Pew Essential Groundfish Habitat

Marine Planner User Guide

Overview

Welcome to the Pew Essential Fish Habitat Groundfish MarinePlanner tool (EFH)! This tool was built by Ecotrust for Pew to aid in identifying priority areas of the US West Coast for protection for groundfish habitat. From there it grew to serve as a layer aggregator across additional Ocean Health topics such as Highly Migratory Species and Ecosystems.

For the most part, this is a great tool for any visitor to open up a great wealth of spatial data and overlay these layers with each other to answer complex questions. For authorized users, you can also propose fishing openings and closures and generate reports comparing a scenario of your plan against others. You can also run filtering across the coastal waters to target areas that have particular characteristics such as species presence, substrate, or many others.

This document is intended to go in-depth into all of the features and capabilities of the tool. If you are looking for a brief overview of the tool to dive in right away, please use to ‘Tutorial’ button on the bottom of the left panel at http://pewmarineplanner.ecotrust.org

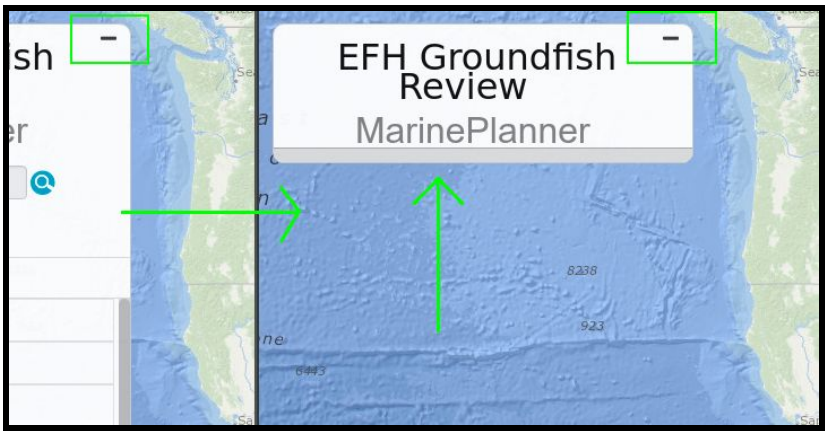
Features

Left Navigation Panel

Apart from the map, the most prominent feature when opening the tool is the Left Navigation Panel (or “Nav Panel”). It is your primary point of interaction with this tool, at least in terms of controlling and manipulating the information shown on the map.
Here are the features of the Nav Panel roughly from top-down, left-to-right:

Minimizer

The “Minus” sign at the top right corner of the Nav Panel can be used to minimize the height of the Nav Panel, removing access to all of the controls, but making more space to view the map. From the minimized position, clicking the minus sign again will re-expand the Nav Panel to its full height:



Search

This search bar allows you to search for a layer in the tool by its name. It does not matter which Theme Tab or Category it belongs to. The typeahead popup will help you sort through likely matches once you’ve typed something in:

Pressing “Enter” after you have selected a layer will open it on your map.

Theme Tabs

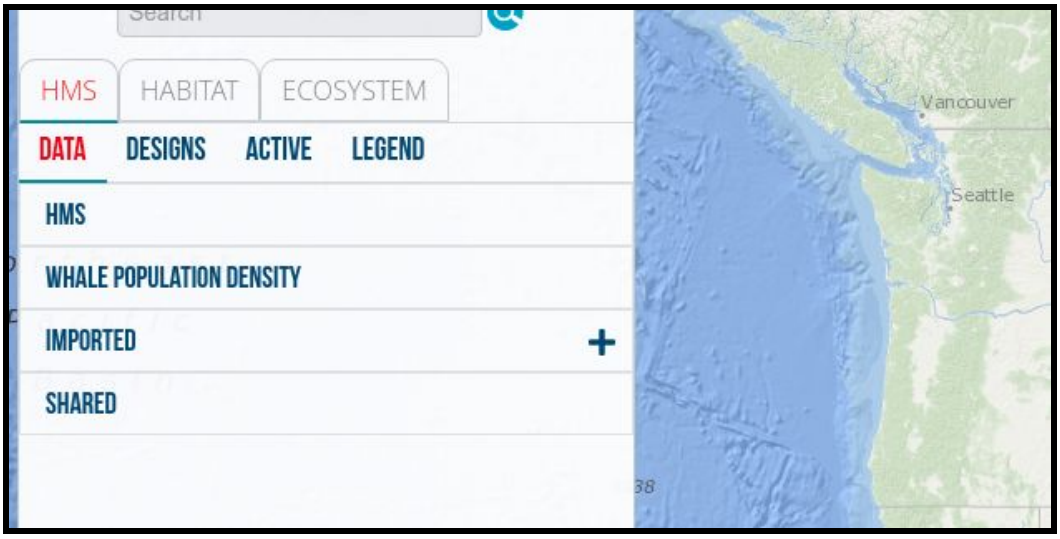
As mentioned in the intro, this tool serves a variety of audiences and specialists. It can be configured by administrators to cater to all sorts of groups. In order to enable these groups to keep from overwhelming the layer options of other groups with likely non-relevant layers, the categories of layers (further covered in the “Data Tab” section) are assigned to one or more “Themes” that they are relevant to.
However, in the interest of informational cross-pollination and the possibility of new connections between these spatial layers being discovered, there is no reason why layers from one theme cannot be displayed on the map along with layers from another theme. These Theme tabs help to coordinate that effort.
In the example below we have three themes: Highly Migratory Species (“HMS”), Habitat, and Ecosystem. The “Habitat” tab is selected, so the “Data” tab beneath it will only reveal categories of layers that are relevant to habitat. If the HMS tab were selected different layer categories would be displayed. It is important to note that of all of the tabs beneath the Themes Tabs (“Data”, “Designs” - only for authorized users, “Active”, and “Legend”), only the Data Tab is impacted by selecting different Theme Tabs.

Data Tab

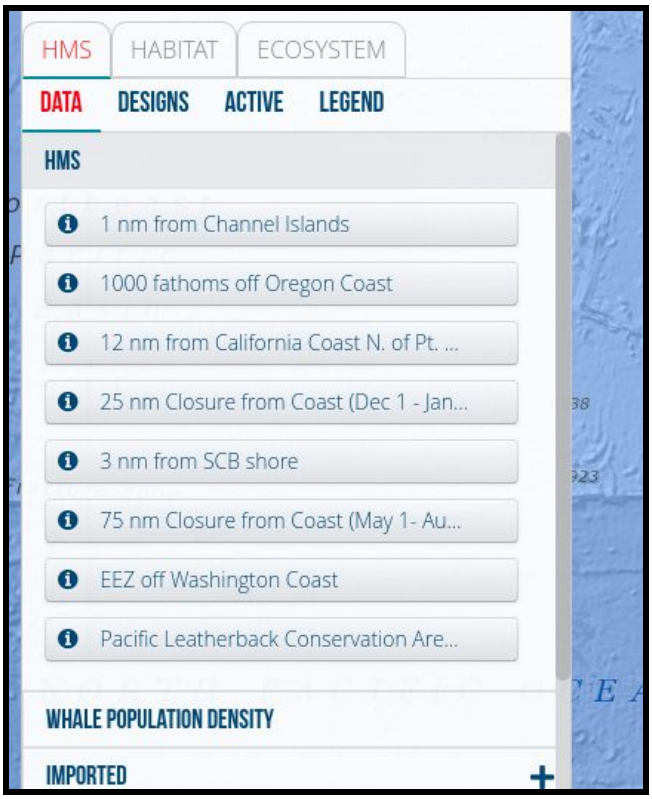
The Data Tab is where all of the layers available in the EFH tool can be accessed. As mentioned in the Theme Tabs section, the layers available at any one given time under the Data Tab can change, but between the Data Tabs for every Theme Tab, all layers available to the user can be seen.

Data Tab Hierarchy 1: Categories

The Data Tab has an established hierarchy for organizing layers - only layer categories are displayed at first. For example, take the screenshot below:



Under the HMS Theme's Data Tab, you see 4 Categories: "HMS", "Whale Population Density", "Imported", and "Shared". None of these are layers in themselves. Clicking on them will not change the map in any way. What it does do, is expands that Category to reveal all of the map layers the belong to it:



We can see that the HMS category has 8 layers associated with it. Layers are the next step down the hierarchy and will be discussed in the next section.

Before we dig in to layers, there are two special categories that can be seen in the previous screenshots: “Imported” and “Shared”.

Unlike the other categories, these are shared between all Themes. Also it is important to note you may not see either of these.

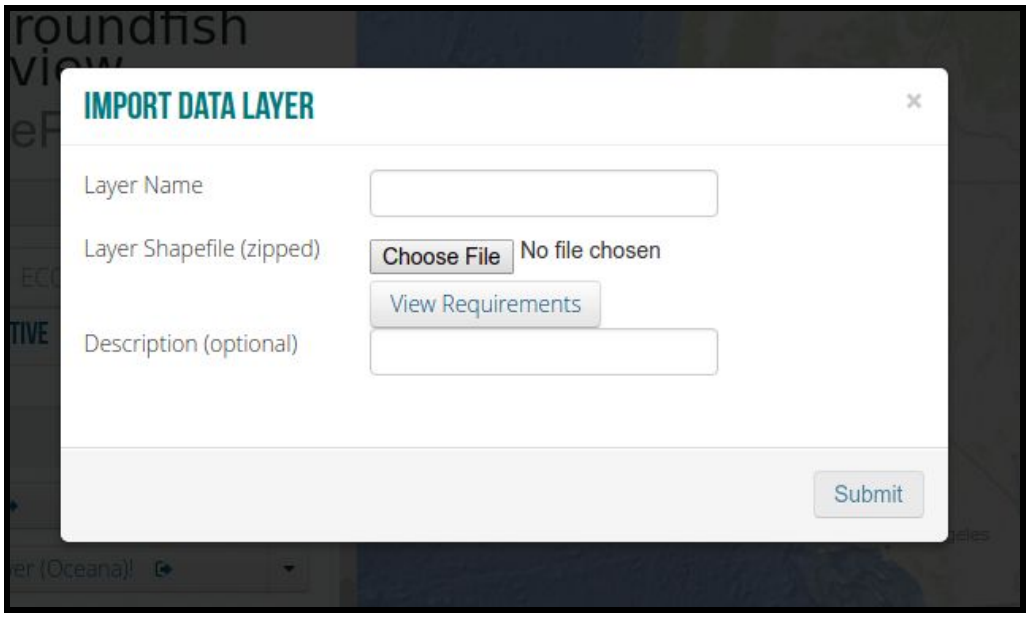
Imported:

This category only appears to registered users. While the site administrator can add and manage layers at will, every registered user has the option to upload their own layers, so long as they adhere to the prescribed requirements:

Uploaded files must be:

- A zipped ('.zip') file containing the elements of a valid ESRI shapefile, including files of type:
    - .cpg
    - .dbf
    - .prj
    - .shp
    - .shx
- Projected into EPSG:3857, aka "WGS 1984 Web Mercator (Auxillary Sphere)"

The registered user may upload this data at any time using the plus (“+”) sign displayed on the “Imported” row. Pressing this will bring up the following form:



Filling out the form, the user can give their layer a name, use their computer operating system's file picker to select the file for upload (click on 'Choose File' to activate this), review the file requirements, and give their layer a description. Clicking Submit will begin the upload.
Once finished, the user's layer should appear under "Imported" after their next page refresh. A handy shortcut button to refresh the page is provided once the upload completes.

Note that styling is basic. This import tool is to get basic shapes displayed on the screen. Detailed layers, particularly those that would require intricate cartography are best served via some WMS and imported into this tool by the administrator. If your shapefile is over 10 MB, you may want to reconsider the best way to handle this layer.

Imported layers by default have 'click identification' enabled - if a user clicks on a feature from an imported layer, the attributes of that feature will be displayed on screen. This cannot be turned off, so please remove any sensitive information from shapefiles before importing them.

Shared:

This Category appears if any users that have imported a layer have chosen to share it with a group that you are associated with (this includes public, so even non-registered users may see this Category). Layers under this category work just like other layers, described below.

Data Tab Hierarchy 2: Layers

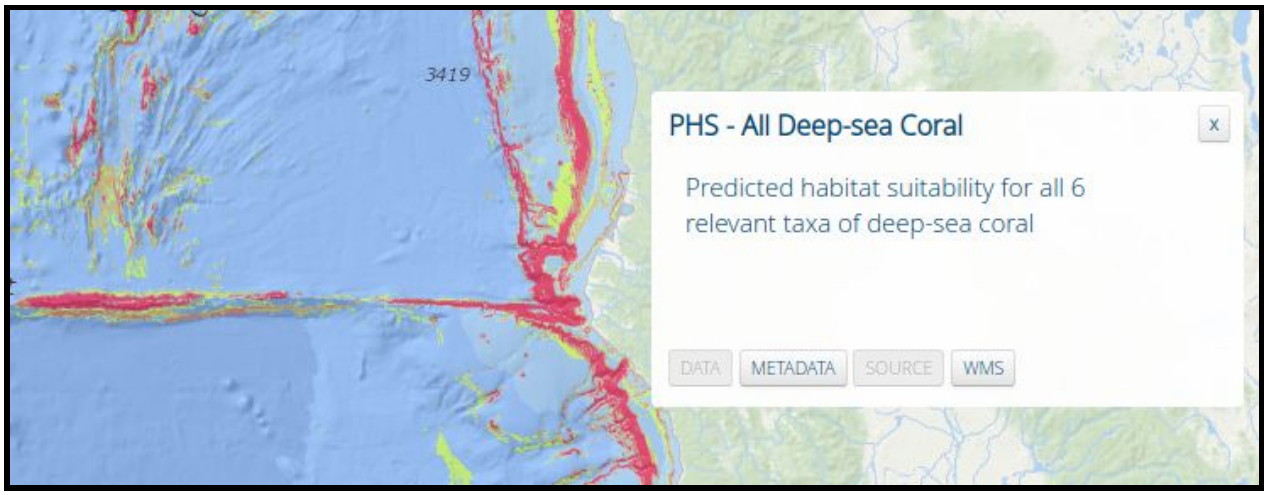
Layers are the most important part of the hierarchy. Clicking on almost any of these will result in the layer being displayed on the map (please refer to the next section "Sublayers" to understand why this is "almost any" and not every).

In the example above you'll see three green boxes. The first is the information icon. More on that later. The next it the layer label - this tells you the title of the layer that will be displayed if

you click on it. The third box contains a checked checkbox. You'll also note that the layer row appears 'selected' - as in this case, the user has clicked on "Krill" and you can see the map data showing to the right.

Some default assumptions are made regarding the layer's transparency, and order (if you have multiple layers turned on). Adjusting these settings are covered in the "**Active Tab**" seciton.

The Information Icon:
Clicking on the information button will display all of the important information about that layer in a pop-up panel to the right.

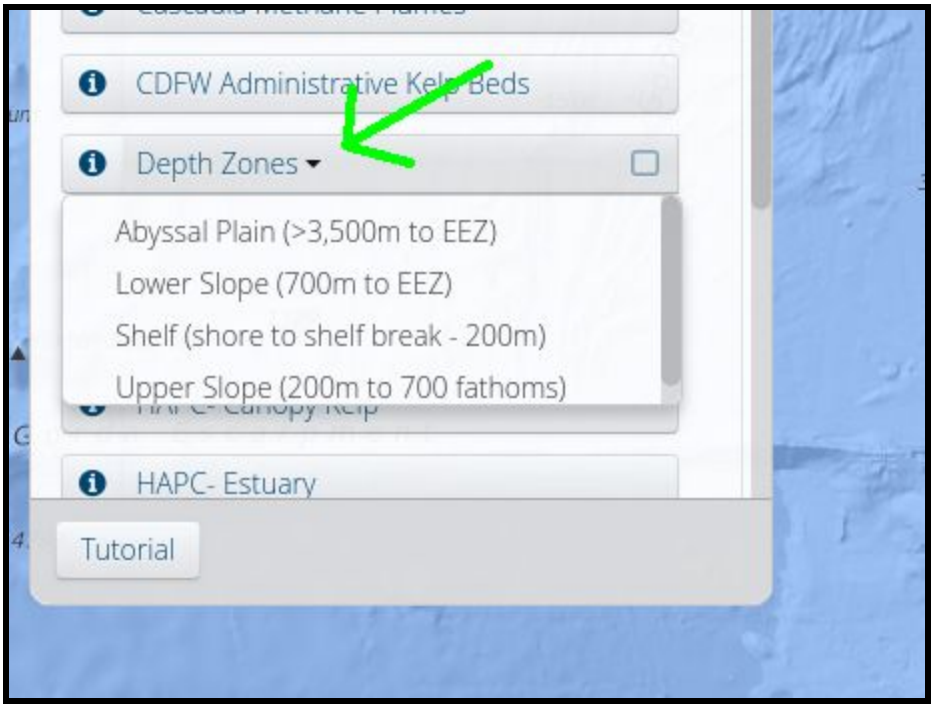


Here we can see the Title of the layer, any description provided for it, and 4 buttons below:

- Data:
    - If it is possible to provide a link to download the raw data behind the layer, this button will be enabled.
- Metadata:
    - If there is a link to review the metadata for the layer, this button will be enabled.
- Source:
    - This can link users to the website of the data provider, if available.
- WMS:
    - This link will bring the user to a page showing how the online layer may be integrated with other sites and tools.

Data Tab Hierarchy 3: Sublayers

If you recall, in the last section on Layers we were careful to say "Clicking on almost any of these will result in the layer being displayed…". This is because there are a few special layers that serve as "parent layers" to a group of Sublayers. Those parent layers will have a triangle icon next to their title, and clicking on them will instead expand the list of the children Sublayers. See the image below for an example:



In this case, you can show any 1 “Depth Zone” on the map at a time. Clicking on one of the sublayers will display it on the map as if it were a regular Layer. Once you’ve made your selection the box with the list of Sublayers will disappear. Afterwards, clicking on the Layer (“Depth Zones”) again will hide any of its Sublayers from the map, resetting the process, so if clicked again, the user will once again be presented with the selection list of children Sublayers.

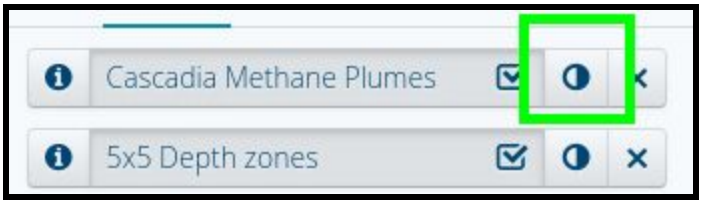
Active Tab

The Active Tab collects all of your currently selected (or “active”) layers in one place. Layers are presented in the order that they are layered on top of one another on the map, so the layer listed on the top will cover any layers listed below it and so on.

From here you can easily:

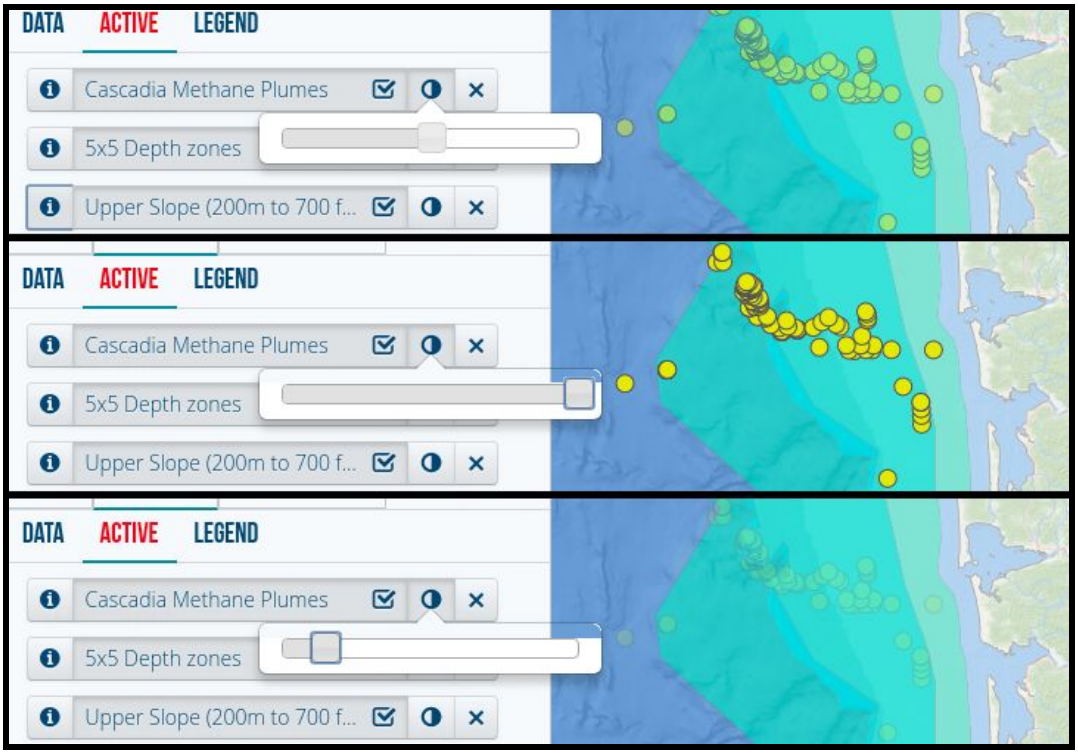
- Get more information about the active layers
    - The info button works exactly like the info button covered in the Layers section
- You can turn the layer on and off
    - This is done by clicking on its name, just like in the Layers section, but in this case, the layer will stay ‘active’ - in that it will keep its place in the active tab for quick reference.
- You can change the opacity of the layer
    - see below for more info
- You can deactivate the layer with the ‘X’ button
    - This is equivalent to clicking on an active layer in the data tab: it is hidden and removed from the list of active layers.
- You can change the layer order
    - This is done via drag-and-drop operations with your mouse, explained in more detail below.

Changing Opacity:
All layers that you add to your map view may have their opacity changed. From inside the “Active Tab” simply click on the Opacity button (a circle bisected vertically between light and dark) next to each layer name:



Clicking on the opacity button will pop open an opacity slider. Using your mouse to click on the slider and drag it left and right adjusts the opacity - right for more opaque, left for more translucent. Dragging to either extreme will make your layer entirely opaque or invisible.

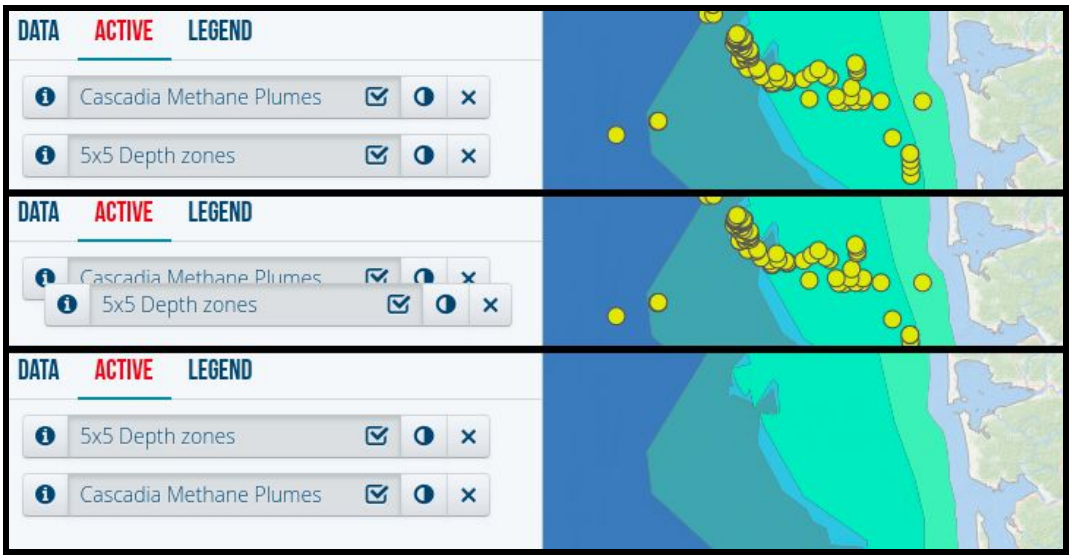
See the layer with the yellow dots example below:



Layer Order:

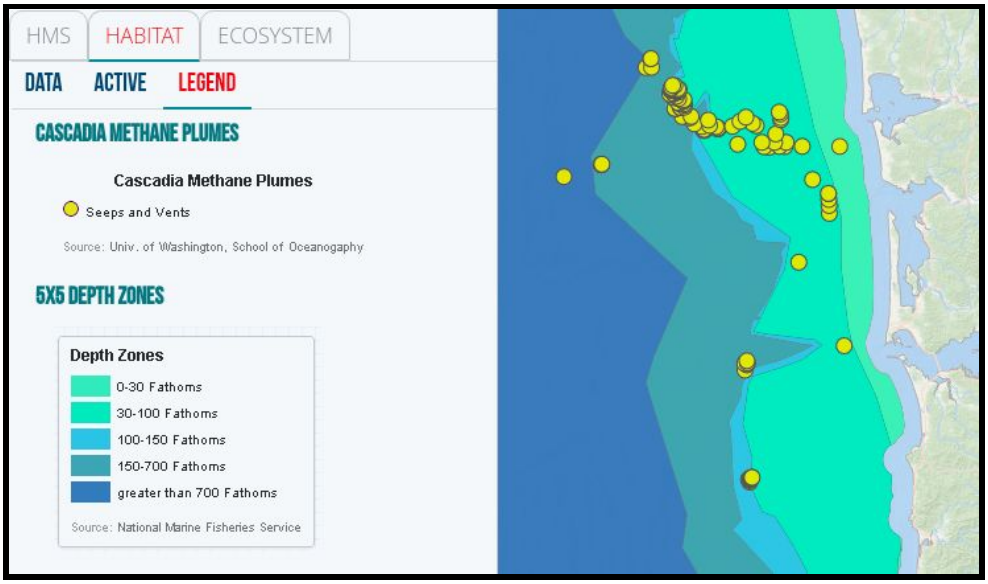
Ordering layers is also easy to do from here. Simply click on your layer record in your active tab using your mouse, and drag it up or down to position it where you want in relation to the other layers on the map.

For example, if I have two layers at full opacity, each will obscure data below any data it is representing. Let's take a look at that yellow dot layer ("Cascadia Methane Plumes") and a layer covering most of the sea floor with shades of blue ("5 x 5 Depth Zones"). If you display the Depth Zones layer on top at full opacity, it will completely obscure the Methane Plumes layer:



Legend Tab

The Legend Tab is simply a place to see the legends for all of the layers you have displayed on the map in one place. There is no interactivity. The legends will be in the same order as your entries in the Active tab: Layers on top on the map are also on top of the legends list:



Map Features

Of course, the Left Navigation Panel is not the feature of this tool eyes will be drawn to: the belongs to the most important part: the Map.

Layer Identification

Some layers are interactive. If you click on the features of those layers on the map, you can get more information about the feature that you clicked:

Zoom/Pan

Zooming in and out of the map follows traditional web map navigation:

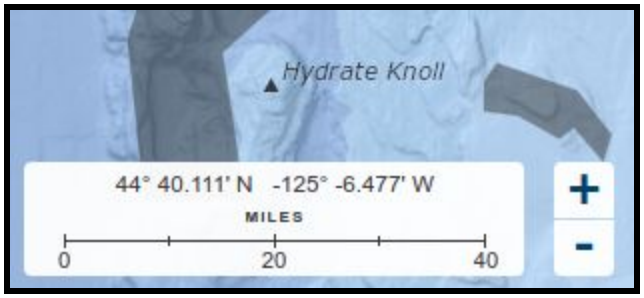
- You can use the buttons in the bottom right of the screen
    - “+” to zoom in
    - “-” to zoom out

- You can use the scroll wheel on your mouse:
    - Scroll up to zoom in
    - Scroll down to zoom out
- You can double-click to zoom in
- You can hold ctrl while clicking to zoom in (command for Mac users)

Moving the map view, or “panning” also follows basic web map conventions: simply use your mouse to click and drag the map to center on what you want to see

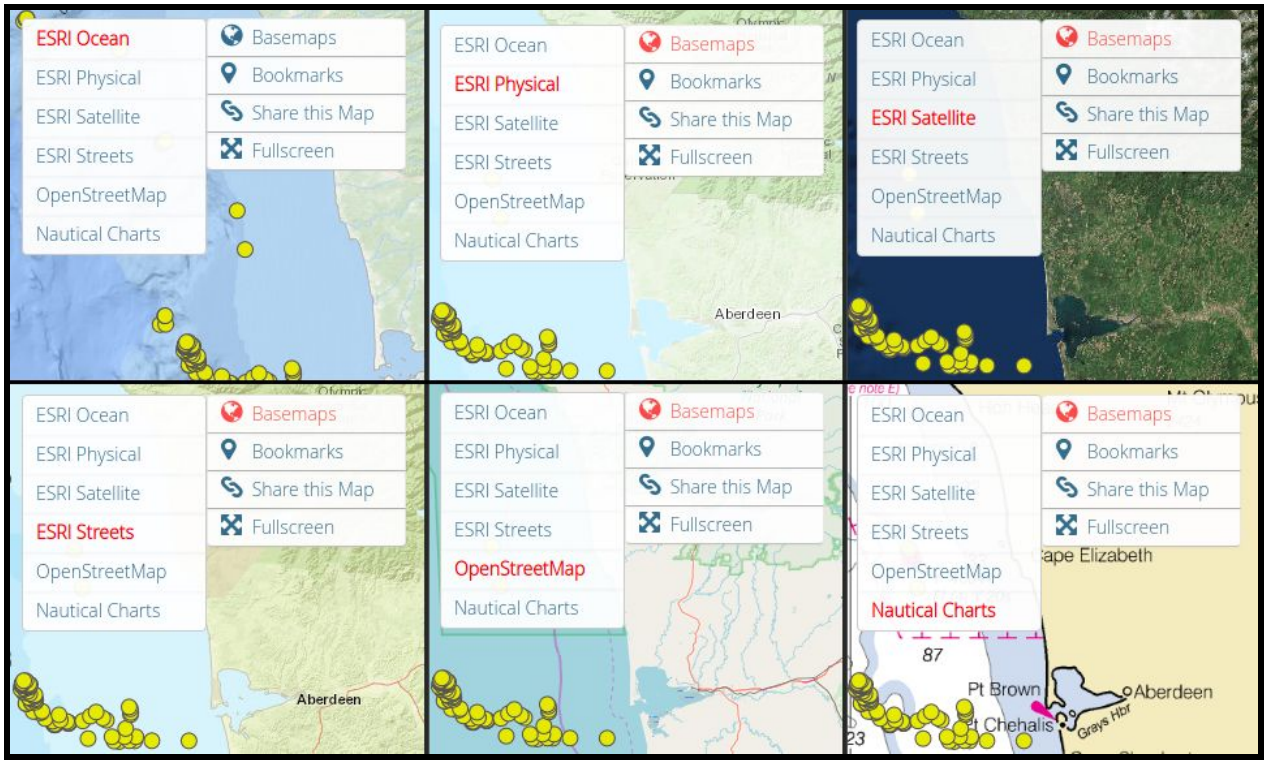
Scale Bar

In the bottom right corner, next to the zoom buttons, you will find the scale bar.
It is meant to give you the approximate scale of the map you are looking at, just like printed maps.
This scale bar has an additional feature - if your mouse cursor is over the map, the coordinates of your mouse will be printed above the scale bar:



Basemaps

Apart from the Layers that we have discussed thus far in the Left Navigation Panel, there is also the matter of the map layer underneath that gives perspective to those “overlay” layers. These are called Base Layers (or Basemaps). You can select different basemaps from the button with the globe icon in the top-right corner of the screen:



ESRI Ocean

By default, this tool chooses the ESRI Ocean layer. Provided by ESRI, it is simple, clear and elegant, with a focus on Ocean features, revealing the bathymetry below using hillshading.

ESRI Physical

A simple map with terrestrial hillshading provided by ESRI.

ESRI Satellite

A clear, cloudless Aerial Imagery layer provided by ESRI.

ESRI Streets

Similar to the cartography of ESRI Physical, this layer does more to call out street and traffic infrastructure. This is also provided by ESRI.

OpenStreetMap

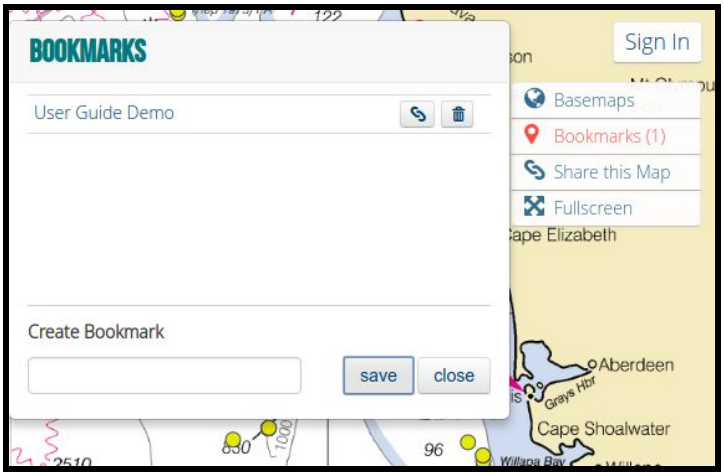
This baselayer comes from open-source, crowd-sourced data provided by OpenStreetMap. It has vivid colors and high contrast to clearly denote a variety of different interests.

Nautical Charts

Like the ESRI Ocean layer, the cartography of this layer is more focused on marine areas, with little detail on land. These detailed charts are provided by NOAA.

Bookmarking

This feature allows you to quickly snapshot your mapview, either to return to later or to share with others. At any time, you can click on the pinpoint icon in the top right (under the “Basemaps” globe button) to create a new bookmark.

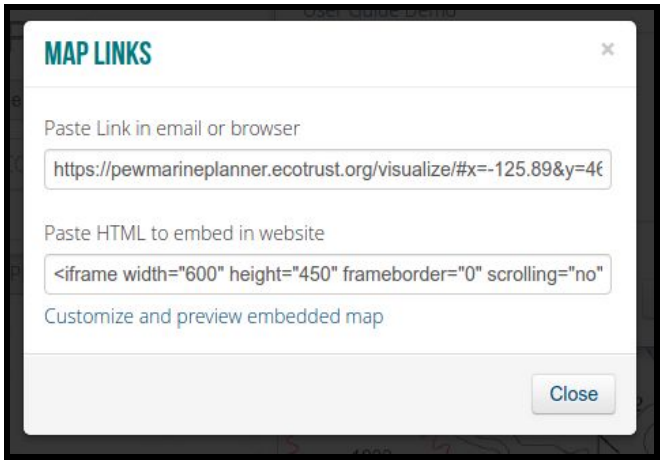


Your bookmark captures the following information:

- Your baselayer
- The Layers you have turned on, including
    - their display order
    - their opacity
- Where your map is pointing at
- What zoom level you are zoomed into

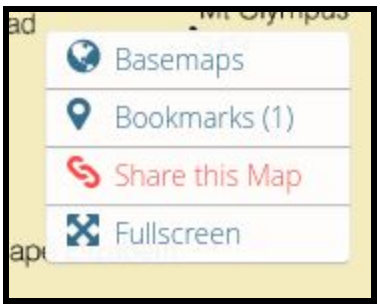
At any time you can click on one of your created bookmarks to switch your view to it. If you do this, a button appears at the top to “Return to Previous View”

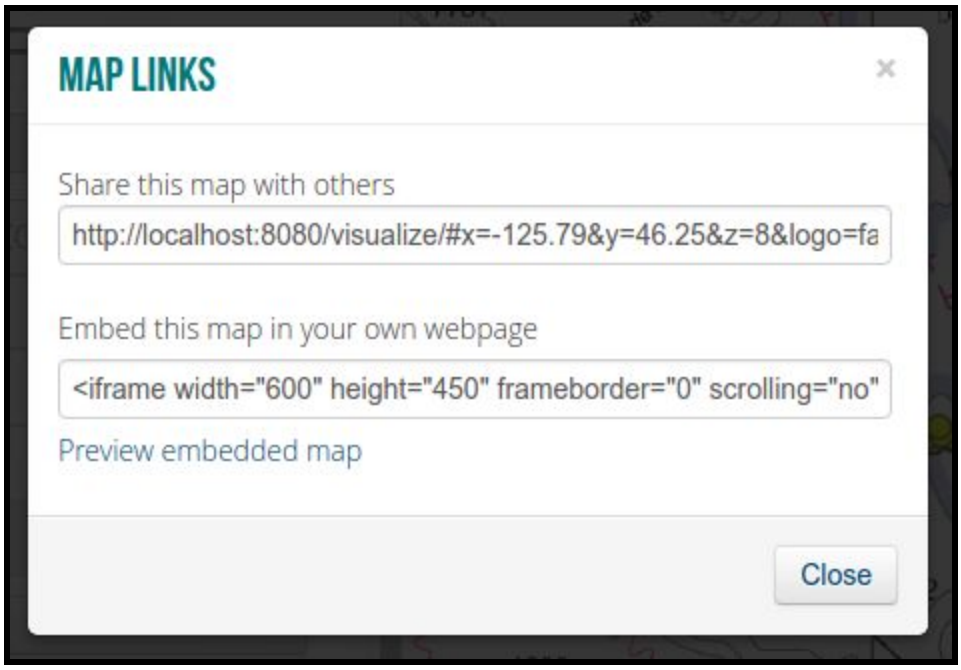
You may use the “Trash” button to delete any bookmark, or the “Link” button to open up a view to get links to share with other people (clicking on it will bring anyone straight to your map) or some HTML to embed your map inside of another website:



“Share This Map”

Much like the “Links” pop-up in Bookmarks, if you’d rather just straight to grabbing links or embeddable HTML to share or use elsewhere, you can just click on the “Share This Map” button in the top right:

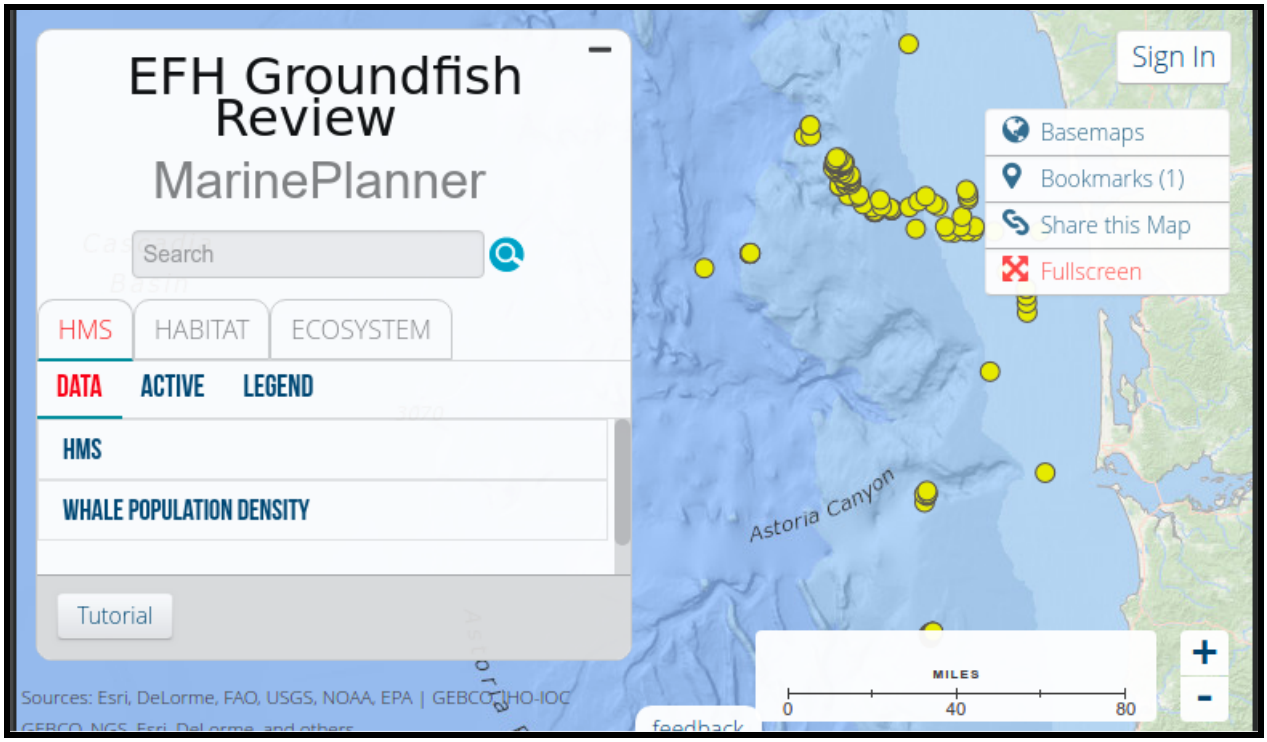


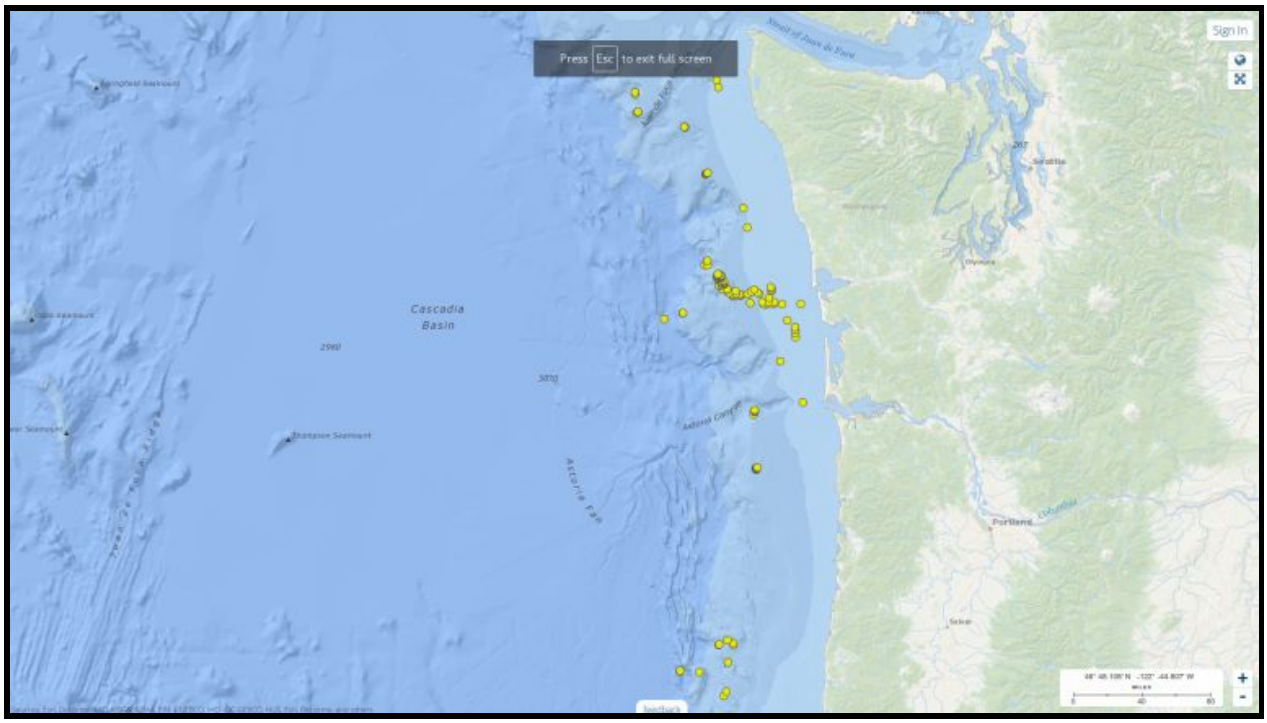


If you click on “Preview embedded map” in the popup, a new window will open displaying your map.

Full Screen Mode

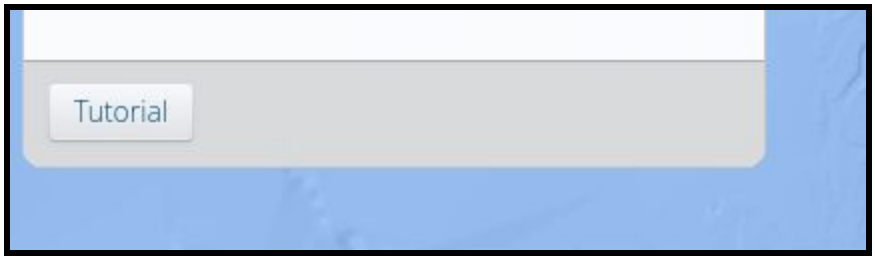
The last button in the top right corner is “Fullscreen”. This button works just like it says: it will maximize the map to fill your entire monitor, and remove most of the widgets (including the entire Left Navigation Panel) so you can just look at as much map as possible.





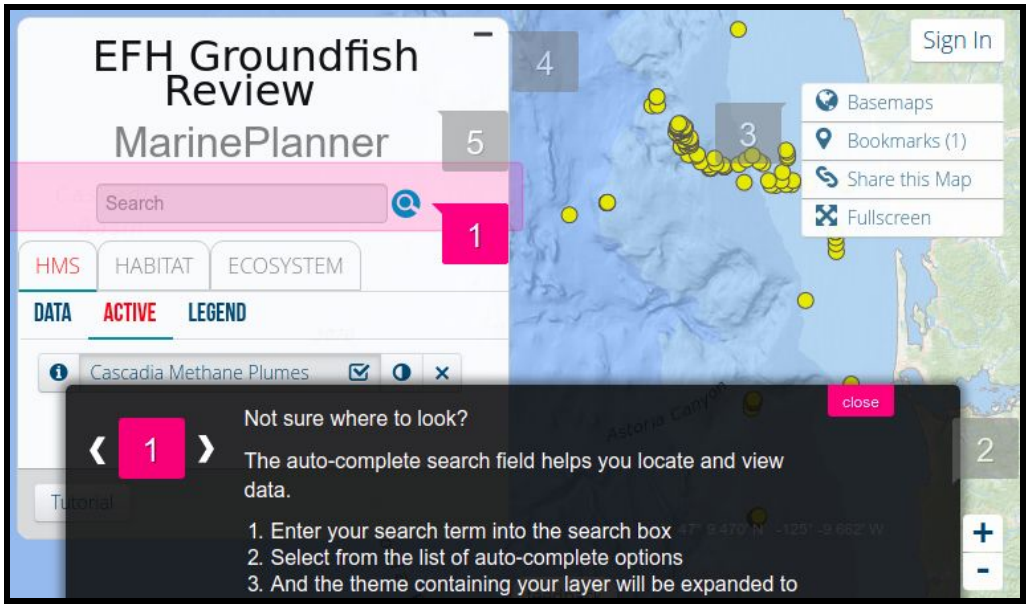
Tutorial

At the bottom left corner of the Left Navigation Panel you will find a “Tutorial” button:



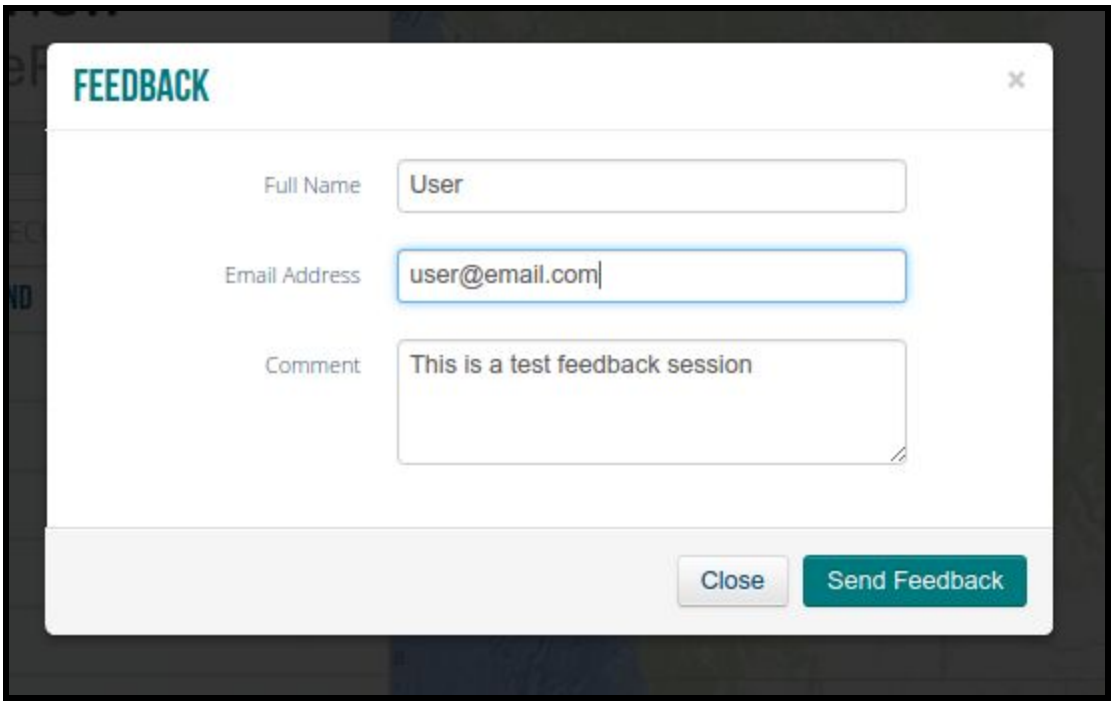
This button opens up a series of on-screen guides to help new users discover the various features of the tool.
There are three different tutorials:

- Basics
    - This covers the search bar, using the buttons on the map, and minimizing the Left Nav Panel.
- Data Tab
    - This tour gives the user an overview of Categories, Layers, and the info button.
- Active Tab
    - This tour covers all of the features of the Active Tab, including opacity and ordering.



Feedback

At the very bottom center of your browser screen you will notice a little tab that says “Feedback”. Clicking on this opens a pop-up window that allows users to submit feedback to the developers.



Registered Users Only Features

Sign In

Forgot Username

When not logged in to the tool:

- Click on ‘Sign In’ at the top to open the Sign In pop-up window
- Click on ‘Forgot your username?’ link
- Enter the email address that you believe you were registered with
- Click Submit

After a few minutes, you should receive an email at the provided address stating your username for logging in to the tool.

If you do not see this within 5 minutes, please check any spam folders or other email filtering you may have in place.

Forgot Password

When not logged in to the tool:

- Click on ‘Sign In’ at the top to open the Sign In pop-up window
- Click on ‘Forgot your password?’ link
- Enter the email address that you believe you were registered with
- Click Submit

After a few minutes, you should receive an email at the provided address containing:

- a link to reset your password
- confirmation of your username

If you do not see this within 5 minutes, please check any spam folders or other email filtering you may have in place.
Once you receive your email,

- Open a web browser
- copy the link into a browser address bar
- Enter your new desired password into the ‘New password’ field
- Enter that password again into the ‘Confirm password’ field
- Click ‘Change my password’

You will then be directed to a login page where you can use your new credentials to log in.

Account Management

Admin (Administrators only)

Please review the Administrator’s Guide for information on this.
If you are not an Administrator, then you should not see this option after clicking on your username in the top-right corner of the viewer.

Profile

Clicking on “Profile” in the user menu opens up a pop up window that allows you to edit your first name, last name, and email.

Password

Use this to reset your password. You do need to know your current password to use it.

Sharing

Several features of the tool allow you to share your work passively with other users:

- Imported Layers
- Grid Filtering Results
- Drawings

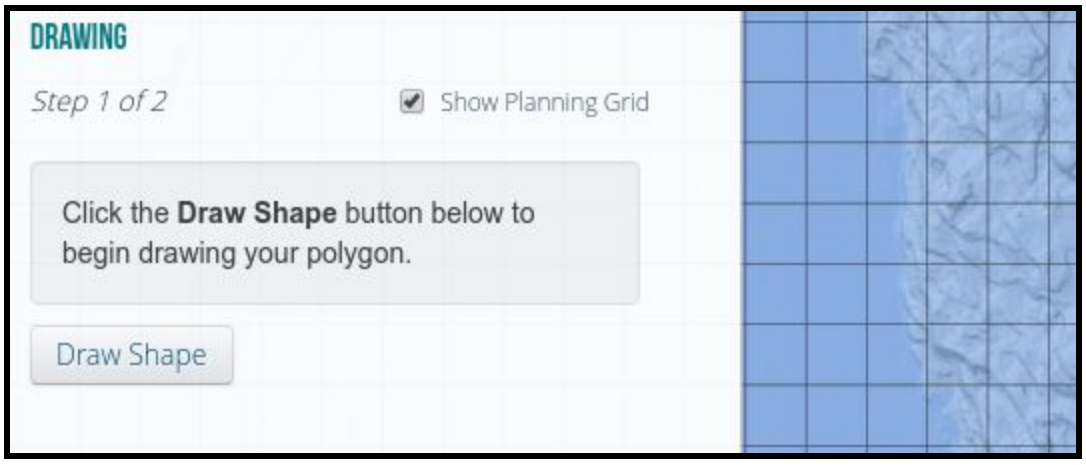
The method of sharing is the same in all of these cases:

- Click on the arrow button next to the listed item
- Select “Share” from the dropdown menu
- Check the boxes of the groups you’d like that item shared with
- Click “Share” to save that.

If you share with public, every user can see your shared data if they have access to that feature. Note that non-registered users cannot access Grid Filtering and Drawing, and will not see your shared items in their Left Navigation Pane, however, if you use the link provided by a bookmark containing your publicly shared features, or use the “Share This Map” feature, those maps can be shared, and will appear, even for non-registered users.

Drawing and Editing Features

Drawing New Features:
Click on the “Draw Shape” button provided via whatever method you’ve used to need to draw a new feature (such as “Create New Drawing” - these are covered in more detail below):

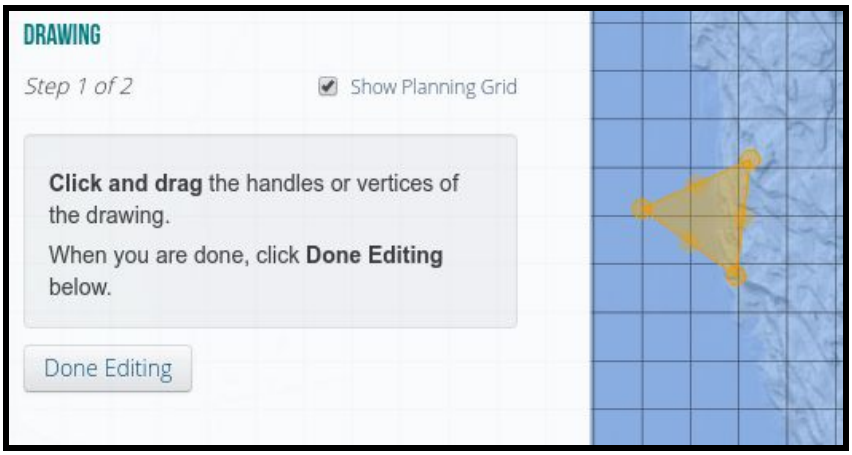


Then follow the instructions provided in the Left Navigation Panel, clicking once on the map to drop your first point, then successive clicks dropping more points, drawing lines between them to outline your feature:

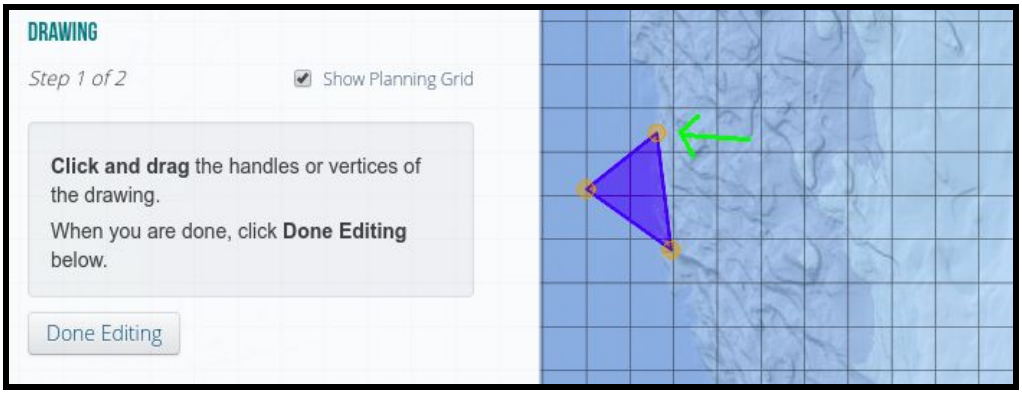
Finally, double-click when dropping your last point to finish drawing:

Editing an Existing Feature:

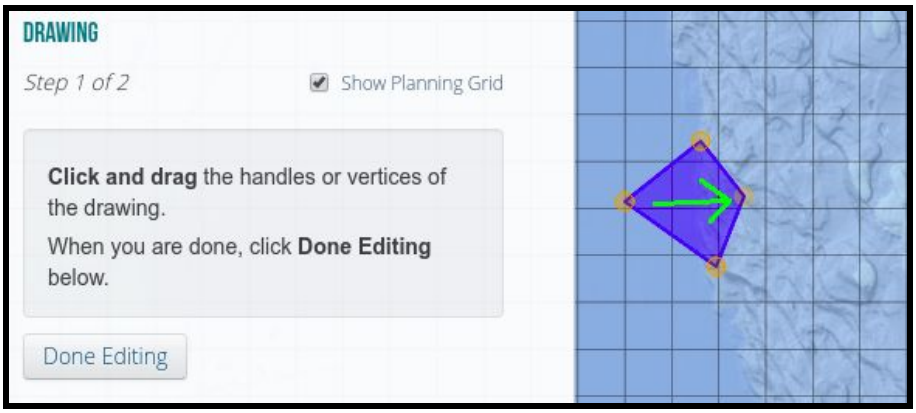
Once you've enabled editing mode, you will see circles around every vertex (corner) of your feature, and fainter circles at every midsection between your vertices:



You can click and drag any corner/vertex to reposition it:



You can click and drag any midsection circle to create a new corner/vertex:



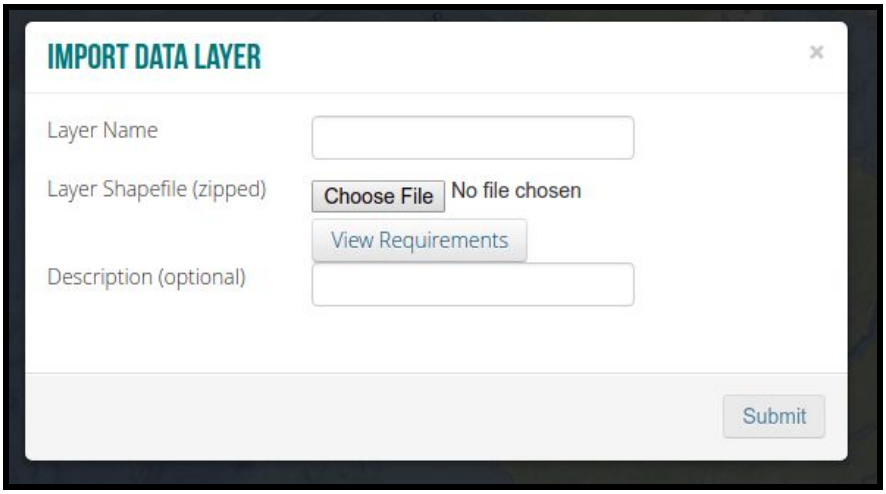
You can also delete any corner/vertex by hovering over it with your mouse pointer and pressing “delete” on your keyboard.
When finished, simply click “Done Editing” to disable editing mode.

Import Layers (Data Tab)

Previously Imported Layers will appear under the Data Tab (regardless of Theme Tab selected) as the final category in the layers list as “IMPORTED”.
You will see all layers that you yourself have imported, as well as any layers that have been shared with a group that you belong to (‘public’ or ‘staff’)
These layers can be opened and viewed like any of the normal layers, and will appear in the ‘Active Tab’ once selected so that you can rearrange the layer order and alter opacity.

Create

Click on the “Plus” sign next to the “Imported” Category
Fill out the form in the pop-up, using “Choose File” to navigate your Operating System’s file browser to pick the file you wish to import:



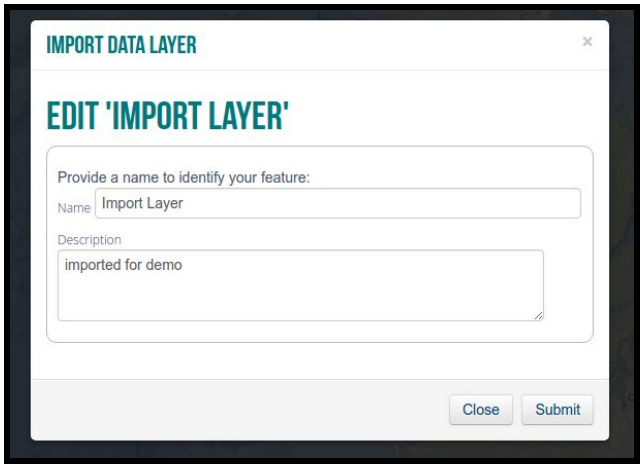
Be sure to review the requirements to be sure that your file is valid to upload:

- A zipped ('.zip') file containing the elements of a valid ESRI shapefile, including files of type:
    - .cpg
    - .dbf
    - .prj
    - .shp
    - .shx
- Projected into EPSG:3857, aka "WGS 1984 Web Mercator (Auxillary Sphere)"

It is also important to note that this file should not be very complex. Its styling will be simple, and the entire layer will be loaded as a vector to be rendered by the user's browser. Anything more than 10MB should be carefully considered, and probably should be served in another way.

Edit

Choosing edit from and imported Layer's dropdown menu opens a form where you can update the name or the description of your layer:



Note that if you need to change the spatial information of your layer, you'll need to delete this record and upload your new data.

Share

See the sharing section covered above. Shared layers will appear in the "Shared" category of users belonging to groups that you have shared with.

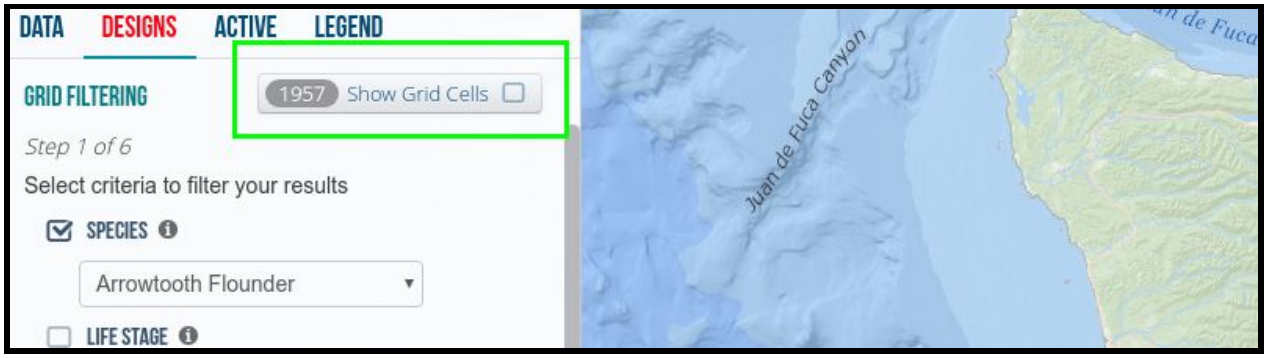
Delete

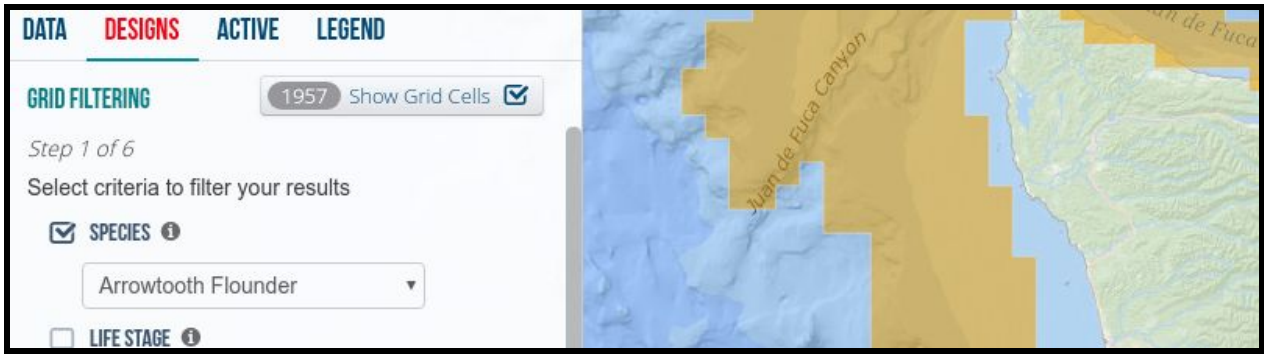
Permanently deletes the imported layer.

Grid Filtering (Designs Tab)

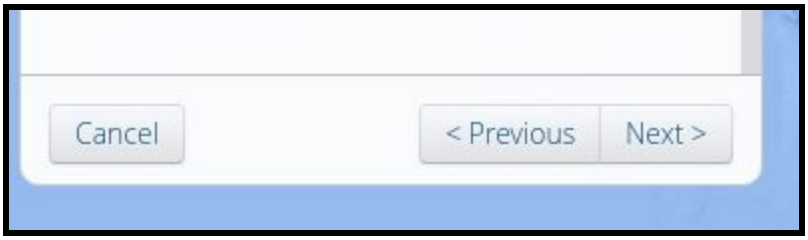
Create

Under the Designs tab, click the "+" sign next to "Grid Filtering".
Fill out the form to narrow down the areas on the map that meet your criteria.
At any point you can view your grid cells by clicking "Show Grid Cells"





Use the buttons at the bottom of the Left Navigation Panel to navigate through the form (or cancel the filtering process):



Finally, name your filter results report and optionally provide a brief description about it and click “Save” to finish:

Edit

Editing works just like creating, except that the form is pre-populated with the answers previously given to create your existing Grid Filtering report. You must Save to make your changes permanent.

Share

See the “Sharing” section above if you need more information about this.

Zoom To

Selecting this zooms the map to show the entire extent of the filtering report.

Delete

Permanently delete your Grid Filtering Results.

Drawings (Designs Tab)

Individual Drawings vs. Collected Drawings (“Scenarios”)

Individual drawings get their own reports. However, you can collect a series of drawings into a “Scenario” for use in comparing different groupings of plans. For example, if you have a series of drawn closures and openings, you would want to collect them into a single scenario if you wanted to compare how they stack up against other proposed plans for fishing closures, in terms of area closed/reopened, amount of habitat protected, etc… To add a drawing to a scenario, use the “Add to Scenario” option covered below.

Create

Create a new Drawing by clicking on the “+” sign next to “Drawings”.
Then follow the drawing steps covered above, or with the on-screen guidance in the Left Navigation Panel.

Edit

Follow the instructions provided on the Left Navigation Panel, or review the section on editing Drawings above.

Share

See the section on Sharing earlier in this document.

Zoom To

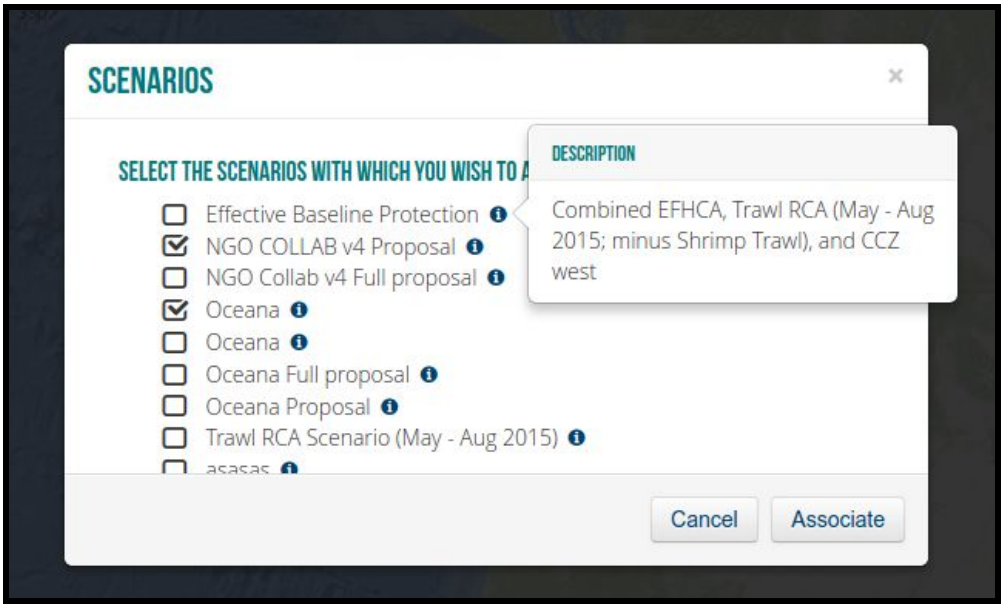
Zoom the map to the extent of your drawing.

Copy

Create a duplicate of your drawing.

Add to Scenario

To add your drawing to a scenario, click on the “Add to Scenario” option in the drawing’s drop-down menu. This will bring up a list of existing scenarios to add your drawing to:



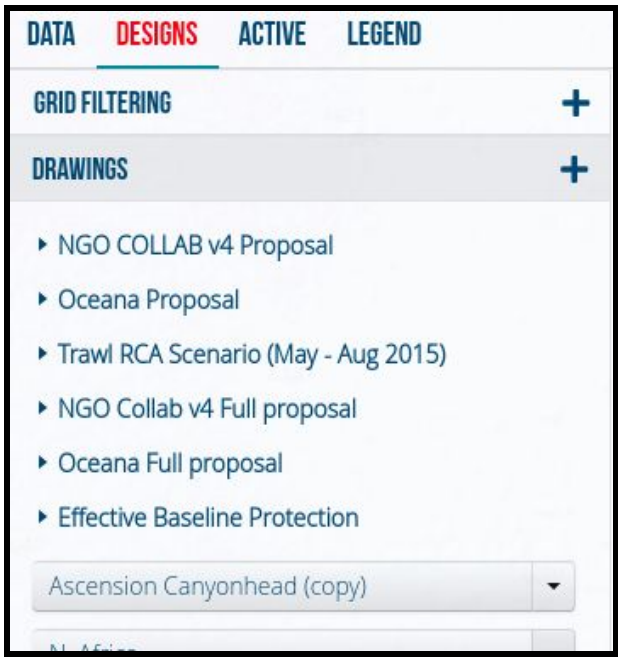
Check the checkbox next to any scenario that you want this drawing included in. You can hover over the “i” icon next to the scenarios to see any description that may be provided for them. Then you can click on “Associate” to finish creating the relationship.

Delete

Permanently deletes this Drawing.

Editing Drawings Associated with a Scenario

Once you have drawings in a scenario, it will show up under your drawing section in blue above your normal drawing records:



Clicking on one of those scenarios will open up all of the drawing records associated with it. All of these function just like the drawings below.
Note that any drawings that were added to the scenario are copied into it. Editing your old drawing will not impact the drawing inside the scenario you previously associated it with.

Scenarios (Designs Tab)

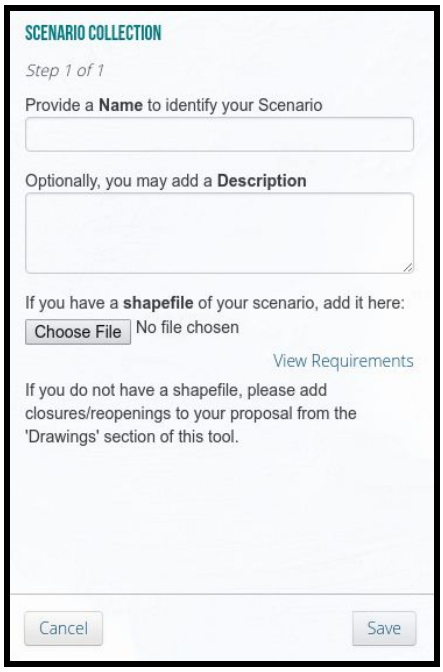
Create or Import

Clicking on the “+” sign next to “Scenarios” begins the process of creating a new Scenario. This may be done in two ways: You can create a blank scenario and add your Drawing records to it, or you can import a zipped shapefile of your scenario, so long as it meets the following criteria:
Uploaded files must be:

- A zipped ('.zip') file containing the elements of a valid ESRI shapefile, including files of type:
    - .dbf
    - .prj
    - .shp
    - .shx
- Projected into EPSG:3857, aka "WGS 1984 Web Mercator (Auxillary Sphere)"
- Contain the following attributes:
    - 'RegAction':
        - The regulatory action to be taken on the area.
        - Values should be either 'close' or 'reopen'
    - 'SiteName':
        - Name of the area

Whichever approach you take, you’ll be provided this form:

- Give your scenario a name
- Provide a brief description of the scenario
- Click “Choose File” if importing a shapefile
    - Click “View Requirements” if you want to review them to be sure your shapefile will work.
- Click save to create the record



Edit (Owner Only)

You may use the same form as create to rename your scenario, update its description, or import an updated shapefile of its data.

Share (Owner Only)

See the sharing section above. You can only share scenarios that you own, or have copied from scenarios shared with you.

Zoom To

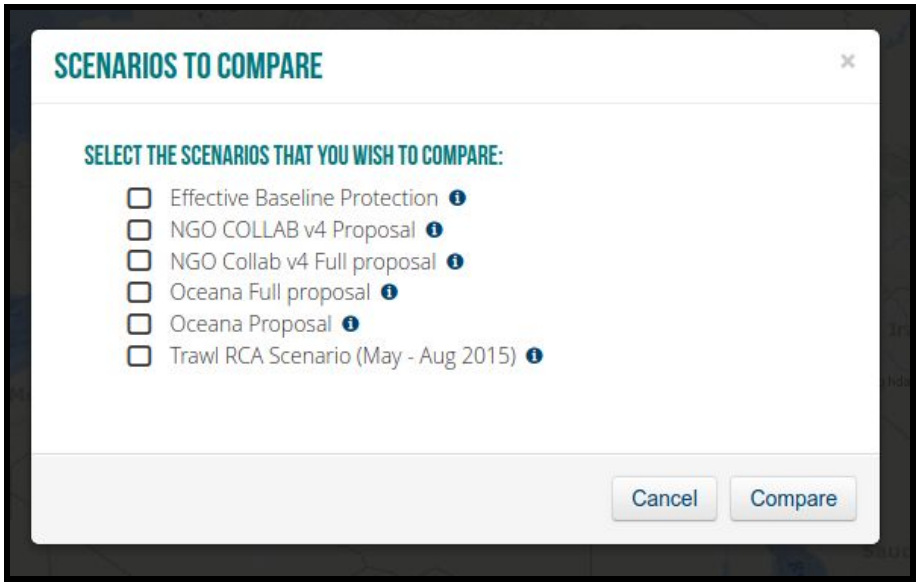
Zoom the map view to the extent of your scenario.

Create Copy

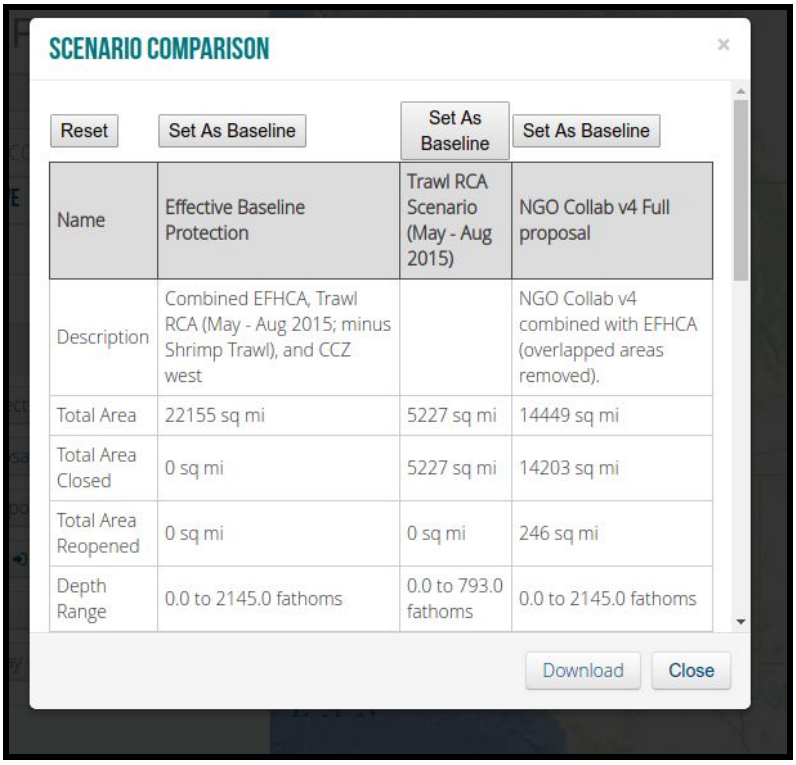
Create a copy of your scenario, including any drawings or features associated with it.

Compare

Clicking Compare from the Scenario's dropdown menu will open a popup with a checklist of available Scenarios to compare:



You can check any number of them, then click compare to see your results:



You can get this report as a difference between scenarios as well. By selecting a scenario to be a baseline (with the corresponding “Set As Baseline” button), you will get numeric values for non-baseline scenarios as the difference:

At any point, you can click “Reset” to have no baseline and just show raw numbers for each scenario. You can also click on “Download” to get the comparison as a .CSV file.

Delete (Owner Only)

Permanently delete this scenario from the MarinePlanner tool.