

# World Ocean Database 2001

## World Ocean Atlas 2001

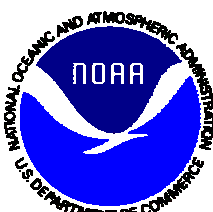
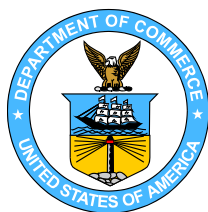
### World Ocean Atlas 2001 Figures

The Ocean Climate Laboratory (OCL) of NOAA's National Oceanographic Data Center (NODC) has completed the update of previous releases of global oceanographic data. The *World Ocean Database 2001* (WOD01) expands on earlier compilations by including new variables, data types, and additional historical and modern observations. Changes with this edition of the World Ocean Database fall into four categories: stations added; stations with major changes (changes to position, date, depth of measurements and/or measured variables); stations removed; and stations moved from one database to another. The WOD01 comprises a total of eight CD-ROMs. Discs 1 through 7 contain the observed depth profile, surface, and plankton data; disc 8 contains global standard depth level data. The CD-ROM contents are based on the different instrument types used to sample data: Ocean Station Data, Expendable Bathythermograph, Mechanical Bathythermograph, High Resolution Conductivity-Temperature-Depth (CTD), Bottle and Low Resolution CTD, Undulating Oceanographic Recorders, Floats, Buoys, Continuous measurements. A series of publications is also available detailing the temporal distributions of

- Bathythermograph profiles
- Conductivity/Salinity-Temperature-Depth (Pressure) Casts
- Temperature, Salinity and Oxygen Profiles
- Nutrient Profiles
- pH, Alkalinity, pCO<sub>2</sub> and tCO<sub>2</sub> Data
- Chlorophyll and Plankton Data

Data Type	Climatological Atlas of the World (1982)	NODC 1991 Global Ocean T/S Profiles (CD-ROM)	WOA94	WOD98	WOD01
Station data & low resolution C/STD profiles	425,000	783,921	1,194,407	1,373,440	2,121,042
High resolution CTD profiles	na	66,450	89,000	189,555	311,943
MBT profiles	775,000	980,377	1,922,170	2,077,200	2,376,206
XBT profiles	290,000	704,424	1,281,942	1,537,203	1,743,590
Moored Buoys (MRB)	na	na	na	107,715	297,936
Drifting Buoys	na	na	na	na	50,549
Profiling Floats	na	na	na	na	22,637
Undulating Oceanographic Recorders	na	na	na	na	37,645
Autonomous Pinniped Bathythermograph	na	na	na	na	75,665
<b>Total Stations</b>	<b>1,490,000</b>	<b>2,535,163</b>	<b>4,487,519</b>	<b>5,285,113</b>	<b>7,037,213</b>
Surface only data* (cruises)	na	na	na	na	4,743

\* Surface data are represented differently in the database - all observations in a single cruise have been combined into one "station" with depth, value of variable measured, and latitude, longitude and Julian year-day to identify data and position of individual observations.



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 Ocean Climate Laboratory

## World Ocean Database, Atlas, and Atlas Figures 2001

The *World Ocean Atlas 2001* (WOA01) contains ASCII data of statistics and objectively analyzed fields for one-degree and five-degree squares generated from World Ocean Database 2001 standard level flagged data. The ocean variables included in the atlas are: in-situ temperature, salinity, dissolved oxygen, apparent oxygen utilization, percent oxygen saturation dissolved inorganic nutrients (phosphate, nitrate, and silicate), chlorophyll at standard depth levels, and plankton biomass sampled from 0 - 200 meters. Objectively analyzed fields (one-degree grid) and difference from the annual mean fields are available for all of these variables. Statistics for one-degree and five degree squares for all variables (except plankton biomass) include:

- number of observations;
- arithmetic mean;
- standard deviation about the arithmetic mean; and
- standard error of the mean.

Additional computed and available fields include

- the number of grid points which contain data within the radius of influence surrounding each grid box by one-degree squares (grid point fields);
- annual and seasonal fields of unanalyzed means minus objectively analyzed means by one-degree squares for each one-degree square that contains data (interpolation error);
- land-sea mask used in the analysis at standard depth levels;
- definition of basins used in the analysis at standard depth levels.

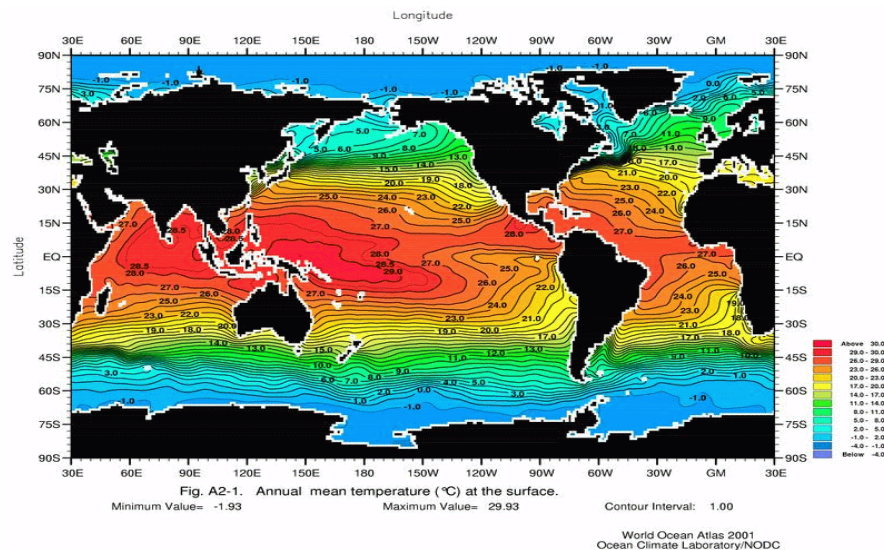
Fields available for plankton biomass include:

- annual and seasonal number of observations by one-degree square in the 0 - 200 meter layer;
- annual and seasonal fields of the unanalyzed means by one-degree in the 0 - 200 meter layer

The *World Ocean Atlas 2001 Figures* (WOAF01) product contains both JPG and PDF images of the fields described above as:

- annual, seasonal, and monthly global data statistics of observed, unanalyzed data for one-degree and five-degree squares at standard depth levels (see Table 1). The following statistics for each grid box are included: 1) number of observations, 2) arithmetic mean, 3) standard deviation, 4) standard error of the mean, 5) "interpolation error" of the objectively analyzed fields defined as fields of unanalyzed means minus objectively analyzed means of one-degree squares at standard depth levels.
- annual, seasonal, and monthly objectively analyzed mean fields by one-degree squares at standard depth levels.
- seasonal and monthly objectively analyzed fields minus annual mean objectively analyzed fields by one-degree squares at standard depth levels.

For the purpose of this product, the seasons are defined based on the Northern Hemisphere as Winter (January-March), Spring (April-June), Summer (July-September), and Fall (October-December). These data are also available online in JPEG or PDF formats.



All three World Ocean CD-ROM (WOD and WOA) or DVD (WOAF), in publication form, and online via the NODC webpage (<http://www.nodc.noaa.gov>). Online data access is free. The CD-ROM's and publications may be ordered via the order form included in this flyer, or may be ordered online at <http://www.nndc.noaa.gov>. All *online orders* are priced at the discount rate that would otherwise be available only to US government, research and educational facilities. products are available on

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• <b>NODC-148</b> WOD-01-01: Ocean Station & Surface Data (Observed Depth Data)	\$22.00/17.00		
• <b>NODC-149</b> WOD-01-02: North Atlantic 0°-90° (Observed Depth Data) (Conductivity, Temperature, Depth Probe; Undulating Oceanographic Recorder)	\$22.00/17.00		
• <b>NODC-150</b> WOD01-03: North Pacific 0°-90° (Observed Depth Data) (Conductivity, Temperature, Depth Probe; Undulating Oceanographic Recorder)	\$22.00/17.00		
• <b>NODC-151</b> WOD01-04: Southern Hemisphere, Indian Ocean (Observed Depth Data) (Conductivity, Temperature, Depth Probe; Undulating Oceanographic Recorder)	\$22.00/17.00		
• <b>NODC-152</b> WOD01-05: North Atlantic 0°-90° (Observed Depth Data) (XBT; MBT; Autonomous Pinniped BT; Moored Buoy; Profiling Float; Drifting Buoy)	\$22.00/17.00		
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• <b>World Ocean Database CD-ROM set</b> (Complete Set of 8 CD-ROM's)	<b>\$176/\$136</b>		
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• <b>NA-42</b> - WOD 2001 Volume 1: Introduction	\$20.00/15.00		
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• <b>NODC-158</b> WOD01-03: Nutrients, Chlorophyll, Plankton: <i>Objectively Analyzed Fields &amp; Statistics</i>	\$22.00/17.00		
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<b>WORLD OCEAN ATLAS 2001 PUBLICATION LIST:</b>			
• <b>NODC IR-17:</b> WOA2001: Objective Analyses, Data Statistics, & Figures CD-ROM Documentation	Free		
• <b>NA-49</b> - WOA 2001 Volume 1: Temperature	\$20.00/15.00		
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