NOAA CoastWatch Ocean Color Data Dissemination

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# NRT & Science Quality Data

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Near-Real Time</th>
<th>Delayed-Mode/Science-Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latency:</td>
<td>Best effort, as soon as possible (~12-24h)</td>
<td>Best effort, ~1-2 weeks delay</td>
</tr>
<tr>
<td>Processing System:</td>
<td>MSL12</td>
<td>MSL12</td>
</tr>
<tr>
<td>SDR:</td>
<td>IDPS Operational SDR</td>
<td>OC-improved SDR</td>
</tr>
<tr>
<td>Ancillary Data:</td>
<td>Global Forecast System (GFS) Model</td>
<td>Science quality (assimilated; GDAS) from NCEP</td>
</tr>
<tr>
<td>Spatial Coverage:</td>
<td>May be gaps due to various issues</td>
<td>Complete global coverage</td>
</tr>
<tr>
<td>Processed by:</td>
<td>CoastWatch, transferring to OSPO (operational) FY16</td>
<td>NOAA/STAR</td>
</tr>
<tr>
<td>Distributed by:</td>
<td>CoastWatch</td>
<td>CoastWatch, NCEI</td>
</tr>
<tr>
<td>Archive Plans:</td>
<td>TBD (but not through STAR)</td>
<td>Yes, from CoastWatch to NCEI</td>
</tr>
<tr>
<td>Full Mission Reprocessing:</td>
<td>No</td>
<td>Yes, ~2-3 years or as needed</td>
</tr>
</tbody>
</table>
Suomi NPP VIIRS OC Data Products

- **Near Real Time** (Jan 21, 2015 – Present; 2/2012 – Present in November)
  - Global
  - Regional
Suomi NPP VIIRS OC Data Products

- Near Real Time (Days 1-8)
  - Global
  - Regional

- Science Quality (Days 8 – n)
  - Global
  - Regional

- Reprocessed (Mission)
  - Global

Available Now
Available Early 2016
L3 Global 4km

NOAA/NESDIS/STAR

Daily  Weekly  Monthly

9/2/2015
L3 Global 750m Sectors

UZ  VZ  WZ  XZ  YZ  ZZ
UY  VY  WY  XY  YY  ZY
UX  VX  WX  XX  YX  ZX
UW  VW  WU  XW  YW  ZW
L3 Regional

- “CONUS” 750m regions: Hawaii, West Coast, Great Lakes, Northeast, Southeast, Gulf of Mexico, Caribbean

Granule

Daily Merge
Regional Partners (1)

- EUMETSAT
  - Processing and staging of 750m Mediterranean datasets (L3 available through CoastWatch)
  - EUMETcast (Copernicus Service) broadcasts L2 VIIRS

Shown: L3 Daily merge, kdPAR
Regional Partners (2)

- CSIRO
  - Processing and staging of L3 Australia 750m datasets
L2 & L3 Global Products

- **Standard:**
  - Chlorophyll-a
  - Kd490
  - KdPAR
  - nLw_412
  - nLw_445
  - nLw_488
  - nLw_555
  - nLw_672

- **L2_flags**
- **Latitude**
- **Longitude**

- **Experimental:**
  - IOPs
  - PAR

Future Inclusion
L2 & L3 Regional Products

- **Standard:**
  - Chlorophyll-a
  - Kd490
  - KdPAR
  - nLw_412
  - nLw_445
  - nLw_488
  - nLw_555
  - nLw_672

- **Experimental:**
  - IOPs
  - PAR

- **Future Inclusion**

- **L2 flags**
- **Latitude**
- **Longitude**
- **Edgemask**

- **User Driven:**
  - HAB anomaly product
  - Rrs
  - Others TBD
Data Formats

- Global / Sector:
  - NetCDF (v4 CF)
  - GeoTIFF & PNG

- Regional:
  - NetCDF(v4 CF)
  - HDF (v4 with CoastWatch metadata)
  - GeoTIFF & PNG
Access & Protocols (1)

- HTTP
- FTP
- THREDDS
  - OPENDAP
  - NetcdfSubset
- WCS
- WMS
- NCML
- ISO
- UDDC
Access & Protocols (2)

- HTTP:
  - http://coastwatch.noaa.gov

- FTP:
  - ftp://star.nesdis.noaa.gov/pub/socd/mecb/coastwatch/viirs/

- THREDDS:
  - http://coastwatch.noaa.gov/thredds
L2 Granule Selector

The NOAA CoastWatch S-NPP VIIRS granule selector enables a user to select a Level-2 VIIRS ocean color dataset by selecting a date and clicking on the granule that covers the user’s area of interest. The background data will change to show the chlorophyll-a product for the selected day and clicking on a granule will open an information window containing a true color image and various access points to retrieve the data.

Date: 2015-08-25 Time: 2052
Download Data:
True Color Image (PNG)
VIIRS L2 Ocean Color Data (CW NetCDF)
VIIRS Ocean Color Channel Data (CW HDF)
THREDDS access
Planned Enhancements

- **Data Portal**
  - Facilitate the discovery and access to Ocean Data
  - Present a variety of search options
    - Locate the single or handful of datasets (Granule Selector/CW web search)
    - Locate a small to intermediate collection of data meeting user-driven criteria (in development)

  - Locate bulk collections of data (science data on FTP/THREDDS)
Sentinel-3A

- A Cooperative Arrangement between the United States and the European Commission is nearing ratification
- NOAA (NESDIS/)STAR plans to provide near real-time access to global OLCI and SLSTR data products from EUMETSAT
- EUMETSAT data transferred via terrestrial multicast to NOAA – initial tests promising
- OLCI data complements existing JPSS sensors:
  - 300m spatial resolution
  - Spectral bands meeting NOAA NOS HAB requirements
  - Relieves single point-of-failure for HAB forecasting
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Center for Satellite Application and Research
National Environmental Satellite, Data, and Information Service (NESDIS)
Backup Slides
Example “Snapshot” 9/2016

Science-Quality Data replaces 8-day old NRT data

IDPS SDR GFS Model

OC SDR GDAS

1 Week

Reprocessing V1 (MSL12 v1.0.3)

MSL v1.0.2

MSL12 v1.0.4

“forward science processing”

9/1/2016
Example “Snapshot”

Science-Quality Data replaces 8-day old NRT data

Reprocessing/Science 1

Science 2

NRT

Science 1

Science 2

Reprocessing V1

IDPS SDR GFS Model

GDAS

Science-Quality "forward science processing"

1 Week

2012 2015 2016 Today

9/2/2015 NOAA/NESDIS/STAR