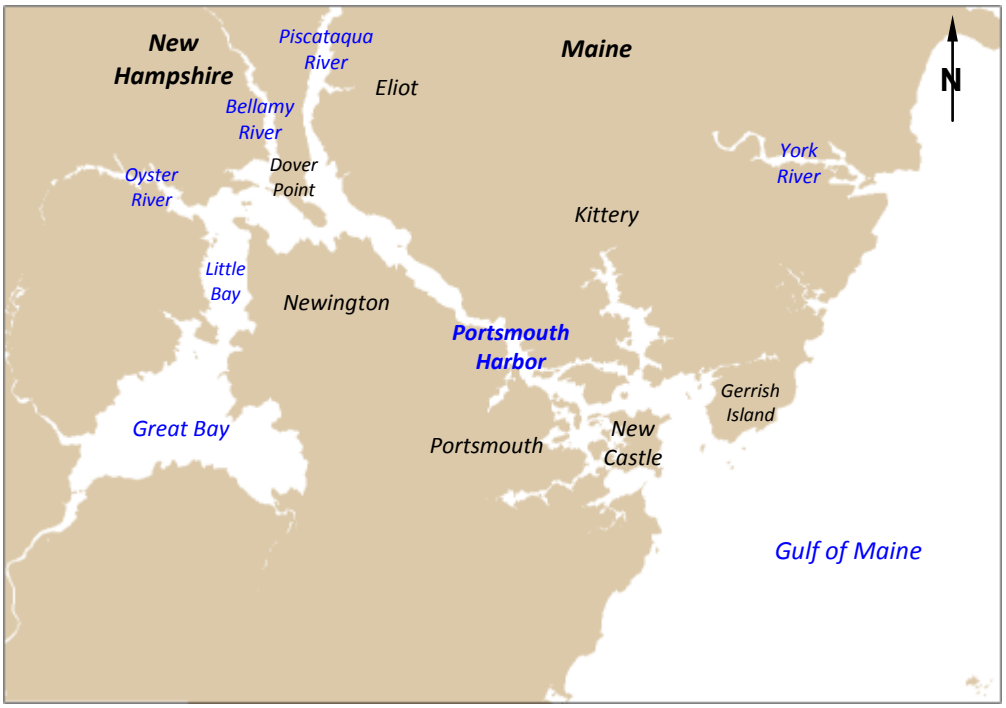
User's Guide

Welcome to the Location File for Portsmouth Harbor! Portsmouth Harbor stretches across Newington, Portsmouth, and New Castle in New Hampshire, and the Maine communities of Kittery and Eliot. The last 8.8 miles of the 13-mile long Piscataqua River constitute the harbor. The Piscataqua has one of swiftest and most difficult currents in the country. When the tide comes in, it reverses the river's normal flow. Travel by tankers and other large vessels is restricted to slack tide, when the current is near zero. This ice-free deep-water harbor has been used for shipping since the 1600s.



Blue text represents water bodies or waterways.

NOAA has created Location Files for different U.S. coastal regions to help you use the General NOAA Operational Modeling Environment, GNOME. In addition, on a case-by-case basis, NOAA develops international Location Files when working with specific partners.

Each Location File contains information about local oceanographic conditions that GNOME uses to model oil spills in the area covered by that Location File. Each Location File also contains references (both print publications and Internet sites) to help you learn more about the location you are simulating.

As you work with the Location File for Portsmouth, GNOME will prompt you to:

1. Choose the model settings (start date and time, and run duration).
2. Select the month for the uncertainty parameters.
3. Input the wind conditions.

GNOME guides you through each of these choices. Each window has a button that leads you to helpful information and the general Help topic list. If you need help setting up the model, click the "Help" button. When you need to input the wind conditions in the "Choosing Wind Type" window, you can click the "Finding Wind Data" button to see a list of web sites that publish wind data for this region.

More information about GNOME and Location Files is available at http://response.restoration.noaa.gov/software/gnome/gnome.html.

Technical Documentation

Background

Portsmouth Harbor is an enclosed port with a narrow opening to the Atlantic Ocean. The largest river entering the area is the Piscataqua River and is approximately 12 miles long. The port and its approaches are dredged and maintained at a minimum depth.

Current Patterns

The Portsmouth Location File contains four current patterns: tides and outer coast. All current patterns were created with the NOAA Current Analysis for Trajectory Simulation (CATS) hydrodynamic application. The outside mean current pattern is set to flow from the north to the south. This pattern should not be relied upon to reflect any variability in the currents. Caution should be exercised with the use of these currents.

This Location File was the first to be created using a long-term current meter record, so currents and uncertainty bounds were scaled differently each month. As a result, when you set up your scenario, you will need to select a month to determine the uncertainty parameters. If your model run begins and ends in the same month, select that month for uncertainty parameters. If your model run spans a month, we suggest that you run GNOME twice, once for the beginning month and once for the ending month.

References

You can get more information about the Portsmouth Harbor area from these publications and web sites:

General Information

Seacoast, NH: Port of Portmouth
http://seacoastnh.com/business/port.html
An overview of Portsmouth Harbor.

Gundalow Company: Map of the Piscataqua Maritime Region
http://gundalow.org/gc_map.asp
Map of the region, provided by the non-profit, Gundalow Company.

Tides

NOAA Tides and Currents
http://tidesandcurrents.noaa.gov/geo.shtml?location=Portsmouth%2C+NH
Tide and current data for Fort Point, NH (Station 8423898).

Maine Boats, Homes, and Harbors
http://www.maineboats.com/tide-charts
Tide charts for Maine and New Hampshire.

Wind and Weather

National Data Buoy Center
http://www.ndbc.noaa.gov/

1. Real-time weather and wave information: The site opens with the "Recent Data" view. On the clickable map, zoom and pan to the Portsmouth area. To view real-time weather data, click a station ID number on the map.
2. Historical information: On the Home page, click the "Historical Data" radio button. On the clickable map, select the Portsmouth Harbor area. To view historical marine data, click a station on the map.

NOAA National Weather Service (NWS) Point Forecasts
http://forecast.weather.gov/MapClick.php?lat=43.071700&lon=-70.763100
Point forecast for Portsmouth, NH.
http://forecast.weather.gov/MapClick.php?lat=43.07390374227269&lon=-70.68191528320312&site=gyx&smap=1&marine=0&unit=0&lg=en
Point forecast for Kittery Point, ME.

NOAA National Weather Service (NWS)
http://www.nws.noaa.gov/view/states.php?state=NH
Weather data and products for New Hampshire.

NOAA National Weather Service (NWS)
http://www.nws.noaa.gov/view/states.php?state=ME
Weather data and products for Maine.

Weather Underground: Portsmouth, NH
http://www.wunderground.com/US/NH/Portsmouth.html
Current conditions and 5-day forecast for Portsmouth, NH.

Oil Spill Response

NOAA Emergency Response Division (ERD)
http://response.restoration.noaa.gov
Tools and information for emergency responders and planners, and others concerned about the effects of oil and hazardous chemicals in our waters and along our coasts.