

# Navy METOC GHRSSST Sea Surface Temperature Web Map Service

## Introduction

The Royal Australian Navy METOC Branch have developed a web map service and web-based viewing application based on data provided by the Group for High Resolution Sea Surface Temperature (GHRSSST). A number of analyses are available with global coverage for the latest 14-day period, from sources including ABOM, NAVO, NCDC, REMSS, and UKMO. A multi-product ensemble analysis (GMPE) is available for official use only, whereas other analyses are public. The viewing application allows users to zoom to any area of interest and to create customised time loops of the images. Raster images can be overlaid with contour lines.

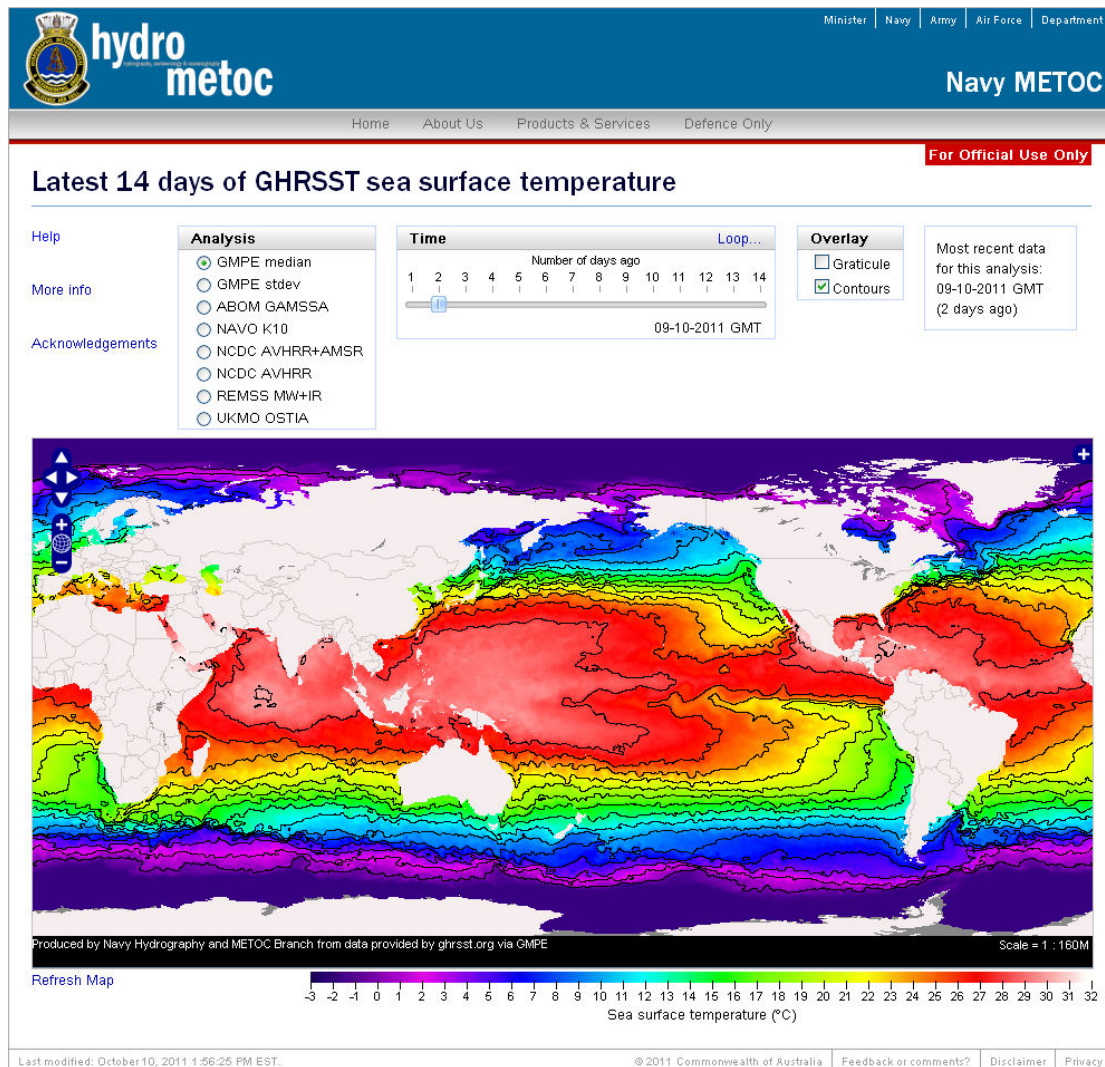


Figure 1: Web-based viewing application

## Data

The source data is downloaded from FTP sites, which are checked every 30 minutes for new data. A Python script converts the data from netCDF format to ESRI ArcSDE rasters, and contour lines are calculated and stored as ESRI featureclasses. These are published in different formats through ESRI ArcGIS Server, including WMS (OpenGeospatial Consortium (OGC) standards compliant Web Map Service).

## Browser-based Viewing

A browser based viewing application has been developed using OpenLayers, an open source JavaScript library for displaying map data. It has simple navigation such as zooming and panning as well as layer switching (Fig.1). The application can be accessed at: <http://www.metoc.gov.au/defence/ghrsst/index.php> for official use, or <http://www.metoc.gov.au/products/ghrsst/index.php> for public use.

Other functionality includes: creating animated time loops over a user-specified interval with customisable speed and direction (Fig.2).

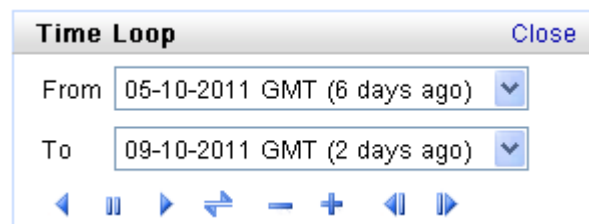


Figure 2: Creating animated time loops

## Direct GIS Access to the GHRSSST Sea Surface Temperature Map Service

The underlying map service of sea surface temperature rasters and contours is can be accessed by GIS software in different formats, as detailed in the service description at [http://www.metoc.gov.au/ArcGIS/rest/services/near\\_real\\_time/ghrsst/MapServer](http://www.metoc.gov.au/ArcGIS/rest/services/near_real_time/ghrsst/MapServer). The GMPE data for official use only is a separate service described at [http://www.metoc.gov.au/ArcGIS/rest/services/near\\_real\\_time/ghrsst\\_gmpe/MapServer](http://www.metoc.gov.au/ArcGIS/rest/services/near_real_time/ghrsst_gmpe/MapServer)

For example, the WMS format can be accessed by any OGC WMS capable client application by connecting to the following URL:

[http://www.metoc.gov.au/ArcGIS/services/near\\_real\\_time/ghrsst/MapServer/WMSServer?](http://www.metoc.gov.au/ArcGIS/services/near_real_time/ghrsst/MapServer/WMSServer?), or for GMPE data:  
[http://www.metoc.gov.au/ArcGIS/services/near\\_real\\_time/ghrsst\\_gmpe/MapServer/WMSServer?](http://www.metoc.gov.au/ArcGIS/services/near_real_time/ghrsst_gmpe/MapServer/WMSServer?)

or by accessing the GetCapabilities file of the WMS services through the following URL:

[http://www.metoc.gov.au/ArcGIS/services/near\\_real\\_time/ghrsst/MapServer/WMSServer?request=GetCapabilities&service=WMS](http://www.metoc.gov.au/ArcGIS/services/near_real_time/ghrsst/MapServer/WMSServer?request=GetCapabilities&service=WMS), or for GMPE data:  
[http://www.metoc.gov.au/ArcGIS/services/near\\_real\\_time/ghrsst\\_gmpe/MapServer/WMSServer?request=GetCapabilities&service=WMS](http://www.metoc.gov.au/ArcGIS/services/near_real_time/ghrsst_gmpe/MapServer/WMSServer?request=GetCapabilities&service=WMS)

The service contains one layer for each combination of available analyses and time step, and raster or contour. Each layer can be accessed and displayed individually through its unique layer name found in the capabilities file.

### **Future Plans**

We are currently working to deploy time-aware services through ESRI ArcGIS Server version 10. Instead of having separate layers for each time step, the services will have layers with a time dimension, which lists available time steps for that layer. This can be used by standard compliant GIS clients (e.g. ArcGIS version 10) to request specific time steps and create animated time loops.

### **Feedback**

The Royal Australian Navy welcomes all user comments, suggestions and queries via the feedback form at: [http://www.metoc.gov.au/errors/feedback\\_form.php](http://www.metoc.gov.au/errors/feedback_form.php)