



NOAA

Sea Surface Temperature

A Common Thread Through NOAA's Oceanographic Portfolio



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Welcome and Overview

What we will talk about today:

- NOAA Organization
- NOAA & GHRSSST
- NOAA & Global Space-based Observing System
- NOAA Offices & Relationships with GHRSSST

NOAA Organization

National Oceanic and Atmospheric Administration

National Marine Fisheries Service (NMFS)

National Ocean Service (NOS)

Oceanic & Atmospheric Research (OAR)

National Weather Service (NWS)

National Environmental Satellite, Data & Information Service (NESDIS)

Southwest Fisheries Science Center (SWFSC)

Integrated Ocean Observing System Program (IOOS)

Earth System Research Laboratory (ESRL)

National Centers for Environmental Prediction (NCEP)

National Centers for Environmental Information (NCEI)

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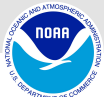
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Office of Satellite and Product Operations (OSPO)

Center for Satellite Applications and Research (STAR)

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NOAA is an active partner in the global space-based observing system.



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Highlighted agreements:

- US-EC Agreement on free & open data exchange
- NOAA-Eumetsat Joint Polar System Agreement on polar observations



NOAA & GHRSSST

Interoperable user access via OPeNDAP, TDS WCS, FTP...



Level 2, 3 and 4 GHRSSST satellite SST data in COARDS/CF-compliant netCDF with ISO 19115-2 metadata



Ancillary fields filled as needed, initial FGDC metadata records appended, data provided in 30-day rolling store



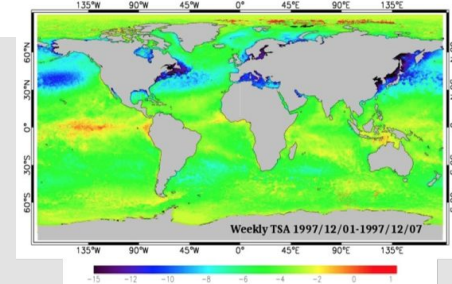
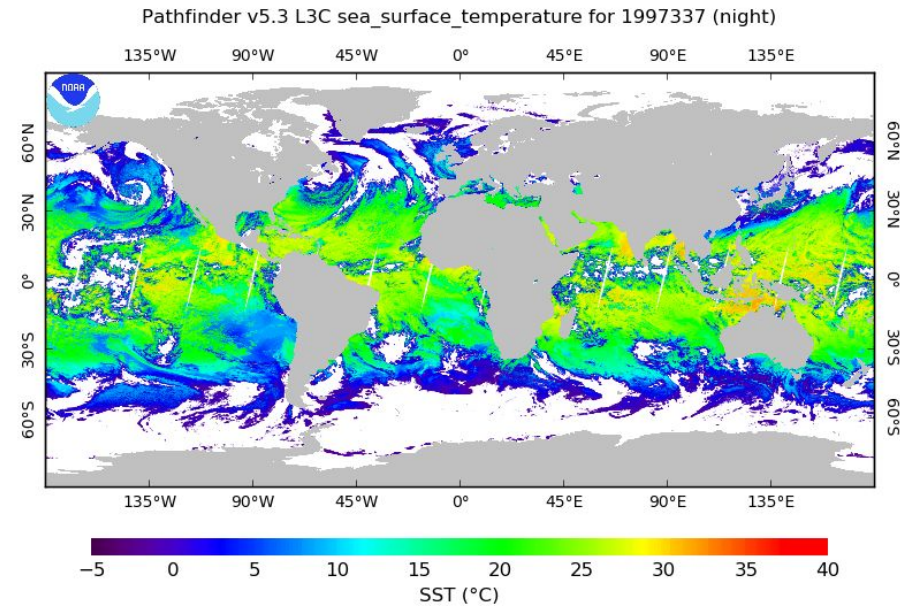
Perpetual archive services, data access and aggregation, climate data records and complete ISO 19115-2 metadata

User requirements, services and feedback at all levels...



NOAA Satellite and Information and GHR SST National Centers for Environmental Information

- Scientific stewardship of GHR SST products
 - All “official” data flow from RDAC to GDAC to LTSRF
 - Data is accessible at all levels
- Pathfinder AVHRR SST 4KM CDR
 - Long temporal and high resolution global SST product; has a myriad user base and applications; derives other products (CoRTAD, OISST,...)
 - Version 5.3 imminent! (July 2016)
- NOAA Daily OISST for investigating global bleaching events
- ICOADS Release 3.0.0 (1662-2014 and 3.0.1 (2015-present, Preliminary near-real-time blend of NCEI/NCEP GTS, Fully available June 2016

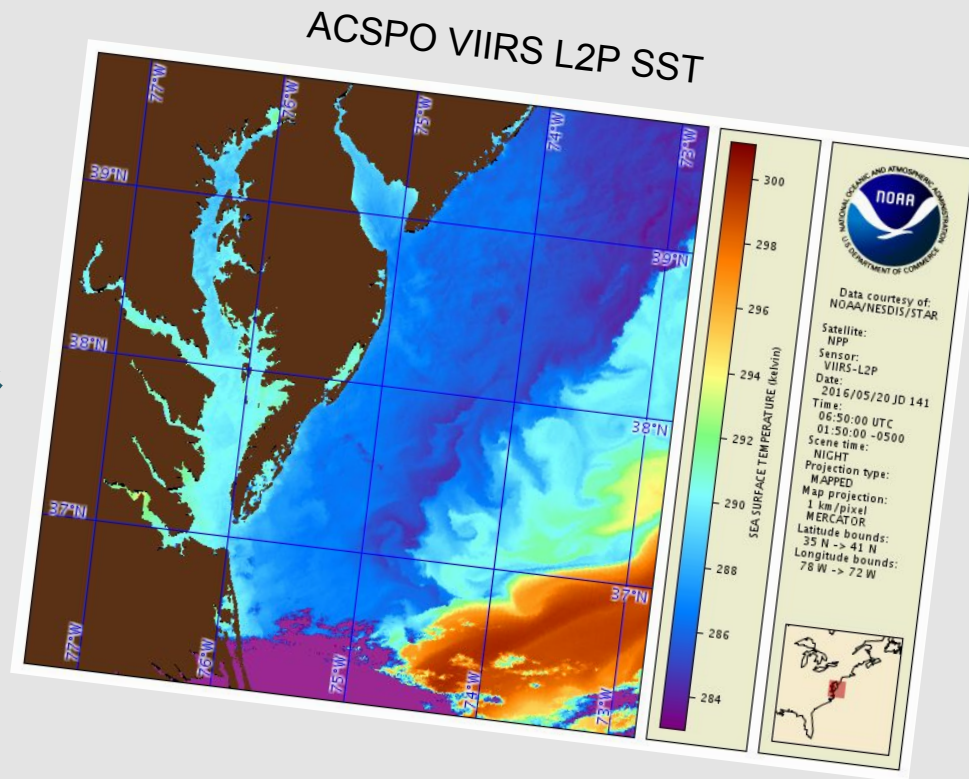


<http://ghrsst.nodc.noaa.gov/accessdata.html>



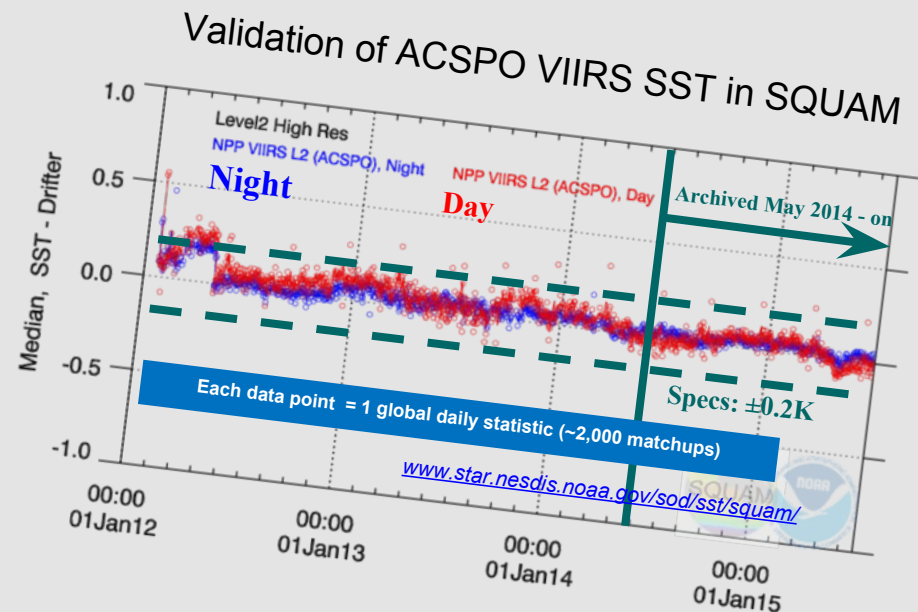
NOAA Satellite and Information and GHRSSST Center for Satellite Applications and Research (STAR)

- Advanced Clear-Sky Processor for Ocean (ACSPO) Operational (OPS) Products
 - S-NPP/JPSS VIIRS
 - GOES-R ABI
 - NOAA/Metop AVHRR
- New RDAC: Reanalysis (RAN) & Experimental (EXP) Products
 - S-NPP VIIRS RAN1
 - NOAA/Metop AVHRR RAN1
 - *iQuam in situ* RAN2
 - Himawari-8 AHI EXP
- NCEI and STAR work to archive OPS & RAN ACSPO Products



Center for Satellite Applications and Research (STAR)

- NOAA SST Monitoring and Cal/Val System is a GHR SST Resource
- Currently comprises 5 subsystems
 - SST Products – SQUAM
 - *In situ* SSTs – *iQuam*
 - SST Radiances – MICROS
 - Regional SSTs – ARMS
 - Sensor Stability for SST – 3S
- ACSPO products are archived at NCEI only after extensive evaluation in the NOAA Monitoring system



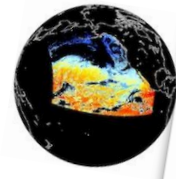
NOAA Satellite and Information and GHRSSST Office of Satellite and Product Operations

With support from STAR, OSPO generates several GHRSSST operational products:

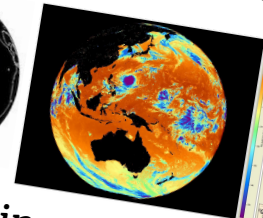
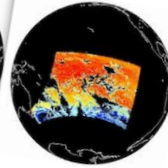
- L2P:
 - GOES E/W (GDS 1+2)
 - Meteosat 10 (GDS 2)
 - Himawari-8 (GDS 2)
 - VIIRS_NPP (GDS 2)
- L3U:
 - VIIRS_NPP (GDS2)
- L4 Geo-Polar (GDS 2):
 - 1/20° SST Analysis
 - 1/20° Nighttime SST Analysis

Operational GHRSSST Compliant
L2P, L3U, and L4 Products

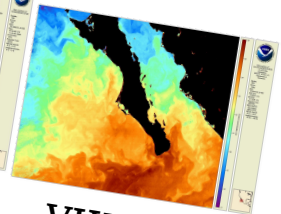
OSPO GDS1 and GDS2 Formatted Products



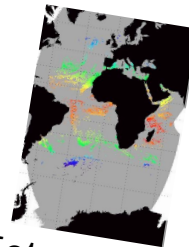
GOES E/W



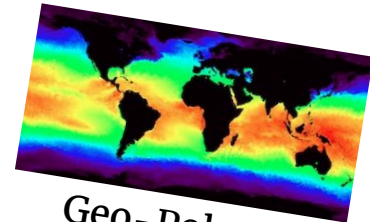
Himawari-8



VIIRS



Meteosat 10



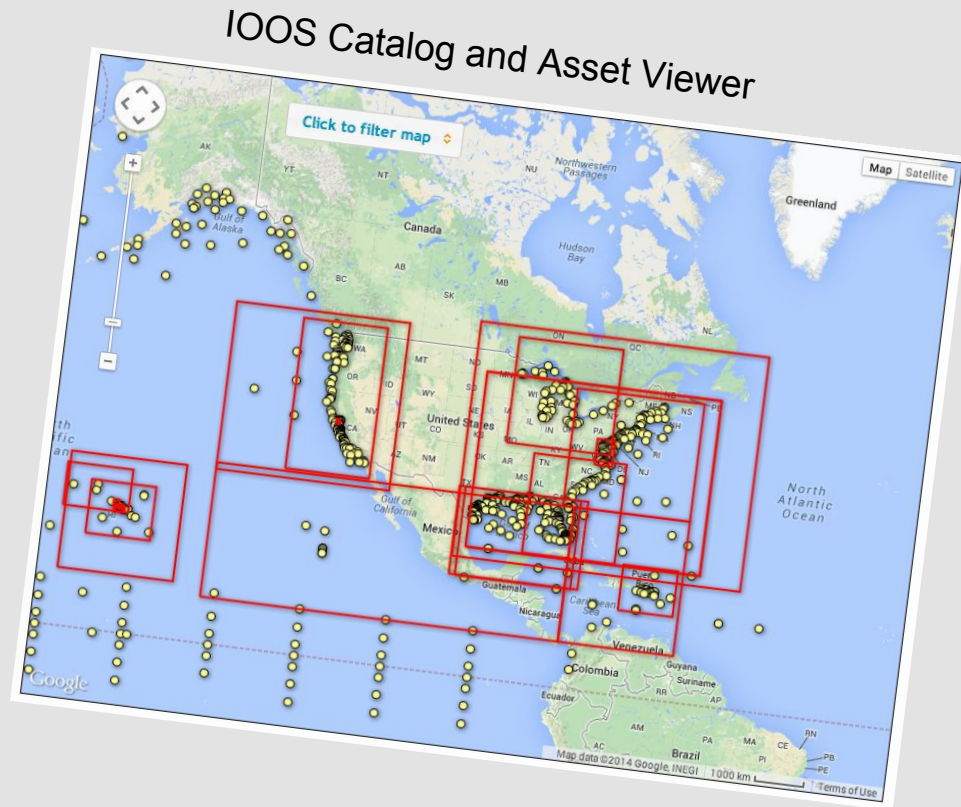
Geo-Polar
SST Analysis

NOS and GHRSSST

Integrated Ocean Observing System Program

With NASA/US Navy, funded the National Ocean Partnership Project “Multi-sensor Improved SST for IOOS” (MISST2)

- After MISST1, focused on global ocean data assimilation, MISST2 brought GHRSSST to the coasts
- Through an [SST User Application Survey](#), telecons, and site visits, provided targeted support for IOOS Regional Associations (RA)
- Helped RAs adopt GHRSSST products and identified needs for new products



<http://www.ioos.noaa.gov/catalog>

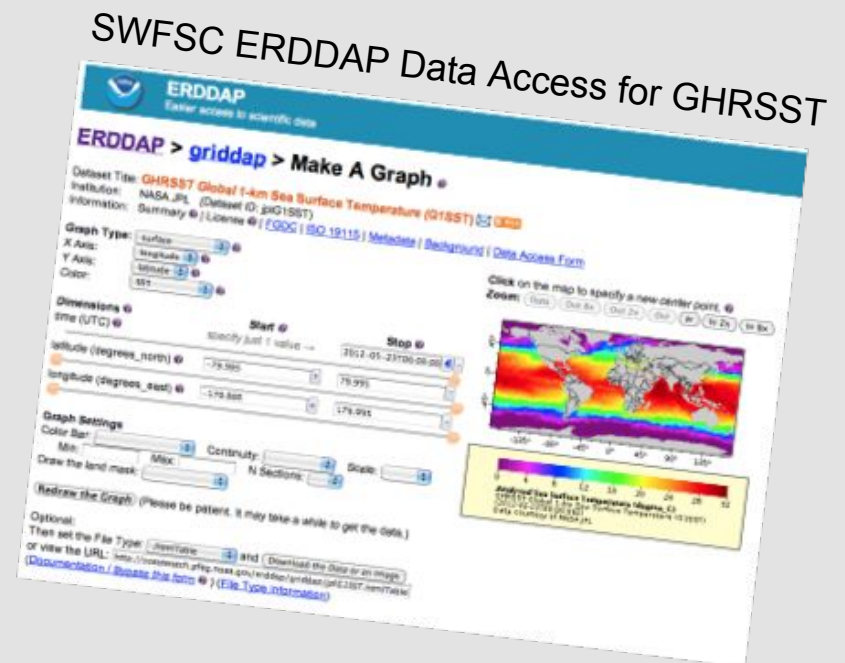
Fisheries and GHRSSST

Southwest Fisheries Science Center

- Tailored access for fisheries users
 - Tools for R and Matlab

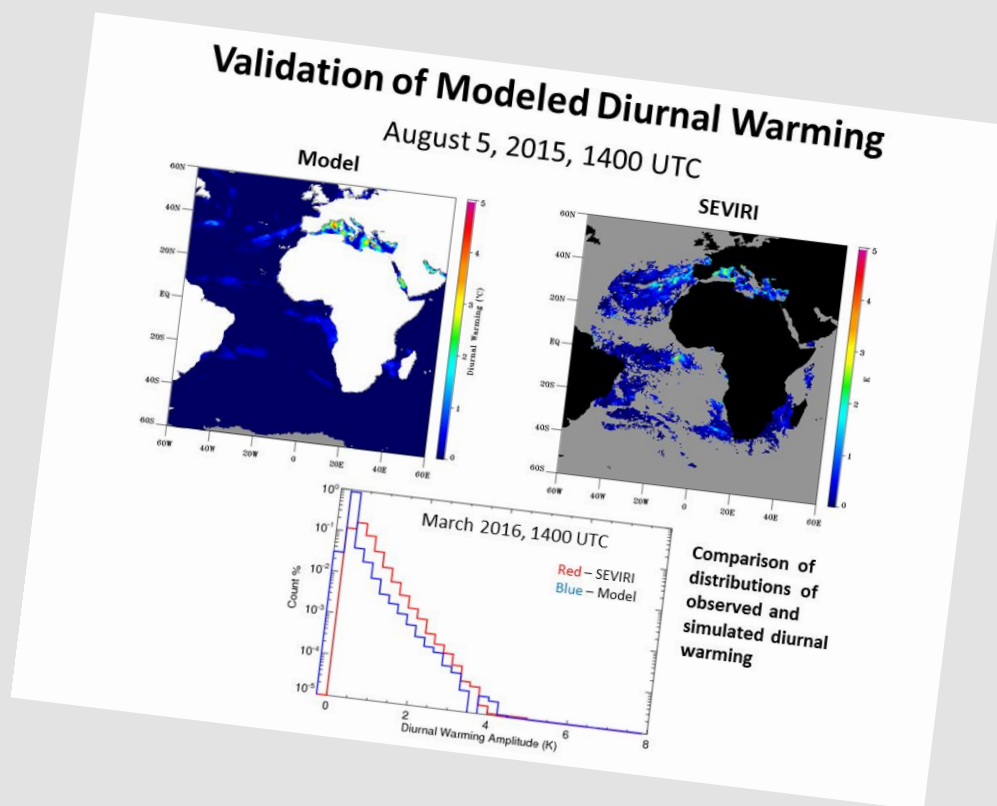
- IOOS Regional Association interface

- Eleven GHRSSST datasets now in ERDDAP



NOAA Research and GHRSSST Earth Systems Research Laboratory

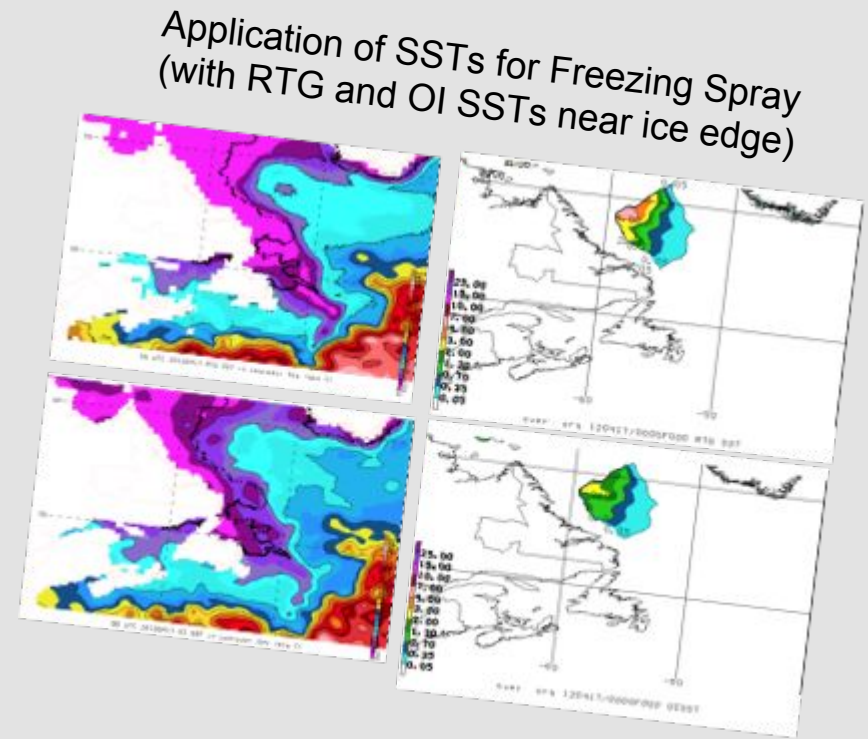
- Science team and DV Working Group member
- Best use of diurnal variability info in SST products
- Impact of sub-pixel SST variability
- Improved specification of satellite SST retrieval uncertainty



NOAA/OAR/ESRL/PSD courtesy Gary Wick

National Centers for Environmental Prediction

- Improving weather and ocean prediction using GHR SST
- Improving lake water temperature representation in GHR SST data
- Implementations coming with GOES, AMSR2, VIIRS



Freezing spray application development -NCEP/OPC

Questions?

