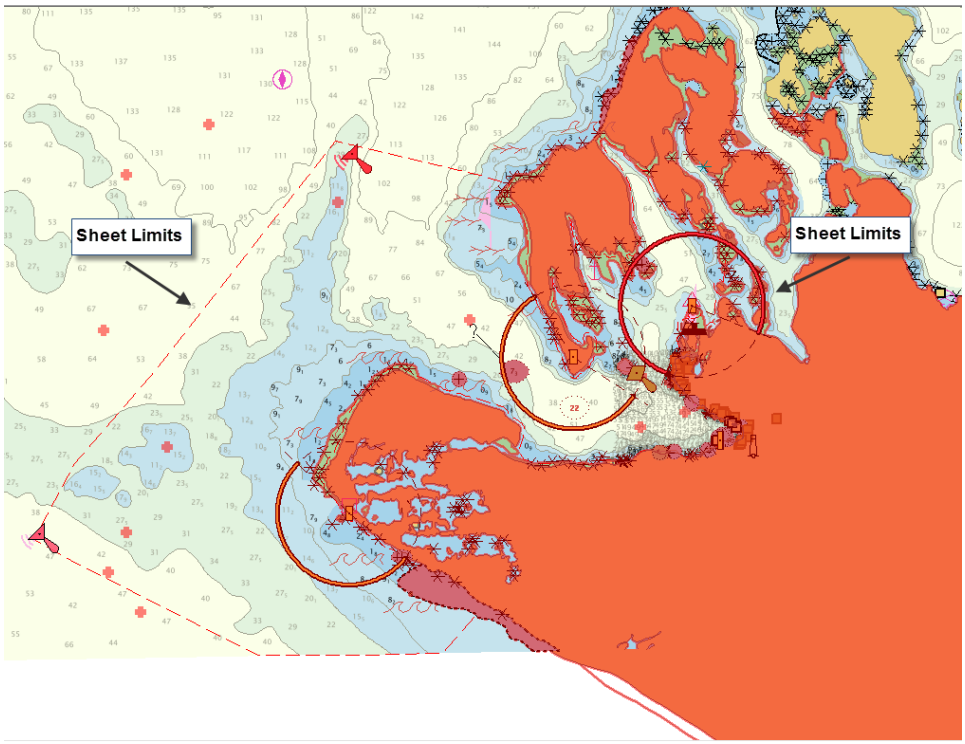


3. Select the options within the popup window as shown below.

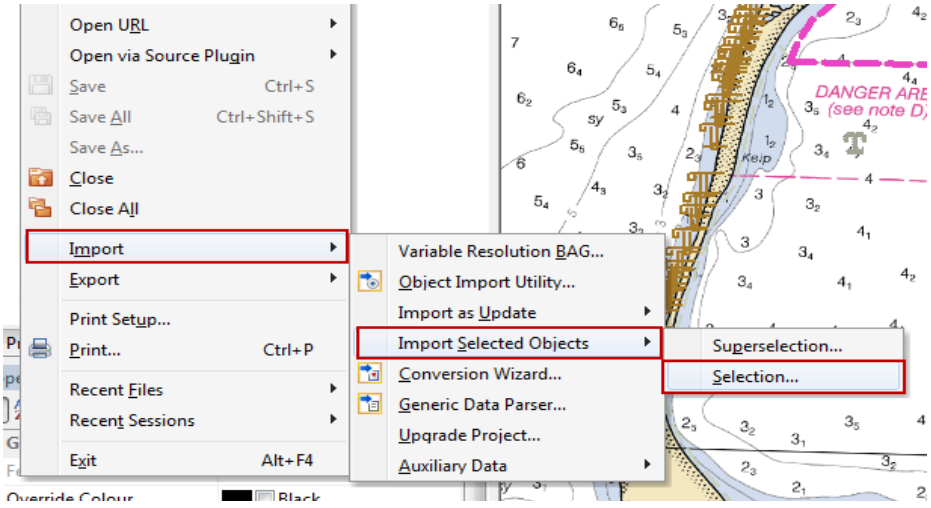


4. This will create a layer with just the assigned features for the OPR project. You can now uncheck the CSF layer and only the assigned features will be shown in the overview window.

5. Create a new Feature Layer either by clicking *File > New > Feature Layer* in the main toolbar or by selecting the *New Feature Layer* icon in the upper right corner  . Name it based on your sheet number (HXXXXX_AssignedFeatureFile or HXXXXX_AFF).
6. Make sure your asgnmt = Assigned layer is highlighted in the layers tab, and then draw a box to include your entire sheet limits to select the assigned features pertinent to your sheet. Everything selected will be highlighted blue (superselection) and red (selected).

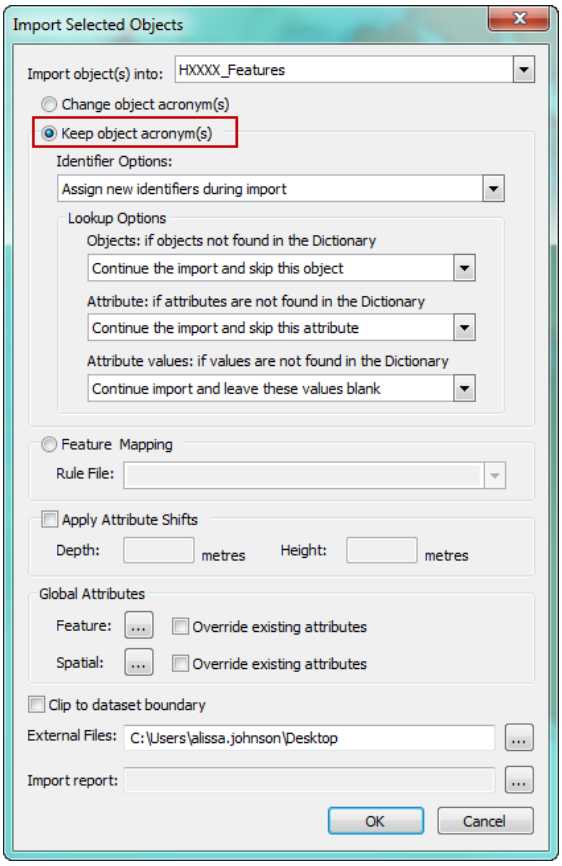


7. Just like with the sheet limits and bottom samples procedure, go to *File > Import > Import Selected Objects > Selection*.



8. Select your HXXXXX_AssignedFeatureFile layer in the *Import object(s) into* dropdown menu, select *Keep object acronym(s)*, and hit *OK*.

   *Keep in mind that you may share features with adjacent sheets (i.e. shoreline).



9. Save your HXXXXX_AssignedFeatureFile as a .hob file in P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Working_Project_Files\02_HOB. To do this, highlight the HXXXXX_AssignedFeatureFile Feature Layer in the *Layers* pane. Then, in the main toolbar, click *File* > *Save* > *Save Active Layer*.
10. You will also need to export this as an S-57 (.000) to be able to load it into Hypack. To export as an S-57, highlight the layer you would like to export and press Ctrl+A or the icon  to select all. The feature symbols should highlight blue and red. Then select *File* > *Export* > *Selection* > *S-57*. Save it to P:\Survey_Storage\00_PROJECTS\YYYY\OPR-HXXX-FH-YY\Working_Project_Files\02_HOB. Double check that the reference frame is correct, then hit *OK*.

Congratulations! You are now ready to start planning lines or polygons for your sheet!