

# Washington Marine Planner Tutorial

## ***Suggested Tasks:***

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## **Register and Sign In**

From the home page:

- <http://washington.marineplanning.org>

You should see one of the following 3 options.

Option 1:

If you see the following page, you might experiment with the 'try The Washington Marine Planner' link at the bottom of the page, although you will likely have a better experience by using one of the other browsers (or updated browser versions) listed.

There are a number of freely available web browsers that provide optimal performance

**Apple Mac OSX 10.4+**

Supported Browsers

[Safari 3.1+](#)  
[Firefox 3.5+](#)  
[Google Chrome 6.0+](#)

**Windows (2000, XP, Vista)**

Supported Browsers

[Google Chrome 1.0+](#)  
[Firefox 3.5+](#)

*We can not support Microsoft Internet Explorer Browsers earlier than MSIE8 or the Linux Operating System at this time.*

**Additional System Requirements**

In addition to installing one the supported browsers, you must also have:

[Google Earth Plugin](#)  
256 MB RAM (512+ strong recommended)  
3D Graphics Card with 16MB VRAM  
Screen resolution of 1024x768 (recommended 1280x1024), "32-bit True Color"

We see that you are using Firefox 5.0.0 on Windows; you can [try The Bioregion Discovery Tool](#) with the understanding that it is not officially supported.

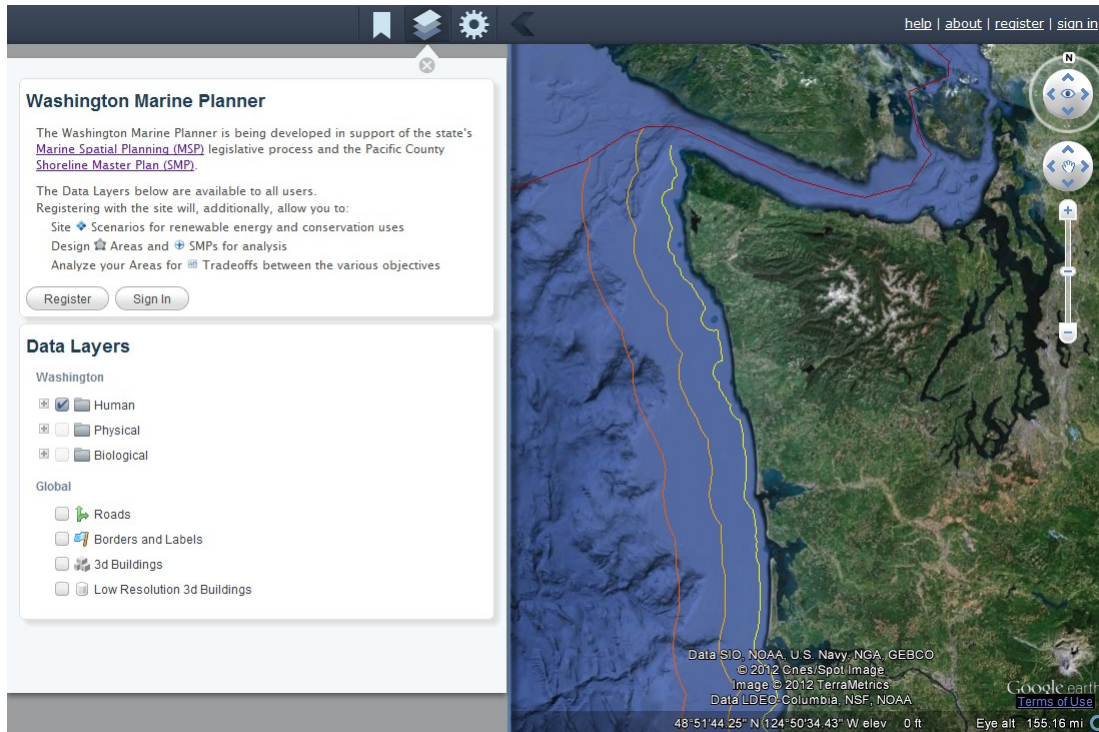
### Option 2:

If you see something similar to the following, you will want to click on the 'Get the Google Earth Plugin now' button to install the Google Earth Plugin. This plugin will allow you to view and interact with the map used in the Washington Marine Planner application.



### Option 3:

Finally, you will arrive at the Washington Marine Planner website that should look a lot like the following:



From here you can view the Data Layers which are available to all users. For additional functionality such as siting Scenarios for renewable energy or conservation objectives, designing Areas or Sites related to Washington's Shoreline Master Program, and Analyze your shapes for Tradeoffs.

To get started:

Click the 'Register' button.

Complete the registration form.

Click the link sent to your email inbox to complete your registration process and Sign In.

## Navigate the Map

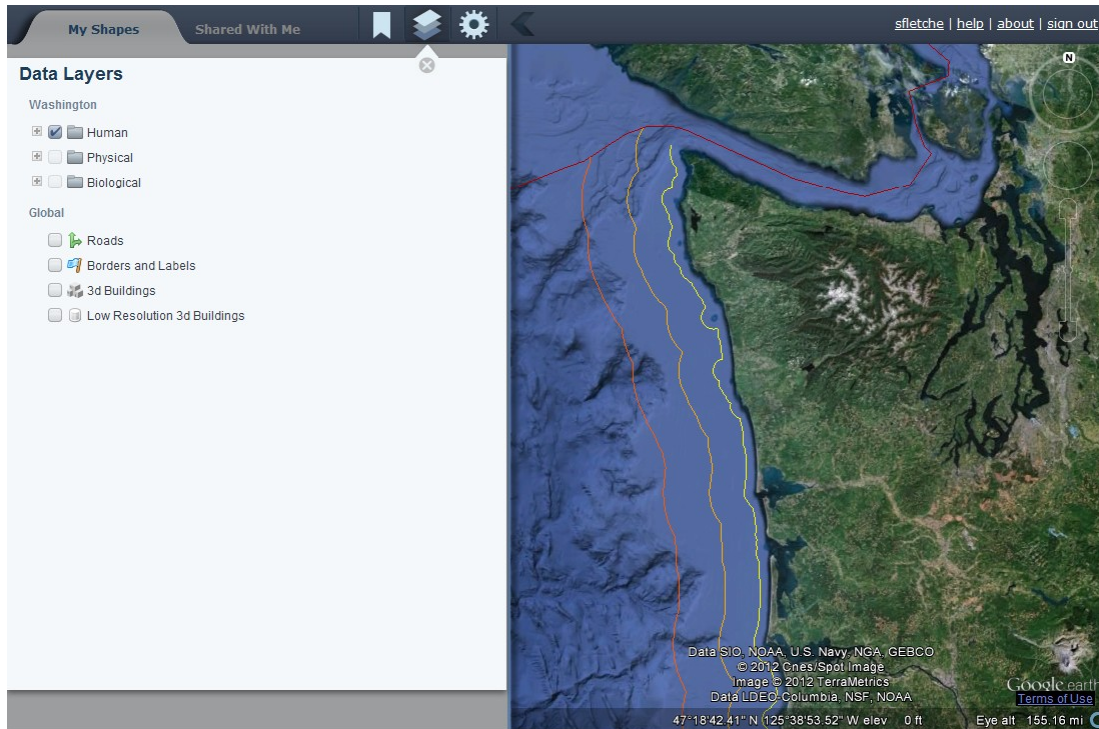
In the right panel you will see the Google Earth map display. The map can be navigated via mouse and keyboard controls. A useful video tutorial for navigating Google Earth can be found [here](#).

Some **commonly used mouse controls** include:

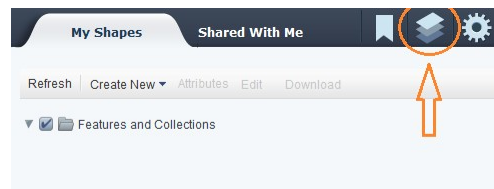
- double-click to zoom in
- use the mouse scroll wheel to scroll in and scroll out
- hold down the mouse button while moving the mouse to 'pan' the map view
- hold the mouse scroll wheel down while moving the mouse to change the 'aspect'
- alt-n can always be used to return the map view to the traditional 'north on top' view
- there are also navigation controls in the top-right corner of the map

## View the Data Layers

Once you have signed in, your screen should look like the image below.



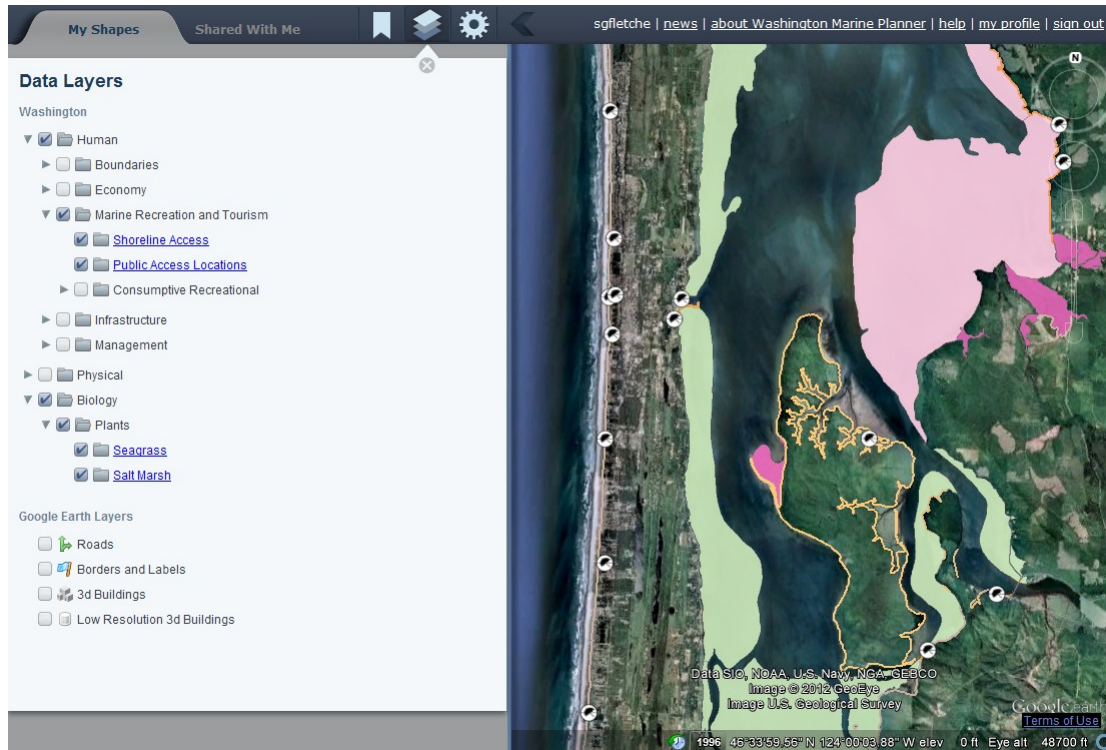
This landing page provides the same public Data Layers that were visible before you logged in. We will leave this page shortly, but you can access these Data Layers at any time through the icon referenced below.



Each of the three Data Layer folders, Human, Physical, Biology can be expanded to show their subfolders and related data layers.

For example, you might want to explore public access sites that are near seagrass and salt marsh areas in Willapa Bay.



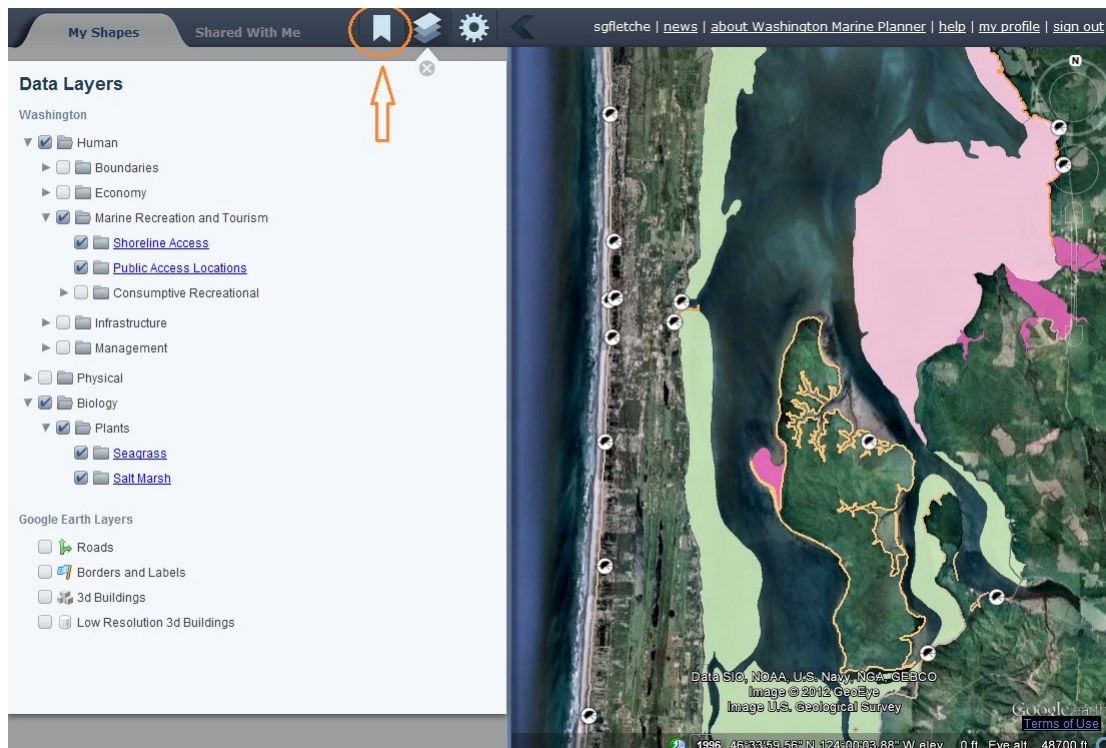


## Create a Bookmark

Sometimes you will want to save a map view for later viewing or sharing with colleagues.

When your map view is how you would like it to be, you can create a bookmark that captures that view.

Simply click the bookmark icon,



Assign it a name, and then Submit.

**My Shapes** Shared With Me

**New Bookmark**

Your map view and public data layers have been recorded. You can recapture the bookmark at any time.

[Recapture Bookmark](#)

**Bookmark Name \***

**Description**

[show details](#)

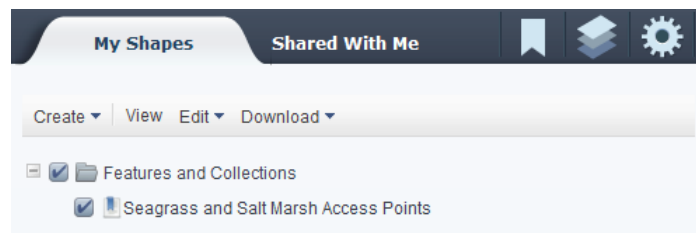
[Cancel](#) [Submit](#)

sgfletche | [news](#) | [about Washington Marine Planner](#) | [help](#) | [my profile](#) | [sign out](#)

Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2012 GeoEye  
Image U.S. Geological Survey  
Google Earth  
[Terms of Use](#)

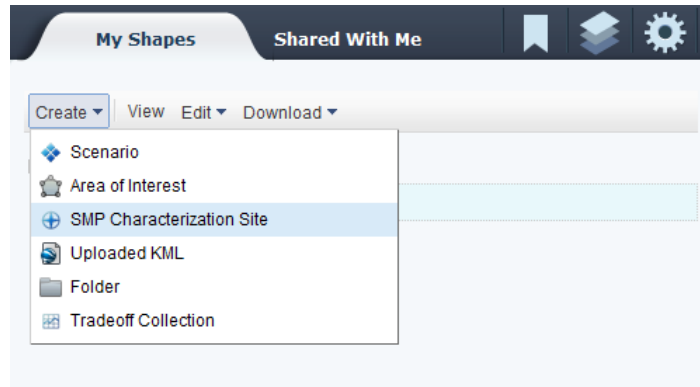
1996 46°33'58.53"N 124°00'07.81"W elev 0 ft. Eye alt 48700 ft

After you have created a bookmark, you will be able to access your bookmark at anytime, either through the URL provided, or from the My Shapes panel on the application.

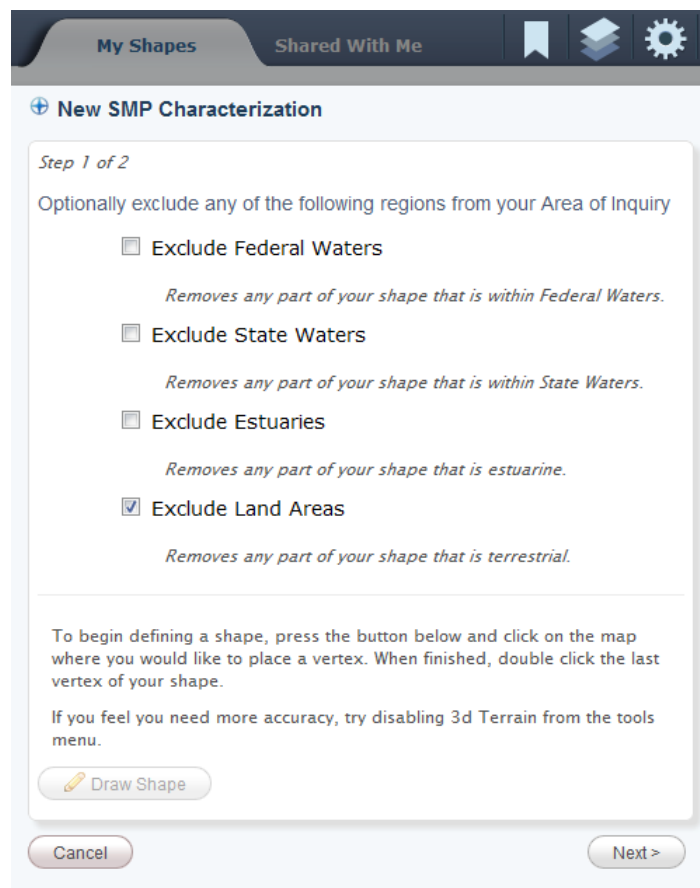


## Generate an SMP Site

To generate a new SMP Characterization site, select Create New at the top of the My Shapes panel and select SMP Characterization Site

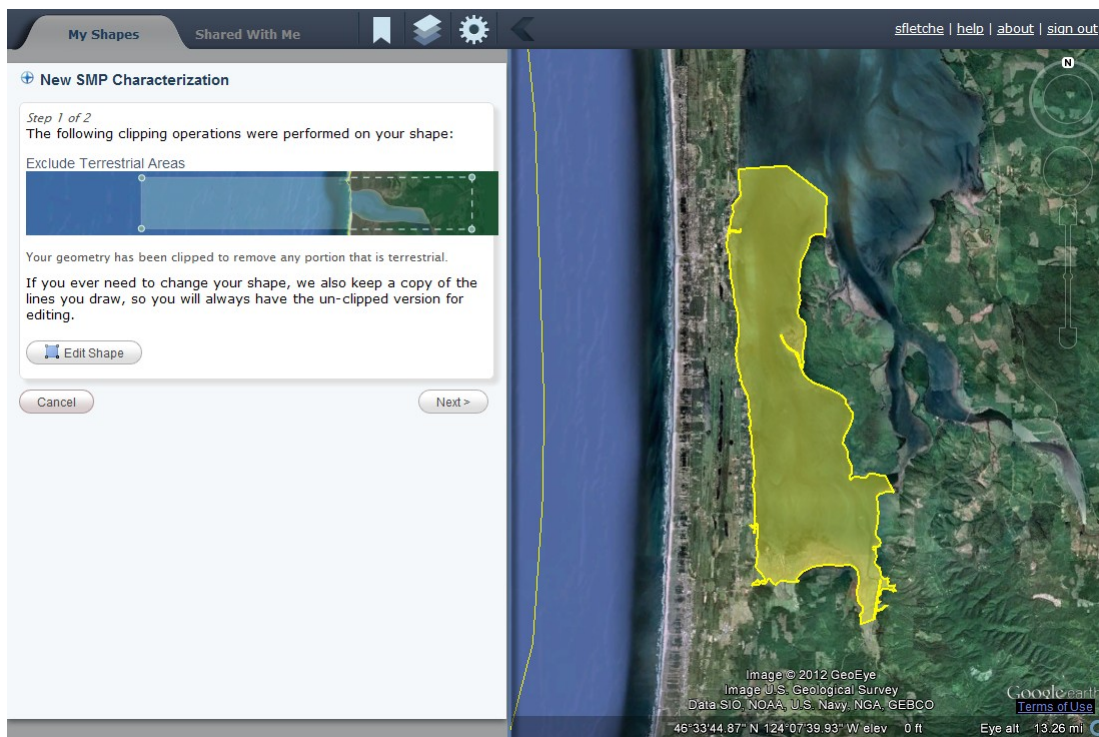


In Step 1, you can select any of the clipping behaviors available. Each of these options will remove any part of your shape that contains the areas mentioned in the descriptions. For example, you may wish to draw a shape that is clipped to the shoreline and so you will want to Exclude Land Areas from your resulting geometry.



After you have selected your clipping behaviors, zoom in on the map to the area that you are interested in exploring and click Draw Shape to begin drawing your shape.

When you are finished with your shape, double-click the final point to complete the drawing process and the Marine Planner will perform the clipping behaviors and validate your shape. An explanation for the result will be offered in the left panel (with the option for further editing) and the resulting shape will be displayed on the map on the right.

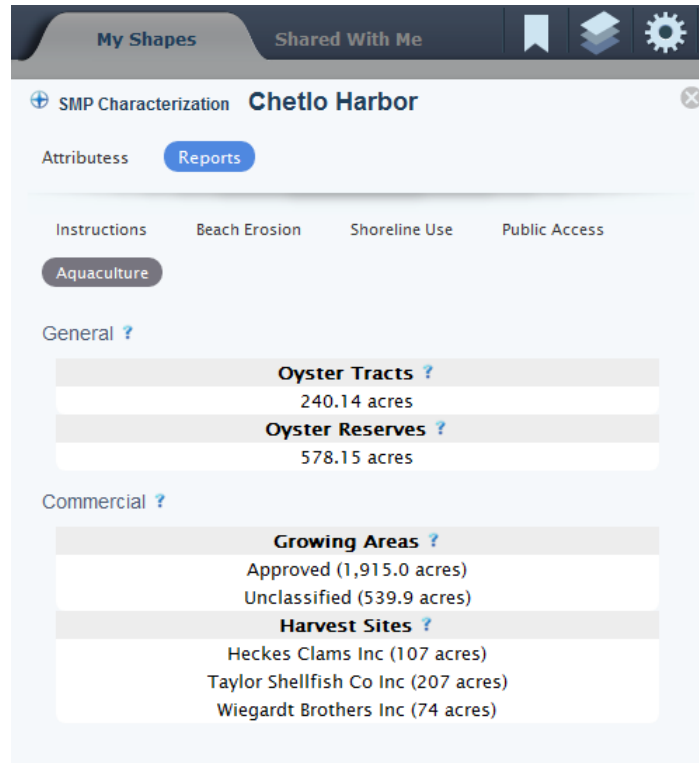


When you are satisfied with your shape, click Next to go to Step 2 and assign your SMP Site a name and an optional description.

## View SMP Site Reports

From the Attributes panel of your SMP site, you will find SMP reports specific to your shape: Beach Erosion, Shoreline Use, Public Access, and Aquaculture.

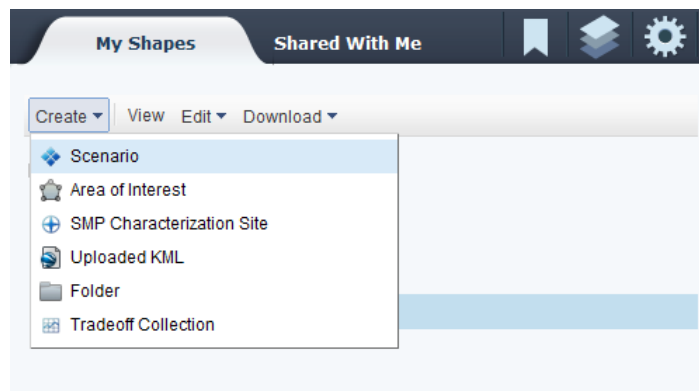




## Generate a Scenario

Multi-Objective Scenarios can be used to identify coastal areas that have desirable characteristics that meet certain criteria. For example, you may wish to identify areas that could be used for generating wind energy. You can provide parameters such as a distance from the shoreline or substrate type along with characteristics such as wind energy potential, and the application will display those areas that match your request.

First, click Create New at the top of the My Shapes panel, then select Scenario.



In Step 1 of the 4 step Scenario creation process, you'll want to select the objective(s) that you have in mind (in this case we'll select Wind).

It's worth noting that hovering over any of the blue question marks will bring up tooltips containing additional information.

**My Shapes** **Shared With Me** [Icons]

**New Scenario**

*Step 1 of 4*

Choose one or more categories:

**Renewable Energy ?**

- ☐ Tidal ?
- ☐ Wave ?
- ☒ Wind ?

**Conservation ?**

- ☐ Benthic ?
- ☐ Nearshore ?
- ☐ Pelagic ?

The renewable energy scenario is designed to identify suitable areas for renewable ocean energy (tidal, wave, wind) using input parameters including sediment type, depth, and power potential.

An additional step is to optimize industry recommended siting criteria while minimizing conflicts with other ocean uses.

**Cancel** **Next >**

In Step 2, we'll uncheck the parameters related to Ports and Depth so that we will only concern ourselves with Distance to Shore, Substrate Type, and Wind Energy Potential for now.

**My Shapes** **Shared With Me** [Icons]

**New Scenario**

*Step 2 of 4*

Select 1 or more parameters from your chosen objective(s):

**Wind Energy**

- ☒ Distance to Shore ?
- ☐ Distance to All Ports ?
- ☐ Distance to Deep Water Port of Astoria ?
- ☐ Distance to Deep Water Port of Grays Harbor ?
- ☐ Depth ?
- ☒ Substrate ?
- ☒ Wind Potential ?

**< Previous** **Cancel** **Next >**

In Step 3, we'll provide a distance to shore, various substrate types, and wind potentials.

My Shapes

Shared With Me

New Scenario

Step 3 of 4

Provide suitable values for each of your chosen parameters:

Wind Energy [\[Hide Parameters\]](#):

Distance to Shore (miles)  ?

Substrate Types ?  

☐ Boulder

☐ Cobble

☐ Gravel

☐ Island/Rock

☒ Mud

☐ Rock

☒ Sand

☐ Shell

Wind Potential ?  

☐ Poor (0 - 200 W/m2, < 12.5 mph)

☐ Marginal (200 - 300 W/m2, 12.5 - 14.3 mph)

☐ Fair (300 - 400 W/m2, 14.3 - 15.7 mph)

☒ Good (400 - 500 W/m2, 15.7 - 16.8 mph)

☒ Excellent (500 - 600 W/m2, 16.8 - 17.9 mph)

☒ Outstanding (600 - 800 W/m2, 17.9 - 19.7 mph)

☒ Superb (> 800 W/m2, > 19.7 mph)

< Previous

Cancel

Next >

Finally, in Step 4, we'll provide a name and Submit.

My Shapes

Shared With Me

New Scenario

Step 4 of 4

Provide a name to identify your scenario:

Name

My Wind Scenario

Optionally, you may add a description and/or attach a file:

Description

Support File

Choose File

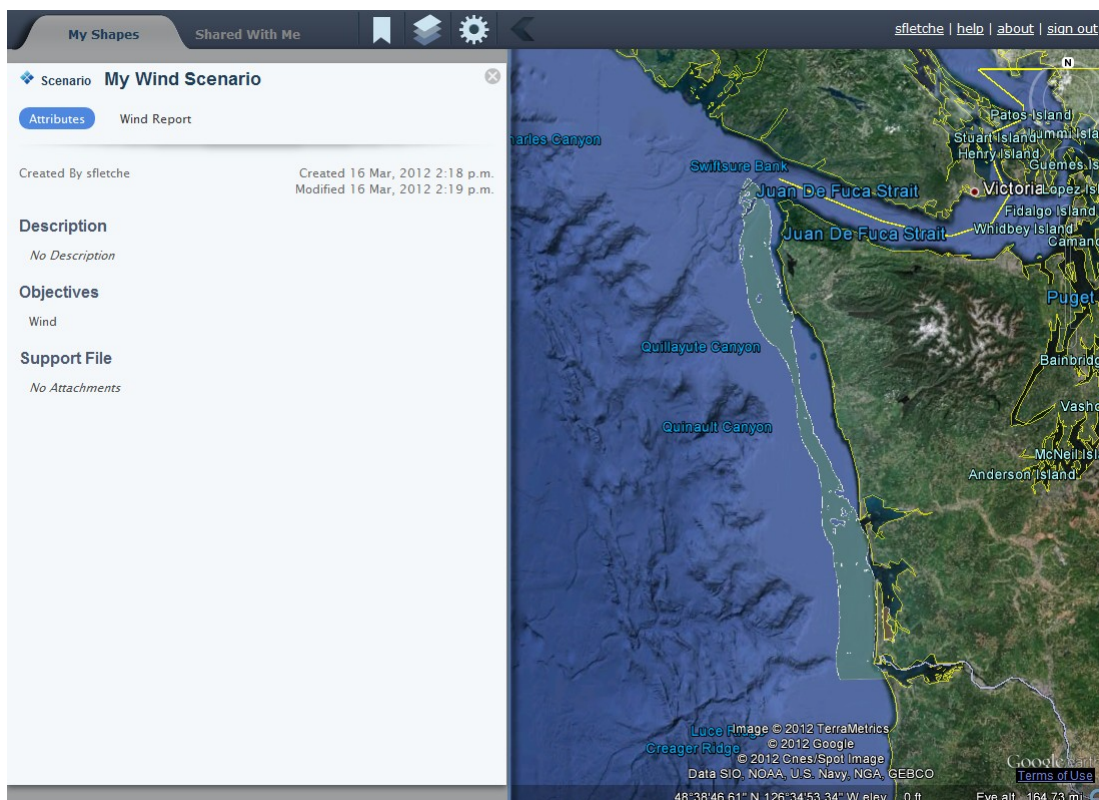
No file chosen

< Previous

Cancel

Submit

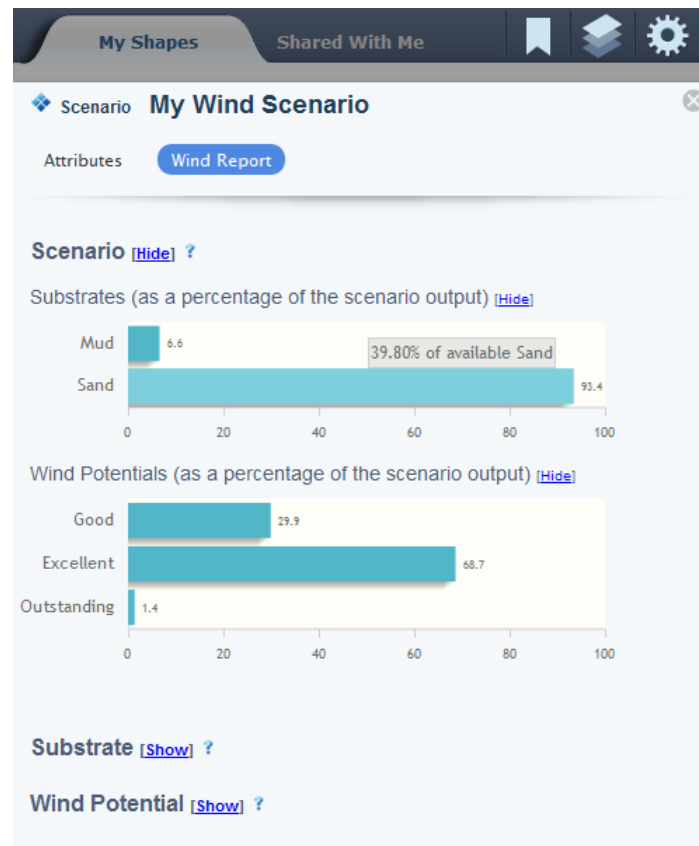
The application will identify those areas along the Washington coast that meet the requested parameters and characteristics and display them on the map.





## View Scenario Reports

From this Attributes panel you can view the Wind Report generated for your scenario.



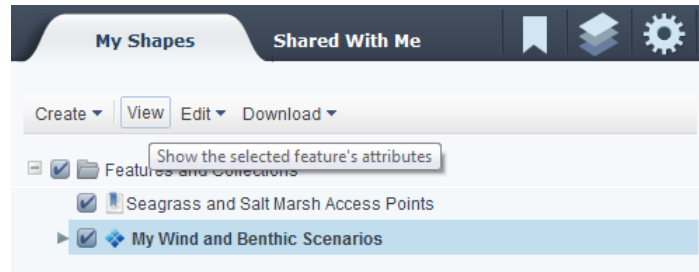
The Scenario Level Report details the make-up of your Wind Scenario with percentage make-up of each of the substrates, and wind potentials. Hovering over a bar provides additional information. For example, placing the mouse pointer over Sand bar informs the user that this scenario contains 39.80% of all available Sand.

The Substrate Level Report displays similar information but drilled down for each substrate in your scenario. For example, while the Scenario level report showed how much of your scenario is Outstanding, Excellent, and Good (the 3 available Wind Potentials), the Substrate level report shows the user how much of your scenario's Sandy area is Outstanding, Excellent, and Good (with additional charts for any other substrates present).

The Wind Potential Reports are similar to the Substrate Reports with information drilled down for each Wind Potential.

### Note:

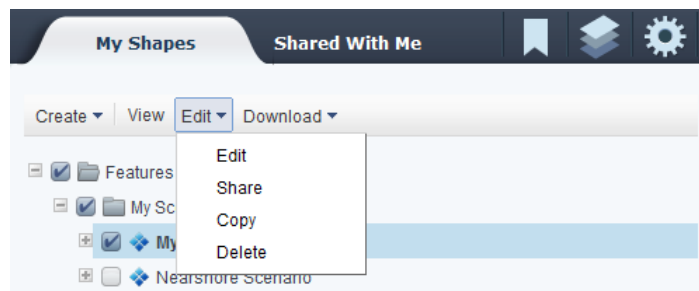
This Wind Scenario is also now located on your My Shapes panel next to the Bookmark we created earlier.



If you find yourself on the My Shapes panel wanting to return to this attributes View (so that you can view scenario reports), simply select the Scenario from My Shapes and then click View (or double click the Scenario name).

## Multi-Objective Scenarios

At this time, we can view the scenario report for our wind energy scenario. To view this report we might Edit our current scenario to include a Benthic objective that identifies areas with Sandy substrate on the Innershelf.



*Step 1 of 4*

Choose one or more management objectives from the following categories:

Renewable Energy ?

- ☐ Tidal ?
- ☐ Wave ?
- ☒ Wind ?

Conservation ?

- ☒ Benthic ?
- ☐ Nearshore ?
- ☐ Pelagic ?

*Step 2 of 4*

Select 1 or more parameters from your chosen objective(s):

Wind Energy

- ☒ Distance to Shore ?
- ☐ Distance to All Ports ?
- ☐ Distance to Deep Water Port of Astoria ?
- ☐ Distance to Deep Water Port of Grays Harbor ?
- ☐ Depth ?
- ☒ Substrate ?
- ☒ Wind Potential ?

Benthic Conservation

- ☒ Substrate ?
- ☒ Depth Class ?
- ☐ Geomorphology ?

*Step 3 of 4*

Provide suitable values for each of your chosen parameters:

Wind Energy [[Show Parameters](#)]:

Benthic Conservation [[Hide Parameters](#)]:

Substrate Types ?

- ☐ Boulder
- ☐ Cobble
- ☐ Gravel
- ☐ Island/Rock
- ☐ Mud
- ☐ Rock
- ☒ Sand
- ☐ Shell

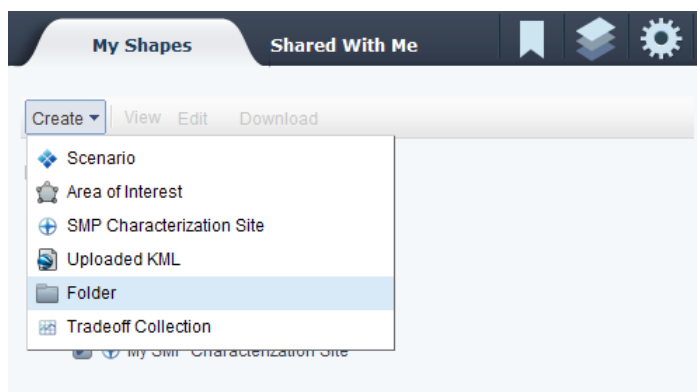
Depth Classes ?

- ☒ Innershelf
- ☐ Midshelf
- ☐ Mesobenthal
- ☐ Bathybenthal

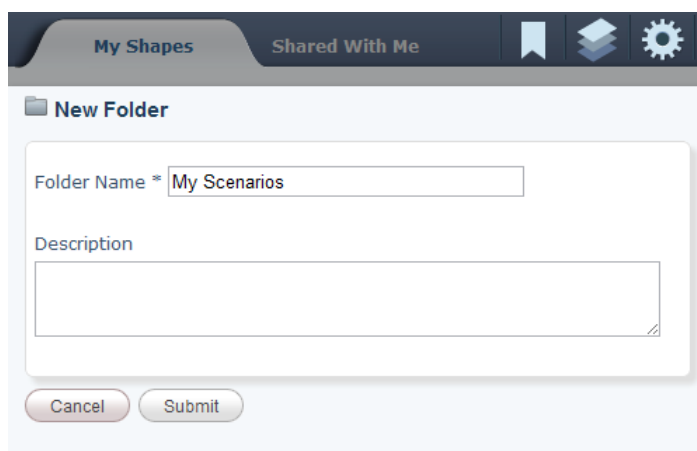
Once this objective has been added to our initial scenario, we will have additional outputs on the map, and reports available for both objectives, one for Benthic Conservation and one for Wind Energy.

## Create a Folder

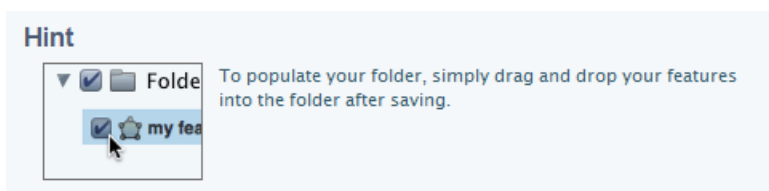
Folders are available to help you organize your bookmarks, sites, and scenarios in the My Shapes tab. To create a folder, select Folder from the Create New menu in the My Shapes panel.



Give your folder a name and click Submit.

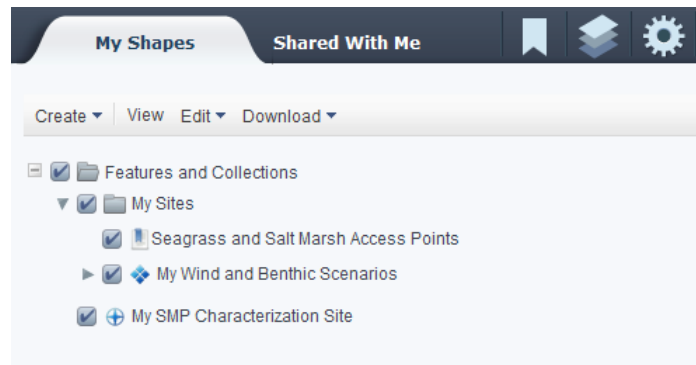


Note the Hint at the bottom of this panel that explains that from the My Shapes panel, you can simply drag and drop any of your features into your new folder.



Here you can see that I've added my bookmark and my wind scenario to the My Sites folder.





## Tradeoff Analysis Basics

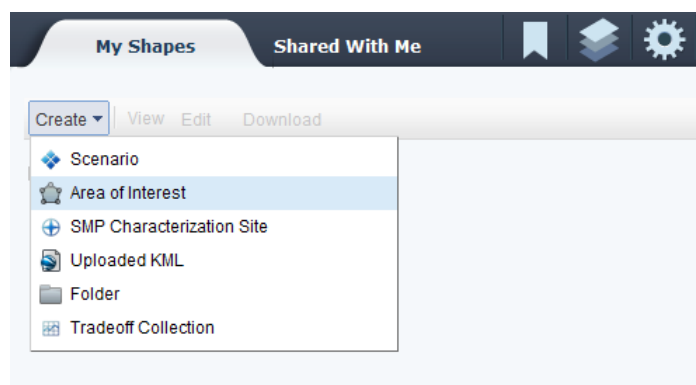
The intended workflow leading up to the Tradeoff Analysis can be seen as having 3 stages (of which only the last 2 are actually necessary for the Tradeoff Analysis).

1. Use Scenario planning to determine potential areas of interest along the coast
2. Create actual Areas of Interest (or SMP Sites) based on the results of the scenario planning or on your own knowledge and experience
3. Group the sites in a Tradeoff Collection, and view tradeoff analysis on those sites contained within that collection.

As we have covered step 1 in the Generate a Scenario section, we will now cover the remaining two steps.

## Create Areas of Interest

From the Create New menu, select Area.



From the initial view you can select various clipping behaviors (similar to SMPs) that will be

performed on your shape after you have finished drawing.

**My Shapes** **Shared With Me**

**New Area of Interest (AOI)**

Step 1 of 2

Optionally exclude any of the following regions from your Area of Inquiry

- ☐ Exclude Federal Waters  
*Removes any part of your shape that is within Federal Waters.*
- ☐ Exclude State Waters  
*Removes any part of your shape that is within State Waters.*
- ☒ Exclude Estuaries  
*Removes any part of your shape that is estuarine.*
- ☒ Exclude Land Areas  
*Removes any part of your shape that is terrestrial.*

To begin defining a shape, press the button below and click on the map where you would like to place a vertex. When finished, double click the last vertex of your shape.

If you feel you need more accuracy, try disabling 3d Terrain from the tools menu.

Draw Shape

Cancel Next >

After you have selected 0 or more clipping behaviors, zoom into an area that you are interested in exploring and click Draw Shape to begin drawing your shape.

When you are finished drawing your shape (double-click the final point to complete the drawing process) the Marine Planner will perform the selected clipping operations and display the result.

Now click Next, and assign a name to your Area before clicking Submit.

**My Shapes** **Shared With Me**

**New Area of Interest (AOI)**

Step 2 of 2

Provide a name to identify your Area:

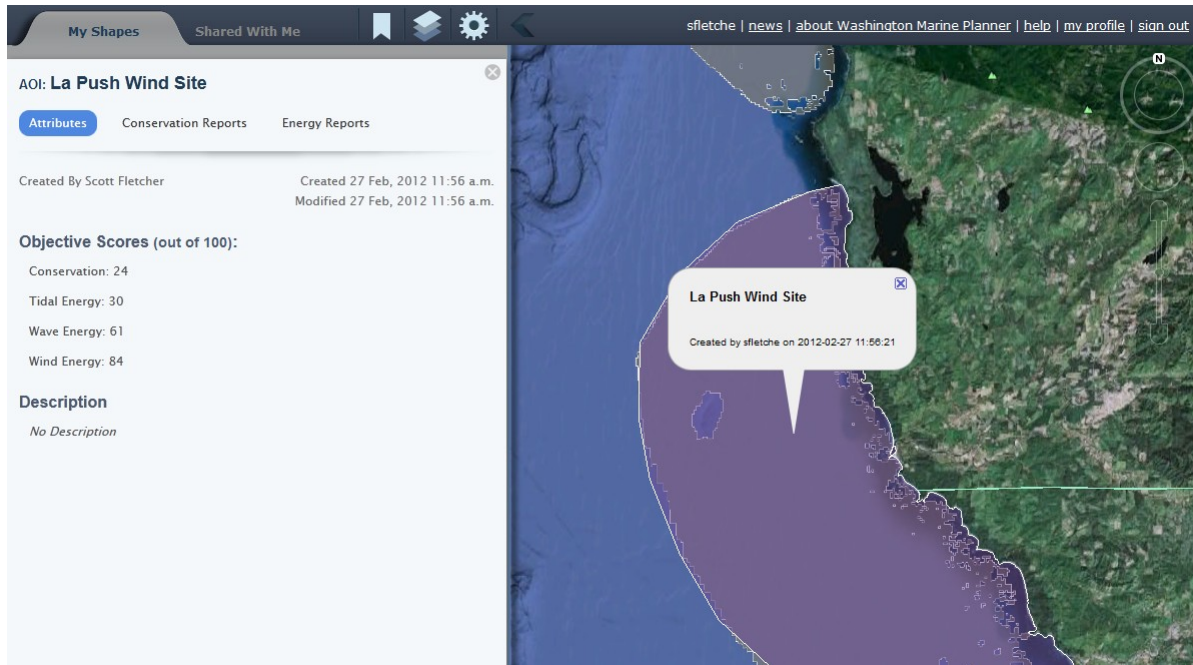
Name \*

Description

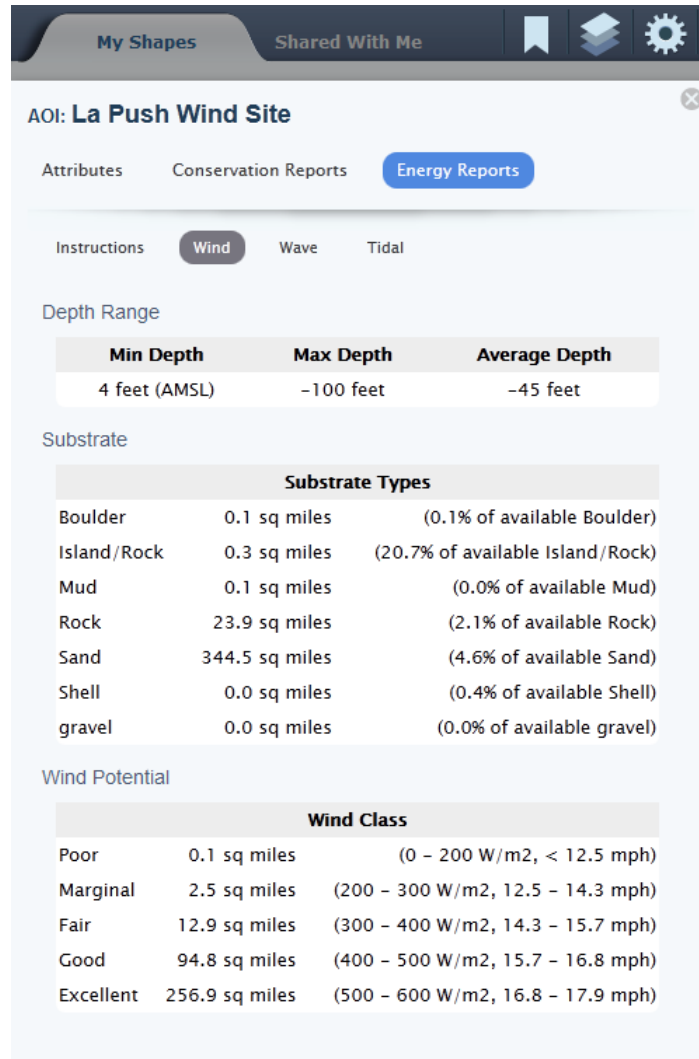
< Previous Cancel Submit

## Area Reports

Each Area that you create will have both Conservation and Energy reports available. Estimated scoring is also determined for each of your Areas in the categories of Conservation, Tidal Energy, Wave Energy, and Wind Energy.



Since our initial interest was finding a suitable Wind Energy site, we might view the Wind Energy report by first selecting the Energy Reports tab, followed by the Wind tab.

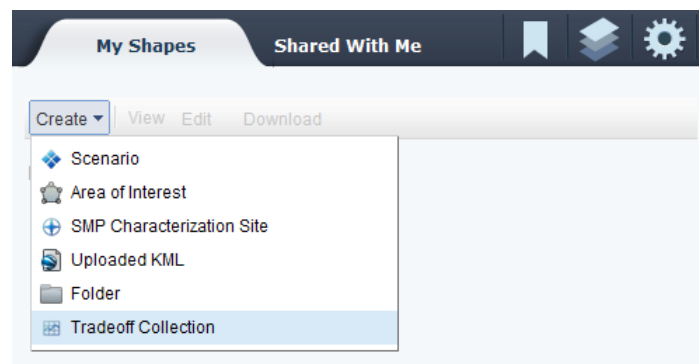


These reports are intended to provide a more detailed account of your Area and provide an indication of how your Area might be considered from the viewpoint of other objectives.

## Tradeoff Analysis

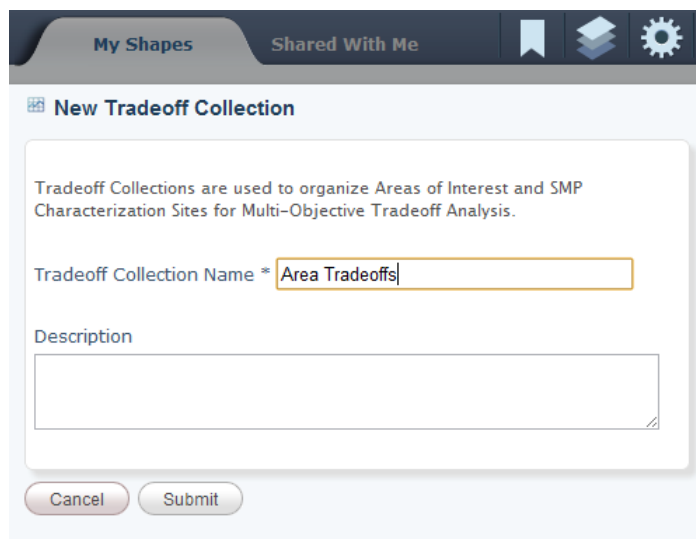
Once you have created a few Areas of Interest you may want to organize them into a Tradeoff Collection so that you can view the Tradeoff Analysis for your collection of shapes.

Click the Create menu and select Tradeoff Collection.





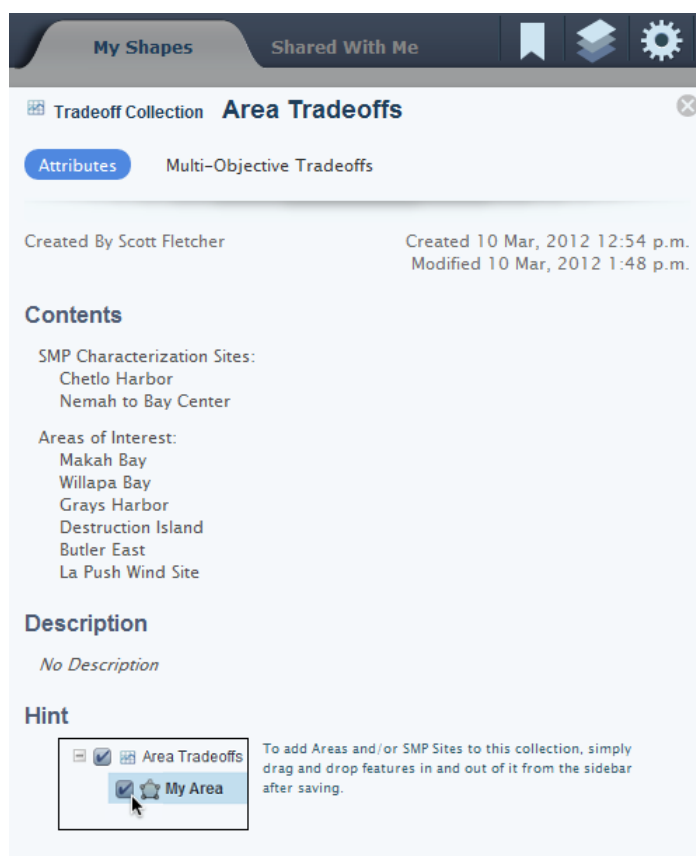
Assign a name to your Tradeoff Collection.



The screenshot shows a web interface with a top navigation bar containing 'My Shapes', 'Shared With Me', and icons for a bookmark, layers, and settings. Below the navigation bar is a modal window titled 'New Tradeoff Collection'. Inside the modal, there is a text box for 'Tradeoff Collection Name' with the value 'Area Tradeoffs' entered, and a larger text area for 'Description'. At the bottom of the modal are 'Cancel' and 'Submit' buttons.

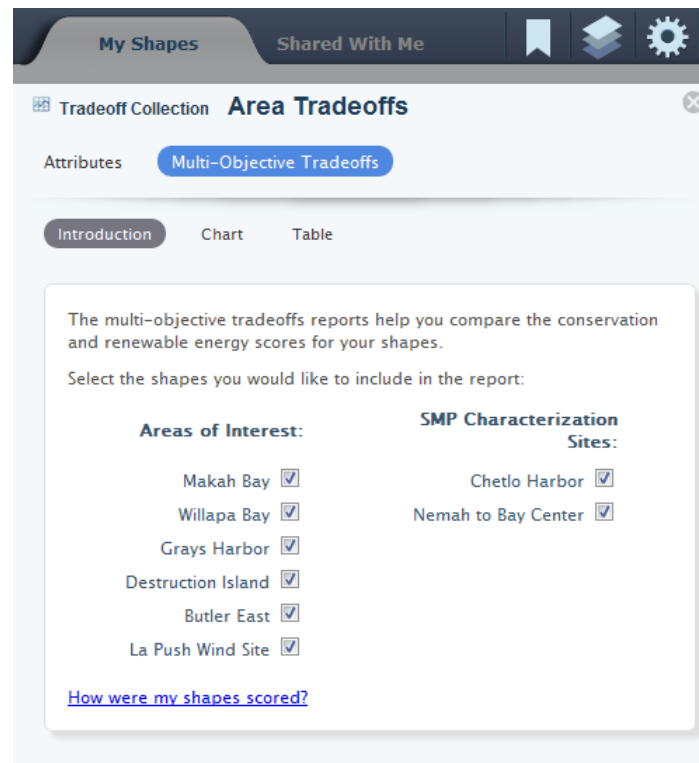
After you click Submit, a Tradeoff Collection feature will be created and from the View menu you can see that your current Tradeoff Collection is empty (we haven't added any shapes yet) so return to My Shapes and drag any Areas or SMP Sites into your Tradeoff Collection that you would like to compare.

After you have dragged some of your shapes into the collection, select your Tradeoff Collection and click View to see the attributes (summary of contents, description, and reports).



The screenshot shows the 'Area Tradeoffs' Tradeoff Collection view. The top navigation bar is the same as in the previous image. Below it, the title bar shows 'Tradeoff Collection Area Tradeoffs' with a close button. The main content area has a tab labeled 'Attributes' and a subtitle 'Multi-Objective Tradeoffs'. It displays the creator 'Created By Scott Fletcher' and the creation/modification dates 'Created 10 Mar, 2012 12:54 p.m.' and 'Modified 10 Mar, 2012 1:48 p.m.'. The 'Contents' section lists 'SMP Characterization Sites' (Chetlo Harbor, Nemah to Bay Center) and 'Areas of Interest' (Makah Bay, Willapa Bay, Grays Harbor, Destruction Island, Butler East, La Push Wind Site). The 'Description' section shows 'No Description'. The 'Hint' section includes a diagram showing a mouse cursor dragging 'My Area' into the 'Area Tradeoffs' collection and a text box stating: 'To add Areas and/or SMP Sites to this collection, simply drag and drop features in and out of it from the sidebar after saving.'

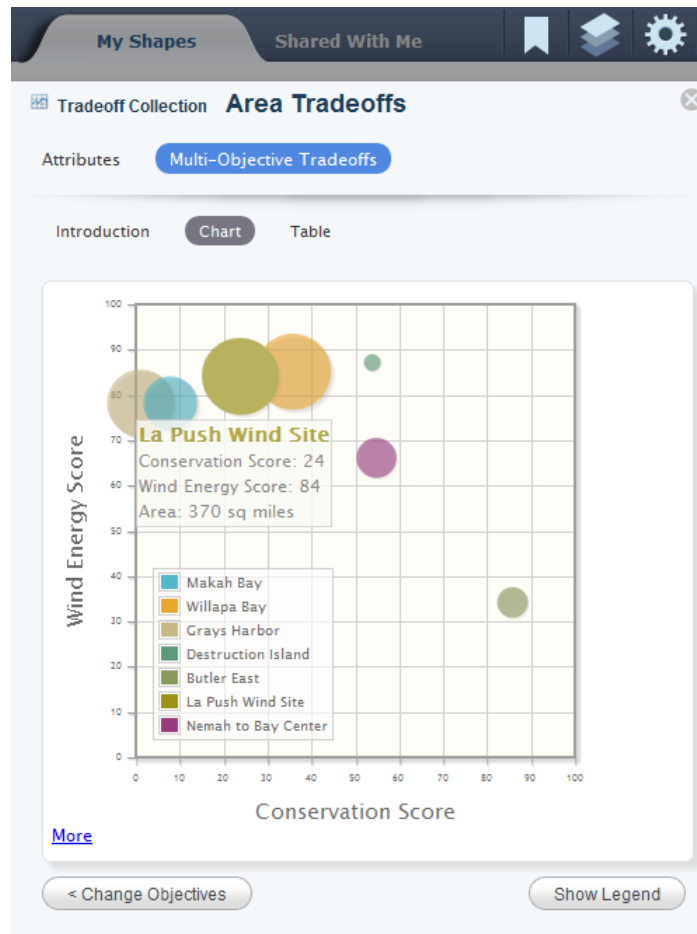
From this View panel, select Multi-Objective Tradeoffs to enter this reporting section.



From here, you can select/deselect any shapes that you would like to show/hide from the Chart and Table reports.

We have provided two ways to view the tradeoff analysis.

1. The Chart tab allows the user to choose 2 objectives to compare on a scatter plot visualization. To see the Conservation scores plotted against the Wind Energy scores of your sites, choose those as objective #1 and #2 and click Show Chart.



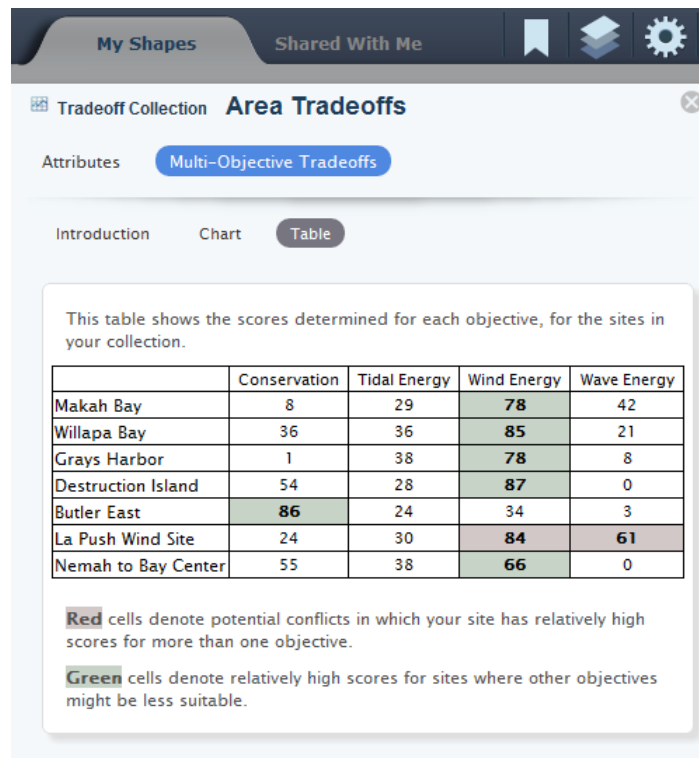
Hovering over a bubble provides the 2 scores and the size of the site.

In our case, areas in the bottom-right have high scores for their conservation potential and lower scores for their wind energy potential.

Areas in the top-left are scored highly for their wind energy potential while less so for their conservation potential.

Areas in the top-right are scored highly for both wind energy and conservation. One might anticipate that these sites in the top-right are sites with greater potential for conflicting interests.

2. The Table tab is an alternative view to the scatterplot in the Chart tab. The Table tab provides tabular output showing all scores (for the conservation objective and each of the energy objectives) for the sites in your collection.



The sites contained within your collection are listed in the left column while the objectives are listed in the first row along the top.

This display highlights those areas that are highly valued for more than a single objective (red) and therefore candidates for conflict, while also denoting those areas that are valued highly for a single objective (green) indicating a lower likelihood of conflict.

We can see here that our La Push Wind Site has a high score for both Wind and Wave Energy, while the other sites have a high score for either Wind or Conservation.

If you have any questions, or experience any problems with the site, please let us know.  
[help@marineplanning.org](mailto:help@marineplanning.org)

-The Marine Planning Development Team