

Home Page

<https://neo.sci.gsfc.nasa.gov/>



The screenshot shows the NASA NEO website home page. At the top, the NASA logo and 'NEO NASA EARTH OBSERVATIONS' are displayed. A navigation menu includes 'ATMOSPHERE', 'ENERGY', 'LAND', 'LIFE', 'OCEAN', 'NEWS', and 'ABOUT'. The main content area features a large image of Earth's atmosphere with a color-coded overlay, and a sidebar with a featured article titled 'Aerosol Optical Thickness'. Below the main image, there is a 'BROWSE DATASETS BY CATEGORY' section with a 'See All' button for 'Atmosphere'. The sidebar also includes a 'NEWS' section with a 'See All' button and a featured article titled 'Analysis: Pacific life during warm and normal winters'.

ATMOSPHERE

Aerosol Optical Thickness

Tiny solid and liquid particles suspended in the atmosphere are called aerosols. Examples of aerosols include windblown dust, sea salts, volcanic ash, smoke from fires, and pollution from factories. These particles are important to scientists because they can affect climate, weather, and people's health. Aerosols affect climate by scattering sunlight back into space and cooling the surface. Aerosols also help cool Earth in another way — they act like "seeds" to help form clouds.

[Read more](#)

BROWSE DATASETS BY CATEGORY

Atmosphere [See All](#)

NEWS [See All](#)

Aug 3, 2017
Analysis: Pacific life during warm and normal winters
[Read more](#)

Example Category and Datasets

The screenshot displays the NASA Earth Observations (NEO) website interface. At the top left is the NASA logo and the text "NEO NASA EARTH OBSERVATIONS". A yellow box labeled "Categories" highlights a navigation bar with tabs for "ATMOSPHERE", "ENERGY", "LAND", "LIFE", "OCEAN", "NEWS", and "ABOUT". The "OCEAN" tab is selected. Below this, a red rounded rectangle labeled "Datasets" encloses a grid of eight dataset cards, each with a world map thumbnail and a title: "Average Sea Surface Temperature 1985-1997 (AVHRR)", "Bathymetry", "Blue Marble: Next Generation", "Chlorophyll Concentration", "Global Temperature Anomaly", "Sea Ice and Snow Extent, Northern Hemisphere", "Sea Ice Concentration and Snow Extent, Global", and "Sea Surface Salinity 2011-2015". Below the grid, there are controls for "View by date:" (with "8 day" and "1 mo" buttons), a color scale legend for "(mg/m³)" with values .01, .03, .1, .3, 1, 3, 10, 30, 60, and a "Download color table" link. To the right is a "Related Websites" section listing "NASA OceanColor Web", "MODIS", and "Aqua". At the bottom, it shows "Dataset you are currently viewing: July 2017" and a "Select Year" dropdown menu set to "2017".

Example Dataset

NASA NEO NASA EARTH OBSERVATIONS

ATMOSPHERE ENERGY LAND LIFE OCEAN NEWS ABOUT IMAGES ANALYZE

CHLOROPHYLL CONCENTRATION (1 MONTH - AQUA/MODIS)

ADD TO ANALYSIS

Currently viewing:
July 2017
Permalink

Downloads

File Type: **JPEG**

Color Grayscale

1.0 degrees 360 x 180
0.5 degrees 720 x 360
0.25 degrees 1440 x 720
0.1 degrees 2880 x 1440

Satellite/tool data collection

View by date:
 8 day 1 mo

(mg/m³)
0.1 0.3 1 3 10 30 60
Download color table

Dataset you are currently viewing: July 2017 Select Year: 2017

July 2017 August 2017 September 2017 October 2017 November 2017 December 2017

Data No Data Currently Viewing

About this dataset Basic Intermediate Advanced

Tiny plants called phytoplankton grow in the sunlit waters of the ocean's surface. Like all plants, phytoplankton contain chlorophyll, a pigment that transforms sunlight into energy the plant can use. This same pigment gives phytoplankton their greenish color. Chlorophyll absorbs most visible light but reflects some green and near-infrared light. By measuring what kind of light is absorbed and reflected, the MODIS sensor aboard NASA's Aqua satellite can measure chlorophyll concentrations in the ocean. Scientists use measures of chlorophyll concentration to determine the abundance of plants near the surface of the ocean.

Related Websites
NASA OceanColor Web
MODIS
Aqua

Further Reading
<https://doi.org/10.1029/2011JC007395>
Hu, C., Z. Lee, and B.A. Franz (2012). Chlorophyll-a algorithm for oligotrophic oceans: A novel approach based on three-band reflectance difference. *J. Geophys. Res.*, 117, C01011, doi:10.1029/2011JC007395.

ATBD (Algorithm Theoretical Basis Document)
Moderate-resolution Imaging Spectroradiometer (MODIS) Aqua Chlorophyll Data: 2014 Reprocessing
NASA Goddard Space Flight Center, Ocean Ecology Laboratory, Ocean Biology Processing Group, NASA OB DAAC, Greenbelt, MD, USA, doi:10.5067/AQUA/MODIS/L3B/CHL/2014

Credits
Imagery produced by the Earth Observations Group in cooperation with

Data interpretation

How is data used?