

NOAA's Operational GHRSSST 5km Global Blended Products

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OPERATIONAL PRODUCTS (GHRST- GDS-2)

Blended SST Analysis Products L4

GEO-Polar Blended SST Analysis 5-km Day/Night
GEO-Polar Blended SST Analysis 5-km Nighttime

METHODOLOGY

- Employs a recursive estimator
 - Emulates the Kalman Filter and
 - uses data-adaptive correlation length scales
 - this provide a reasonable balance between noise reduction and detail preservation.
 - This allow for preservation of mesoscale features.
 - Input datasets are individually bias-corrected (except RTG_HR and soon-to-be-used OSTIA Analysis)

5-km Blended SST Analysis

- Resolution increased from 1/10 degree to 1/20 degree
- Data-adaptive correlation length scale
 - Analysis is performed at 3 different scales
 - Shortest correlation length where data density is maximum
 - Final result is interpolated from these analyses based on data density
 - **Preserves fine-scale features without introducing excessive noise**

5-km Blended SST Analysis

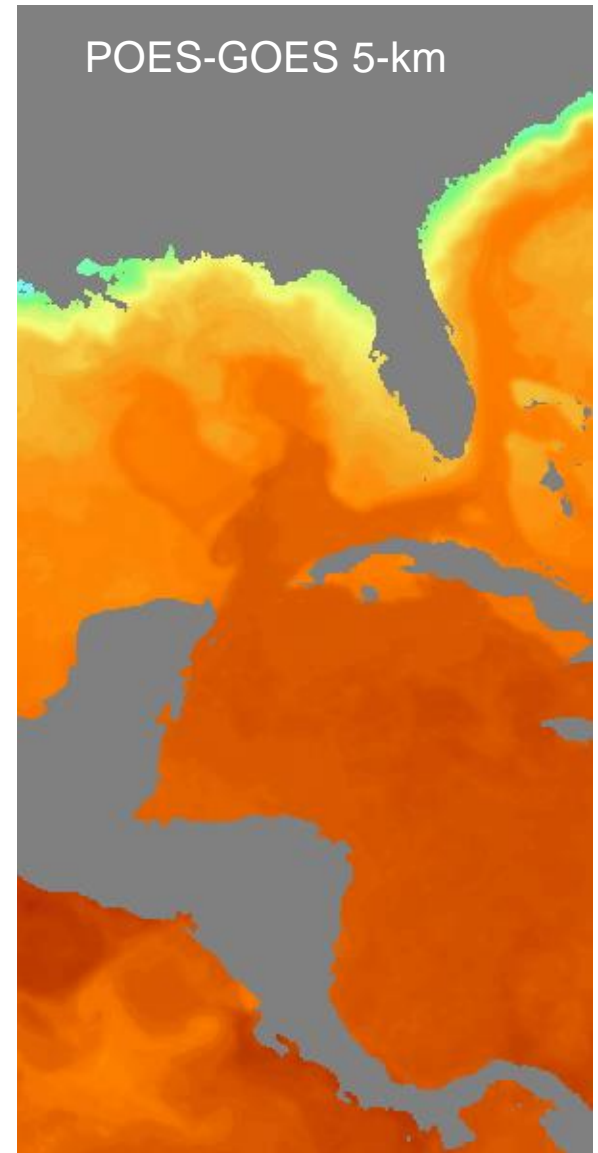
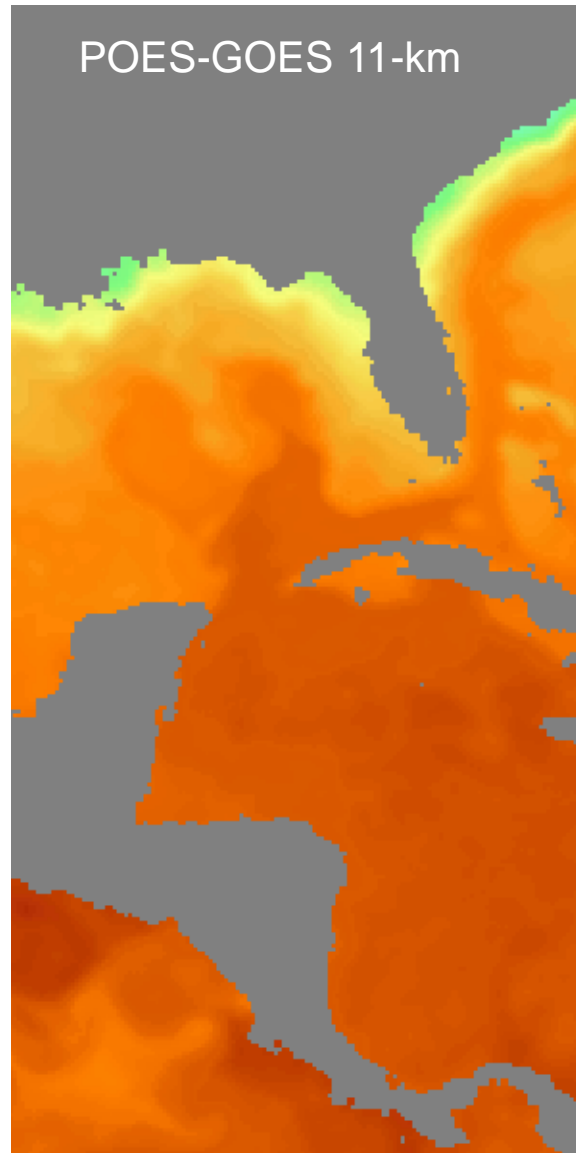
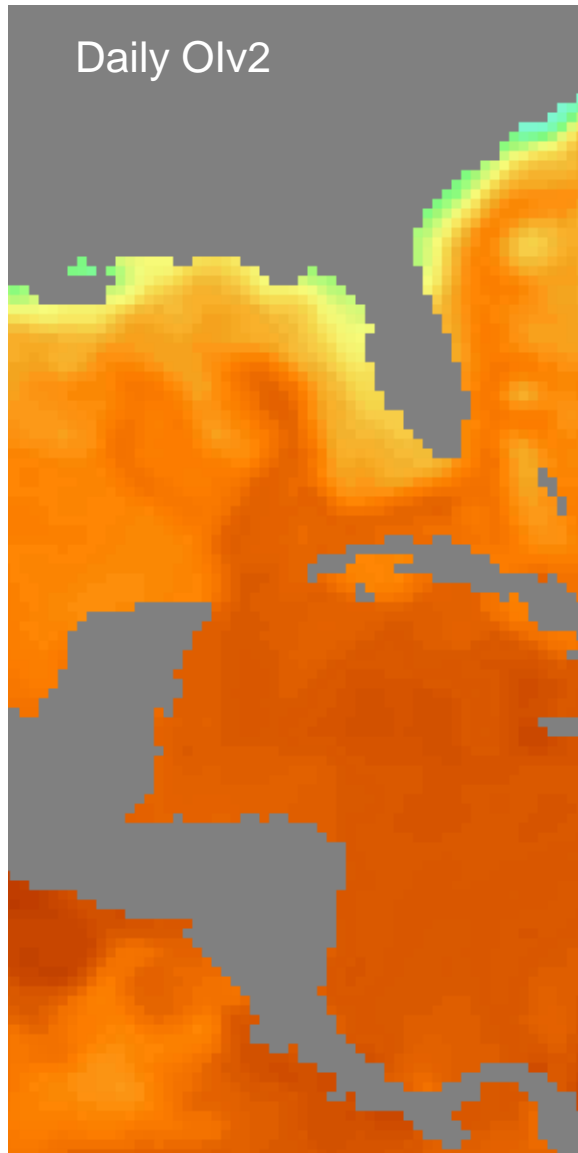
- **Produced daily from 24 hours of AVHRR & Geo-SST data**
 - NOAA-19, METOP-A
 - GOES-E/W Imager
 - MTSAT-2 Imager
 - Meteosat-10 SEVIRI
- **Does not use buoy data**

VALIDATION

- **POINT BY POINT MATCHING**

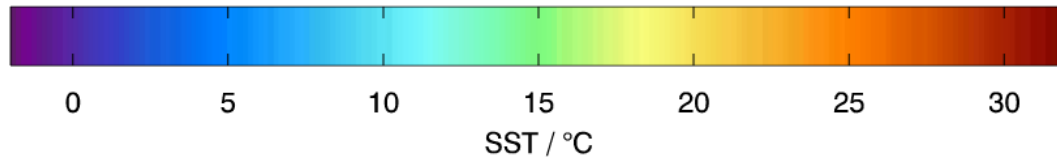
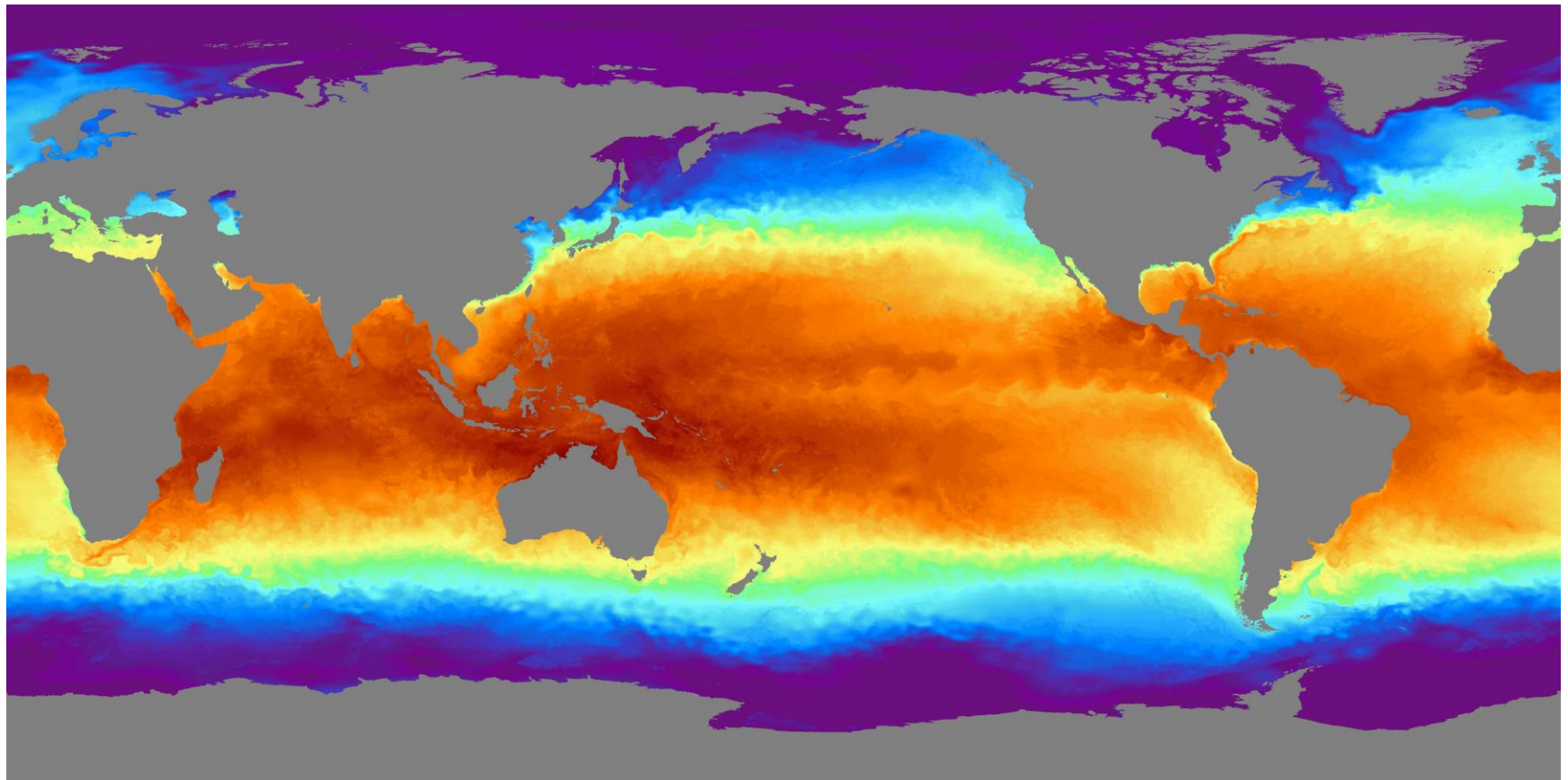
- RTG_HR Analysis
- Daily OI Analysis
- Drifting buoy data
- Statistically compare Analysis SST with buoys and other high- resolution SST analyses for quality monitoring

Resolution difference



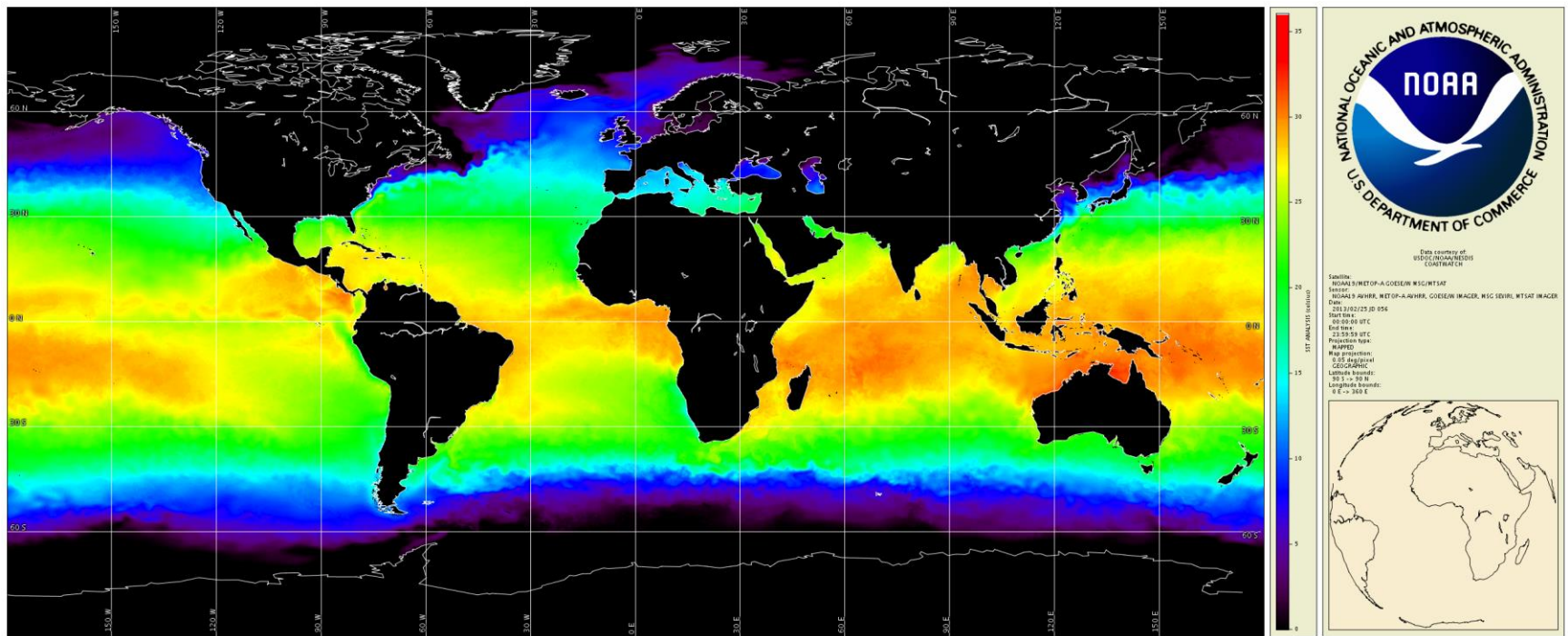
5-km Global Blended SST Analysis

DAY/NIGHT



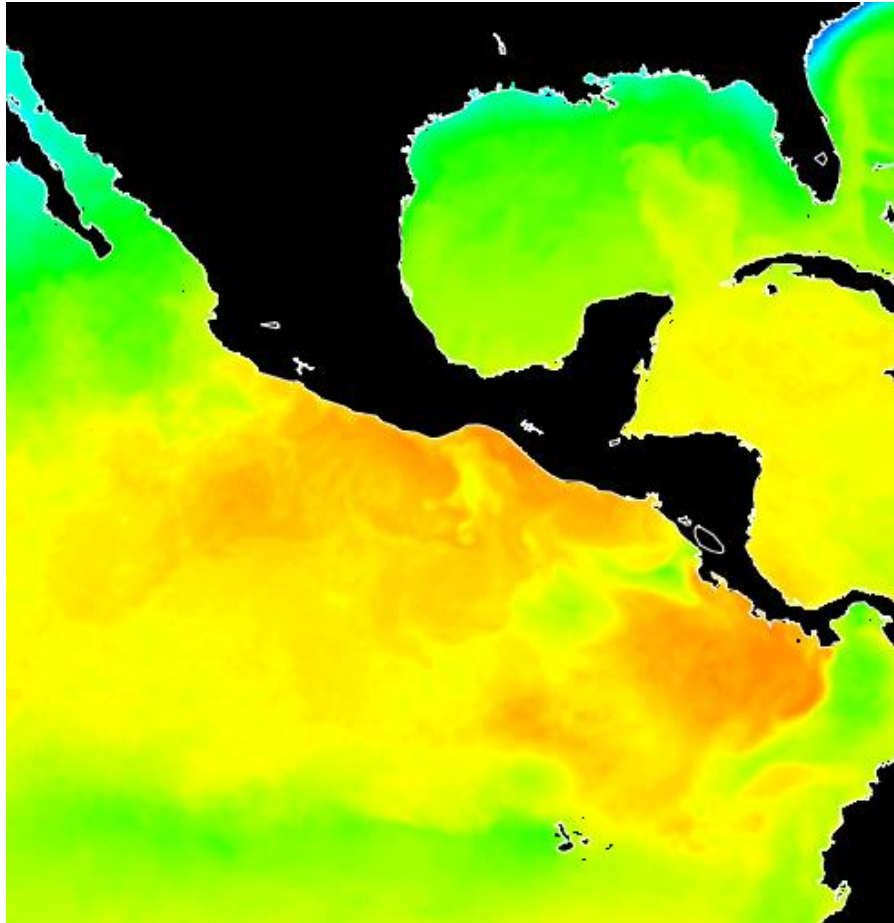
5-km Global Blended SST Analysis

NIGHTTIME



5-km Global Blended SST Analysis

NIGHTTIME



GEO-Polar Planned Improvements

- Inclusion of 1-km VIIRS SST (2013)
- Inclusion of METOP-B SST (2013)
- Improved bias correction scheme (2013)
 - Currently referenced to NCEP RTG
 - Move to OSTIA (Ocean Surface Temperature and Ice Analysis) Reference
- Inclusion of MW data (2014)
 - AMSR-2 SST
- Diurnally corrected product (2014)
 - Provide improved “foundation” SST

REPROCESSING GEO-POLAR BLENDED SSTs

- Geo-Polar Blended SST Analysis
(0.05° x 0.05°) Reprocessed NetCDF-4
Daytime/Nighttime
Nighttime Only
- September 2004 to Present
 - Requires all geostationary satellite data reprocessed
 - Requires all polar satellite data reprocessed
- Requested by NOAA Coral Reef Watch (CRW) Users
 - Provides ability to generate climatology for CRW products
- BEGAN: APRIL 2013
- END: APRIL 2014