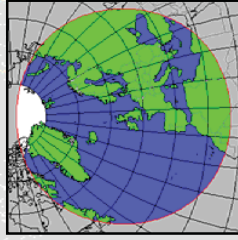


## Satellite reception and archive

- The Dundee station operates several antennas for direct data reception from a range of polar orbiting EO satellites.



- Geographical coverage includes Europe, North Atlantic and parts of the Arctic and North Africa as shown right.
- The archive is unique in terms of length, frequency and consistency of coverage and is ideal for long time series analysis.

- Data sets acquired are as follows:

Satellite/Sensor	Period
NOAA/AVHRR	1978-Present
Terra & Aqua/MODIS	1999-Present
Orbview-2/SeaWiFS	1997-2004

## Near real time processing

- 1-km data are processed within a couple of hours of a satellite overpass.
- Global 1-km data from NASA and ESA can be processed within 4-8 hours
- Products available from various sensors are shown below.

Sensor	Period
AVHRR	Sea surface temperature, Front maps, NDVI, land brightness temperature
SeaWiFS	Chlorophyll-a, water radiance, SPM proxy, Turbidity, RGB
MODIS Aqua	Chlorophyll-a, water radiance, SPM proxy, Turbidity, RGB, Sea surface temperature
MERIS	Chlorophyll-a (case 1 & 2), RGB, SPM Proxy

- Level-3 3-day, weekly and monthly, time composites using mean or median algorithm are produced at full resolution.

- Research cruises are supported in near-real-time. Images assist with pre-cruise planning and modifying sampling whilst at sea. This is particularly useful for studies of transient or developing features such as phytoplankton blooms or mesoscale eddies.

## NEODAAS web access

- The NEODAAS home page ([www.neodaas.ac.uk](http://www.neodaas.ac.uk)) provides a common front end to the services at Dundee and Plymouth.

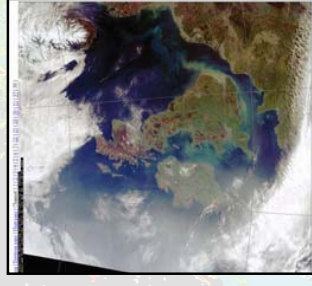
NEODAAS home page.

- The main data portal is accessed from the home page and provides data selection by processing level, product type, date-range and area of interest.
- This then links to relevant data browsers (see panel on right) depending on the selection.

NEODAAS data portal

## Browse pass data

- Free access to browse imagery of the entire archive and image search facilities
- Most full resolution data are online facilitating immediate user access and rapid processing of long time series.

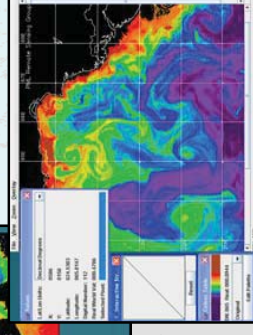


MODIS pass information and the UK RGB browse image.

## Browse mapped data

- All the near real time mapped data can be accessed online by registered users through our web site.
- Clicking on an image will load an image viewer as seen below where full resolution data can be visualised and analysed using a Java plug-in image analysis tool

(left) 7 days of AVHRR SST images plus composite displayed in the Multi-view browser



(Right) MODIS Aqua chlorophyll image (27th March 2006) displayed in the java image viewer.



## The future

### Extending the partnership

- The websites are being linked for the NEODAAS site. Initial developments will include unified user registration and login procedures and providing a common search interface to products at each site.
- Plymouth processing systems are to be operated at Dundee for fastest turn around from data reception to product availability and to provide backup through processing capability at both sites.

### New satellites

- Dundee is ready to receive from the new European MetOp series, which will extend the AVHRR archive to 40 years.
- Preparations are ongoing to support the future US NPP/NPOESS satellites which follow the current missions.
- Other satellites with direct broadcast capability such as Chinese Feng-Yun can be supported if required by users.

### New products

- In addition to routinely providing 1km satellite data shown overleaf, Plymouth also develops other scientific products some of which are outlined below.

#### High resolution data

- Prototype 250 and 500m ocean colour products from the MODIS sensor have been developed. These are of particular use for studying coastal and some estuarine features.
- A similar service will be established with 300m MERIS data when these data become available in near-real time from ESA

#### Primary production data

- Estimates of phytoplankton primary production (carbon production) can be computed from EO and model based chl<sub>a</sub>, SST and meteorological data.

#### Water clarity products

- Useful in monitoring the quality of the marine environment.

#### Antarctic AVHRR 1km data

- AVHRR data from the BAS Rothera receiving station have been processed at Plymouth and full pass and mapped products will soon be available online.

### Increased online storage

- The aim is to provide online storage for the complete Dundee archive for better data management, access and usability with greater scope to derive products across the entire archive.

## Data services

### Additional data

- Additional products that can be supplied include:
  - Global datasets: mirrors of AVHRR Pathfinder, and Ocean colour 4 and 9km data.
  - Atmospheric products
  - Microwave SST
  - Altimetry
  - Land surface parameters such as temperature, NDVI
  - Atmospheric correction of marine data from the NERC Airborne Research and Survey Facility
  - Geostationary satellite imagery giving full global coverage

### Data extraction services

#### Area sub-scenes

- Extraction of an area of interest saves space and eases examination of the study region.
- Data palettes can be rescaled to help identify features.

#### Time series data

- Extraction of time series data for specific locations, either at a point, or along a transect.
- Averaging of data over box regions.
- Output in text format that can easily be input into any spreadsheet or package for analysis.

#### Data formats

- Data are provided 8 or 16 bit raw, GIF, TIF or PNG.
- On request netCDF and GeoTiff can also be produced.

## Contact details

**Email:** [info@neodaas.ac.uk](mailto:info@neodaas.ac.uk)

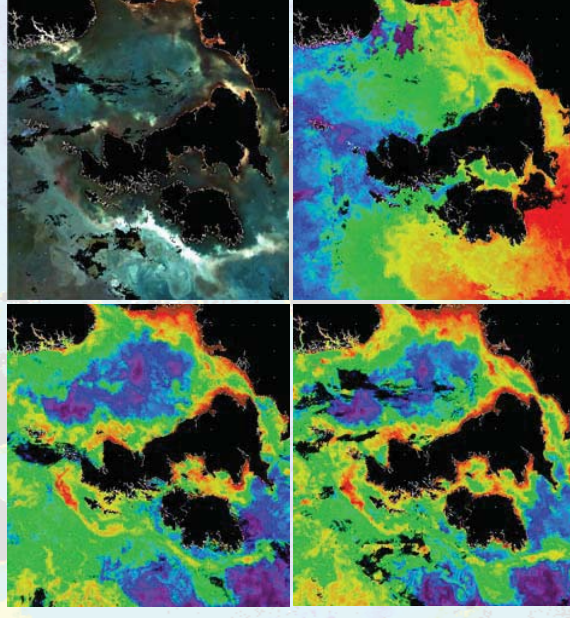
**Website:** <http://www.neodaas.ac.uk>

The website provides free access to browse imagery for data and products. Academic researchers can request access to full resolution data by completing a short application form.

## NEODAAS

### NERC Earth Observation & Data Acquisition & Analysis Service

NEODAAS formally links two facilities whose close partnership has supported academic researchers for many years. Dundee University's Satellite Receiving Station provides EO data acquisition facilities and the Remote Sensing Group at Plymouth Marine Laboratory provides data processing and analysis services. This leaflet gives an overview of the new facility.



UK coastal waters 14<sup>th</sup> June 2006: (top-left) MERIS chlorophyll, (top-right) MODIS Aqua true colour, (bottom-left) MODIS Aqua chlorophyll, (bottom-right) AVHRR SST.

