REVISION HISTORY			
REV	**Description of Change**	**Editor**	**Effective Date**
0	Update	Eli Smith	05/17/2016
1	Update (Change from RA to BHII)	P. Debroisse	12/27/2017
2	Reviewed	P. Debroisse	9/19/2023

Purpose

From the HSSD Section 8.1.2

After completion of all field work for a given survey sheet, the hydrographer shall provide a survey outline that shows the extent of hydrography completed for the registered survey (e.g. H number). This outline shall bound the extent of continuous survey data judged by the hydrographer to be adequate to supersede the chart. Along shore, the survey outline shall be coincident with the NALL as surveyed in accordance with the Hydrographic Survey Project Instructions and Section 1 of this document.

Careful attention should be paid in the near shore area to ensure that features and bathymetry inshore of the NALL are not included. The survey outline need not include all discrete features contained in the S-57 feature file deliverable (i.e. a rocky area or ledge may extend inshore of the survey outline). Also, the Survey Outline should not inscribe high water features positioned inshore of the NALL (e.g., Aids to Navigation).

The only exception to this is coverage acquired pursuant to investigation of assigned items from HSD Operations or NRB, which should be inscribed by the Survey Outline, and LIDAR surveys. The survey outline for a LIDAR survey shall be coincident with the MHW.

The final survey outline shall normally be a single, completely enclosed polygon bounding the final surveyed area as described above. In cases where this area includes an unsurveyed region (e.g., an island), the survey outline file will also include an interior limit (i.e., 'donut hole') following the NALL around this area. In cases where the survey includes a detached surveyed area (e.g., an assigned item with a search radius that does not intersect the main body of the survey), the final survey outline file shall include a separate polygon for the detached area.

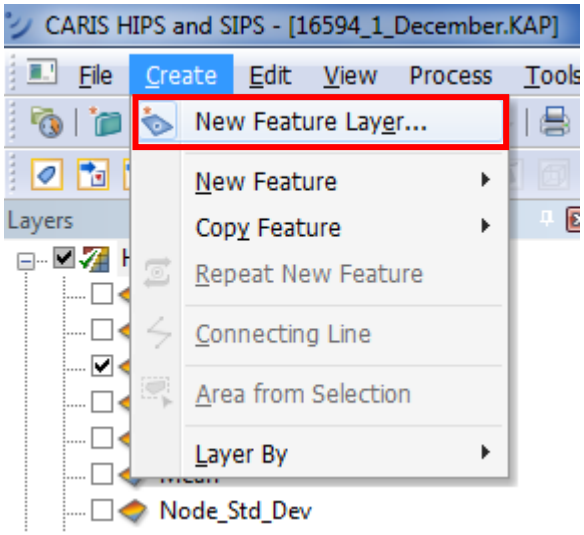
The final survey outline should be compiled as the S-57 Feature Object Class M_COVR in a .000 format in the WGS84 datum, unprojected. The M_COVR feature shall be attributed according to the specifications in Section 8.2 under Metadata Objects.

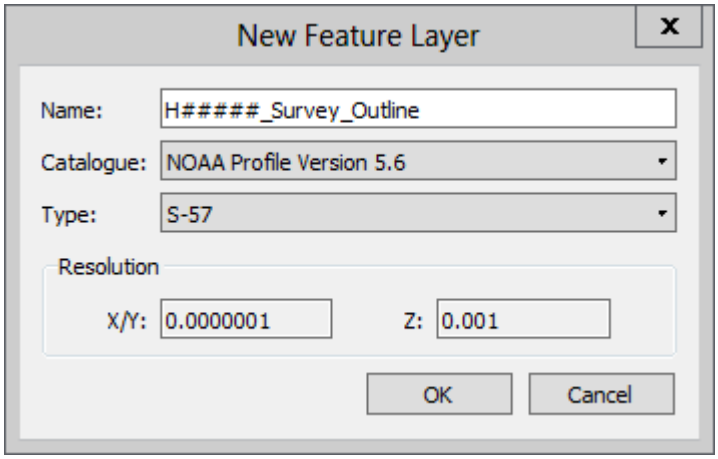
Final survey outlines shall be submitted via email survey.outlines@noaa.gov as soon as possible after completion of field work. Contract field units shall cc their assigned COR on this submission. NOAA field units shall reference Section 5.2.2.3.2 of the OCS Field Procedures Manual for additional guidance.

Procedure

1. Open relevant chart and coarsest resolution surface in HIPS and SIPS.

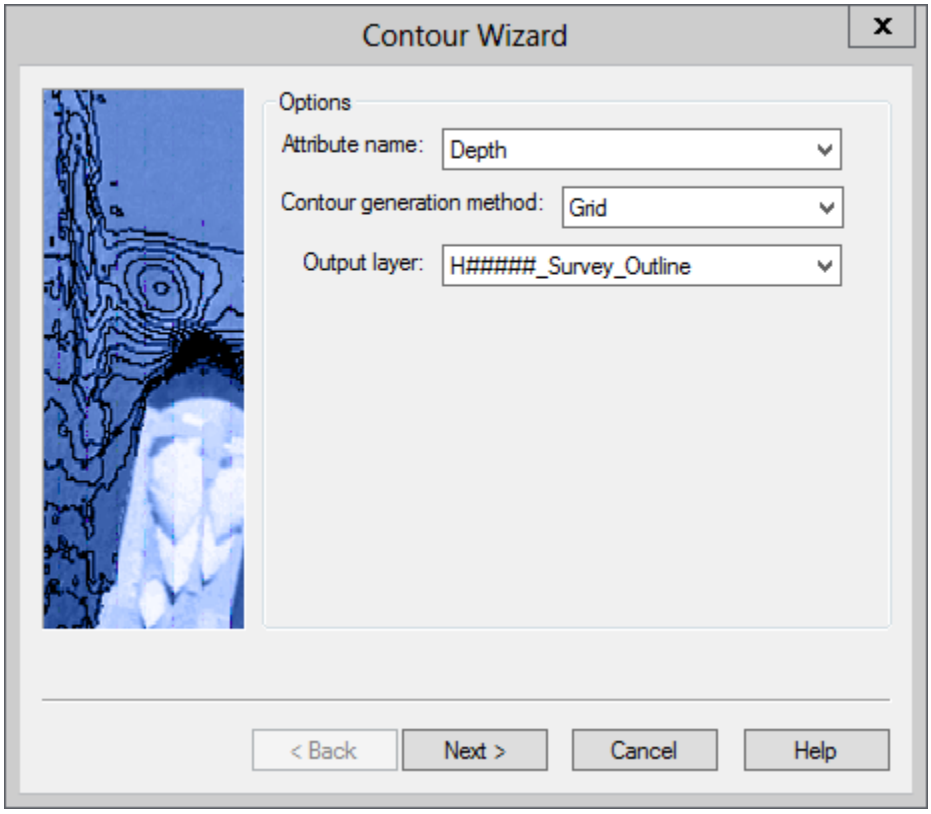
2. Create a New Feature Layer



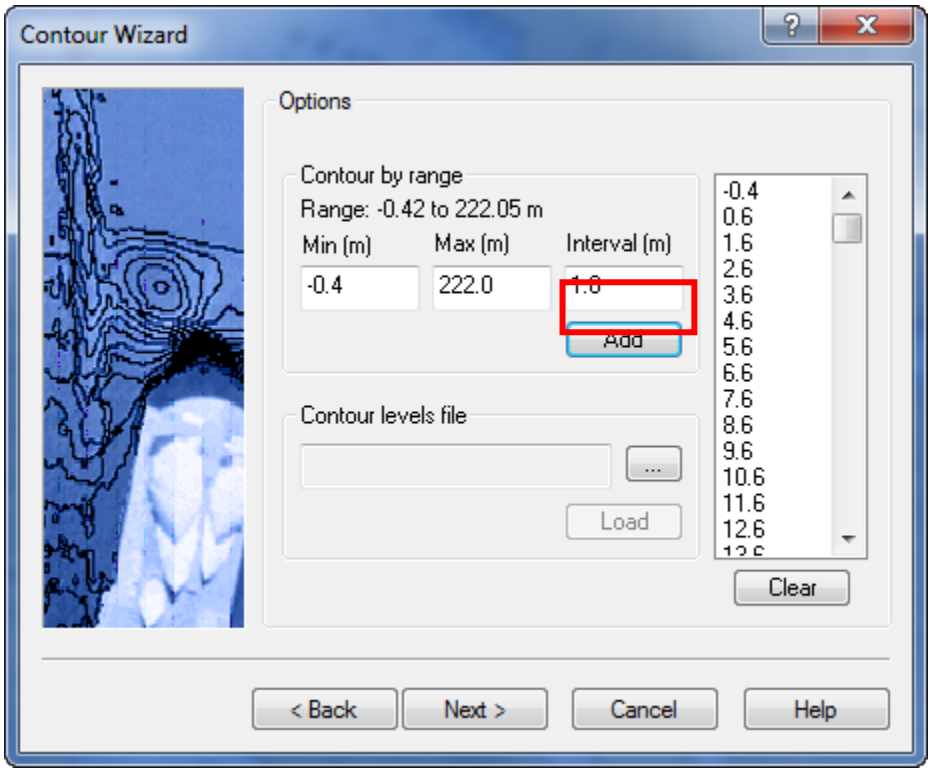


3. Create Survey Outline (as M_COVR object)
   a. Select the **Depth** child layer on the coarsest surface.

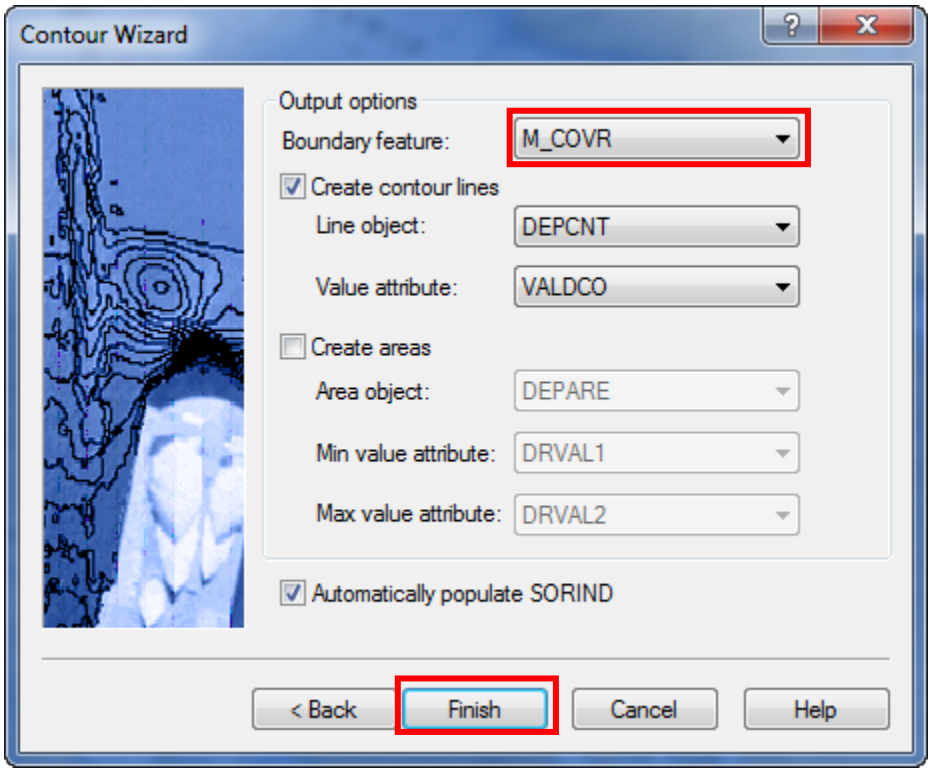
   b. Start the Contour Wizard 



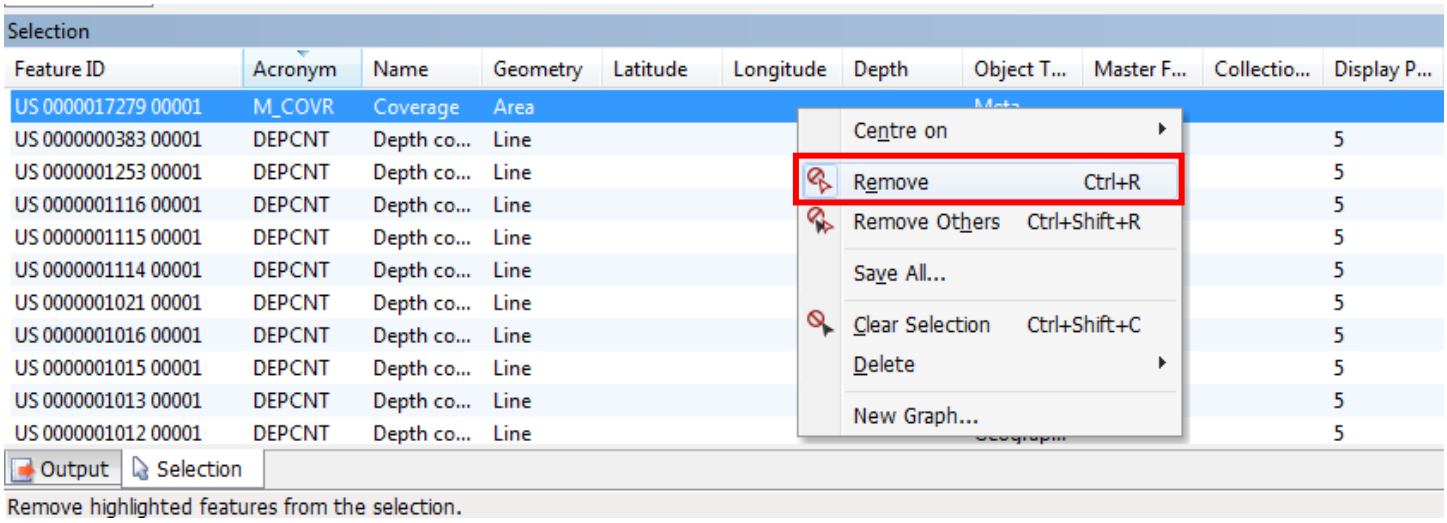
c. Add contours for the range given. There is no need to adjust this.



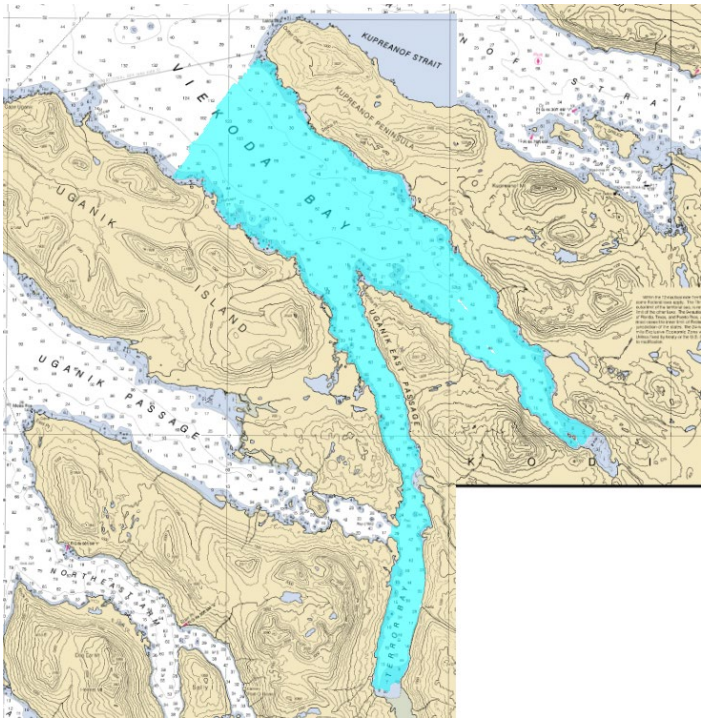
d. Set the Boundary feature to "M_COVR." All other settings can stay default.



e. Once the contour wizard has finished, click on your survey outline feature layer and **Select All**  . Sort by Acronym type to locate the M_COVR feature. Right-click and **Remove** it from the list of selected features. Once it has been removed, you can now select all of the **DEPCNT** features and delete them



f. If you re select your H#####_Survey_Outline layer, you should get an area that covers your sheet limits, such as the image below. (Note: you have to 'select all' to see the M_COVR object).



g. Add the Area column to the Selection window if it isn't already. (Right click the attribute ribbon, and click more, then add the desired attributes to show) With the M-COVR selected you can see the total area of your survey coverage. Change the units (Tools → Options…→ Display Units) to square int. nautical miles and enter the number into your DR – Section A.5.

Feature ID	Acronym	Name	Geometry	Latitude	Longitude	Depth	Object T...	Master F...	Collectio...	Display P..	Area
US 0000017279 00001	M_COVR	Coverage	Area				Meta				31.19

4. Export survey outline

   a. Inspect your coverage area to make sure it is accurate (Does it match the extents of your coverage? Are the islands where you don't have coverage appropriately removed?) If there's a problem, see the Editing the Coverage Area section of this SOP.

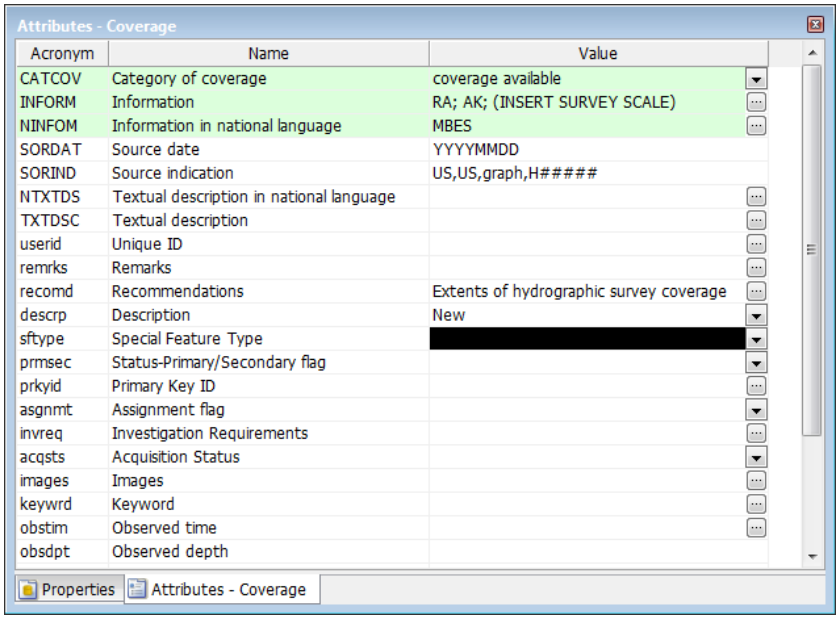
   b. Fill in the necessary attributes

Object	Attribute	
	Acronym	Description
M_COVR (Coverage)	Used for survey outline.	
	CATCOV	(Category of coverage)
	INFORM	(Inform)
	NINFOM	(Information in national language)

INFORM: shall be populated with the following information separated by semi-colon in this order:
- *Platform; State; Scale*

Example: FH; MD; 20,000

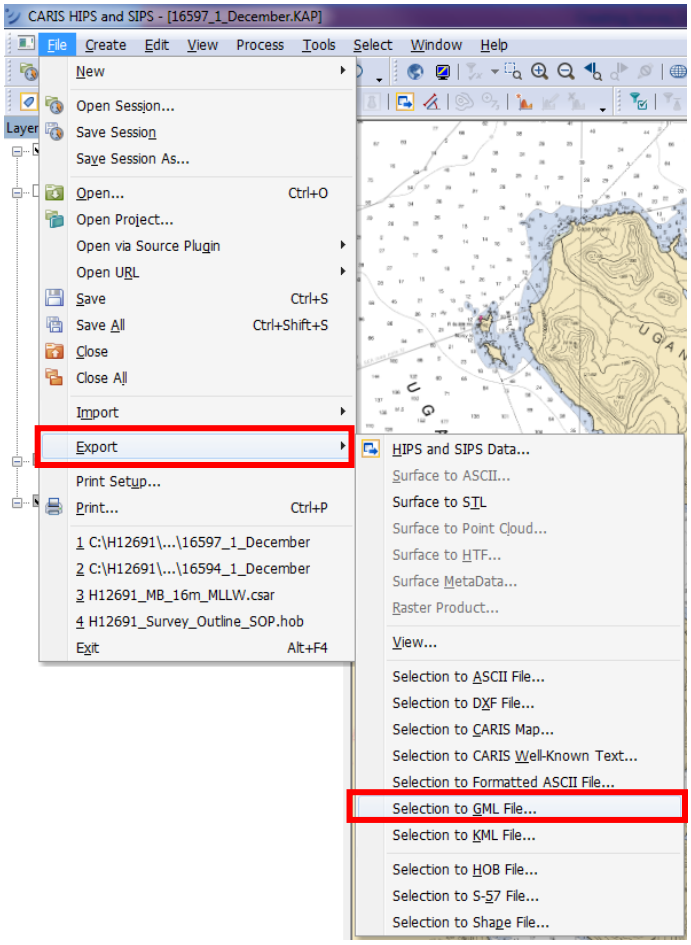
NINFOM: shall be populated with the technique of sounding measurement.
- *Use the terms: Lidar, MBES, VBES, or SSS.*
- *If more than one technique was used separate the techniques by a semi-colon. Example: MBES; SSS.*



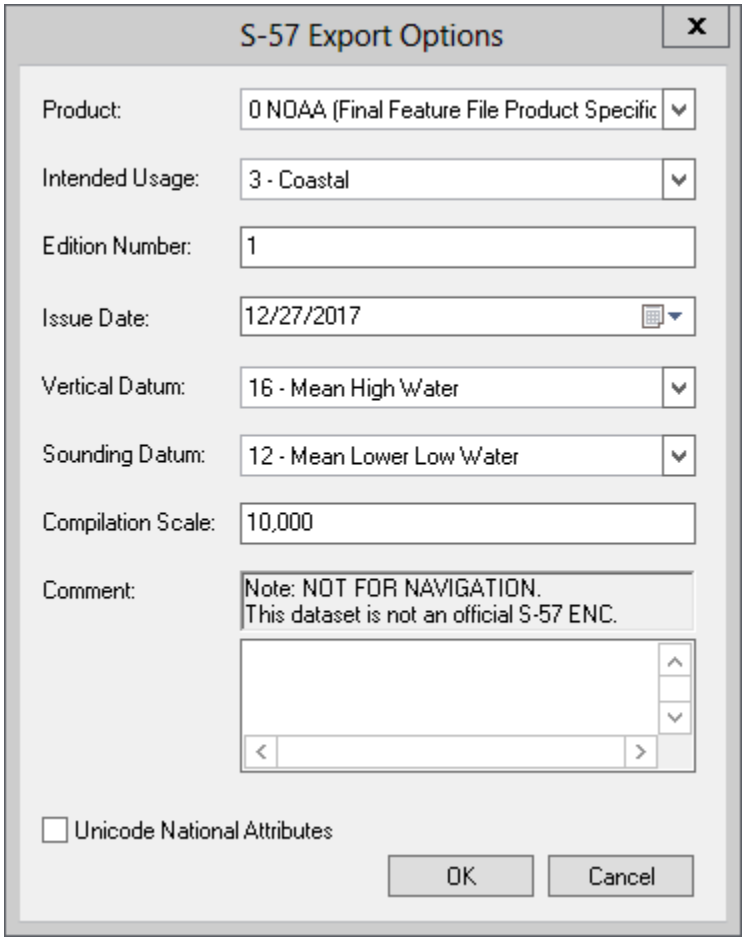
c. Save your .hob file to: Appendices\II_Supplemental_Survey_Records_&_Correspondence

d. The final survey outline should be compiled as the S-57 Feature Object Class M_COVR in a .000 format in the WGS84 datum, unprojected, and as a Shapefile.

File → Export → Selection to S-57 File… Save it in the Appendices\II_Supplemental_Survey_Records_&_Correspondence folder.



e. Fill in the export options with the information for your project and click OK.



Edit the Coverage Area (may not be necessary)

NOTE: The goal is to have one area feature at the end, if possible. To do this use the tools on the pages below to help you manipulate the area feature. These tools will allow you to merge area features (letting you stop in mid digitizing), cut out holes in area features (i.e. reefs) and filling holes (i.e. reefs cut out by accident).

Filling Holes (Holidays) in an Area Feature

1. Select the outline.
2. Select "Edit Feature" and "Click Within Edges" .
3. With the "click within edges" curser , click in the area to be filled.

Open the Components window, expand an inner ring and double click to zoom. Each inner ring is a holiday.

Merging two Area Features

NOTE: To merge two area features they must have the same Acronym (i.e. M_COVR)

1. Select M_COVR areas to merge

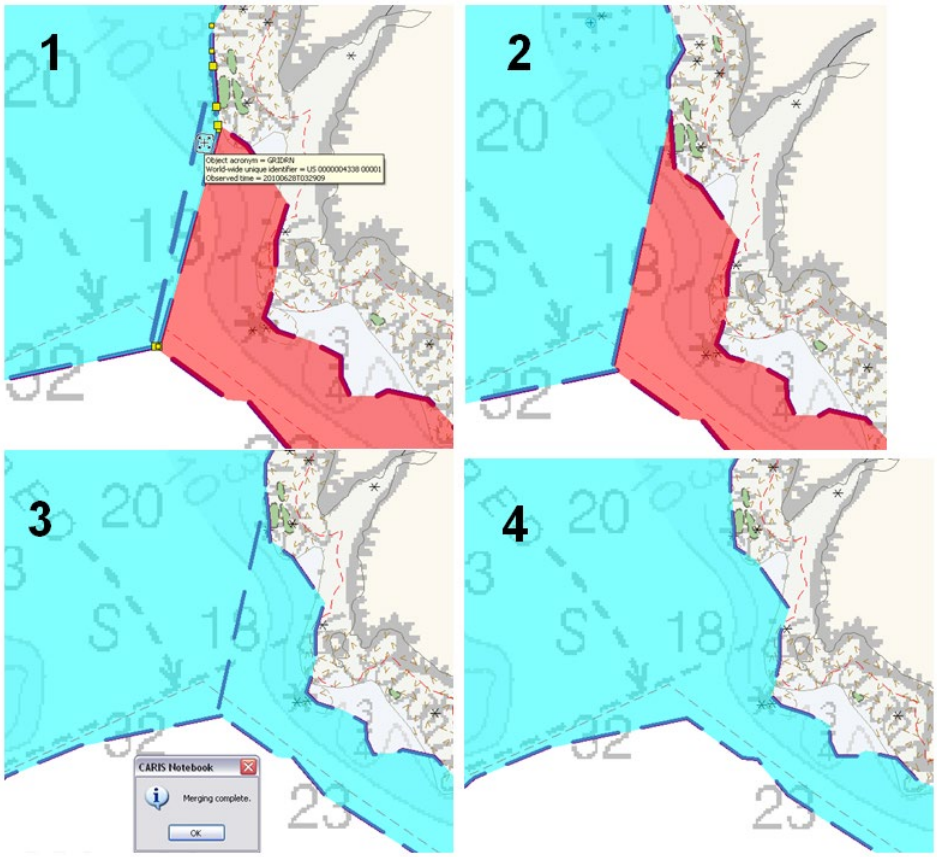
2. Go to Edit → Edges → Intersect and select okay.
   a. This creates new nodes at the intersection between the areas.

3. Turn on "edit features" and select "click within edges"

4. With the "click within edges" curser, click in the small area of overlap between two selected outlines.
   a. The overlap area between the two sections should have disappeared and you can

5. Turn off "edit features"

6. Select areas to merge, go to Edit → Areas → Merge and select okay.



Cutting Holes in an Area Feature

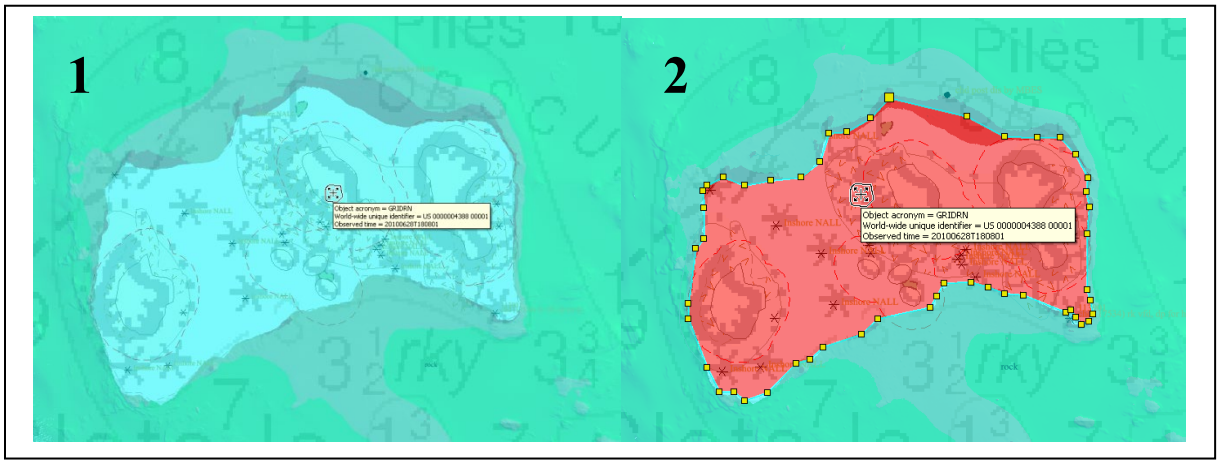
NOTE: To cut a hole area features must have the same Acronym (i.e. M_COVR)

1. Draw a new GRIDRN area around your island that you would like to have clipped out.

2. Select the original outline as well as the outline of hole to be clipped out
   a. Have the master outline superselected (blue).

3. Select "Edit Feature" and "click within edges" .

4. With the "click within edges" curser , click in the area (the superselected blue outline) to be clip out.
   a. A red area is now selected with nodes surrounding it.

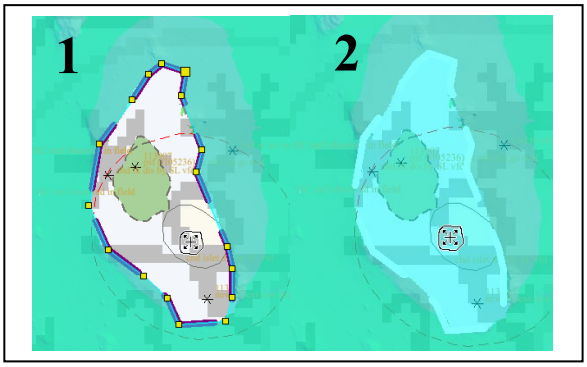


5. Unselect the "edit feature" icon to turn off nodes and superselect (blue) the small polygon area to delete it.

6. Select your survey outline file HXXXX_Survey_Outline.hob and press Select All to ensure you still only have the master outline.

Filling Holes in an Area Feature

1. Select the master outline
2. Turn on "edit feature" and select "click within edges" .
   a. With the "click within edges" curser click in the center of the hole
   b. When finished, unselect the "edit feature" icon to turn off nodes.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2