



NODC's New Geoportal Server



Kenneth S. Casey, Ph.D.
YuanJie Li

NOAA National Oceanographic Data Center



An Overview of NODC's Geoportal Server



Highlights from NODC's Geoportal Implementations



- Multiple service links
- Temporal search
- Browse by keywords
- NODC's ocean locator
- NODC's ocean basemap
- Demo



Geoportal Server-Web interface

NOAA NATIONAL OCEANOGRAPHIC DATA CENTER (NODC)
UNITED STATES DEPARTMENT OF COMMERCE

NODC HOME SEARCH BROWSE SEARCH TIPS

Search

Search metadata content, e.g. title:SST; use "AND" for multiple keywords, e.g. water AND temperature; use "" to search for an exact phrase, e.g. "water temperature" (Search tips!)

Search input: sstAND ODYSSEA

Buttons: Search, Clear All

Additional Options

WHEN

Dates overlap range Dates within range

From: (yyyyymmdd) To: (yyyyymmdd)

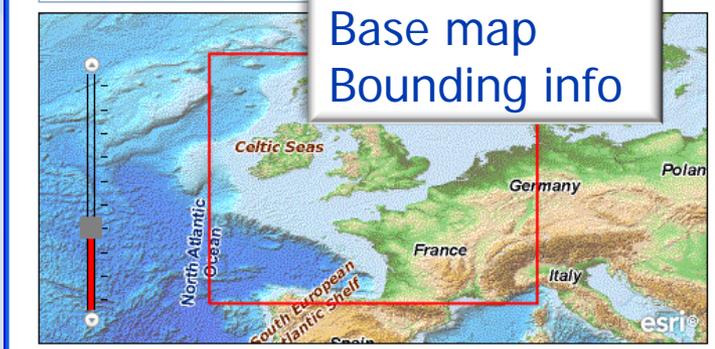
Free Text, Temporal, Spatial, Search

WHERE

Zoom the map to desired area by double-clicking on the location, or shift-click-dragging a bounding box, and choose "intersecting" or "fully within"

Anywhere Intersecting

Ocean Locator Base map Bounding info



Index of /ghrsst/L4/GLOB/REMSS/mw_ir_OI

Name	Last modified	Size	Description
Parent Directory			
2003/	10-Apr-2008 01:02		
2006/	10-Apr-2008 01:02		
2007/	11-Apr-2008 01:00		
2008/	07-May-2008 01:00		
2009/	08-May-2008 01:00		
2010/	08-May-2008 01:00		
2011/	09-May-2008 01:00		

HTTP

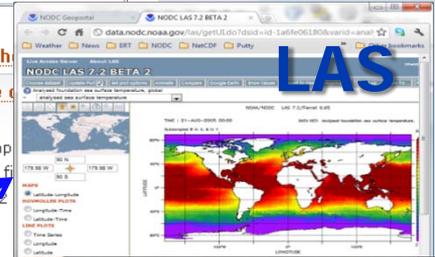
Results 1-1 of 1 record(s)

Expand results [Zoom To Results](#) [Zoom To Search](#)

Analysed L4 foundation sea surface temperature of North-Western European shelves data

The ODYSSEA North-West Europe Shelves Sea Surface Temp produced at Ifremer/CERSAT. It provides a daily cloud-free foundation sea surface temperature at 2 km resolution (0.02). It is generated by me...

[Website Details](#) [Metadata](#) [Download](#) [LAS](#) [TDS](#) [OPeNDAP](#) [FTP](#) [Zoom To](#)



See results through REST
API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#) [JSON](#)

Dataset: 232/20110822-REMSS-L4HRnd-GLOB-v01-iv03-mw_ir_rt_OI.nc.gz

Access:

- OPeNDAP: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- HTTP Server: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- FTP: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- WMS: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- KML: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- JSON: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz
- FRAGMENT: /pub/data.nodc/ghrsst/L4/GLOB/REMSS/mw_ir_rt_OI.nc.gz

TDS

OPeNDAP Server Dataset Access Form

Action: [Get ASCII](#) [Binary \(GZIP Object\)](#) [Show Help](#)

Data URL: http://data.nodc.noaa.gov/opendap/ghrsst/L4/GLOB/REMSS/mw_ir_OI0002/

Global Attributes:

- GLOBAL_CONVENTIONS: CF-1.0
- GLOBAL_TITLE: Analysed foundation sea surface temperature, global
- GLOBAL_LONG_NAME: ghrsst_L4HRnd-GLOB-v01-iv03-mw_ir_OI
- GLOBAL_REFERENCE: none
- GLOBAL_KEYWORDS: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_HISTORY: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_METADATA: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PARENT: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_VERSION: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_VISIBILITY: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_ACCESS: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_COPYRIGHT: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_ORG: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_AUTHOR: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_CREATOR: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_CONTACT: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_SUPPORT: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_ISSUE_DATE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_ISSUE_VERSION: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_DATE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_VERSION: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_STATUS: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_TYPE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_MEDIUM: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_LANGUAGE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_COUNTRY: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_CITY: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_STATE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_REGION: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_WORLDWIDE: TMS, AGOS, AGOS, AGOS, AGOS, AGOS
- GLOBAL_PUBLICATION_OTHER: TMS, AGOS, AGOS, AGOS, AGOS, AGOS

OPeNDAP

Index of /pub/data.nodc/ghrsst/L4/GLOB/REMSS

Name	Size	Date Modified
[parent directory]		
20050821-REMSS-L4HRnd-GLOB-v01-iv01-mw_ir_OI.nc.gz	0 B	10/26/11 2:10:00 AM
FGDC-20050821-REMSS-L4HRnd-GLOB-v01-iv01-mw_ir_OI.xml	0 B	10/26/11 2:10:00 AM
FR-20050821-REMSS-L4HRnd-GLOB-v01-iv01-mw_ir_OI.nc.gz	0 B	10/26/11 2:10:00 AM

FTP



Geoportal Server Discover via Browse

NODC Geoportal - Mozilla Firefox

data.nodc.noaa.gov/geoportal/catalog/search/browse/browse.page

NOAA NATIONAL OCEANOGRAPHIC DATA CENTER (NODC) UNITED STATES DEPARTMENT OF COMMERCE

NODC HOME SEARCH **BROWSE** SEARCH TIPS

Browse

Select a category below.

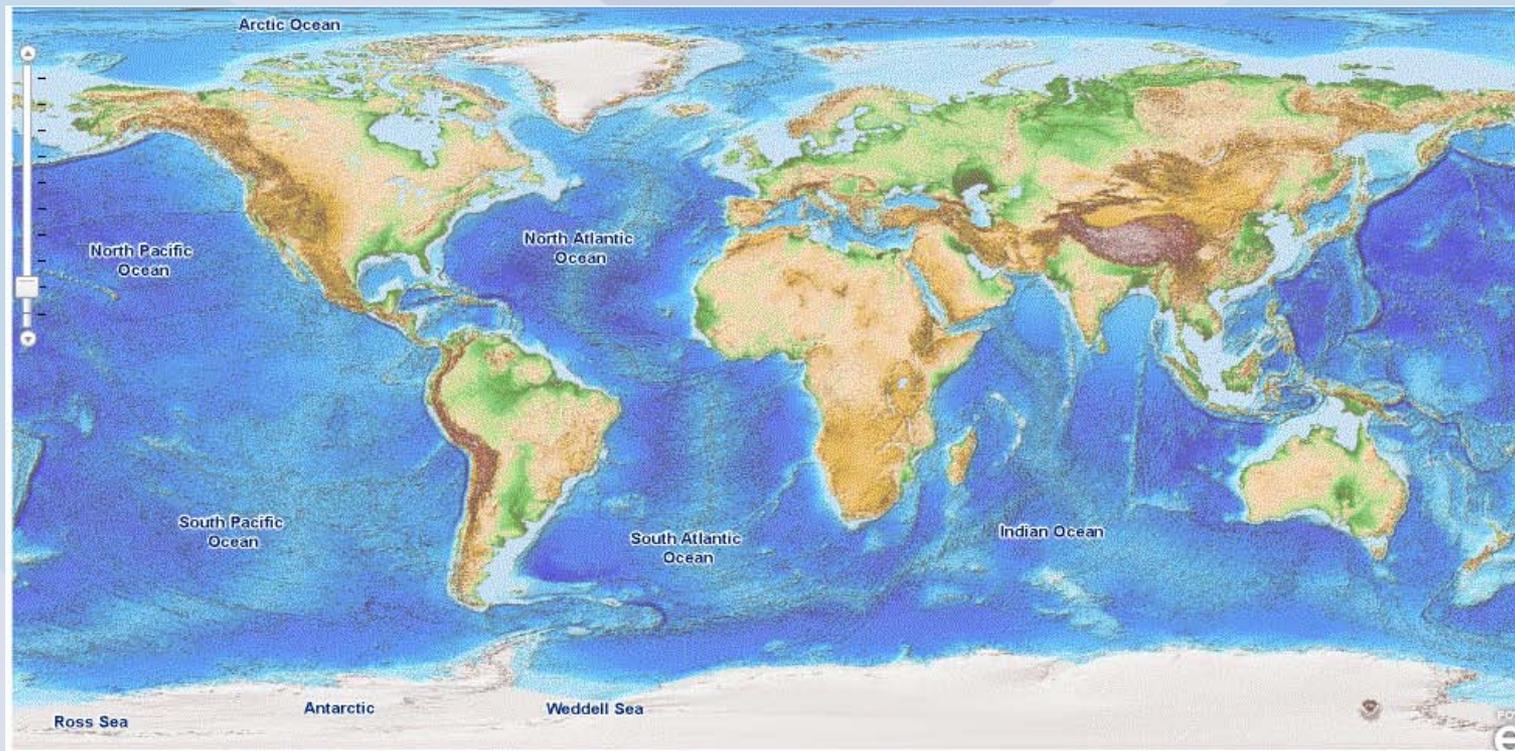
- People (Data submitters)
- Platforms
- Projects
- Institutions
- Sea names
- Data types
- Instruments
- Observations

Select one of the items in the tree to view a specific list of resources.

Browse tree provides another option of data Discovery and access with a further data Filter function

NODC Ocean Basemap

The original data layers include NGDC's EOTOPO1 (NGDC), NODC's Sea area and National Marine Sanctuaries map (VLIMAR and NODC), Large Marine Ecosystems map (NOAA LME), Global countries, states/provinces, and cities polygons (ESRI 2004), Marine Eco-regions of the World, the Exclusive Economic Zone (EEZ) boundaries (Conservation International). <http://data.nodc.noaa.gov/arcgis/rest/services/basemap8/MapServer?f=jsapi>





NODC Ocean Locator

The original data layers include NODC's Sea area and National Marine Sanctuaries map (VLIMAR and NODC), Coral Reef location map (NOAA CoRIS Team, the original GIS map was achieved from ReefBase), Large Marine Ecosystems map (NOAA LME), Global countries, states/provinces, and cities polygons (ESRI 2004), Marine Eco-regions of the World (WWF MEOW), the Exclusive Economic Zone (EEZ) boundaries (Conservation International). The ocean locator is updated whenever a new sea area location is defined in NODC's Ocean Archive System or new data layers are requested by the users.

Data.nodc.noaa.gov/geoportal

Anywhere Intersecting Fully within





How NODC's Geoportal Server Enables Machine to Machine Search Capability and Brings all Together



Machine to Machine - via CS/W

Example: A Search from Desktop-Arcmap > CSWclient returns the location of the data on the map and A brief metadata file with selected metadata fields

The screenshot displays the ESRI GIS Portal search interface. The search criteria are 'sst AND ODYSSEA' in the NODC catalog. The results list 'ODYSSEA Global High Resolution Foundation Analysed L4 foundation sea surface temperature'. The map shows the location of the data in the North-Western European Shelves. The metadata file is displayed in a separate window, containing XML data including service type, subject terms, and a detailed abstract.

ESRI GIS Portal - Find Services

Find:

In Catalog:

Live Data and Maps Only
 Use Current Extent

Results (3)

ODYSSEA Global High Resolution Foundation Analysed L4 foundation sea surface temperature

Abstract:

The ODYSSEA North-West Europe Shelves Sea Surface Temperature is produced at Ifremer/CERSAT. It provides a daily cloud-free field of foundation

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" >
<dc:type scheme="urn:x-esri:specification:ServiceType:ArcIMS:Metadata:ContentType">DSD-EUR-L4UHRInd-NWE-ODYSSEA.xml</dc:type>
<dc:type scheme="urn:x-esri:specification:ServiceType:ArcIMS:Metadata:ContentType">DSD-EUR-L4UHRInd-NWE-ODYSSEA.xml</dc:type>
<dc:subject>SEA SURFACE TEMPERATURE</dc:subject>
<dc:subject>AVHRR > Advanced Very High Resolution Radiometer</dc:subject>
<dc:subject>AMSR-E</dc:subject>
<dc:subject>AATSR</dc:subject>
<dc:subject>SEVIRI</dc:subject>
<dc:subject>TMI</dc:subject>
<dc:subject>satellite data</dc:subject>
<dc:subject>3268 - SATELLITE</dc:subject>
<dc:subject>Group for High Resolution Sea Surface Temperature</dc:subject>
<dc:subject>MEDSPIRATION</dc:subject>
<dc:subject>US NATIONAL AERONAUTIC AND SPACE ADMINISTRATION; JET PROPULSION LABORATORY Physical Oceanography Distributed Active Archive Center</dc:subject>
<dc:subject>Earth Science</dc:subject>
<dc:subject>Oceans</dc:subject>
<dc:subject>Ocean Temperature</dc:subject>
<dc:subject>Sea Surface Temperature</dc:subject>
<dc:subject>climatologyMeteorologyAtmosphere - 004</dc:subject>
<dc:subject>oceans - 014</dc:subject>
<dc:subject>environment - 007</dc:subject>
<dc:subject>biota - 002</dc:subject>
<dc:subject>World-Wide Distribution</dc:subject>
<dc:subject>North-west Europe</dc:subject>
<dc:subject>North-western Europe Shelves</dc:subject>
<dc:modified>2011-10-01T08:01:14+00:00</dc:modified>
<dc:abstract>The ODYSSEA North-West Europe Shelves Sea Surface Temperature is produced at Ifremer/CERSAT. It provides a daily cloud-free field of foundation sea surface temperature at 2 km resolution (0.02 degree). It is generated by merging all available satellite sensors for sea surface temperature (micro-wave and infra-red), after careful intercalibration using AATSR sensor as reference (previously re-calibrated using all available in situ data). The development of this real-time sea surface temperature at Ifremer/CERSAT is supported by ESA initially in the frame of Medspiration project. This metadata record is a collection-level description for GHRSSST analysed L4 foundation sea surface temperature over North-Western European shelves data for all time periods. Select time periods and files are accessible through the servers detailed in the DISTRIBUTION SECTION of this record.</dc:abstract>
<dc:references scheme="urn:x-esri:specification:ServiceType:ArcIMS:Metadata:Onlink">http://ghrsst.nodc.noaa.gov/</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:ArcIMS:Metadata:Document">http://data.nodc.noaa.gov/geoportal/csw?getxml=&7B1F5D4E79-F0AB-4D85-9EA2-7C804C52781A%7D</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:TDS">http://data.nodc.noaa.gov/thredds/catalog/ghrsst/L4/NWE/EUR/ODYSSEA/</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:FTP">ftp://ftp.nodc.noaa.gov/pub/data.nodc/ghrsst/L4/NWE/EUR/ODYSSEA/</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:OPeNDAP">http://data.nodc.noaa.gov/opendap/ghrsst/L4/NWE/EUR/ODYSSEA/</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:LAS">http://data.nodc.noaa.gov/las/getUL.do?dsid=id-1b06ada0f5&varid=analysed_sst-1b06ada0f5&auto=true</dc:references>
<dc:references scheme="urn:x-esri:specification:ServiceType:Download">http://data.nodc.noaa.gov/ghrsst/L4/NWE/EUR/ODYSSEA/</dc:references>
</ows:BoundingBox>
<ows:LowerCorner>-13.0 43.0</ows:LowerCorner>
<ows:UpperCorner>9.0 60.0</ows:UpperCorner>
</ows:BoundingBox>
</ows:BoundingBox>
```



Machine to Machine - OpenSearch

The image shows a screenshot of a web browser displaying the OpenSearch client interface and search results. The top part of the browser shows the OpenSearch logo and navigation links: Home, About, Product Search, Ad Technologies, Visual Search, and Jobs (we're hiring). Below this is a search bar with the text "OpenSearch" and a "Search" button. The main content area displays search results for "sst" (sea surface temperature) from the Geoportal GeorSS. The results list several data sets with their descriptions and links for further details.

OpenSearch Client - Create New Search Feed - Mozilla Firefox

OpenSearch

Home About Product Search Ad Technologies Visual Search Jobs (we're hiring)

OpenSearch Search Preferences Help

Geoportal GeorSS. - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Geoportal GeorSS.

Back Forward data.nodc.noaa.gov/geoportal/rest/find/document?searchText=sst&start=&max=&bbox=&f=html Reload Stop sst Home

Dataexamples NODC_Data ESRIGeoportal NODCGeoportalAdmin DataTools ERT TDS perl CF javafamilies ArcGISserver idl SRU ESIP UAF

MWIR optimum interpolated SST data sets
The through-cloud capabilities of microwave radiometers provide a valuable picture of global sea surface temperature (SST) while infrared radiometers (MODIS) have a higher spatial resolution. To utilize these SSTs, scientists...
[Website](#) [Details](#) [Metadata](#) [Download](#) [LAS](#) [TDS](#) [OPeNDAP](#) [FTP](#)

Global 10km Analyzed SST data set
K10 L4 sea surface temperature analysis produced daily on an operational basis at the Naval Oceanographic Office using a weighted average of AVHRR, GVAR, and AMSRE SST retrievals. Pathfinder 9km climatology is used when no ...
[Website](#) [Details](#) [Metadata](#) [Download](#) [LAS](#) [TDS](#) [OPeNDAP](#) [FTP](#)

TMI 25km gridded SST data sets
Version-3b TMI Ocean Products, in November 1997, the TMI radiometer with a 10.7 GHz channel was launched aboard the TRMM satellite. The important feature of microwave retrievals is that SST can be measured through clouds, w...
[Website](#) [Details](#) [Metadata](#) [Download](#) [TDS](#) [OPeNDAP](#) [FTP](#)

AMSRE 25km gridded SST data sets
The Advanced Microwave Scanning Radiometer (AMSRE) was launched on May 4, 2002, aboard NASA's Aqua spacecraft. The National Space Development Agency of Japan (NASDA) provided AMSRE to NASA as an indispensable part of Aqua...
[Website](#) [Details](#) [Metadata](#) [Download](#) [TDS](#) [OPeNDAP](#) [FTP](#)

TMI geolocated L2 orbital SST data sets.
Version-3b TMI Ocean Products, in November 1997, the TMI radiometer with a 10.7 GHz channel was launched aboard the TRMM satellite. The important feature of microwave retrievals is that SST can be measured through clouds, w...
[Website](#) [Details](#) [Metadata](#) [Download](#) [TDS](#) [OPeNDAP](#) [FTP](#)

MODIS Aqua L2P swath SST data sets
The production of the MODIS L2P data is a joint collaboration between JPL, OBPG and RSMAS. RSMAS is responsible for sea surface temperature algorithm development, error statistics and quality flagging, while the OBPG is NAS...
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MODIS Terra L2P swath SST data sets
The production of the MODIS L2P data is a joint collaboration between JPL, OBPG and RSMAS. RSMAS is responsible for sea surface temperature algorithm development, error statistics and quality flagging, while the OBPG is NAS...
[Website](#) [Details](#) [Metadata](#) [Download](#) [TDS](#) [OPeNDAP](#) [FTP](#)

North Sea and Baltic Sea L4 SST data sets
The L4 analysis is based upon nighttime GHRSSST L2P subskin SST observations from several satellites and instruments such as: AMSRE, ATS_NR_2P, AVHRR18, G, AVHRR17, NAB, AVHRR18, NAB, and SEVIRI. The ice-free field from Ocean...



Geoportal Server – REST URL

- [http://data.nodc.noaa.gov/geoportal/rest/find/document?searchText=+\(Temperature\)+\(sdate:\[1986 TO 1990\]\)+\(edate:\[1986 TO 1990\]\)&start=1&max=25&spatialRel=esriSpatialRelWithin&bbox=137.72,33.36,143.29,36.14&f=html](http://data.nodc.noaa.gov/geoportal/rest/find/document?searchText=+(Temperature)+(sdate:[1986 TO 1990])+(edate:[1986 TO 1990])&start=1&max=25&spatialRel=esriSpatialRelWithin&bbox=137.72,33.36,143.29,36.14&f=html)
- “Show me in HTML format the first 25 datasets with the keyword *temperature*, between 1986 and 1990, within the bounding box 137.72 E to 143.29 E and 33.36 N to 36.14 N”
- Want it in KML? Change the “html” to “kml”.

Geoportal Server Components





Usability Test Results- Questions List

Query	Which part do you find difficult? 1. Free text; 2. Temporal search; 3.Spatial search; or any other comments
1. Water temperature, wave height data for Gulf of Mexico during the past 5 years	
2. Wind data from remote sensing for California coast	
3. Ocean current data for Chukchi Sea for a time period covering 2009 to present	
4. Station data from a NOAA cruise e.g. "Townsend Cromwell" from 1960s	
5. Can you find this data with the following information Place: Black Sea Institution: Woods Hole Oceanographic Institution (WHOI) Data collected: 2003	
6. Please define a search by yourself and provide a short description below: 😊	
Suggestions:	

The test queries were selected from real user requests to NODC. Normally when users could not figure out how to find the data, they send the requests to NODC's user services. The average time used for each test is between 15 to 45 minutes.



Usability Test Results- More About The Testers

32 out of 34 users provided their contact information; and 19 of them are willing to be in touch with us for future updates.

40% students

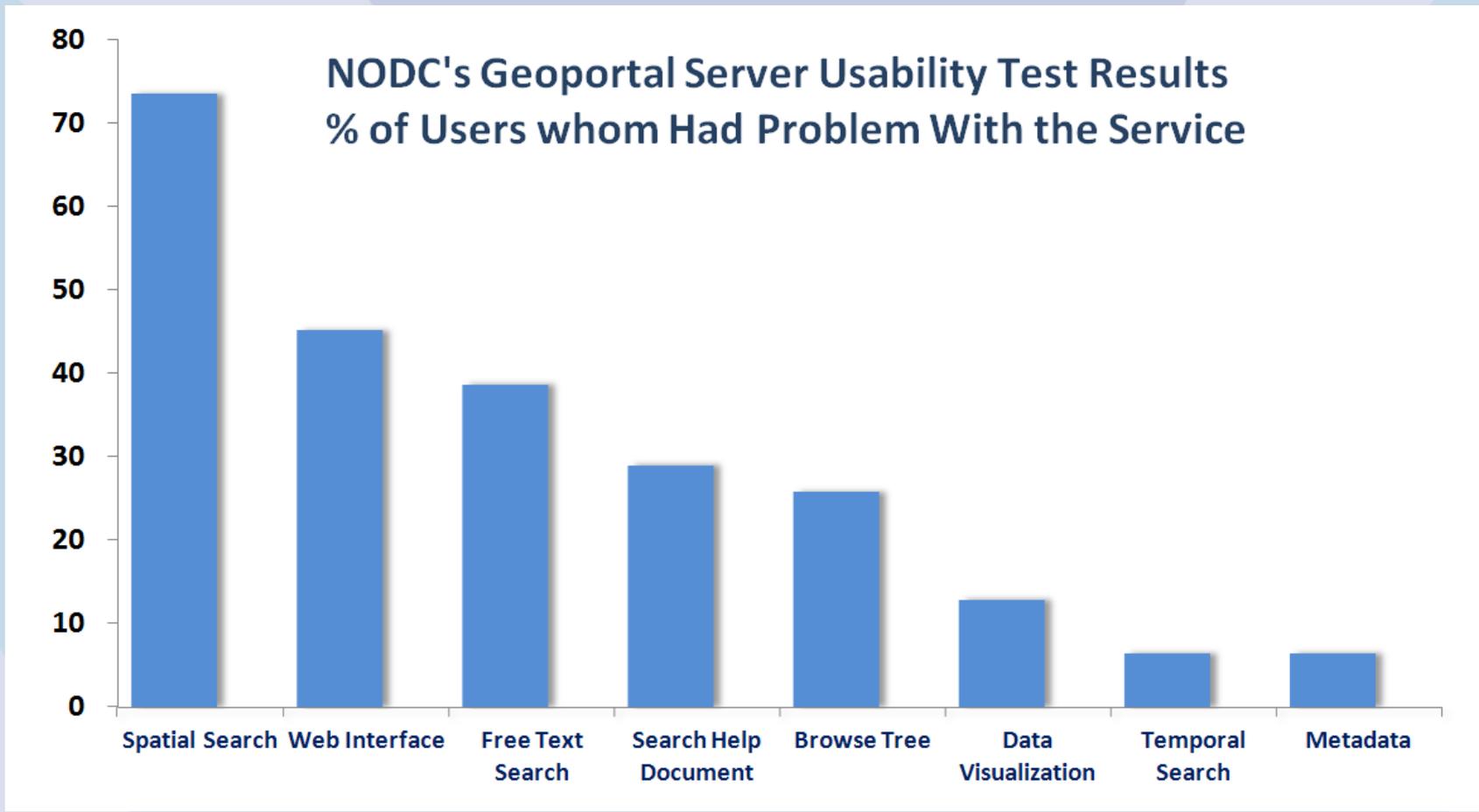
60% researcher/scientist

28% data management

Testers are from America, Asia, and Europe with good English or poor English skills



Usability Test Results





Future implementation plan

- Map locator: improve the map layout; make the locator work with automatic zoom
- Free text search: configure the search default syntax; add ontology service to Geoportal Server
- Web interface: distinguish between two ways of search; make the most popular REST APIs shown on top of the results list; others
- Data visualization: working with Archive Management and Technical Development teams achieve this goal
- ISO19115-2 metadata capability: on-going with ncISO (NGDC) metadata and ISO19115 metadata from the xsl (NCDDC) transformation



Acknowledgements

- Thank you to Christine White and her team at ESRI who continue to help us improve our Geoportal
- A big thank you to Jefferson Ogata, John Relph, Donald Collins, Andy Allegra, Kelly Logan, Matthew Austin



Thank You!