NOAA 0.25° Daily Optimum Interpolation Sea Surface Temperature (OISST)

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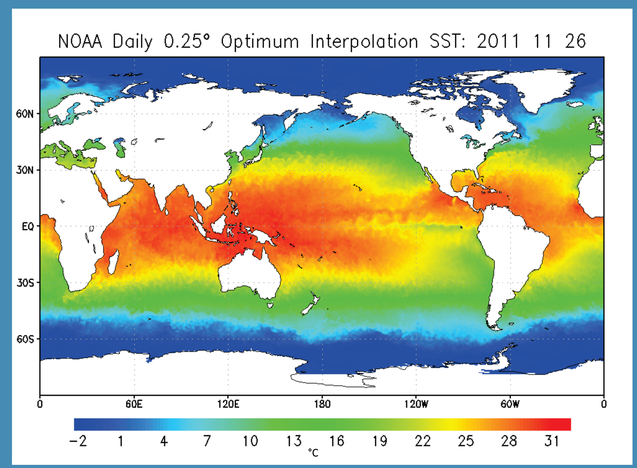
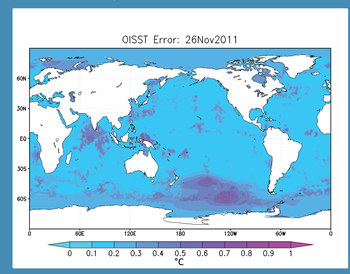
CDR Image

Daily OISST

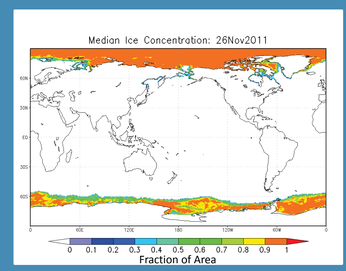


- *In situ* and satellite (AVHRR) data are combined
- Gaps filled using optimum interpolation (OI)
- Bias adjustment for different observation types

Companion Fields



- Error estimate allows users to exclude or assign diminished weight to lower quality SSTs



- 7-day median sea ice used to estimate SST at ice margin (popular with ice modelers)

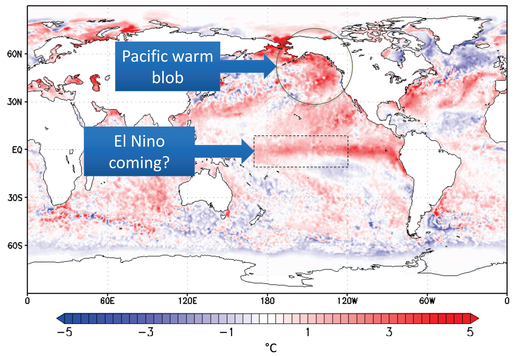
CDR Description

- **Resolution:** Daily, 0.25° spatial grid (~25 km)
- **Coverage:** Global ocean
- **Update Frequency:** Everyday since Nov 2008 (v2 release)
  - Preliminary OISST (1-day latency)
  - Replaced by final (science quality) product after 2 weeks
- **Targeted users:** Weather and climate modelers
- **Unanticipated users**: Ecologists, satellite algorithm developers, fisherfolk

Current Applications Based on the CDR

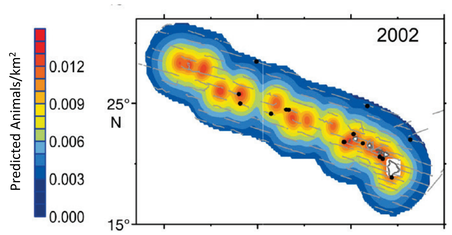
- **Modeling:** Climate Forecast System model at NCEP is initialized with daily OISST
- **Monitoring:** OISST anomalies show departures from "normal" conditions

NOAA Daily 0.25° OISST Anomaly: 20 June 2015



- **Ancillary dataset:** TRMM rain rate, MODIS SST, primary production computations
- **Decision support/resource management:** Predict marine organism distribution

Short-finned pilot whale



From Forney et al. (2015). Habitat-based models of cetacean density and distribution in the Central North Pacific. Endangered Species Research, 27: 1-20.

Future Improvements of the CDR and Anticipated Applications

Proposed Improvements

- Reprocess using updated inputs
- Include microwave SSTs (AMSR-E, WindSat, AMSR2)
- Higher resolution, ~0.04° (~4 km)

Potential Applications

- Same as current but higher resolution is more suitable for regional/local resource management
- Environmental Impact Assessments (EIA) required by National Environmental Policy Act (NEPA)