NESDIS Environmental Inventory No. 2

Oceanographic Data for Development of the U.S. Exclusive Economic Zone

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service

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INTRODUCTION

This publication provides information on oceanographic data available from measurements at approximately 500,000 locations within the U.S. Exclusive Economic Zone (EEZ). Fifteen data types of potential use in economic development have been selected for presentation here from the more than forty oceanographic data files routinely maintained by the National Oceanographic Data Center (NODC).

The NODC is one of three discipline oriented data centers operated within the National Environmental Satellite Data and Information Service (NESDIS) of the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. The other two NESDIS environmental data centers are the National Climatic Data Center (NCDC), and the National Geophysical Data Center (NGDC). These organizations serve as national repositories and dissemination facilities for global oceanographic, climatological, and geophysical data.

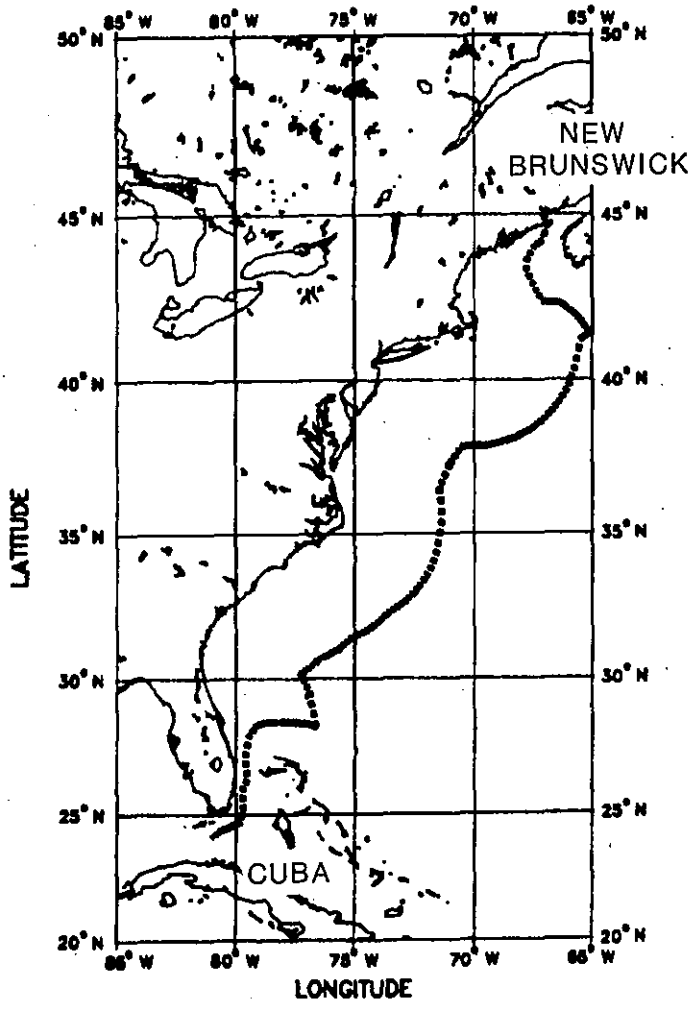
Data held by each center are acquired from a variety of sources including government agencies, universities and research institutions, private industry, and foreign organizations. Foreign data are obtained through bilateral exchanges and through the World Data Center (WDC) system. The World Data Center system comprises WDC-A in the United States, WDC-B in the U.S.S.R., and WDC-C in Western Europe and Japan. This multiple-center network is maintained to facilitate international data exchange, to protect data collections from catastrophic loss, and to make data accessible to users around the world. Most WDC-A subcenters are located at and operated by the corresponding NESDIS national data centers. World Data Center-A for Oceanography, for example, is operated by the NESDIS National Oceanographic Data Center.

The U.S. EEZ has been divided in this publication into six major areas for data coverage description. These are the U.S. east coast, gulf coast and west coast, Puerto Rico, Alaska and the Pacific islands. The Pacific islands have been further divided into three sub-areas because of their widely-scattered locations. These are Midway, Johnston Island, and Hawaii; Howland and Baker Islands, Palmyra Atoll, Jarvis Island, and American Samoa; and the Northern Mariana Islands, Guam, and Wake Island.

Data holdings for each of these areas are described in the form of map plots for each data type, or, in a few cases, for two similar data types. Sampling locations are shown and the total number of stations or observations is given along with the time period covered by data in the file. The accompanying text describes the nature of the data and any related observations.

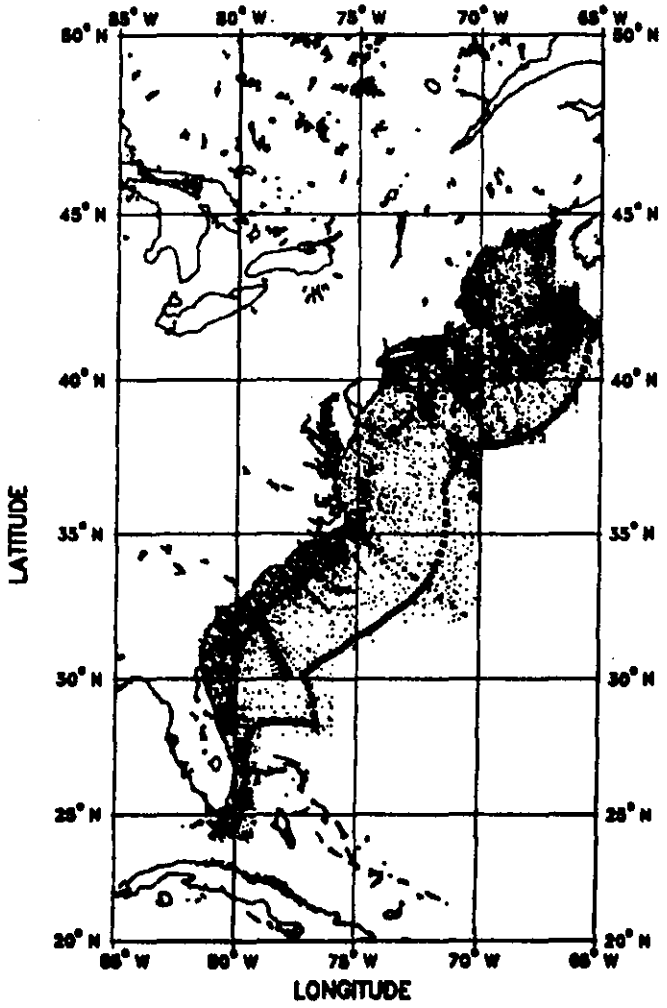
All data described in this publication are available from the National Oceanographic Data Center at costs that cover data retrieval and reproduction. In most cases subsets of the data can be selected and special presentations prepared to meet user specifications. User services personnel can assist in formulating data orders and may be able to provide more detailed data inventory information to assist in defining data selection criteria. In all cases, cost estimates are provided before data searches and retrievals are made. Addresses and telephone numbers of NODC contact points are provided on page 89.

EAST COAST



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

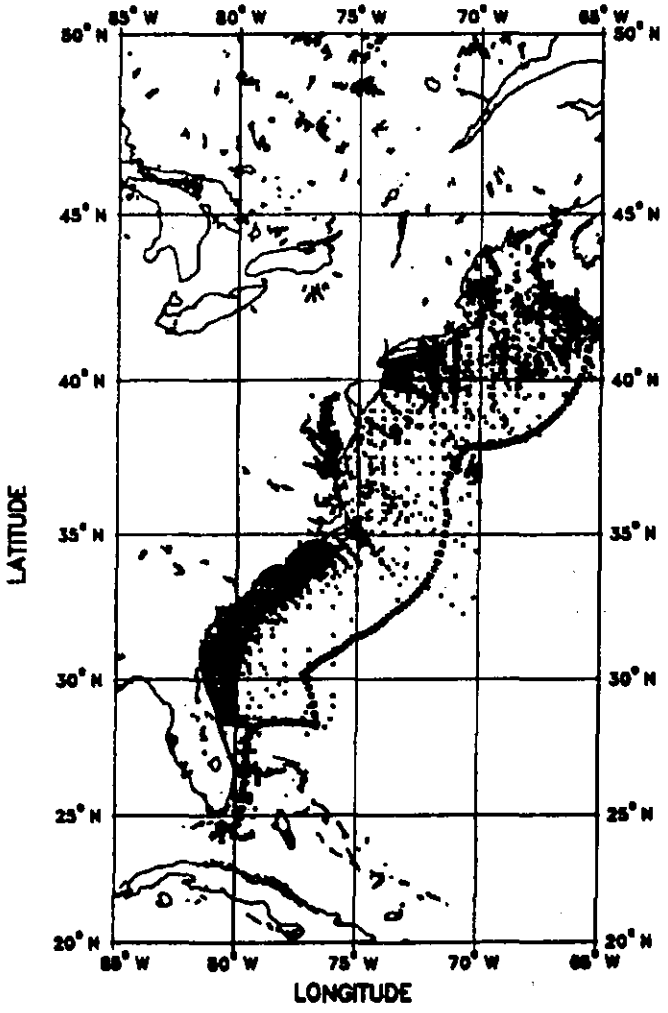
OCEANOGRAPHIC STATION DATA



Stations 22,070
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

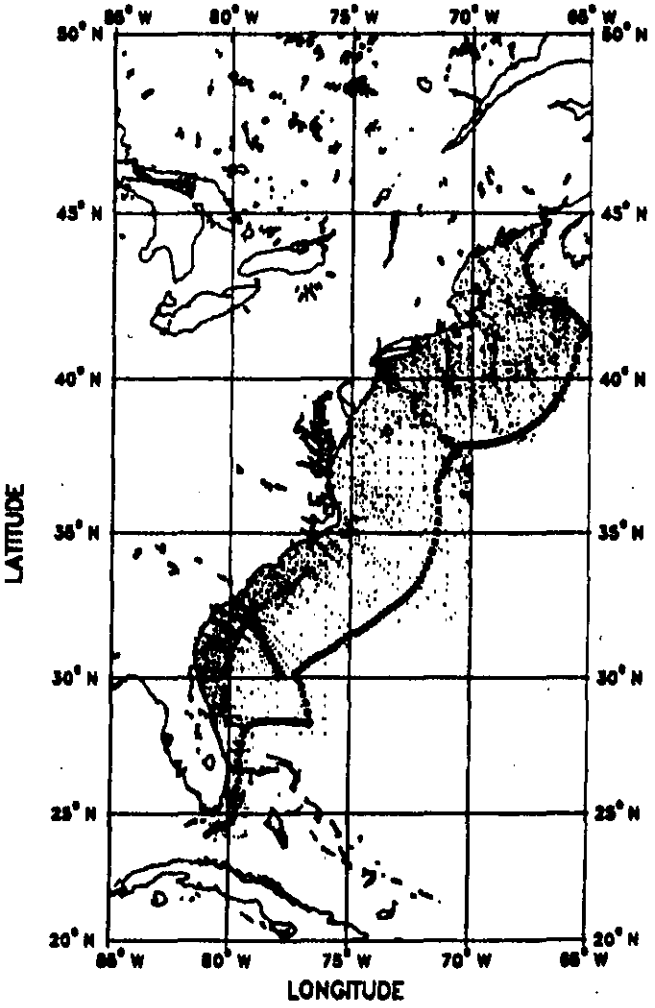
OCEAN STATION-NUTRIENT DATA



Stations 5,660
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

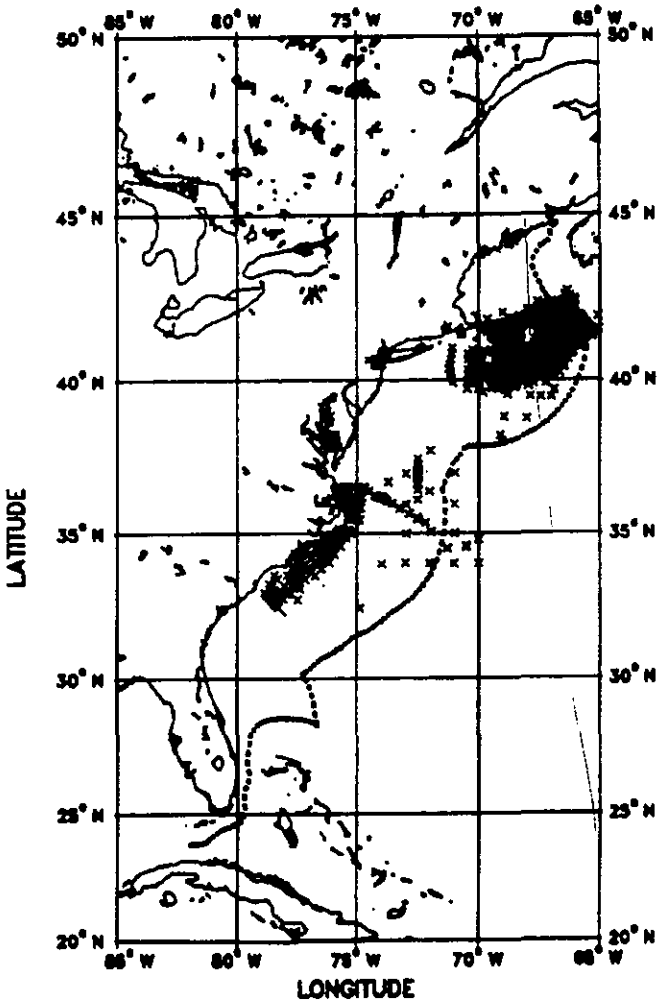
OCEAN STATION-DISSOLVED OXYGEN DATA



Stations 10,437
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

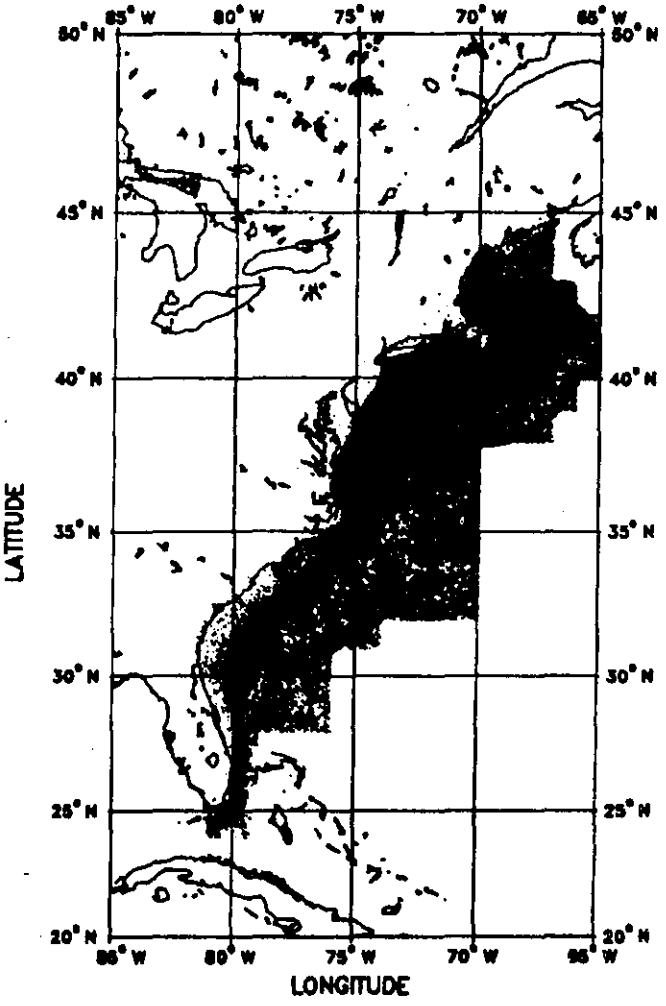
LOW RESOLUTION CTD/STD DATA



Stations 1,572
File Time Coverage 1969-1984

These data are low-resolution versions of conductivity-temperature-depth (CTD) and salinity-temperature-depth (STD) measurements obtained using electronic recorders. The term "low-resolution" refers to values being stored for up to 106 depth levels, including the 34 standard depth levels defined by the International Association of Physical Sciences of the Ocean (IAPSO), and not the entire original measured profile. Cruise information, position, date, and time are reported for each station. Principal measured parameters are temperature and salinity, and meteorological conditions at the time of observation, such as air temperature, barometric pressure, wind, and waves, may also be reported. Data are available in both cruise-sorted and geographically-sorted modes.

EXPENDABLE BATHYTHERMOGRAPH DATA

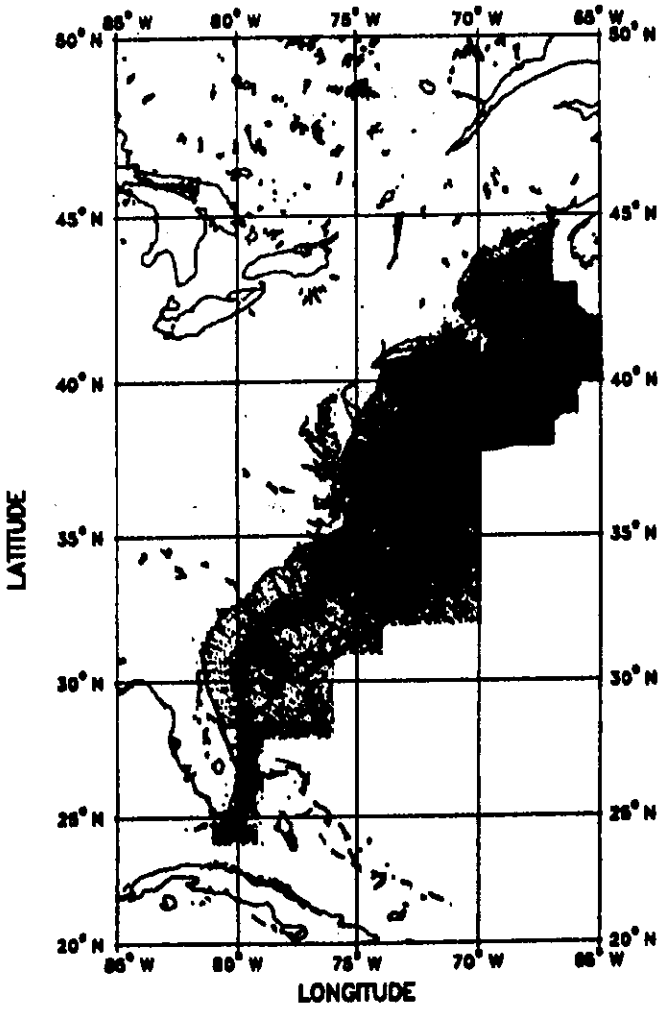


Stations 66,409

File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

MECHANICAL BATHYTHERMOGRAPH DATA

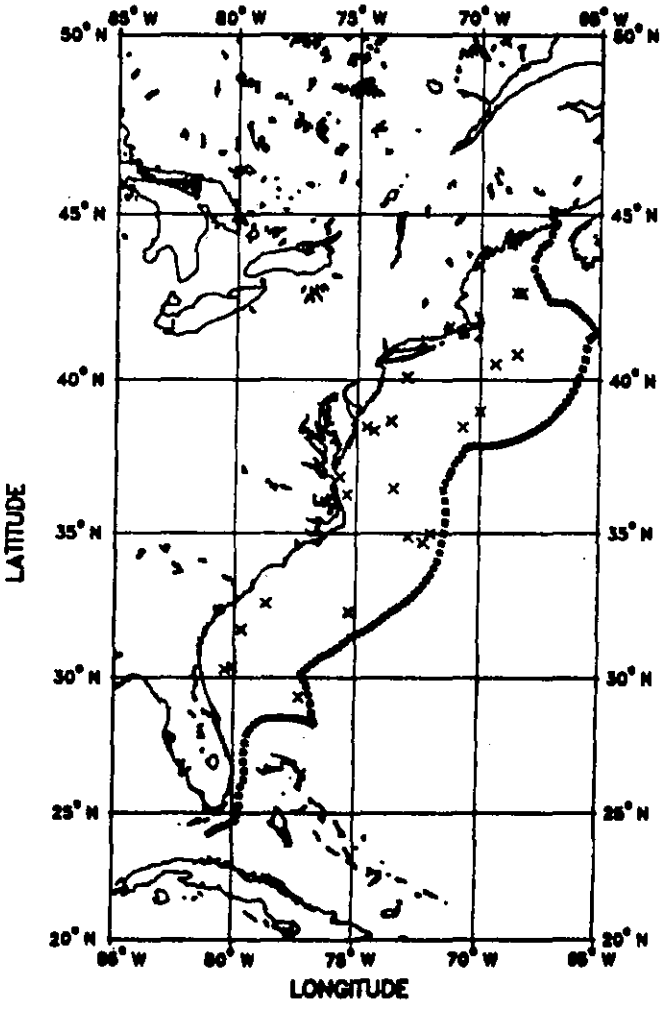


Stations 92,630

File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

METEOROLOGICAL AND WAVE SPECTRAL DATA

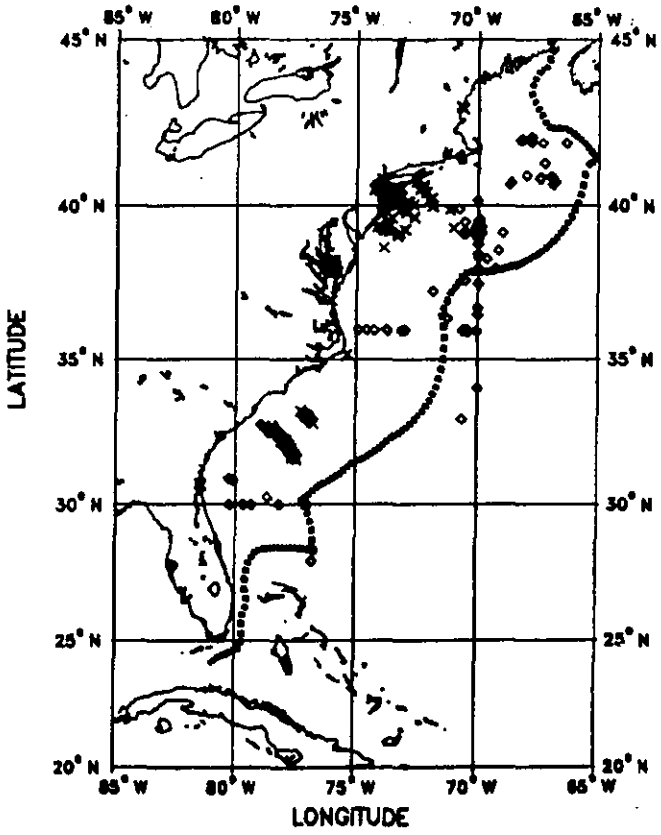


Observation Months 719

File Time Coverage 1970-1984

These are time series meteorological and oceanographic data collected from automated buoys operated by the NOAA Data Buoy Center (NDBC). The data are telecommunicated to U.S. operational centers for use in real-time forecasting and then accumulated and transmitted on magnetic tape to NODC. Station identifier, position, date, time, sampling duration, and sampling rate are reported for each series of measurements. Reported meteorological parameters typically include air temperature and pressure, dew point, wind speed and direction, wind gust, visibility, precipitation, and solar radiation. Ocean surface data may include water temperature and salinity or conductivity, significant wave height, average wave period and direction, dominant wave period, and maximum wave height and steepness. Subsurface temperature, salinity, conductivity, pressure, and east and north current components may also be reported. Wave data may be provided as spectral density values or, for directional spectra, as co- and quadspectra or angular Fourier coefficients. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

CURRENT DATA-COMPONENTS/RESULTANTS



◇ Observation Months 1,554 File Time Coverage 1962-1984

Current Data-Components

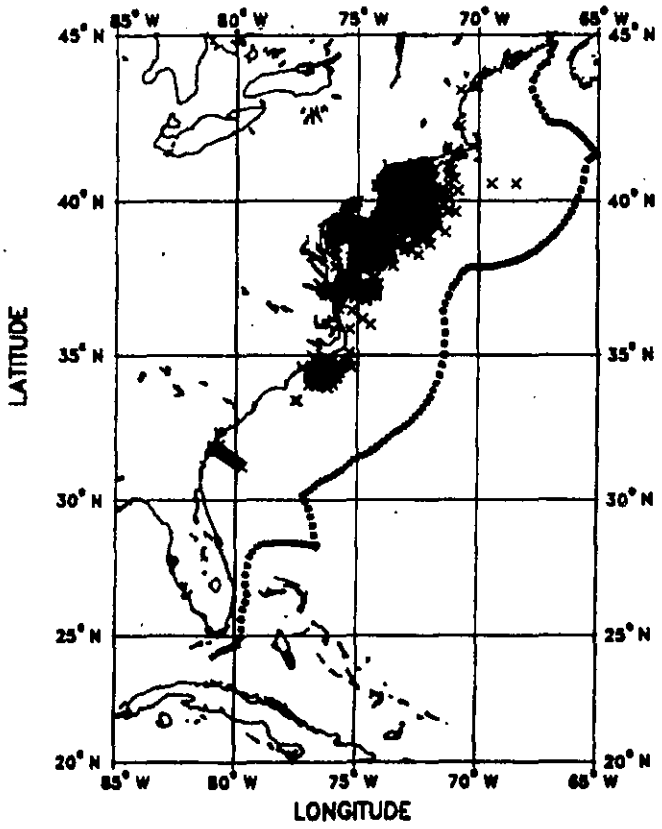
These data are time series measurements of ocean currents obtained from current meter moorings. Position, bottom depth, sensor depth and current meter characteristics are reported for each station. The data record comprises values of east-west (u) and north-south (v) current vector components at specific times and dates. Current direction is defined as the direction toward which the water is flowing with positive directions east and north and negative directions west and south. Data values may be subject to averaging or filtering and are typically reported at 10 to 15 minute intervals. Water temperature, pressure and conductivity or salinity may be reported as associated measurements. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

× Observation Months 2,361 File Time Coverage 1973-1984

Current Data-Resultants

These data are time series measurements of ocean currents obtained from current meter moorings, principally made using Aanderaa current meters. Position, bottom depth, and sensor depth are reported for each station. The data record comprises values of current direction and speed at specific times and dates. Data values may be subject to averaging or filtering and are typically reported at 10 to 15 minute intervals. Other environmental parameters may be reported as associated measurements including: water temperature, salinity, conductivity, transmissivity, wind direction and speed, and dominant wave direction, height and period. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

WATER PHYSICS AND CHEMISTRY/PRIMARY PRODUCTIVITY DATA



× Observations 14,958 File Time Coverage 1951-1982

Water Physics and Chemistry

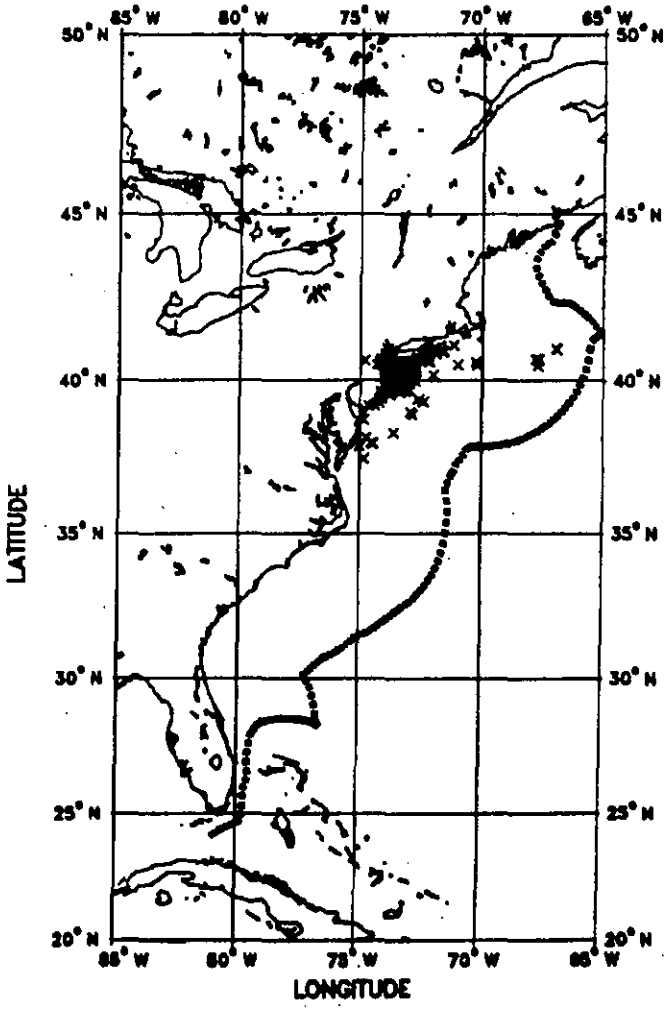
These data are from measurements and analyses of physical and chemical characteristics of the water column. Among chemical parameters typically recorded are pH, concentration of dissolved oxygen, ammonia, nitrate, phosphate, chlorophyll, and suspended solids. Physical parameters typically recorded include temperature, salinity, density (sigma-t), transmissivity, and current velocity (north-south and east-west components). Cruise and station information, including environmental conditions at the study site at the time of observation, is also included.

◇ Observations 730 File Time Coverage 1973-1978

Primary Productivity

These data are measurements of photosynthetic capacity and phytoplankton productivity collected to provide information on nutrient levels and nutrient flow in offshore areas. In addition to cruise information, position, date, time, and sampling depths, bottom depth, and general environmental information, parameters typically included are: concentrations of chlorophyll A, B and C, plant carotenoids; phaeopigments; concentrations of oxygen, particulate organic carbon, ammonia, nitrate, nitrite, silicate, and urea; temperature, salinity, and total alkalinity; and light penetration, and light intensity. Values of photosynthetic capacity and primary productivity may be reported as total values or partial values for phytoplankton, net plankton, nanoplankton, and dissolved organic matter.

MARINE TOXIC SUBSTANCES AND POLLUTANTS

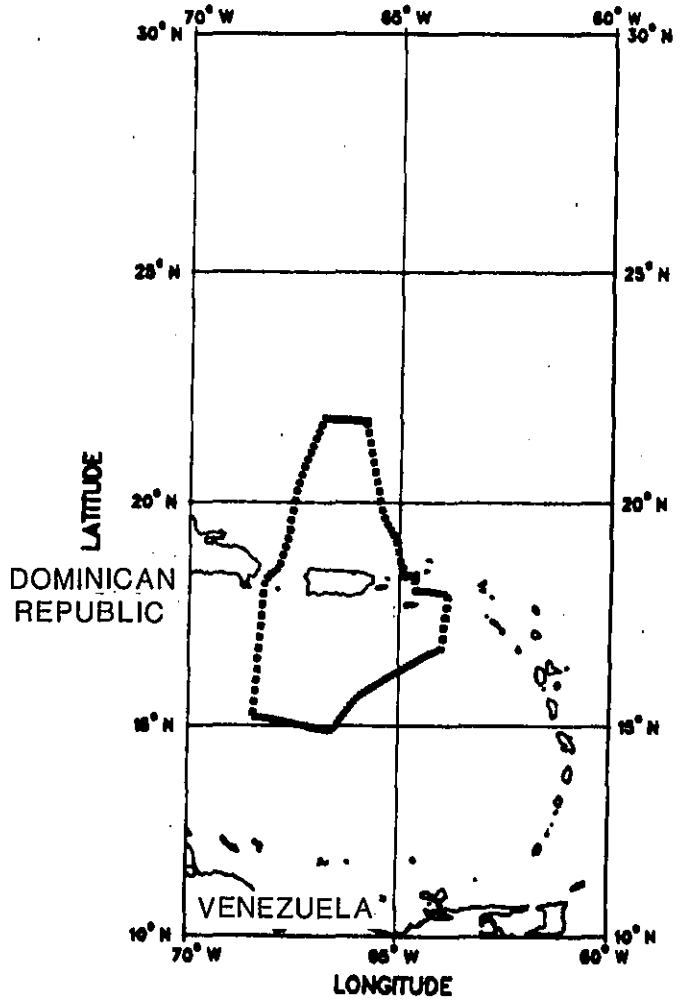


Observations 228

File Time Coverage 1974-1984

These are data on ambient concentrations of toxic substances and other pollutants in the marine environment which derive from laboratory analyses of samples of water, sediment, or marine organisms. These samples may have been collected either near marine discharge sites or during monitoring surveys of large ocean areas. Field observations of tar deposits on beaches may also be reported. Survey information includes platform type, start and end dates, and investigator and institution name. If data are collected near a dishcarge site then discharge location, depth, distance to shore, average volume, and other pertinent information is provided. Position, date, time, and environmental conditions are reported for each sampling station. Environmental data typically include meteorological and sea surface conditions, tidal stage and height, depth of the thermocline or mixed layer, sea surface temperature and salinity, and wave height and period. Sample characteristics, collection methods, and laboratory techniques are reported for each sample collected and analyzed. The data record comprises concentration values (or a code to indicate trace amounts) for each chemical substance analyzed. Chemical substances are identified by codes based on the registry numbers assigned by the Chemical Abstracts Service (CAS) of the American Chemical Society. Marine organisms from which samples have been taken are identified using the 12-digit NODC Taxonomic Code.

PUERTO RICO



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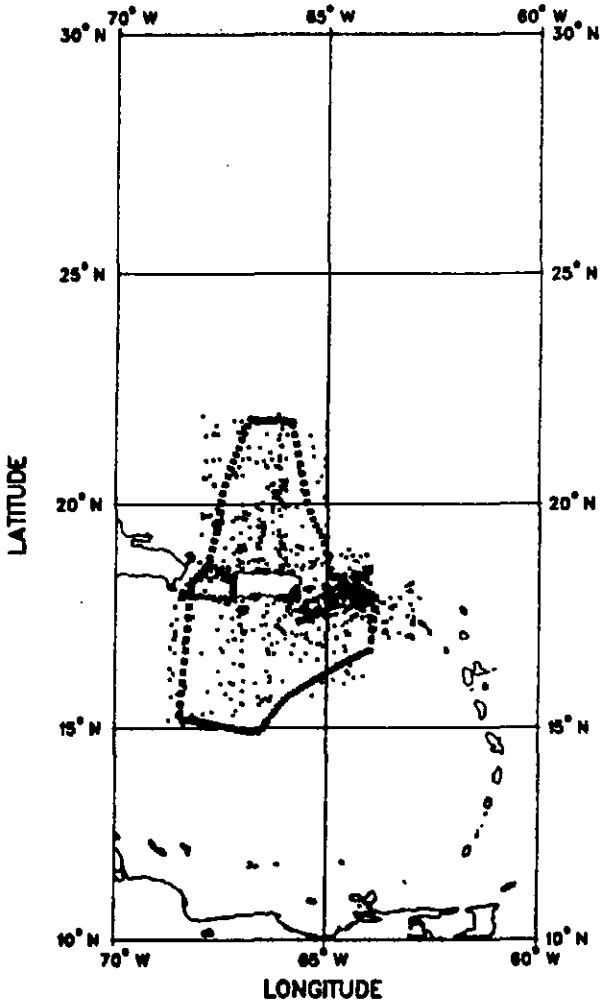
OCEANOGRAPHIC STATION DATA



Stations 1,796
File Time Coverage 1900-1984

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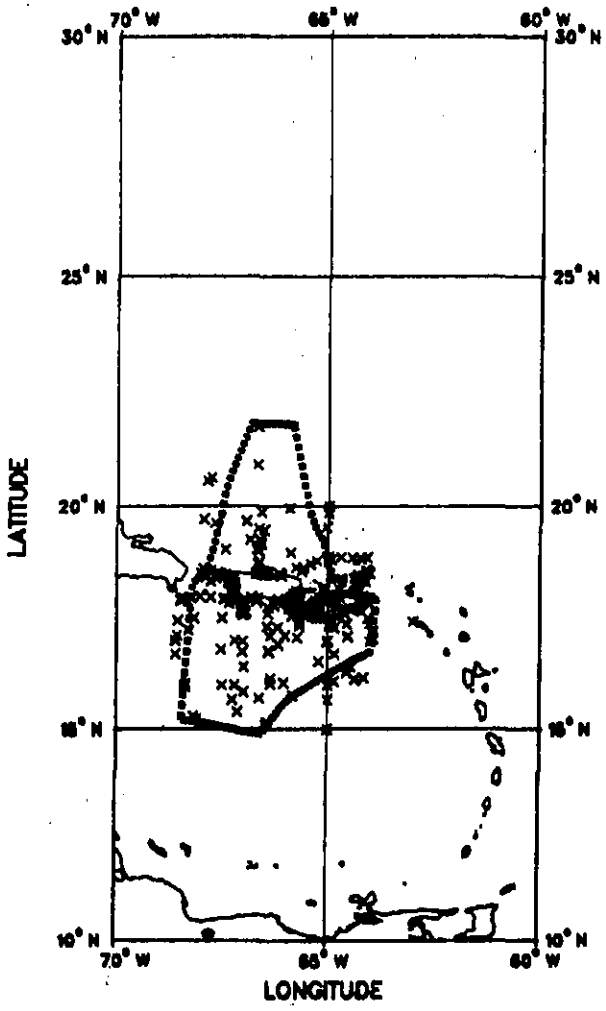
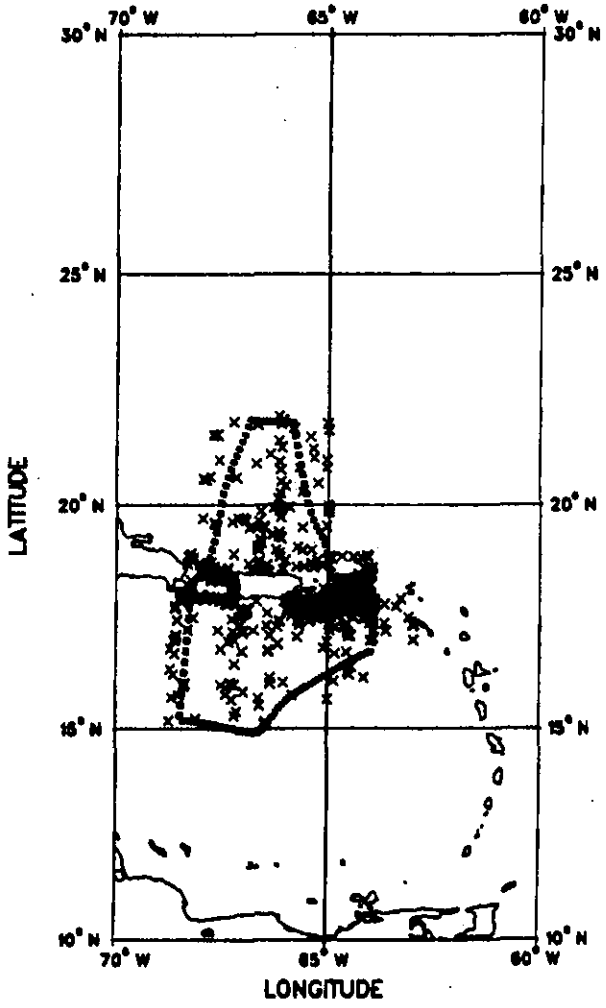
OCEAN STATION-NUTRIENT DATA



Stations 716
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-DISSOLVED OXYGEN DATA



Stations 977
File Time Coverage 1900-1984

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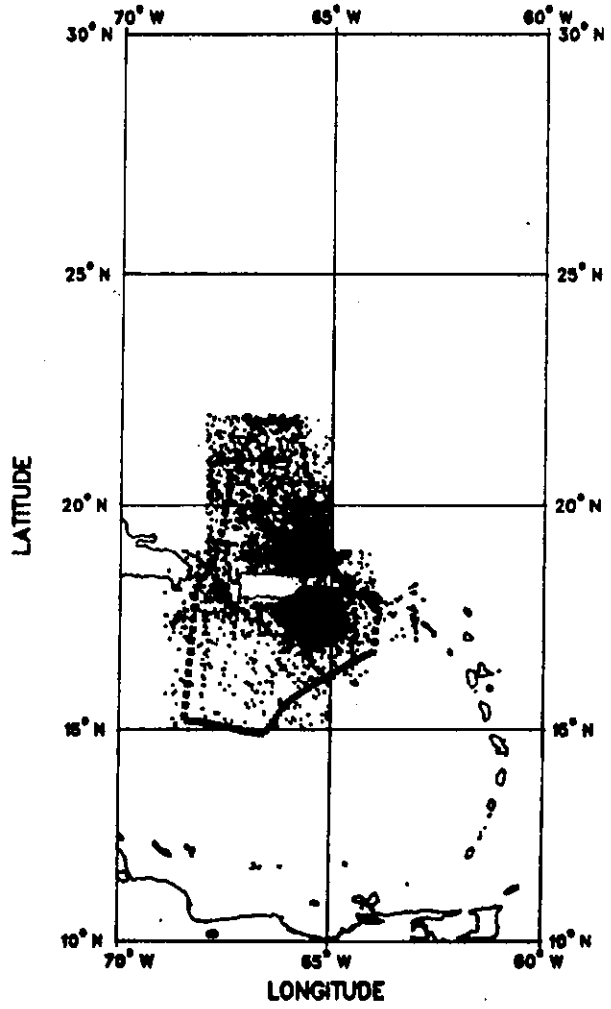
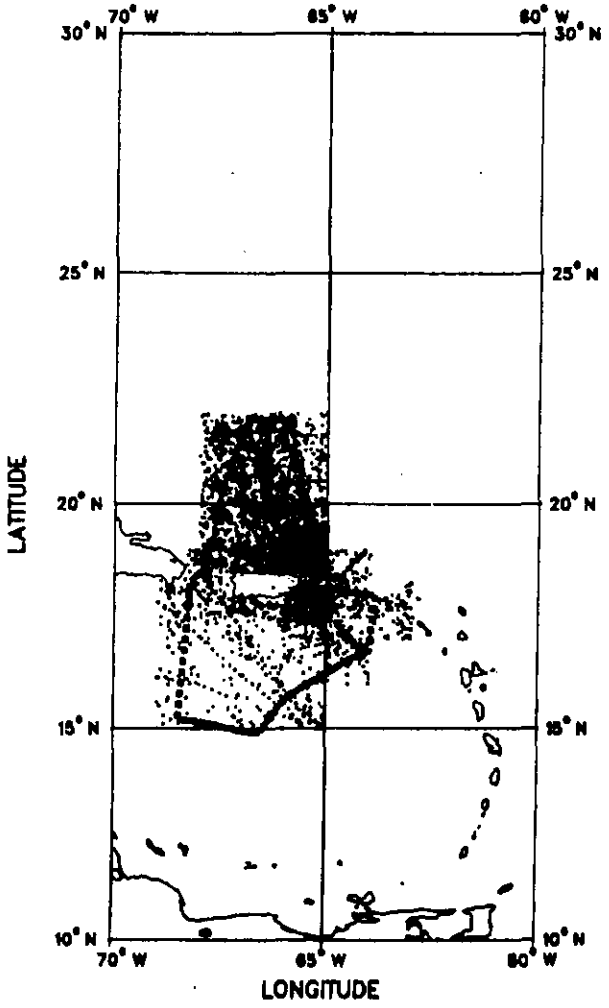
EXPENDABLE BATHYTHERMOGRAPH DATA



Stations 5,497
File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

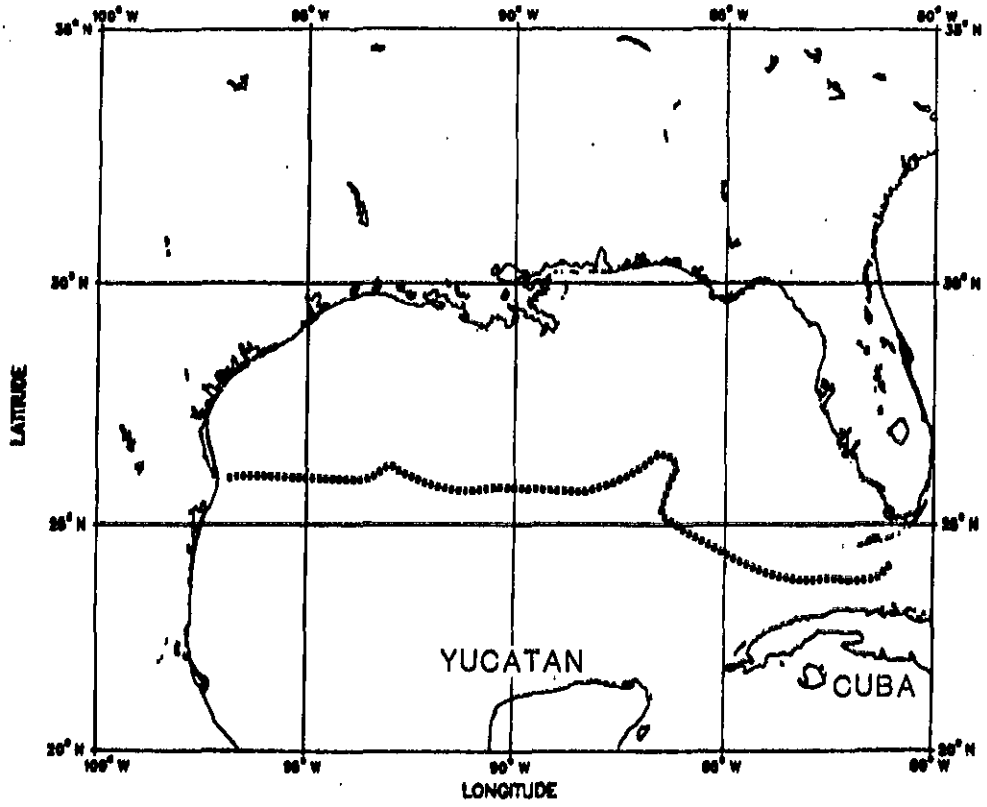
MECHANICAL BATYTHERMOGRAPH DATA



Stations 4,592
File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

GULF COAST



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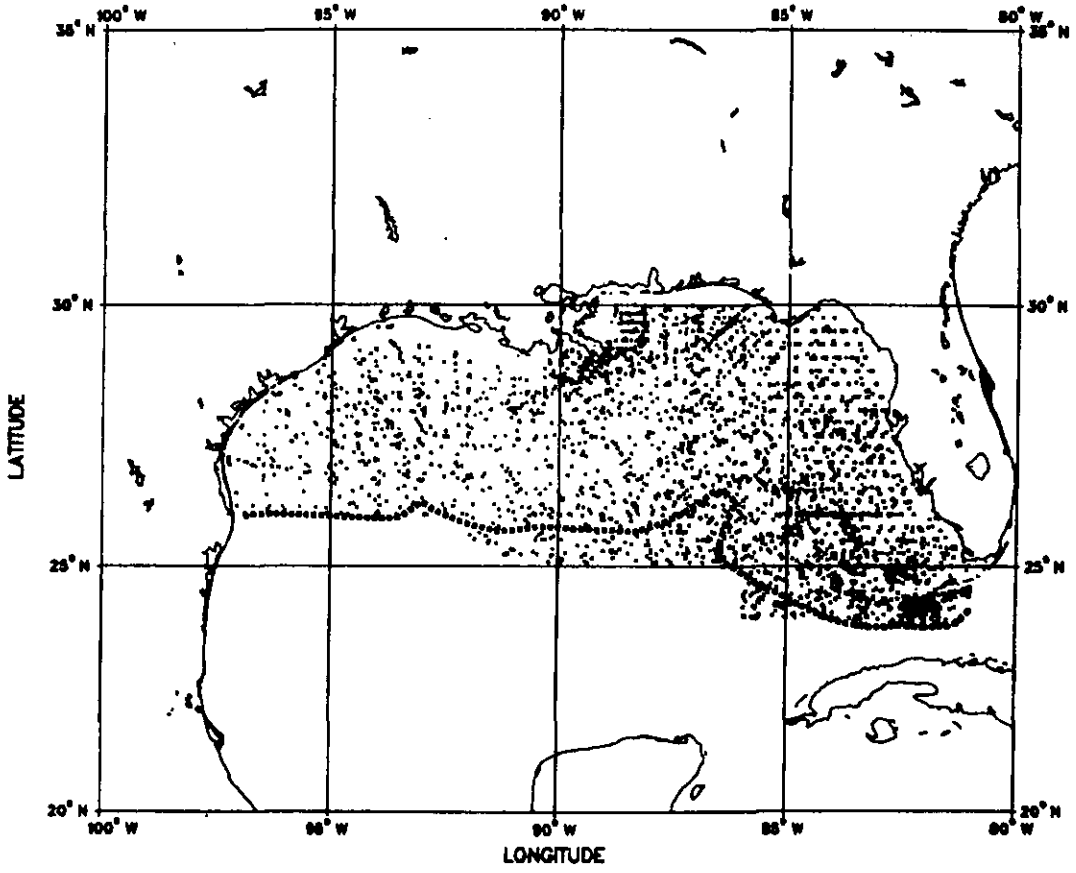
OCEANOGRAPHIC STATION DATA

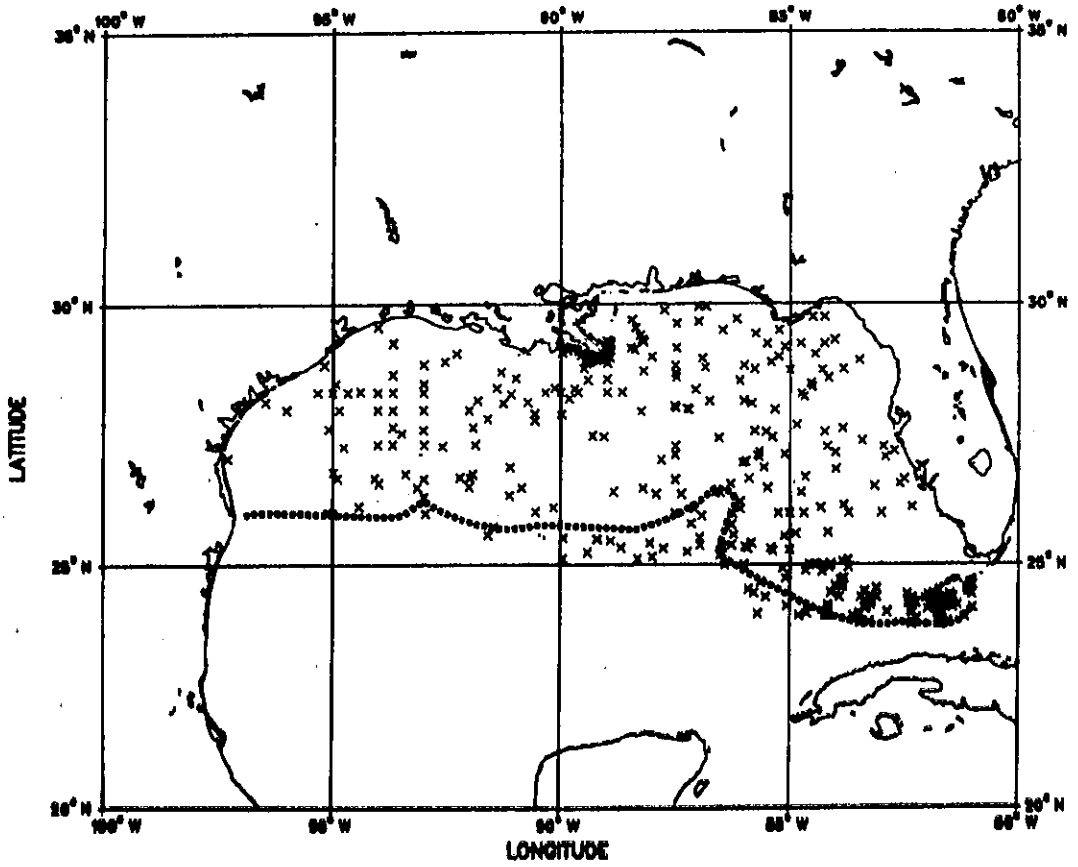


Stations 5,928

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-NUTRIENT DATA

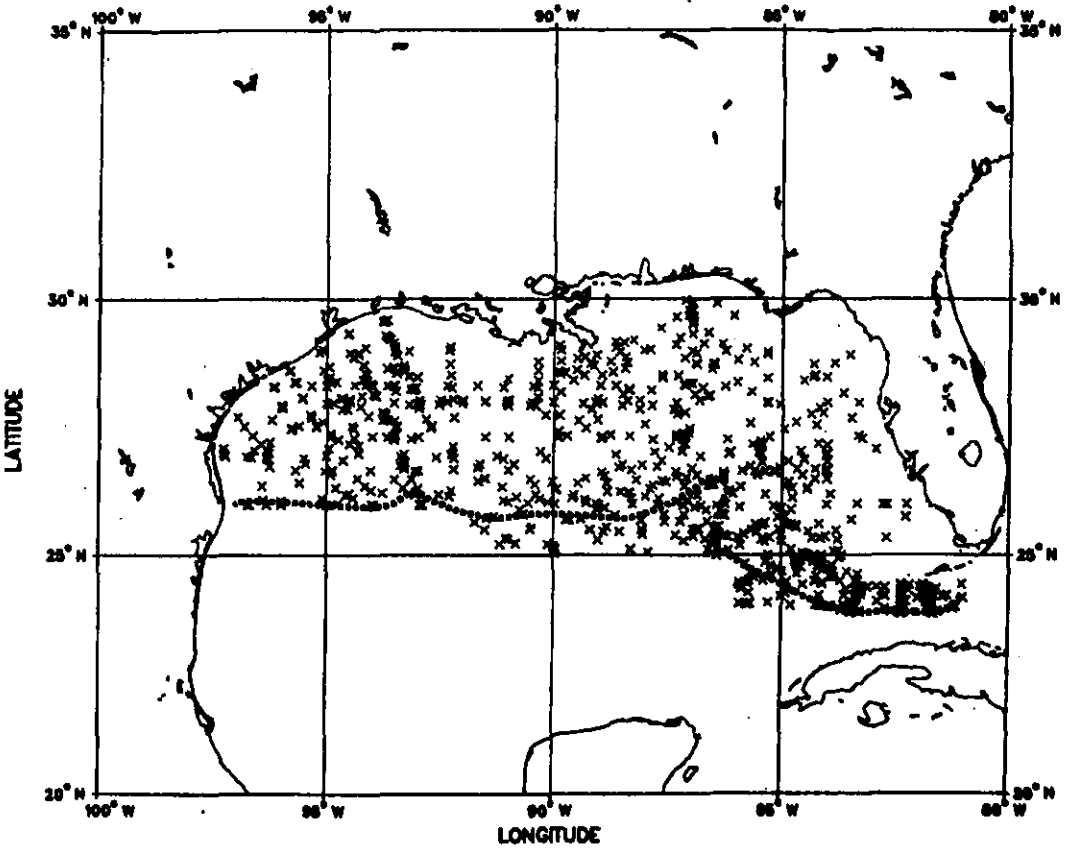


Stations 433

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-DISSOLVED OXYGEN DATA



Stations 801

File Time Coverage 1900-1984

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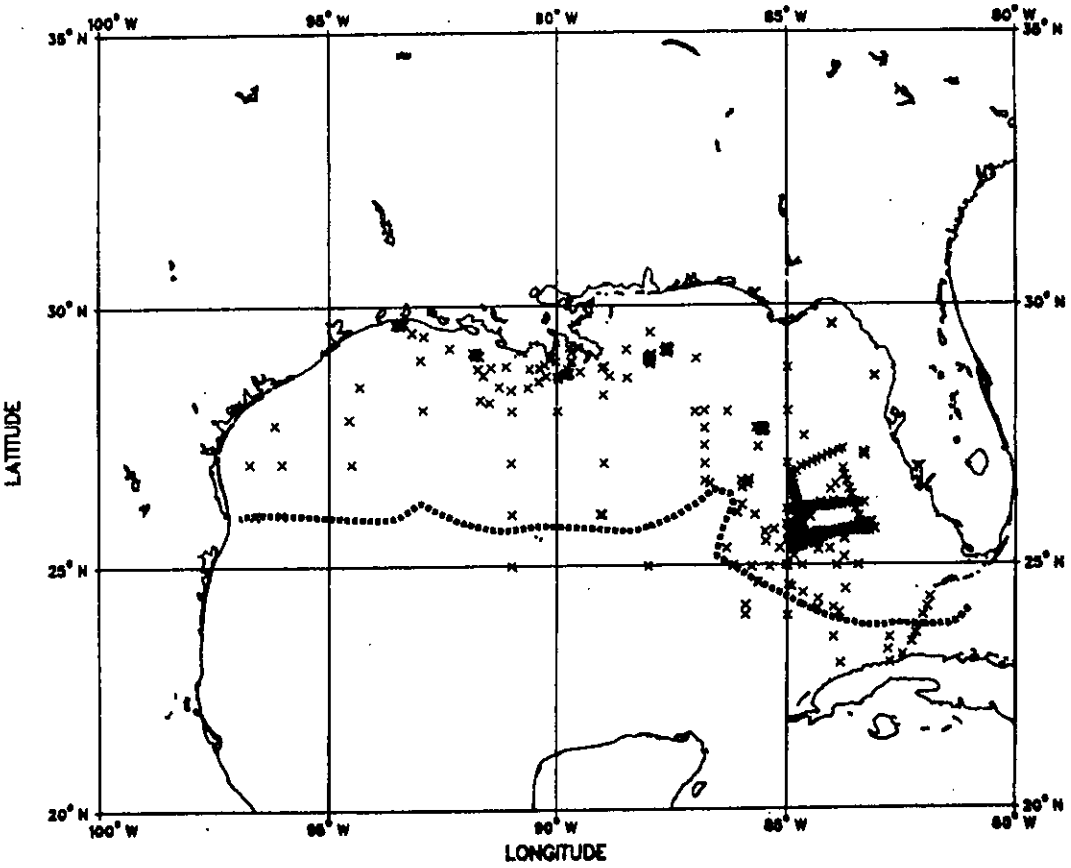
LOW RESOLUTION CTD/STD DATA



Stations 595

File Time Coverage 1969-1984

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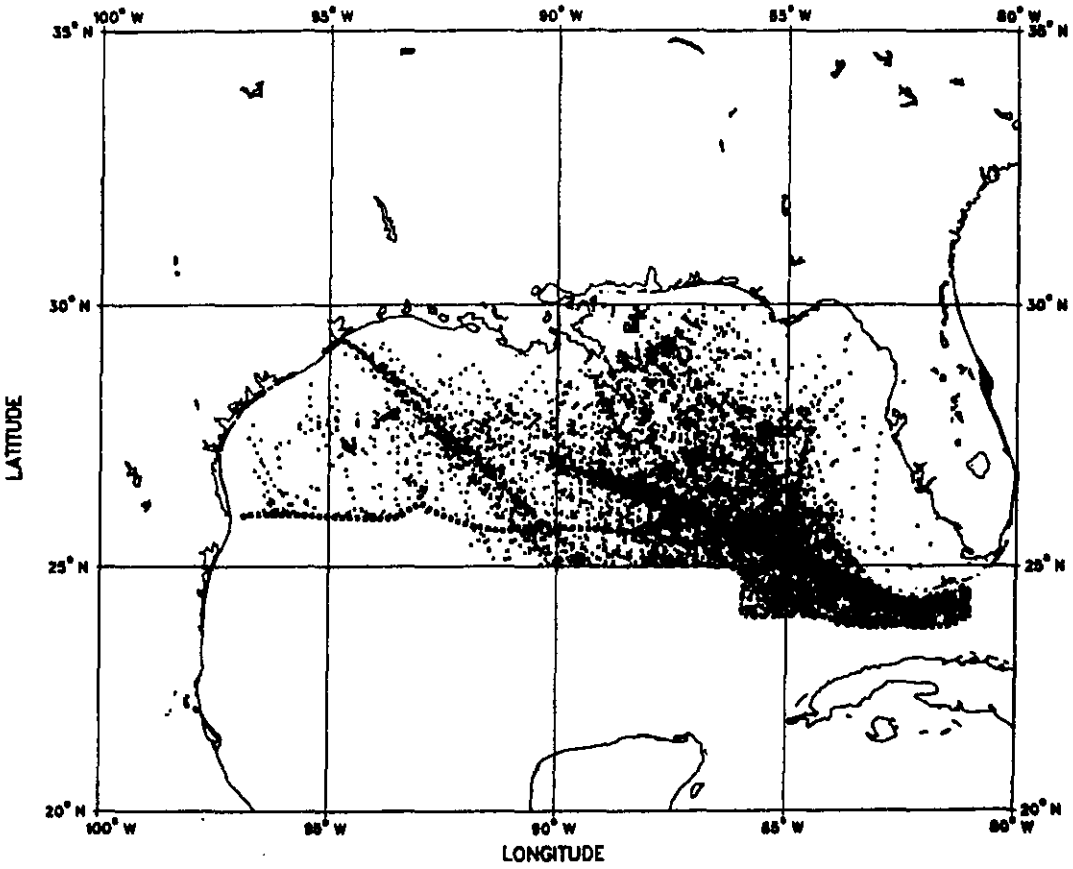
EXPENDABLE BATHYTHERMOGRAPH DATA



Stations 7,646

File Time Coverage 1966-1984

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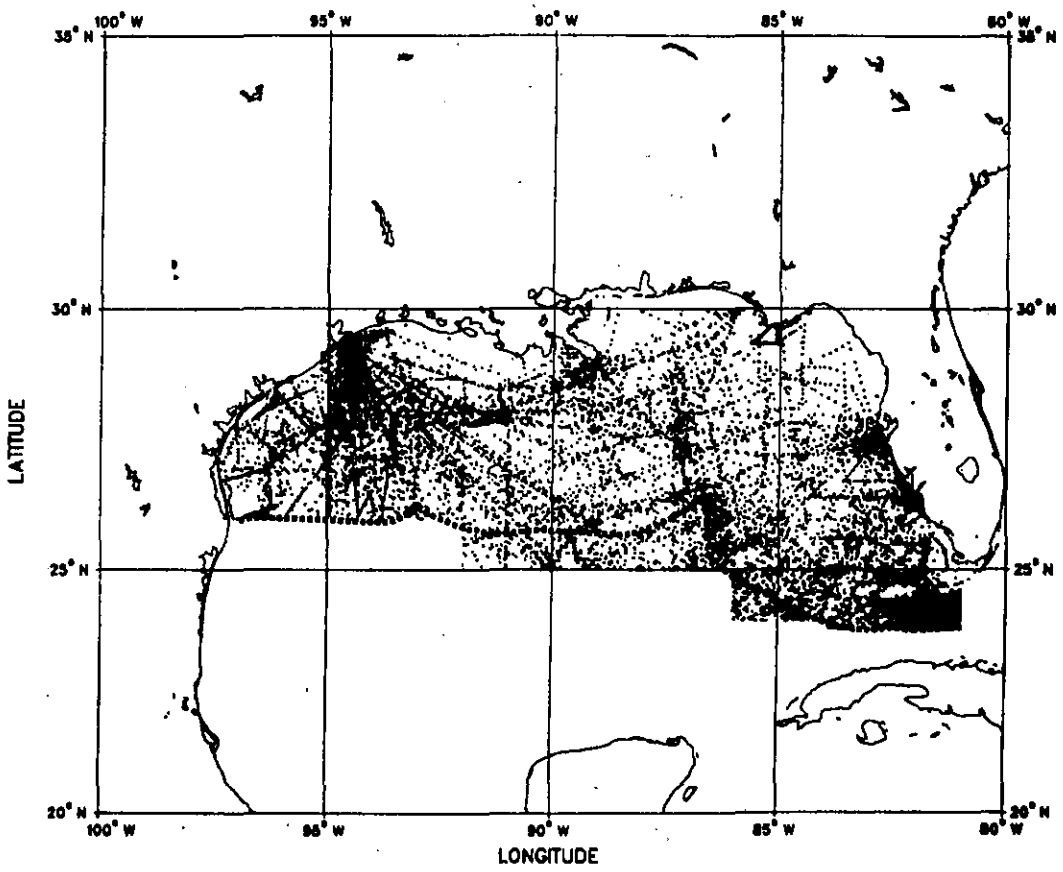
MACHANICAL BATHYTHERMOGRAPH DATA

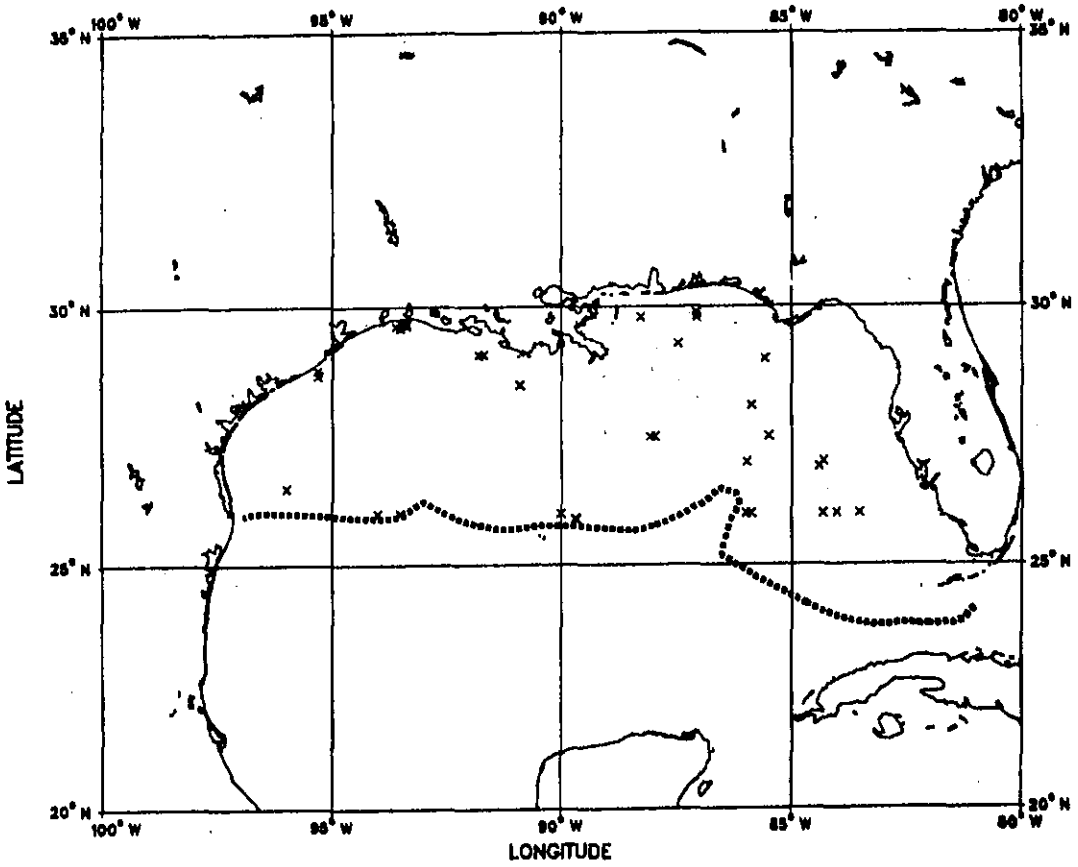


Stations 14,486

File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

METEOROLOGICAL AND WAVE SPECTRAL DATA

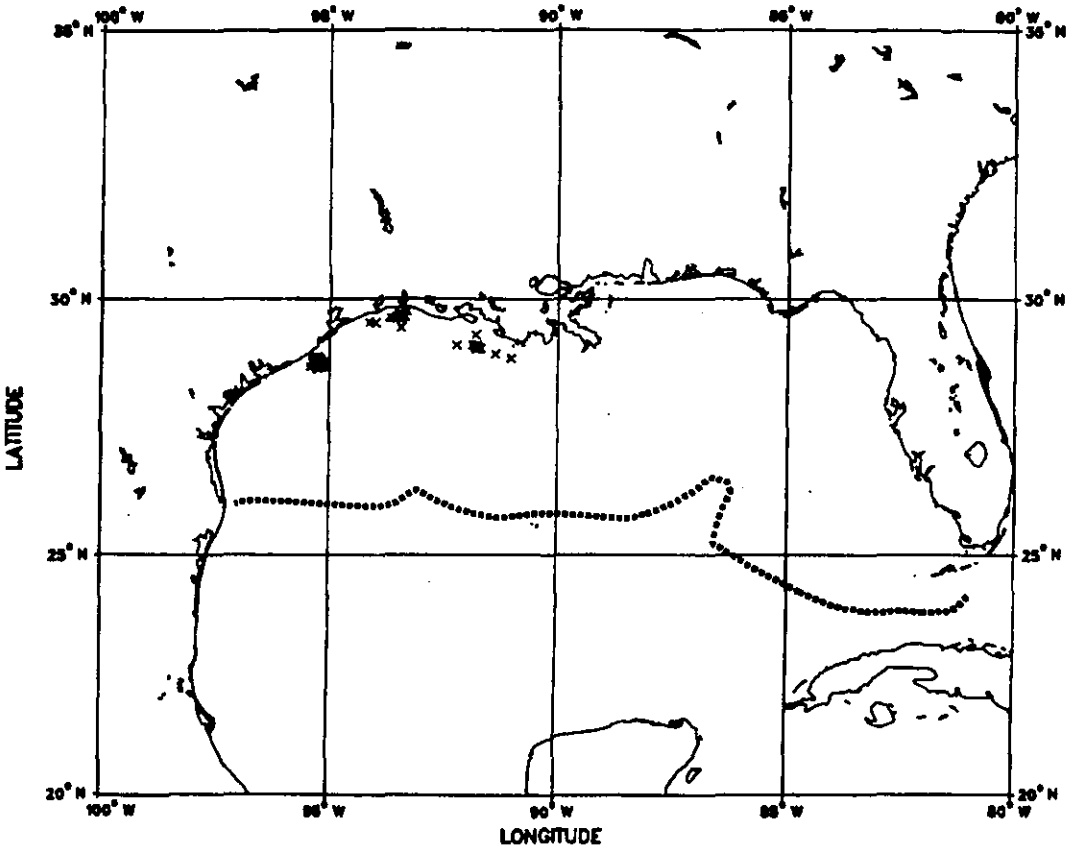


Observation Months 559

File Time Coverage 1970-1984

These are time series meteorological and oceanographic data collected from automated buoys operated by the NOAA Data Buoy Center (NDBC). The data are telecommunicated to U.S. operational centers for use in real-time forecasting and then accumulated and transmitted on magnetic tape to NODC. Station identifier, position, date, time, sampling duration, and sampling rate are reported for each series of measurements. Reported meteorological parameters typically include air temperature and pressure, dew point, wind speed and direction, wind gust, visibility, precipitation, and solar radiation. Ocean surface data may include water temperature and salinity or conductivity, significant wave height, average wave period and direction, dominant wave period, and maximum wave height and steepness. Subsurface temperature, salinity, conductivity, pressure, and east and north current components may also be reported. Wave data may be provided as spectral density values or, for directional spectra, as co- and quadspectra or angular Fourier coefficients. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

CURRENT DATA-RESULTANTS

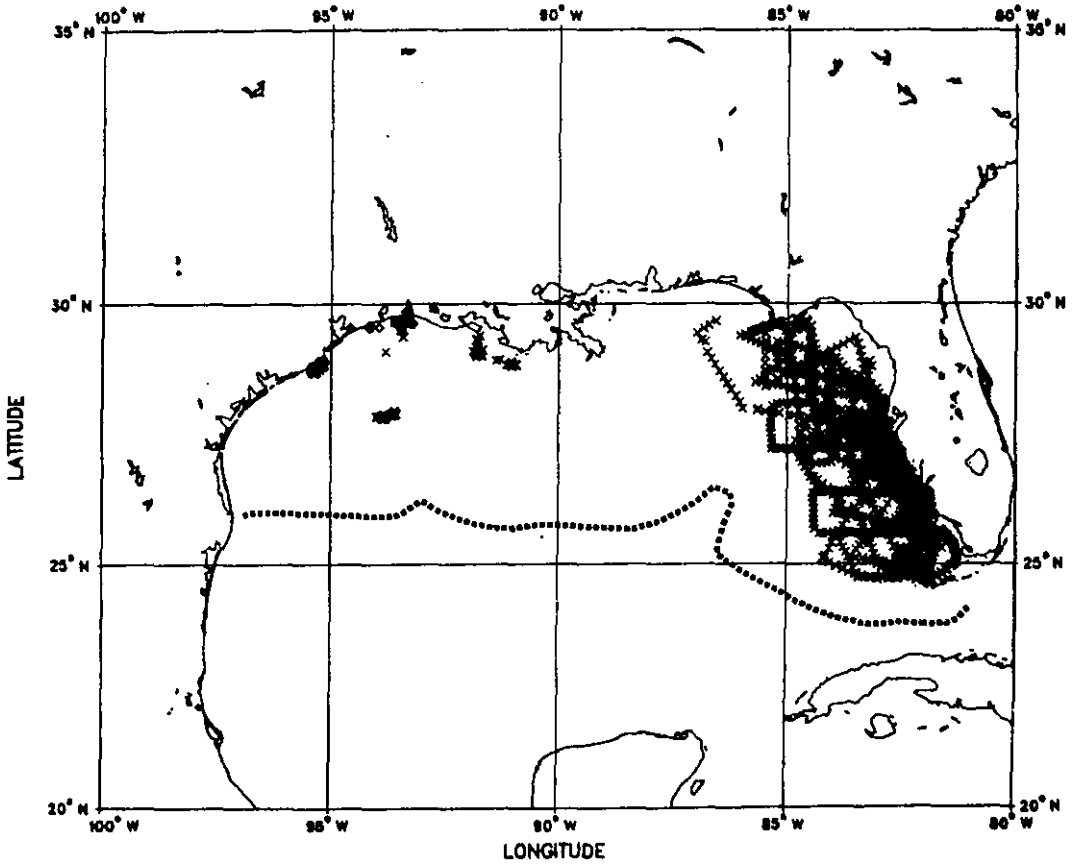


Observation Months 2,244

File Time Coverage 1973-1984

These data are time series measurements of ocean currents obtained from current meter moorings, principally made using Aanderaa current meters. Position, bottom depth, and sensor depth are reported for each station. The data record comprises values of current direction and speed at specific times and dates. Data values may be subject to averaging or filtering and are typically reported at 10 to 15 minute intervals. Other environmental parameters may be reported as associated measurements including: water temperature, salinity, conductivity, transmissivity, wind direction and speed, and dominant wave direction, height and period. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

WATER PHYSICS AND CHEMISTRY/PRIMARY PRODUCTIVITY DATA



× Observations 2,272 File Time Coverage 1951-1982

Water Physics and Chemistry

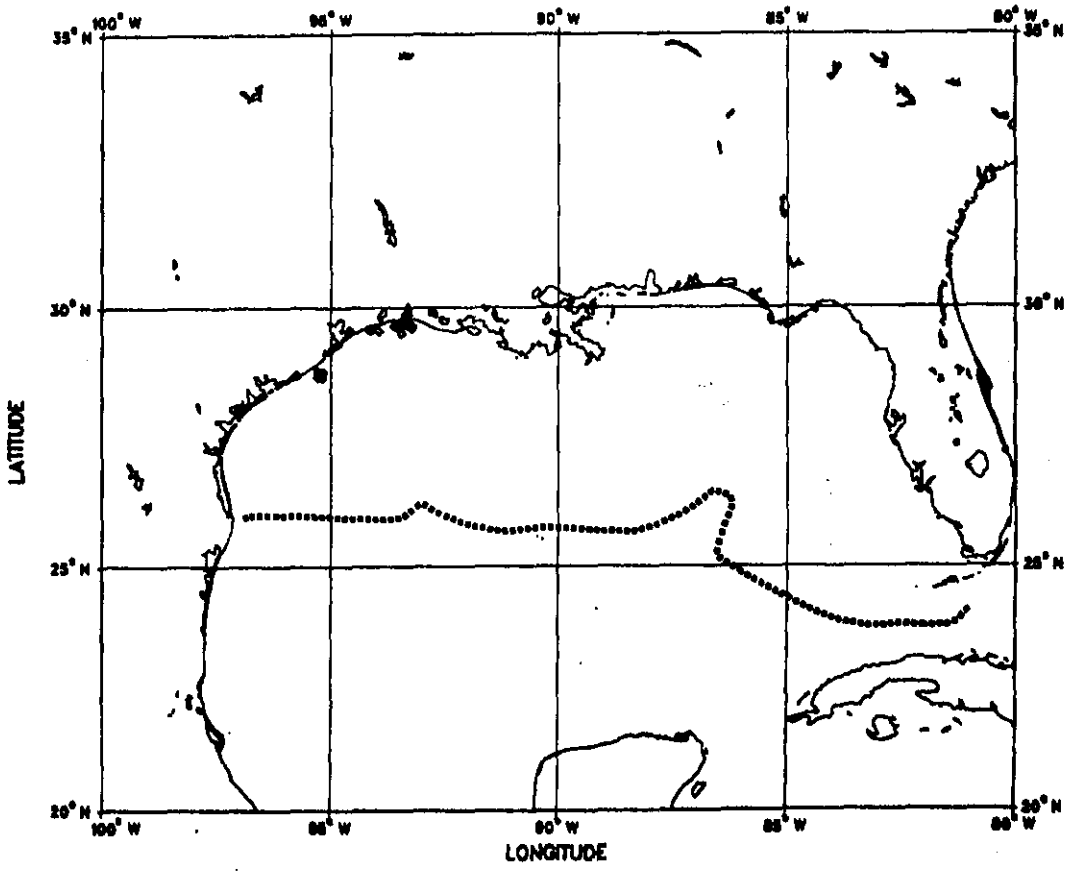
These data are from measurements and analyses of physical and chemical characteristics of the water column. Among chemical parameters typically recorded are pH, concentration of dissolved oxygen, ammonia, nitrate, phosphate, chlorophyll, and suspended solids. Physical parameters typically recorded include temperature, salinity, density (sigma-t), transmissivity, and current velocity (north-south and east-west components). Cruise and station information, including environmental conditions at the study site at the time of observation, is also included.

◇ Observations 232 File Time Coverage 1958-1984

Primary Productivity

These data are measurements of primary productivity collected to provide information on nutrient levels and nutrient flow in offshore areas. In addition to cruise information, position, date and time, measured parmeters typically included are: concentrations of chlorophyll A and phaeopigments, concentrations of phosphate, nitrate, silicate, and ammonia, temperature, salinity, and carbon assimilation. Measurements of chlorophyll A, phaeopigment and carbon assimilation may be reported as integrated values.

MARINE CHEMISTRY/PRIMARY PRODUCTIVITY DATA



× Observations 538 File Time Coverage 1975-1984

Marine Chemistry

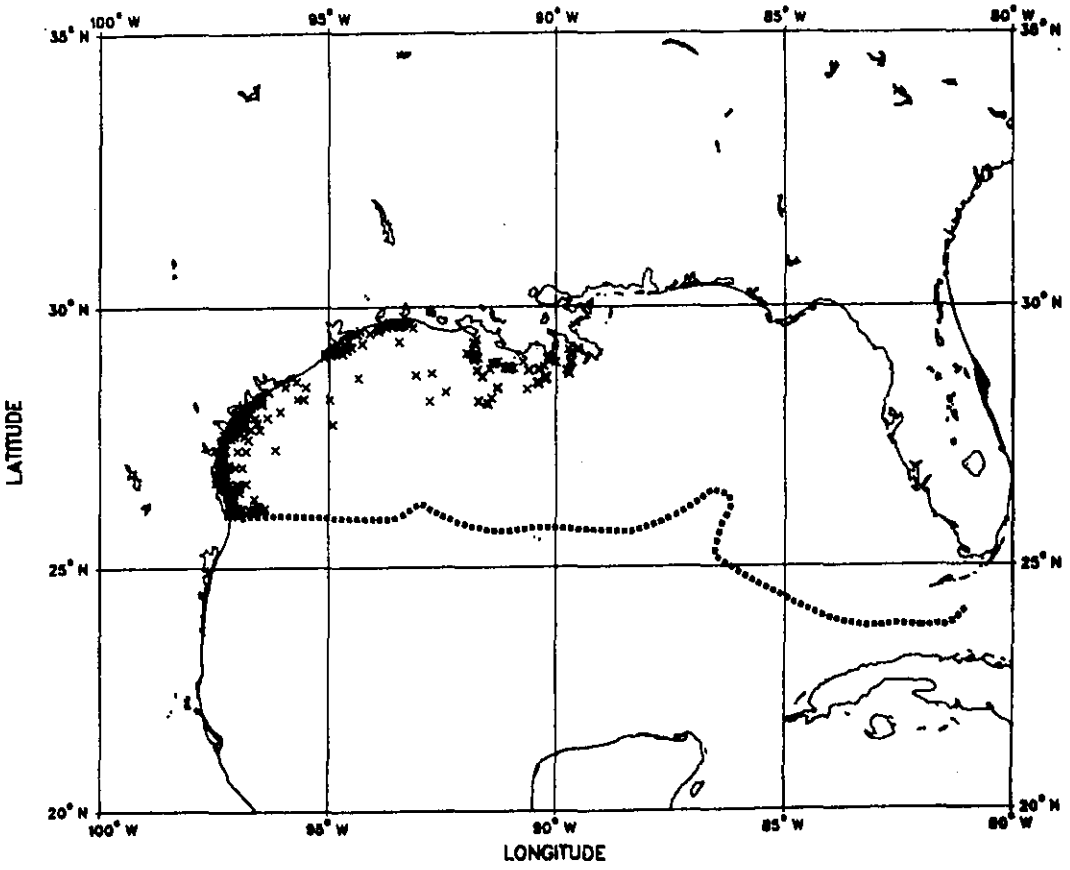
These are data from chemical analyses of seawater samples. Cruise information, position, date, and time are reported for each station along with sample depth, temperature, salinity, and density (sigma-t). Chemical and biochemical parameters typically reported include: dissolved oxygen, nitrate, nitrite, ammonia, inorganic phosphate and silicate; dissolved organic carbon, particulate organic carbon and nitrogen; apparent oxygen utilization, percent oxygen utilization, percent oxygen saturation, adenosine triphosphate, total phaeophytin, total chlorophyll, total suspended matter, total recoverable petroleum hydorcarbons and total resolved light hydrocarbons.

◇ Observations 194 File Time Coverage 1973-1978

Primary Productivity

These data are measurements of photosynthetic capacity and phytoplankton productivity collected to provide information on nutrient levels and nutrient flow in offshore areas. In addition to cruise information, position, date, time, and sampling depths, bottom depth, and general environmental information, parameters typically included are: concentrations of chlorophyll A, B and C, plant carotenoids; phaeopigments; concentrations of oxygen, particulate organic carbon, ammonia, nitrate, nitrite, silicate, and urea; temperature, salinity, and total alkalinity; and light penetration, and light intensity. Values of photosynthetic capacity and primary productivity may be reported as total values or partial values for phytoplankton, net plankton, nanoplankton, and dissolved organic matter.

MARINE TOXIC SUBSTANCES AND POLLUTANTS

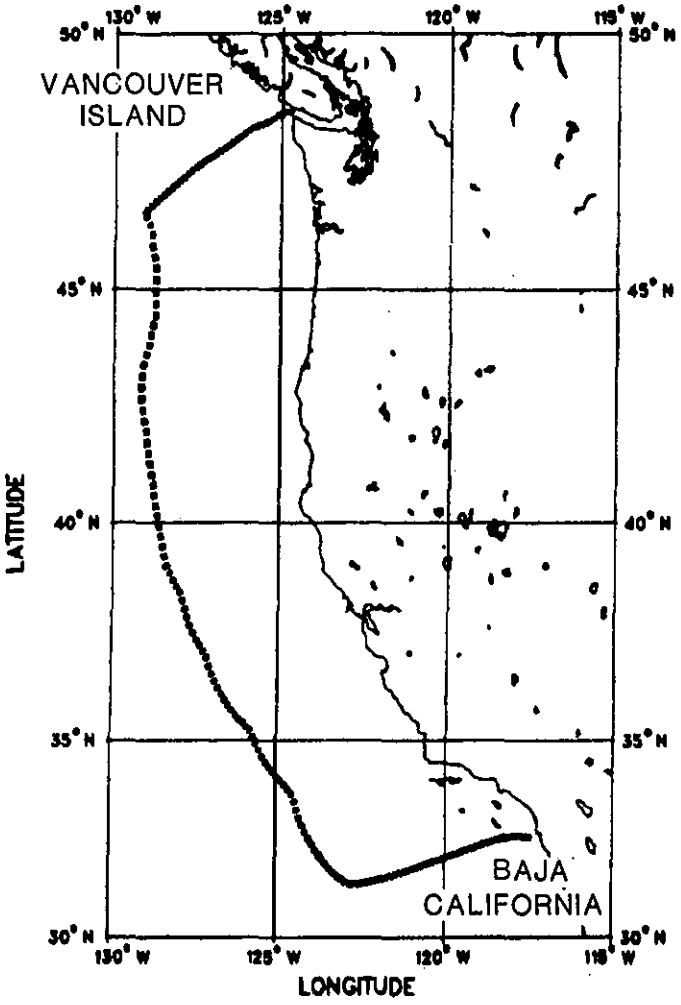


Observations 678

File Time Coverage 1974-1984

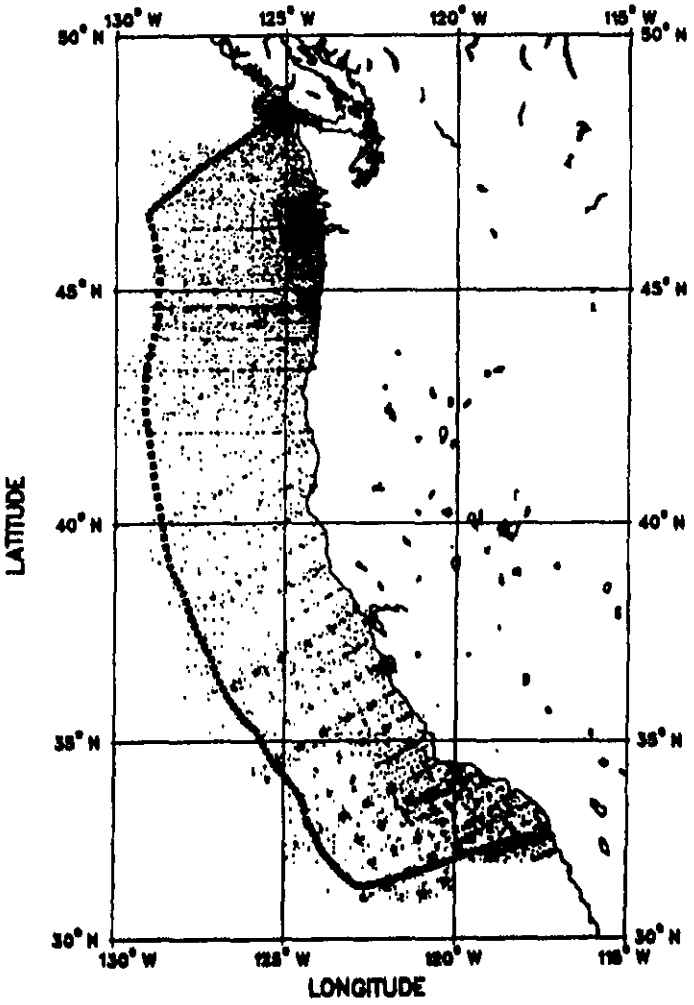
These are data on ambient concentrations of toxic substances and other pollutants in the marine environment which derive from laboratory analyses of samples of water, sediment, or marine organisms. These samples may have been collected either near marine discharge sites or during monitoring surveys of large ocean areas. Field observations of tar deposits on beaches may also be reported. Survey information includes platform type, start and end dates, and investigator and institution name. If data are collected near a dishcarge site then discharge location, depth, distance to shore, average volume, and other pertinent information is provided. Position, date, time, and environmental conditions are reported for each sampling station. Environmental data typically include meteorological and sea surface conditions, tidal stage and height, depth of the thermocline or mixed layer, sea surface temperature and salinity, and wave height and period. Sample characteristics, collection methods, and laboratory techniques are reported for each sample collected and analyzed. The data record comprises concentration values (or a code to indicate trace amounts) for each chemical substance analyzed. Chemical substances are identified by codes based on the registry numbers assigned by the Chemical Abstracts Service (CAS) of the American Chemical Society. Marine organisms from which samples have been taken are identified using the 12-digit NODC Taxonomic Code.

WEST COAST



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

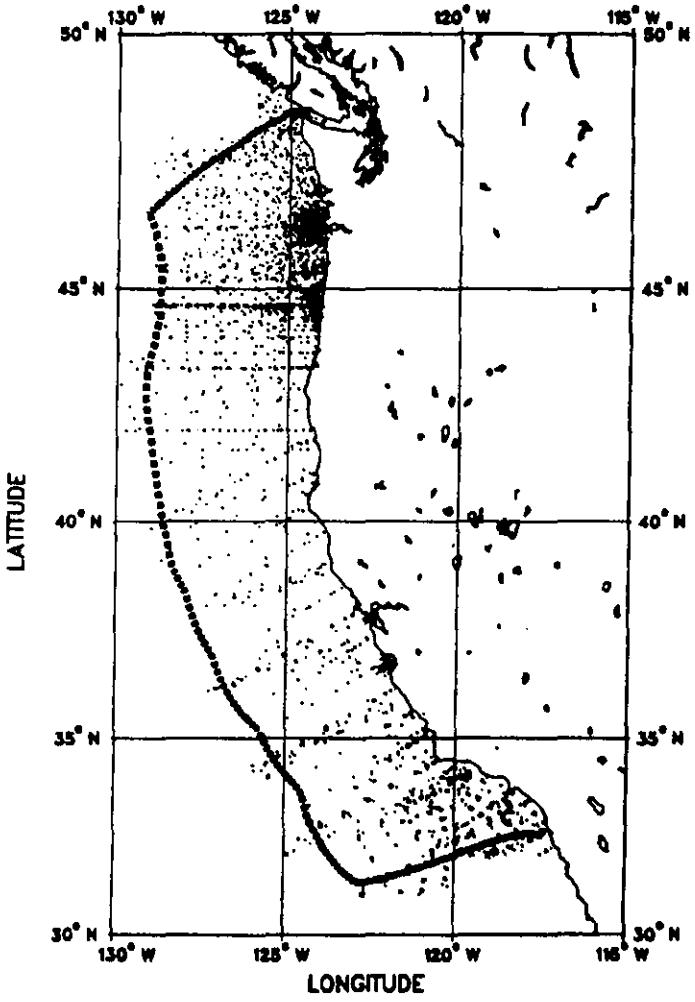
OCEANOGRAPHIC STATION DATA



Stations 18,630
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

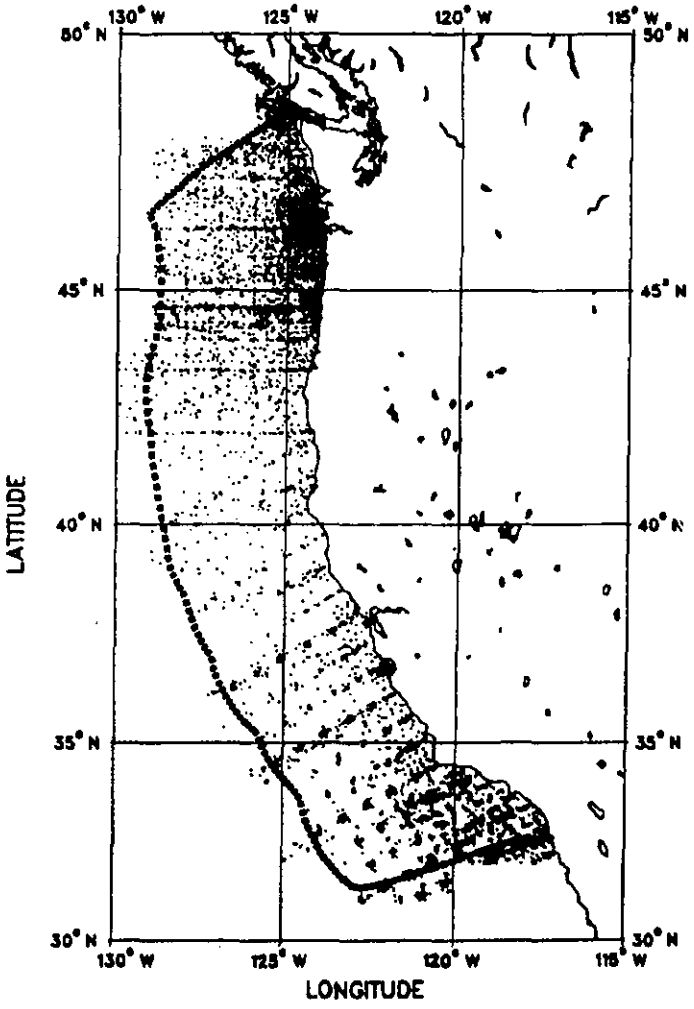
OCEAN STATION-NUTRIENT DATA



Stations 5,409
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-DISSOLVED OXYGEN DATA

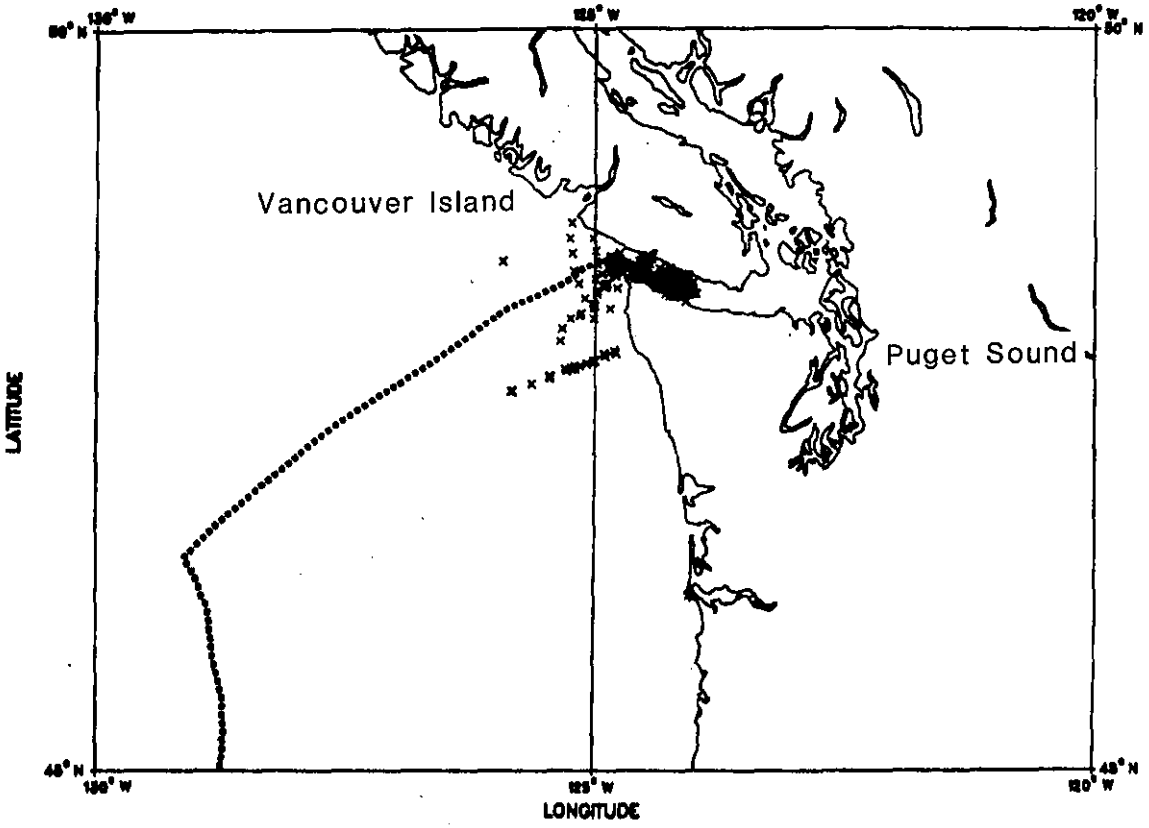


Stations 14,113

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

LOW RESOLUTION CTD/STD DATA

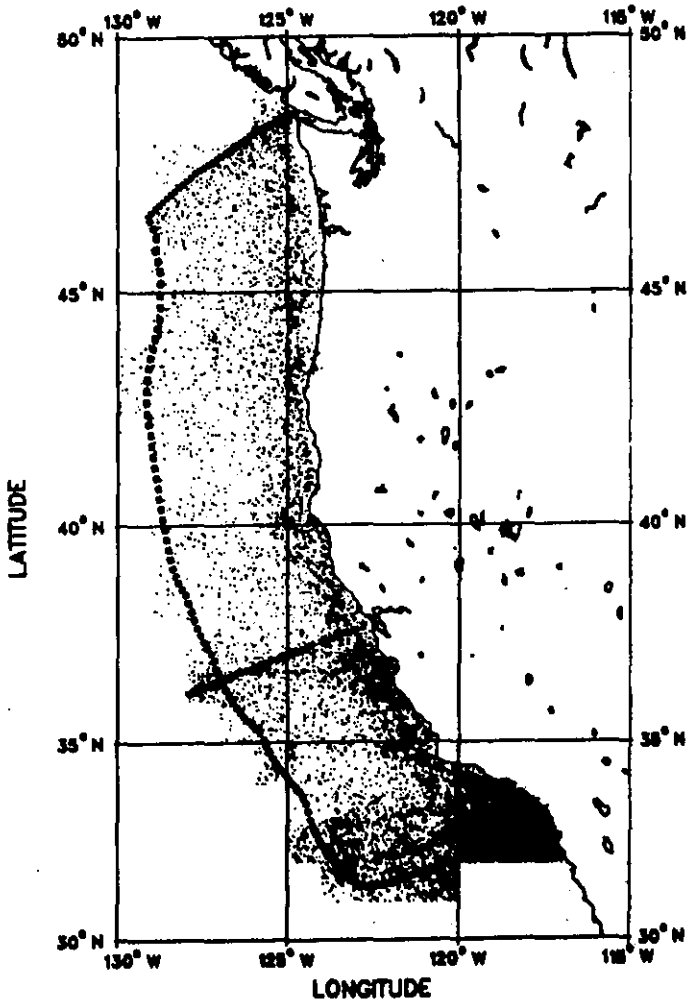


Stations 404

File Time Coverage 1969-1984

These data are low-resolution versions of conductivity-temperature-depth (CTD) and salinity-temperature-depth (STD) measurements obtained using electronic recorders. The term "low-resolution" refers to values being stored for up to 106 depth levels, including the 34 standard depth levels defined by the International Association of Physical Sciences of the Ocean (IAPSO), and not the entire original measured profile. Cruise information, position, date, and time are reported for each station. Principal measured parameters are temperature and salinity, and meteorological conditions at the time of observation, such as air temperature, barometric pressure, wind, and waves, may also be reported. Data are available in both cruise-sorted and geographically-sorted modes.

EXPENDABLE BATHYTHERMOGRAPH DATA

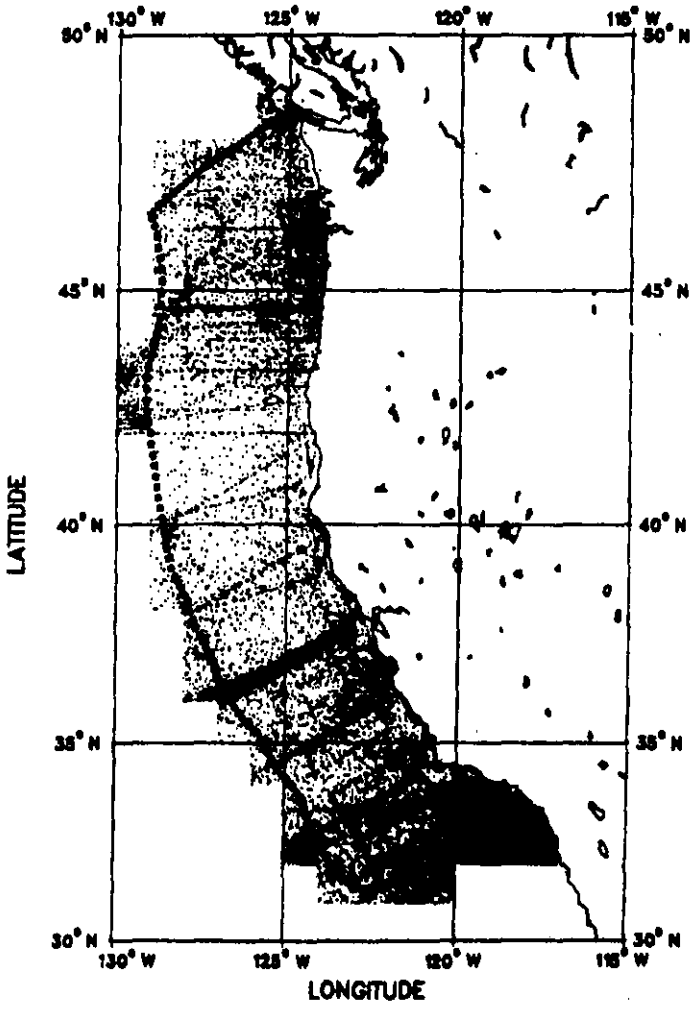


Stations 17,935

File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

MECHANICAL BATHYTHERMOGRAPH DATA

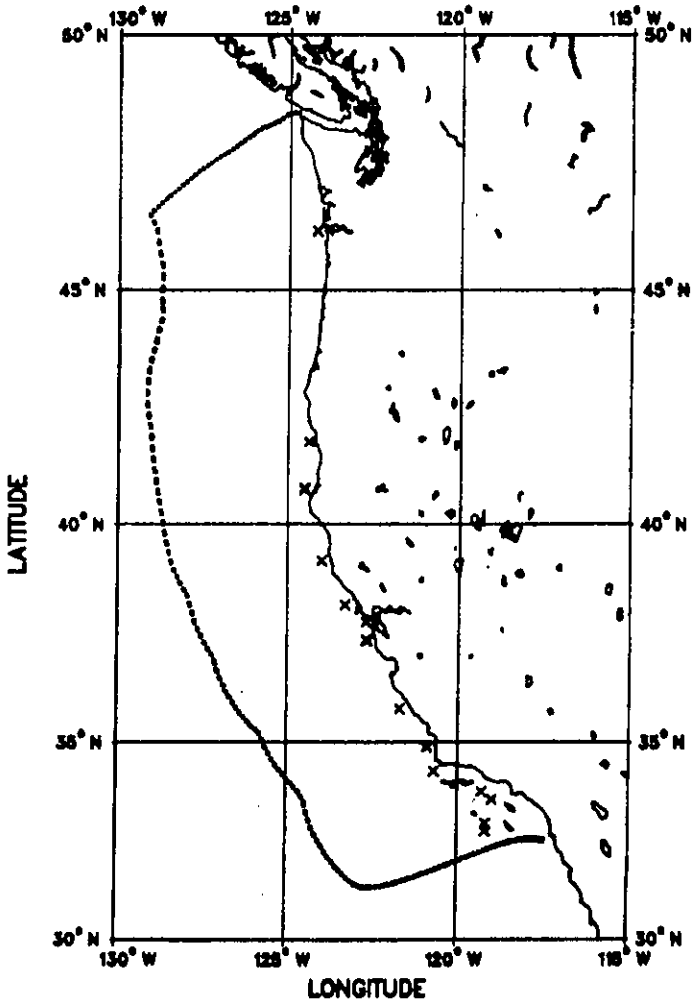


Stations 50,783

File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

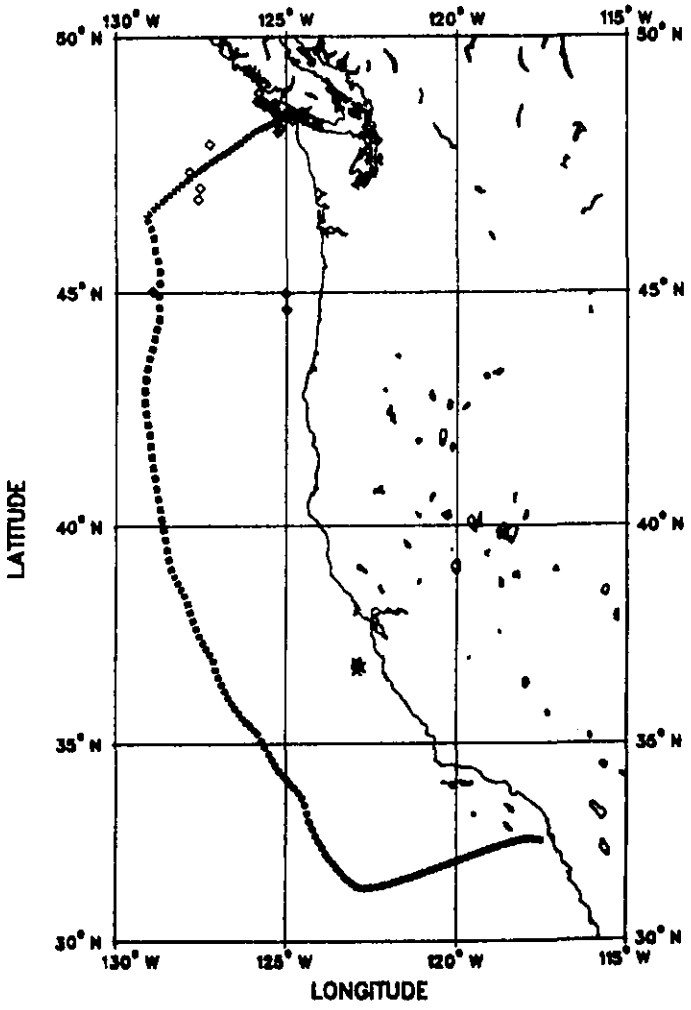
METEOROLOGICAL AND WAVE SPECTRAL DATA



Observation Months 311
File Time Coverage 1970-1984

These are time series meteorological and oceanographic data collected from automated buoys operated by the NOAA Data Buoy Center (NDBC). The data are telecommunicated to U.S. operational centers for use in real-time forecasting and then accumulated and transmitted on magnetic tape to NODC. Station identifier, position, date, time, sampling duration, and sampling rate are reported for each series of measurements. Reported meteorological parameters typically include air temperature and pressure, dew point, wind speed and direction, wind gust, visibility, precipitation, and solar radiation. Ocean surface data may include water temperature and salinity or conductivity, significant wave height, average wave period and direction, dominant wave period, and maximum wave height and steepness. Subsurface temperature, salinity, conductivity, pressure, and east and north current components may also be reported. Wave data may be provided as spectral density values or, for directional spectra, as co- and quadspectra or angular Fourier coefficients. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

WATER PHYSICS AND CHEMISTRY/PRIMARY PRODUCTIVITY DATA



× Observations 610 File Time Coverage 1951-1982

Water Physics and Chemistry

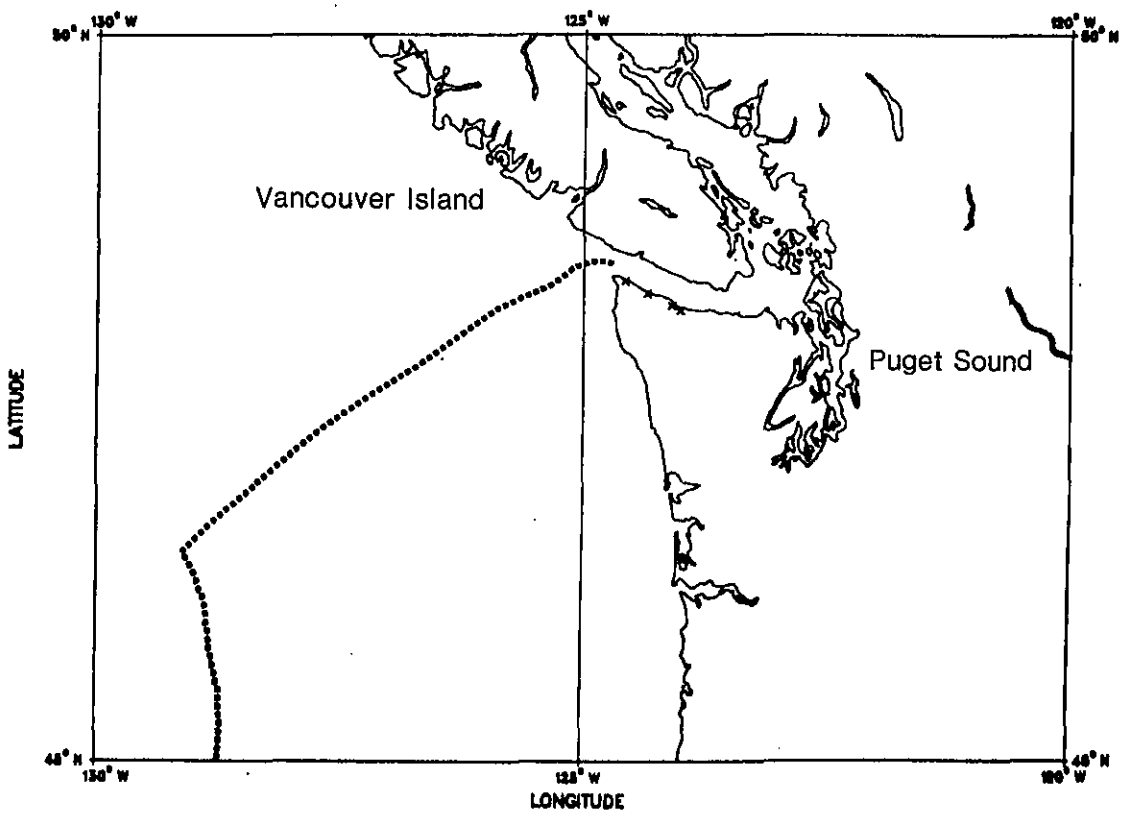
These data are from measurements and analyses of physical and chemical characteristics of the water column. Among chemical parameters typically recorded are pH, concentration of dissolved oxygen, ammonia, nitrate, phosphate, chlorophyll, and suspended solids. Physical parameters typically recorded include temperature, salinity, density (sigma-t), transmissivity, and current velocity (north-south and east-west components). Cruise and station information, including environmental conditions at the study site at the time of observation, is also included.

◇ Observations 51 File Time Coverage 1958-1984

Primary Productivity

These data are measurements of primary productivity collected to provide information on nutrient levels and nutrient flow in offshore areas. In addition to cruise information, position, date and time, measured parmeters typically included are: concentrations of chlorophyll A and phaeopigments, concentrations of phosphate, nitrate, silicate, and ammonia, temperature, salinity, and carbon assimilation. Measurements of chlorophyll A, phaeopigment and carbon assimilation may be reported as integrated values.

MARINE TOXIC SUBSTANCES AND POLLUTANTS

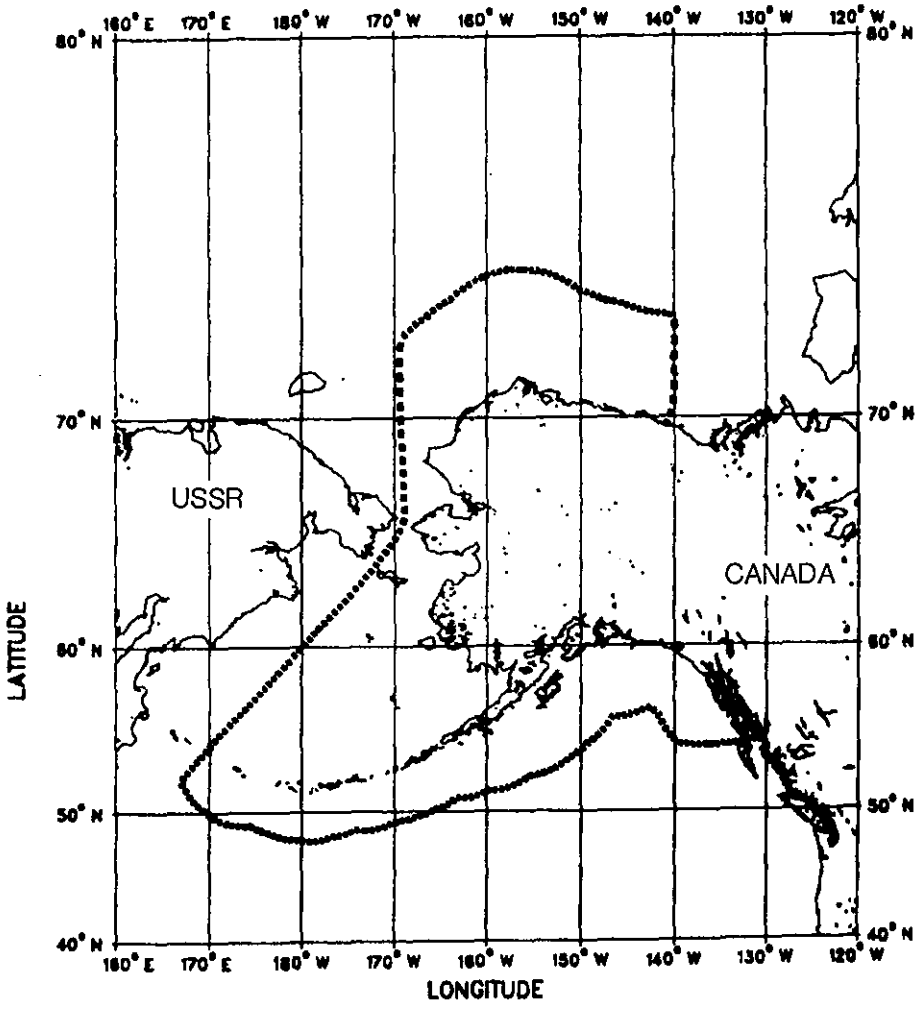


Observations 26

File Time Coverage 1974-1984

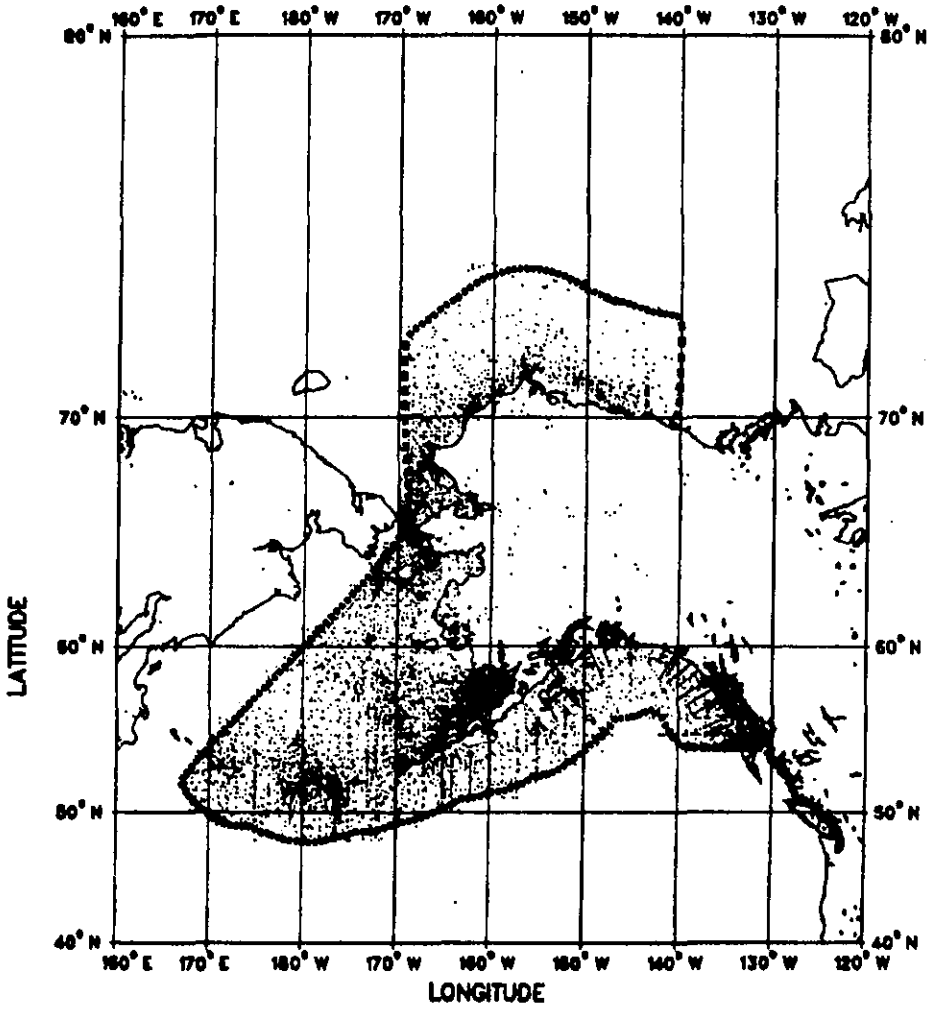
These are data on ambient concentrations of toxic substances and other pollutants in the marine environment which derive from laboratory analyses of samples of water, sediment, or marine organisms. These samples may have been collected either near marine discharge sites or during monitoring surveys of large ocean areas. Field observations of tar deposits on beaches may also be reported. Survey information includes platform type, start and end dates, and investigator and institution name. If data are collected near a dishcarge site then discharge location, depth, distance to shore, average volume, and other pertinent information is provided. Position, date, time, and environmental conditions are reported for each sampling station. Environmental data typically include meteorological and sea surface conditions, tidal stage and height, depth of the thermocline or mixed layer, sea surface temperature and salinity, and wave height and period. Sample characteristics, collection methods, and laboratory techniques are reported for each sample collected and analyzed. The data record comprises concentration values (or a code to indicate trace amounts) for each chemical substance analyzed. Chemical substances are identified by codes based on the registry numbers assigned by the Chemical Abstracts Service (CAS) of the American Chemical Society. Marine organisms from which samples have been taken are identified using the 12-digit NODC Taxonomic Code.

ALASKAN COAST



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

OCEANOGRAPHIC STATION DATA

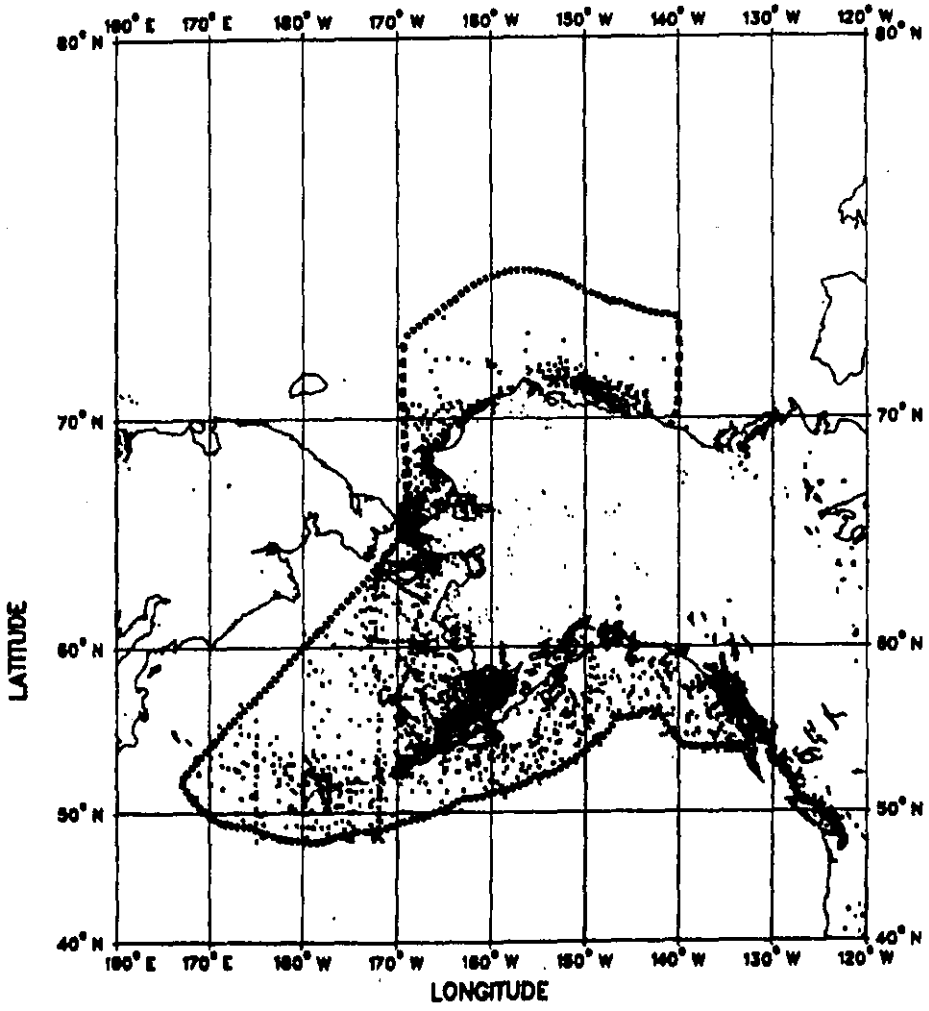


Stations 15,906

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

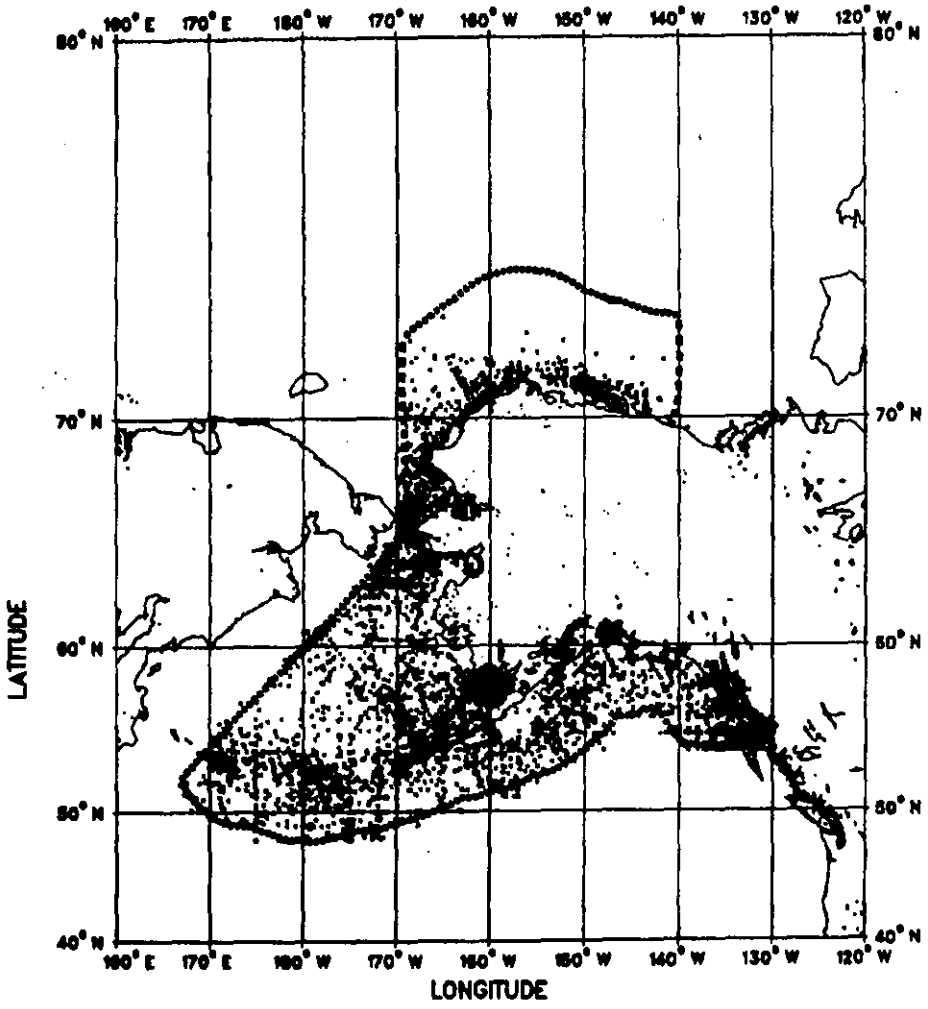
OCEAN STATION-NUTRIENT DATA



Stations 4,340
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-DISSOLVED OXYGEN DATA

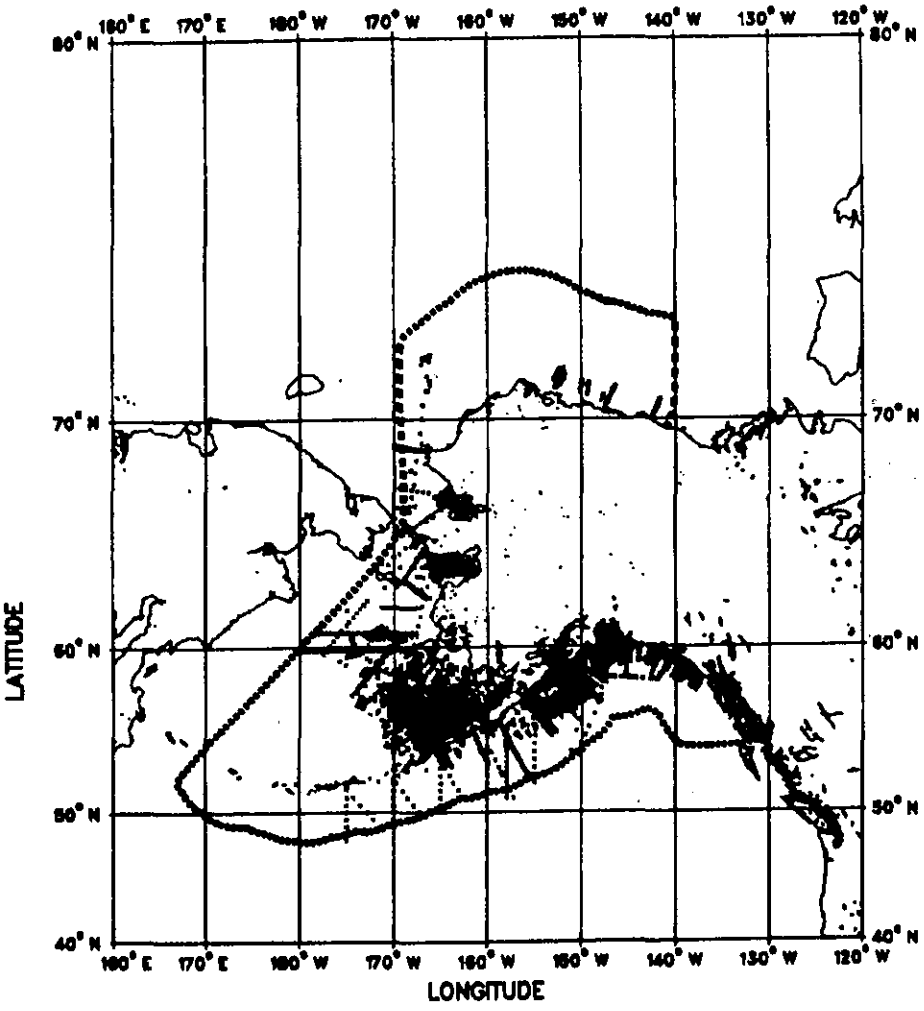


Stations 8,073

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

LOW RESOLUTION CTD/STD DATA

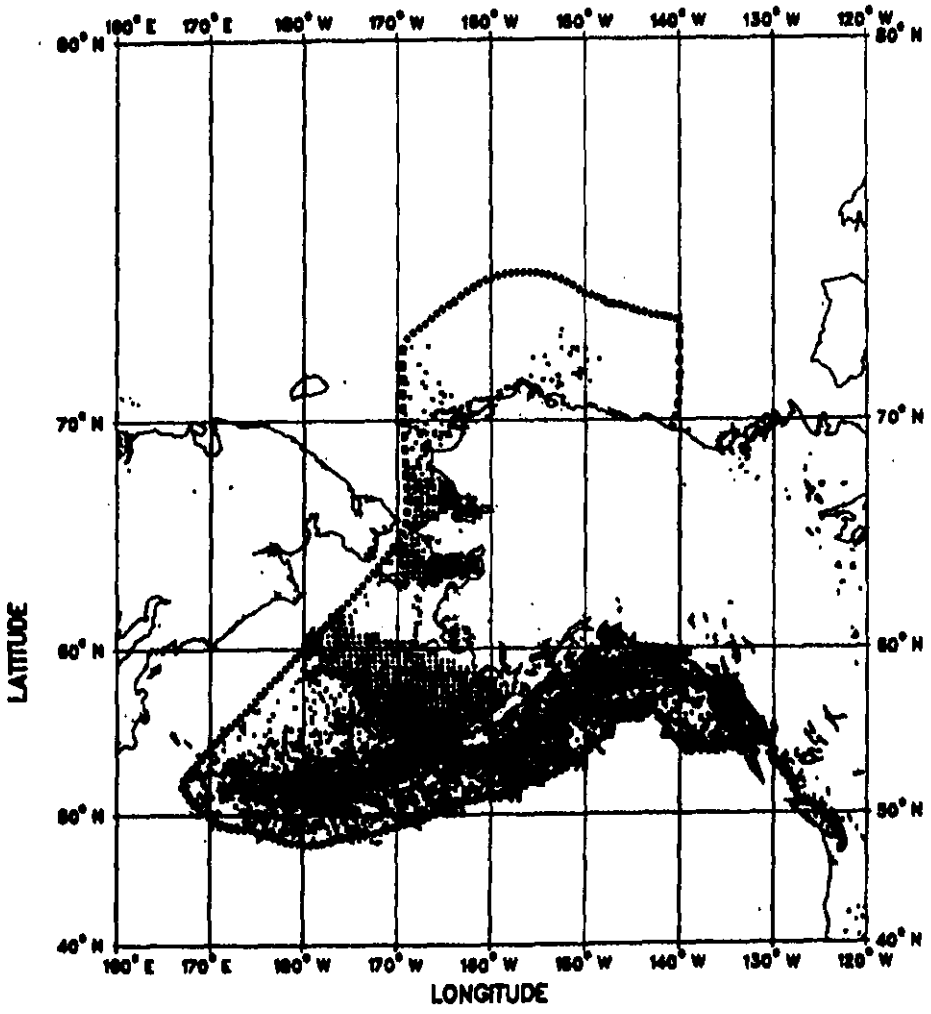


Stations 9,479

File Time Coverage 1969-1984

These data are low-resolution versions of conductivity-temperature-depth (CTD) and salinity-temperature-depth (STD) measurements obtained using electronic recorders. The term "low-resolution" refers to values being stored for up to 106 depth levels, including the 34 standard depth levels defined by the International Association of Physical Sciences of the Ocean (IAPSO), and not the entire original measured profile. Cruise information, position, date, and time are reported for each station. Principal measured parameters are temperature and salinity, and meteorological conditions at the time of observation, such as air temperature, barometric pressure, wind, and waves, may also be reported. Data are available in both cruise-sorted and geographically-sorted modes.

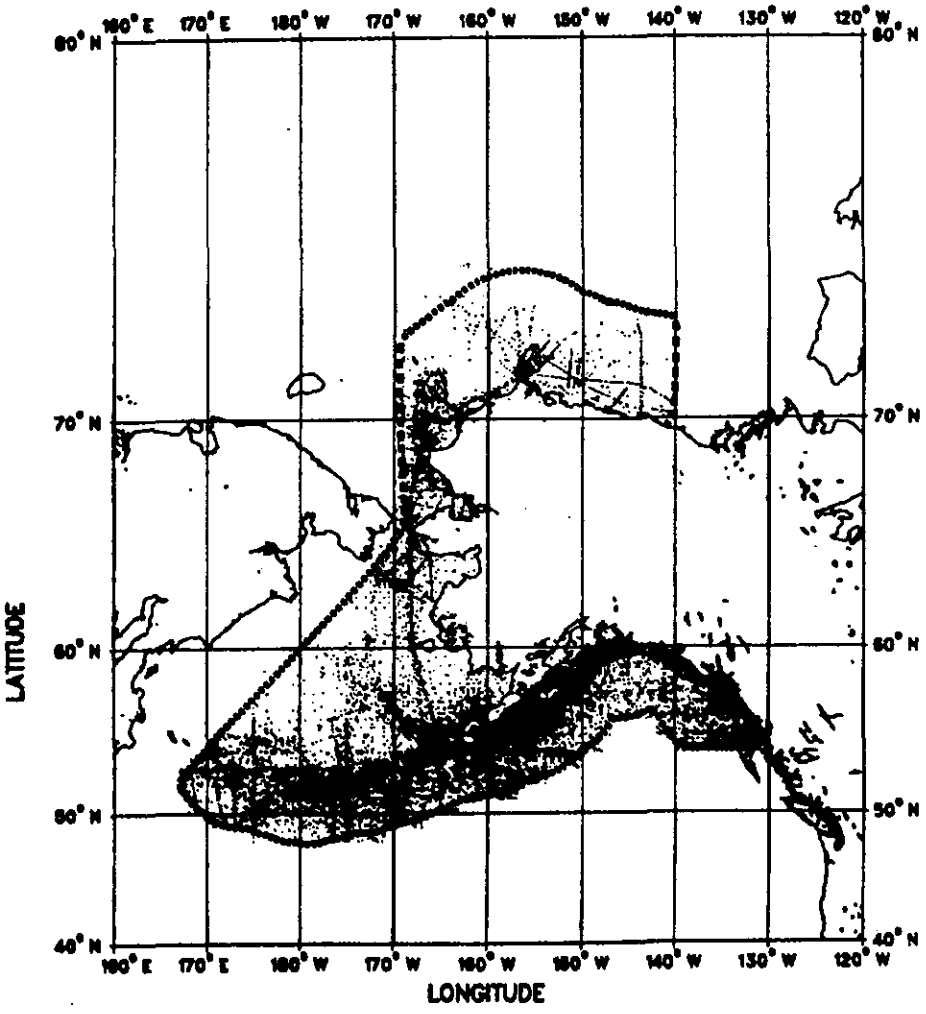
EXPENDABLE BATHYTHERMOGRAPH DATA



Stations 8,036
File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

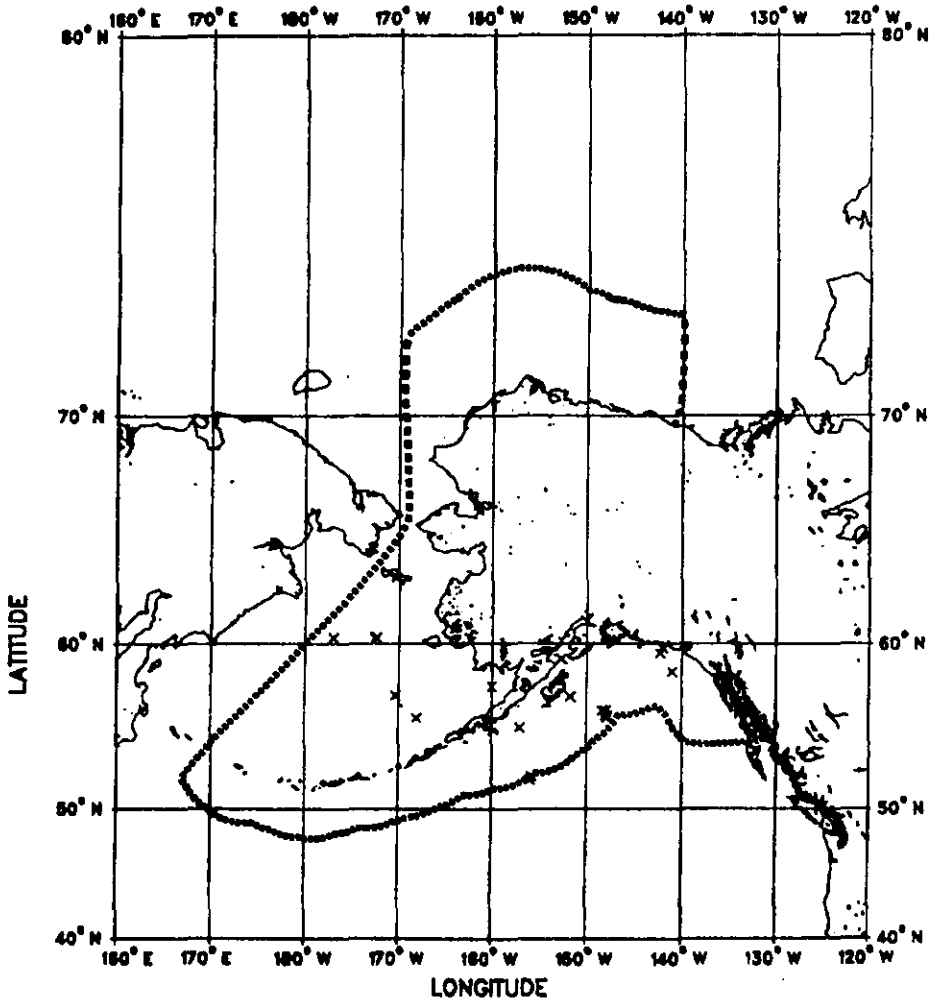
MECHANICAL BATHYTHERMOGRAPH DATA



Stations 18,527
File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

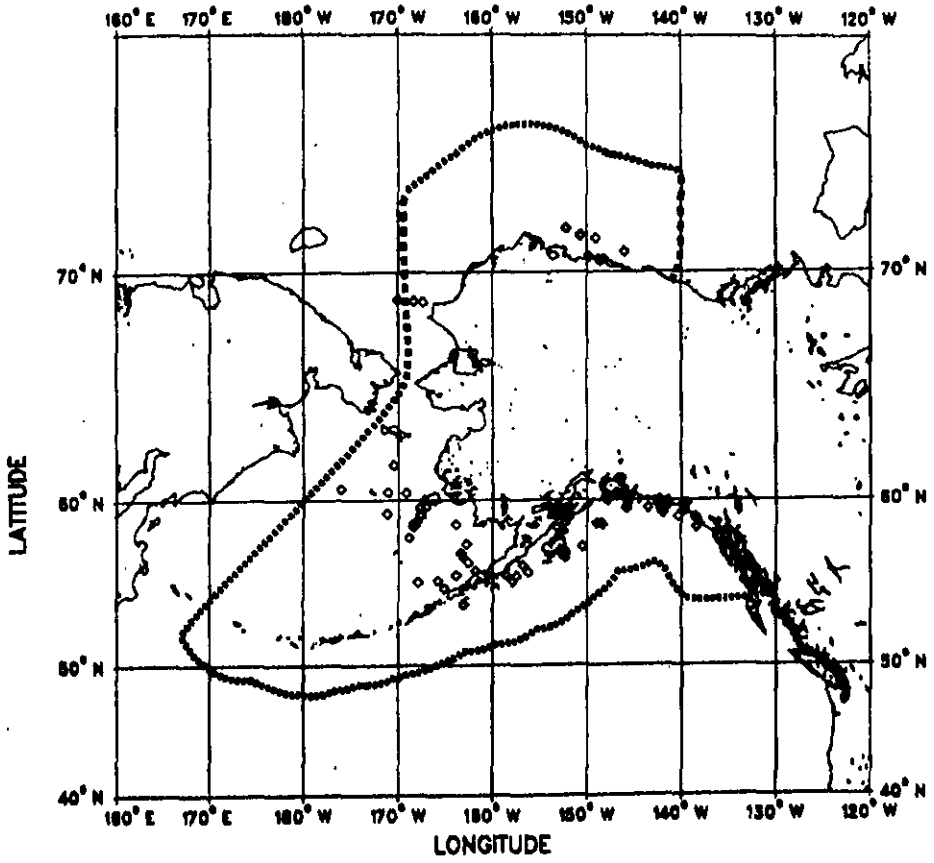
METEOROLOGICAL AND WAVE SPECTRAL DATA



Observation Months 397
File Time Coverage 1970-1984

These are time series meteorological and oceanographic data collected from automated buoys operated by the NOAA Data Buoy Center (NDBC). The data are telecommunicated to U.S. operational centers for use in real-time forecasting and then accumulated and transmitted on magnetic tape to NODC. Station identifier, position, date, time, sampling duration, and sampling rate are reported for each series of measurements. Reported meteorological parameters typically include air temperature and pressure, dew point, wind speed and direction, wind gust, visibility, precipitation, and solar radiation. Ocean surface data may include water temperature and salinity or conductivity, significant wave height, average wave period and direction, dominant wave period, and maximum wave height and steepness. Subsurface temperature, salinity, conductivity, pressure, and east and north current components may also be reported. Wave data may be provided as spectral density values or, for directional spectra, as co- and quadspectra or angular Fourier coefficients. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

CURRENT DATA-COMPONENTS/RESULTANTS



◇ Observation Months 1,423 File Time Coverage 1962-1984

Current Data-Components

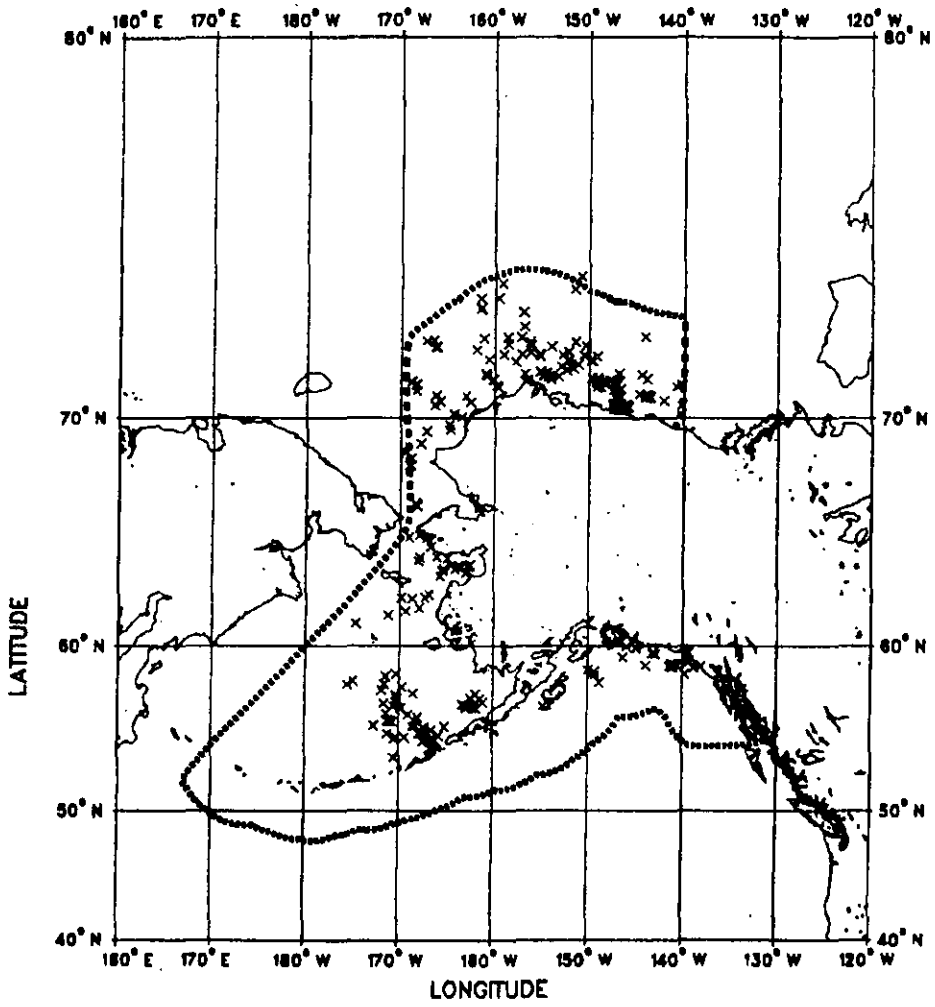
These data are time series measurements of ocean currents obtained from current meter moorings. Position, bottom depth, sensor depth and current meter characteristics are reported for each station. The data record comprises values of east-west (u) and north-south (v) current vector components at specific times and dates. Current direction is defined as the direction toward which the water is flowing with positive directions east and north and negative directions west and south. Data values may be subject to averaging or filtering and are typically reported at 10 to 15 minute intervals. Water temperature, pressure and conductivity or salinity may be reported as associated measurements. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

× Observation Months 69 File Time Coverage 1973-1984

Current Data-Resultants

These data are time series measurements of ocean currents obtained from current meter moorings, principally made using Aanderaa current meters. Position, bottom depth, and sensor depth are reported for each station. The data record comprises values of current direction and speed at specific times and dates. Data values may be subject to averaging or filtering and are typically reported at 10 to 15 minute intervals. Other environmental parameters may be reported as associated measurements including: water temperature, salinity, conductivity, transmissivity, wind direction and speed, and dominant wave direction, height and period. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

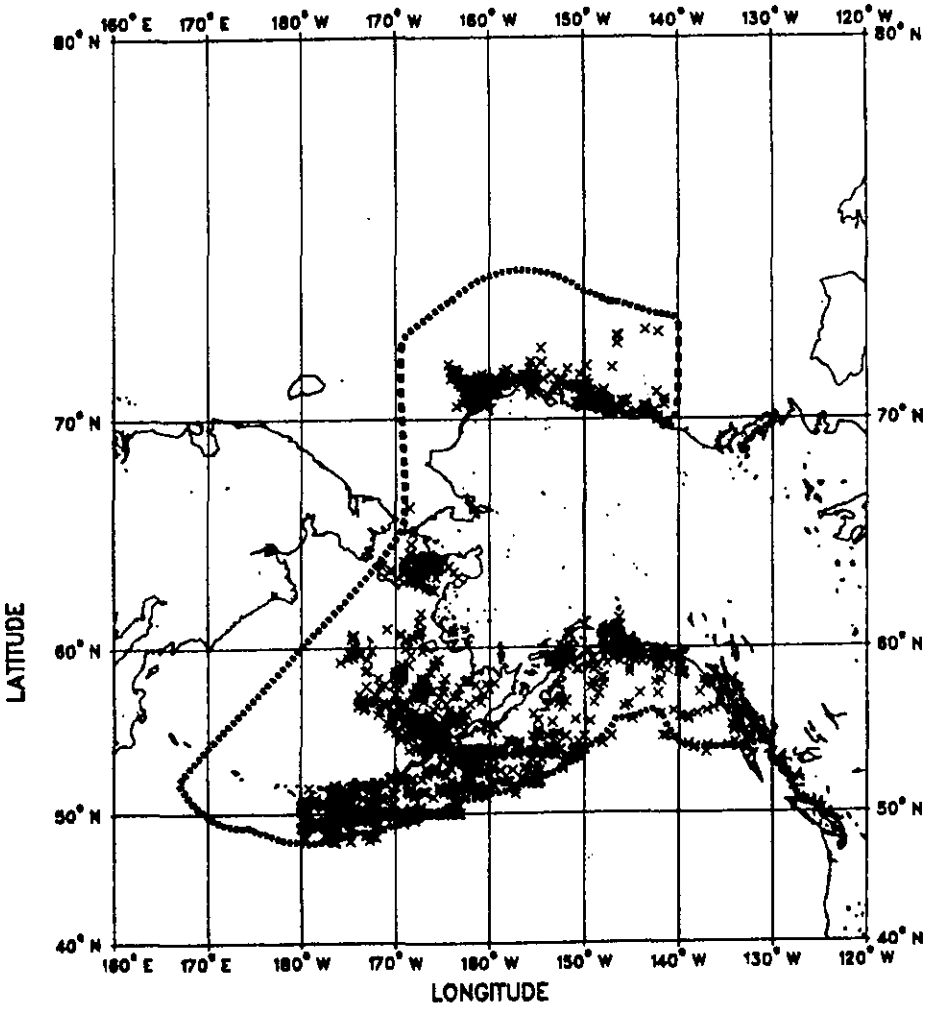
LAGRANGIAN CURRENT OBSERVATIONS



Observations 278
File Time Coverage 1975-1981

These are time series data on ocean circulation determined by tracking drifting buoys, drogues or other instrumental devices as they are carried with prevailing currents. Movement is reported as point to point geographic locations determined by shore-based, surface ship, aircraft, or satellite observations. Movement observed in this manner can be reported for time periods ranging from minutes to months. The platform name for either the platform acquiring the data or deploying the device, drogue characteristics, start and end positions and times, and observation frequency are reported for each observation series. The data record comprises position, date, and time for each observation. Other surface meteorological or oceanographic parameters, such as water temperature and salinity, air temperature and pressure, wind velocity, and wave height and direction may also be reported. In some observations associated subsurface data such as water depth, pressure and temperature may be included.

PRIMARY PRODUCTIVITY DATA

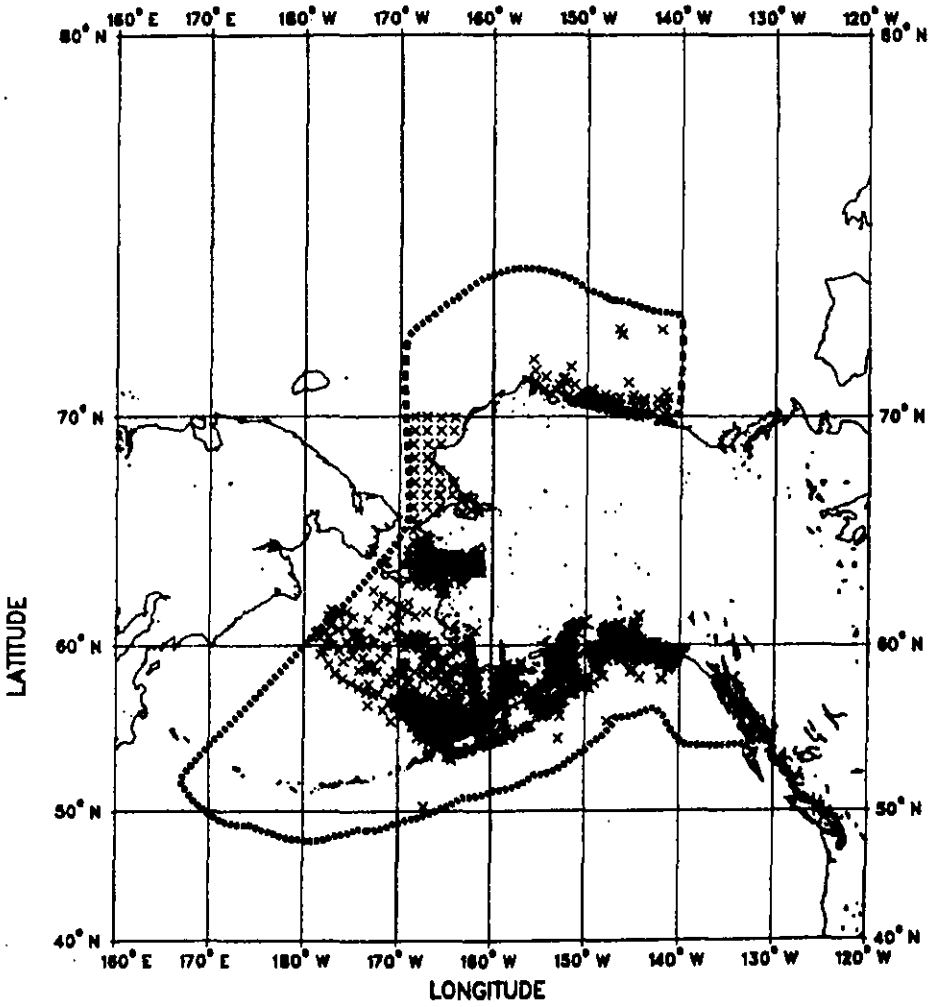


Observations 1,756

File Time Coverage 1958-1984

These data are measurements of primary productivity collected to provide information on nutrient levels and nutrient flow in offshore areas. In addition to cruise information, position, date and time, measured parmeters typically included are: concentrations of chlorophyll A and phaeopigments, concentrations of phosphate, nitrate, silicate, and ammonia, temperature, salinity, and carbon assimilation. Measurements of chlorophyll A, phaeopigment and carbon assimilation may be reported as integrated values.

MARINE TOXIC SUBSTANCES AND POLLUTANTS

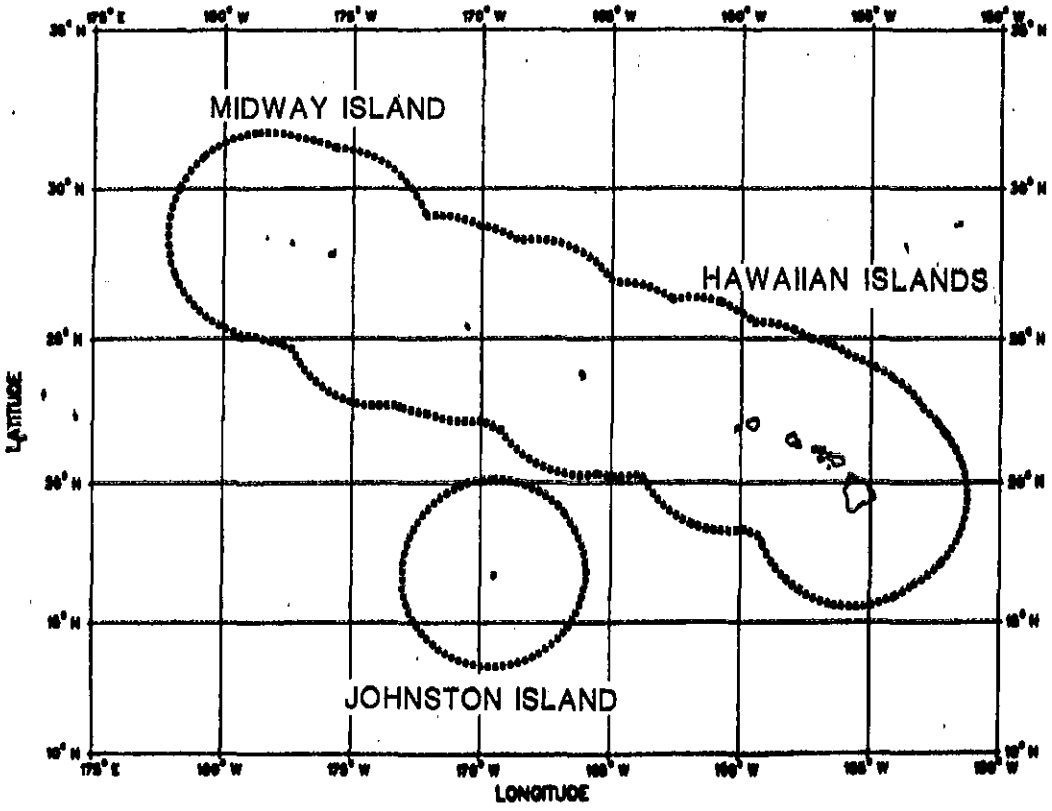


Observations 2,919
File Time Coverage 1974-1984

These are data on ambient concentrations of toxic substances and other pollutants in the marine environment which derive from laboratory analyses of samples of water, sediment, or marine organisms. These samples may have been collected either near marine discharge sites or during monitoring surveys of large ocean areas. Field observations of tar deposits on beaches may also be reported. Survey information includes platform type, start and end dates, and investigator and institution name. If data are collected near a dishcarge site then discharge location, depth, distance to shore, average volume, and other pertinent information is provided. Position, date, time, and environmental conditions are reported for each sampling station. Environmental data typically include meteorological and sea surface conditions, tidal stage and height, depth of the thermocline or mixed layer, sea surface temperature and salinity, and wave height and period. Sample characteristics, collection methods, and laboratory techniques are reported for each sample collected and analyzed. The data record comprises concentration values (or a code to indicate trace amounts) for each chemical substance analyzed. Chemical substances are identified by codes based on the registry numbers assigned by the Chemical Abstracts Service (CAS) of the American Chemical Society. Marine organisms from which samples have been taken are identified using the 12-digit NODC Taxonomic Code.

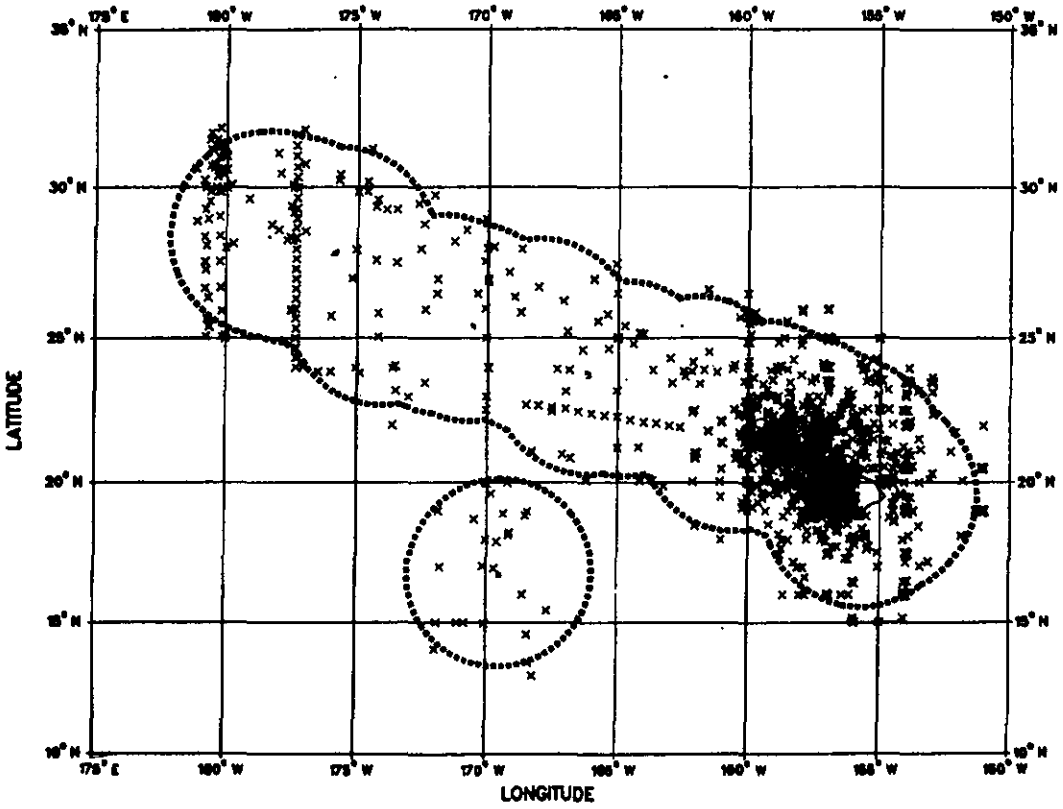
PACIFIC ISLANDS

MIDWAY ISLAND, JOHNSTON ISLAND, AND THE HAWAIIAN ISLANDS



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

OCEANOGRAPHIC STATION DATA

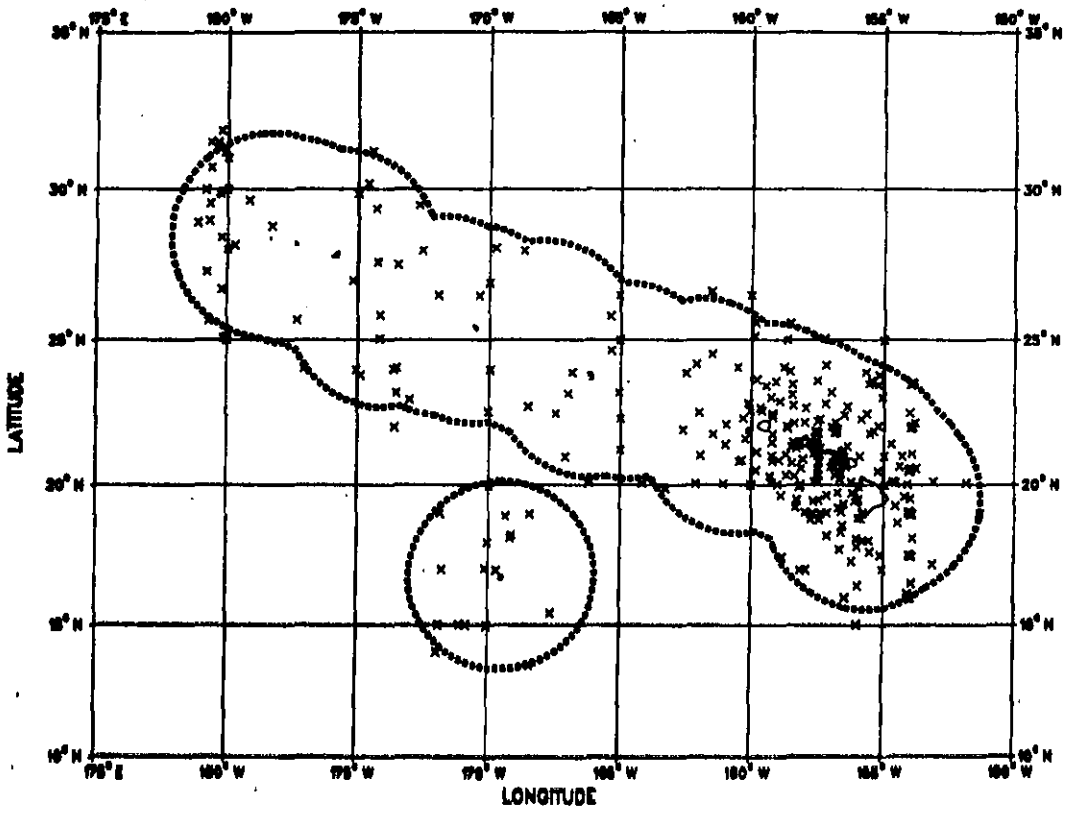


Stations 1,512

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

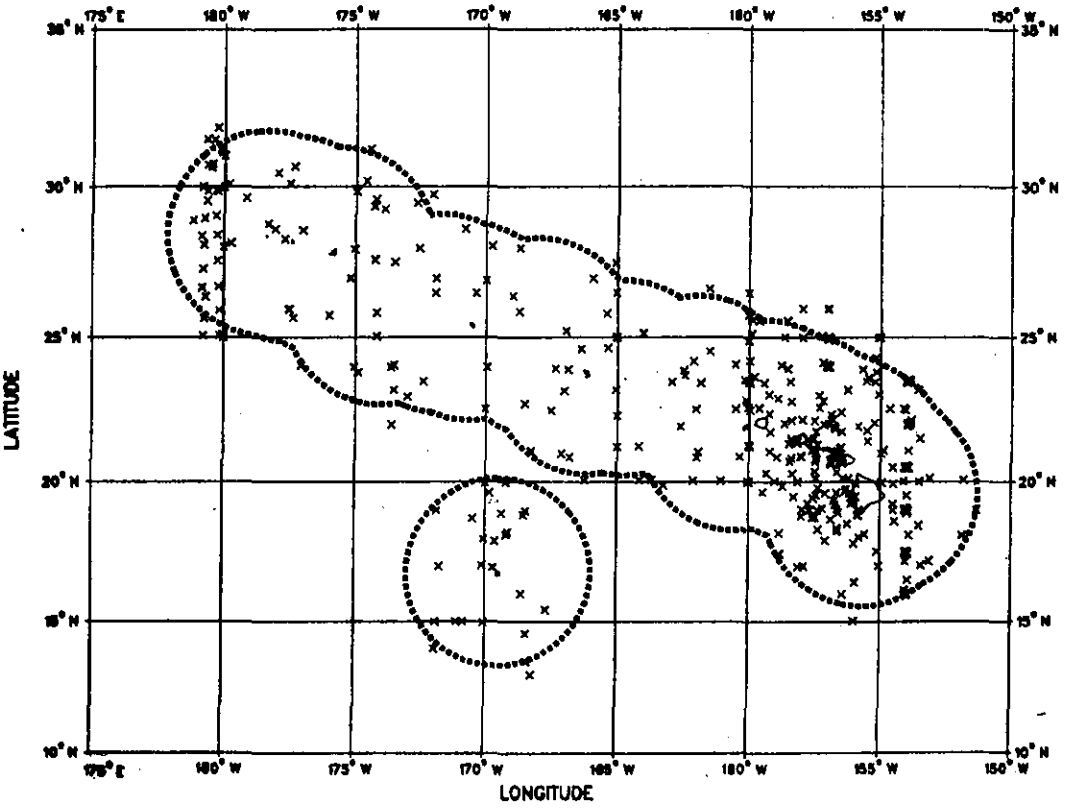
OCEAN STATION-NUTRIENT DATA



Stations 350
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

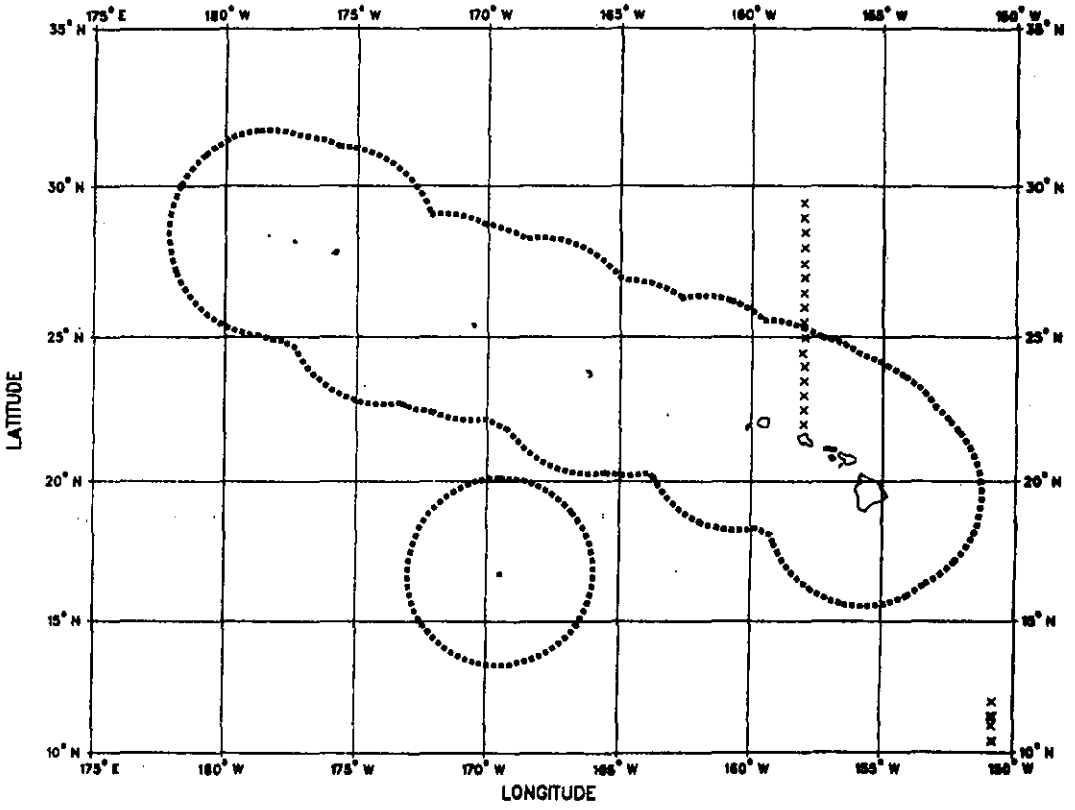
OCEAN STATION-DISSOLVED OXYGEN DATA



Stations 447
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

LOW RESOLUTION CTS/STD DATA

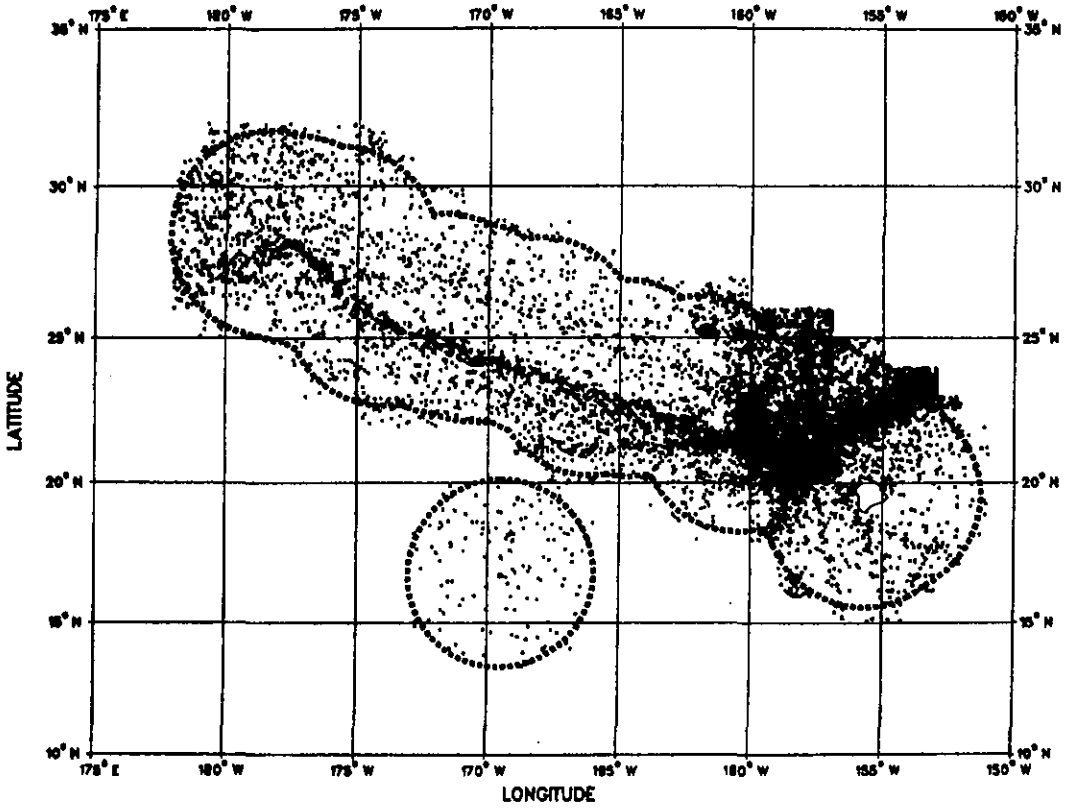


Stations 26

File Time Coverage 1969-1984

These data are low-resolution versions of conductivity-temperature-depth (CTD) and salinity-temperature-depth (STD) measurements obtained using electronic recorders. The term "low-resolution" refers to values being stored for up to 106 depth levels, including the 34 standard depth levels defined by the International Association of Physical Sciences of the Ocean (IAPSO), and not the entire original measured profile. Cruise information, position, date, and time are reported for each station. Principal measured parameters are temperature and salinity, and meteorological conditions at the time of observation, such as air temperature, barometric pressure, wind, and waves, may also be reported. Data are available in both cruise-sorted and geographically-sorted modes.

EXPENDABLE BATHYTHERMOGRAPH DATA

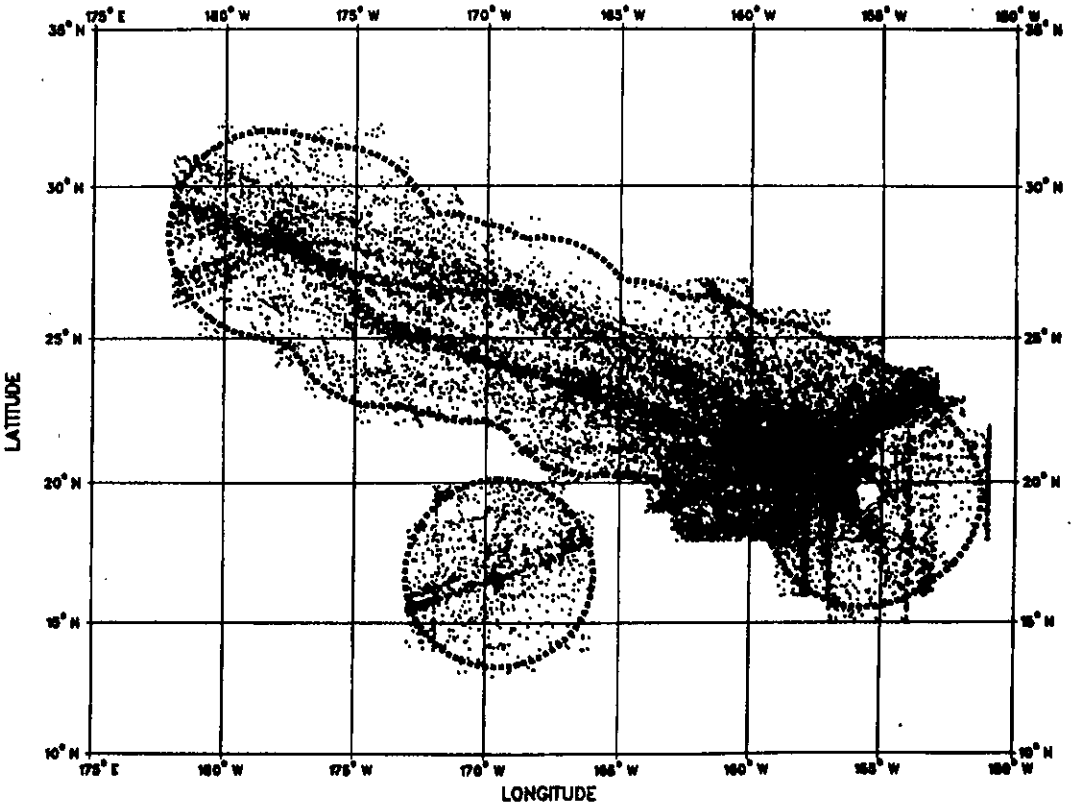


Stations 12,103

File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

MECHANICAL BATHYTHERMOGRAPH DATA

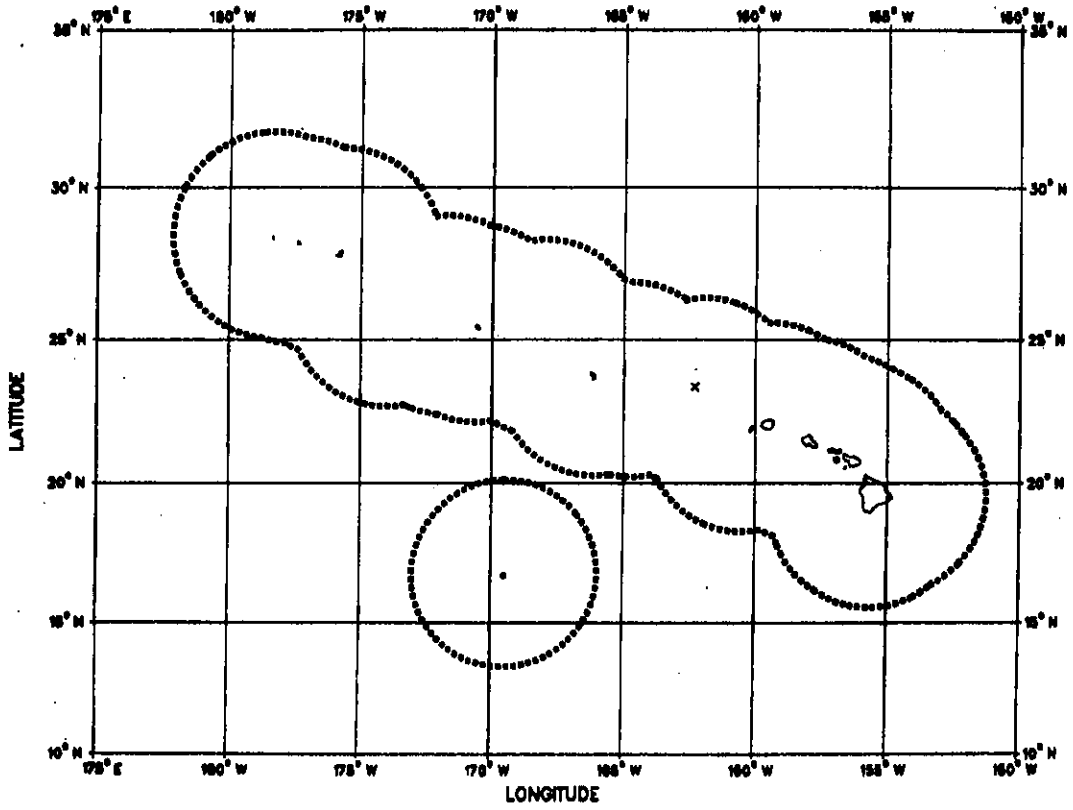


Stations 24,306

File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

METEOROLOGICAL AND WAVE SPECTRAL DATA



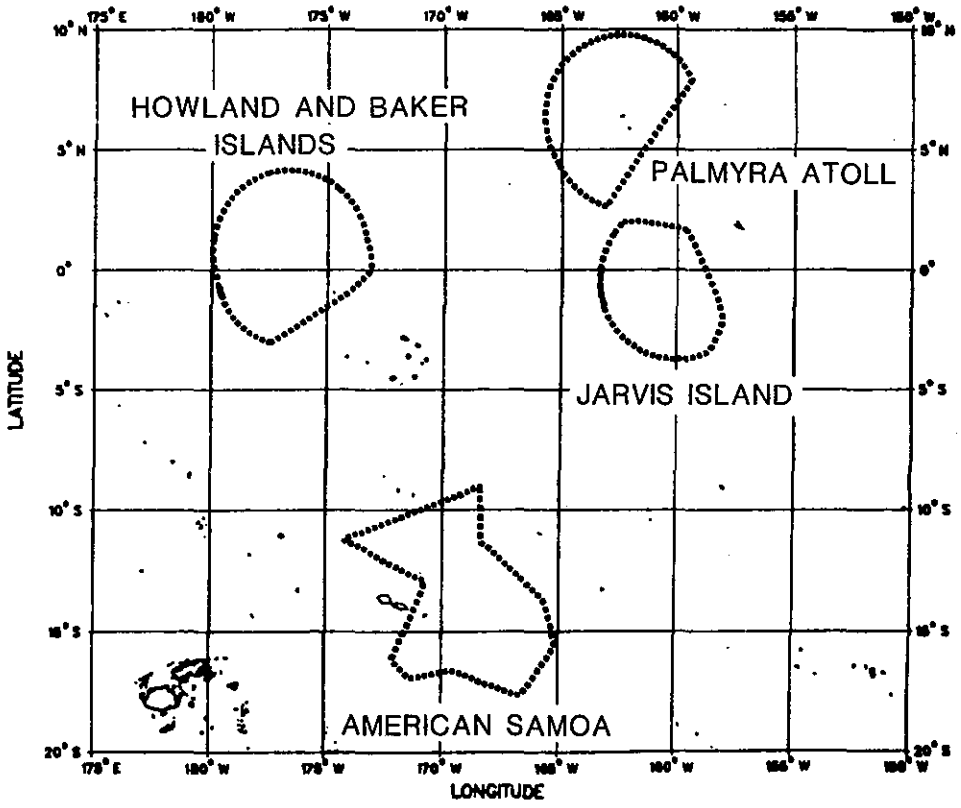
Observation Months 25

File Time Coverage 1970-1984

These are time series meteorological and oceanographic data collected from automated buoys operated by the NOAA Data Buoy Center (NDBC). The data are telecommunicated to U.S. operational centers for use in real-time forecasting and then accumulated and transmitted on magnetic tape to NODC. Station identifier, position, date, time, sampling duration, and sampling rate are reported for each series of measurements. Reported meteorological parameters typically include air temperature and pressure, dew point, wind speed and direction, wind gust, visibility, precipitation, and solar radiation. Ocean surface data may include water temperature and salinity or conductivity, significant wave height, average wave period and direction, dominant wave period, and maximum wave height and steepness. Subsurface temperature, salinity, conductivity, pressure, and east and north current components may also be reported. Wave data may be provided as spectral density values or, for directional spectra, as co- and quadspectra or angular Fourier coefficients. Time series data are reported as observation months, i.e. parameters recorded for a period of one month.

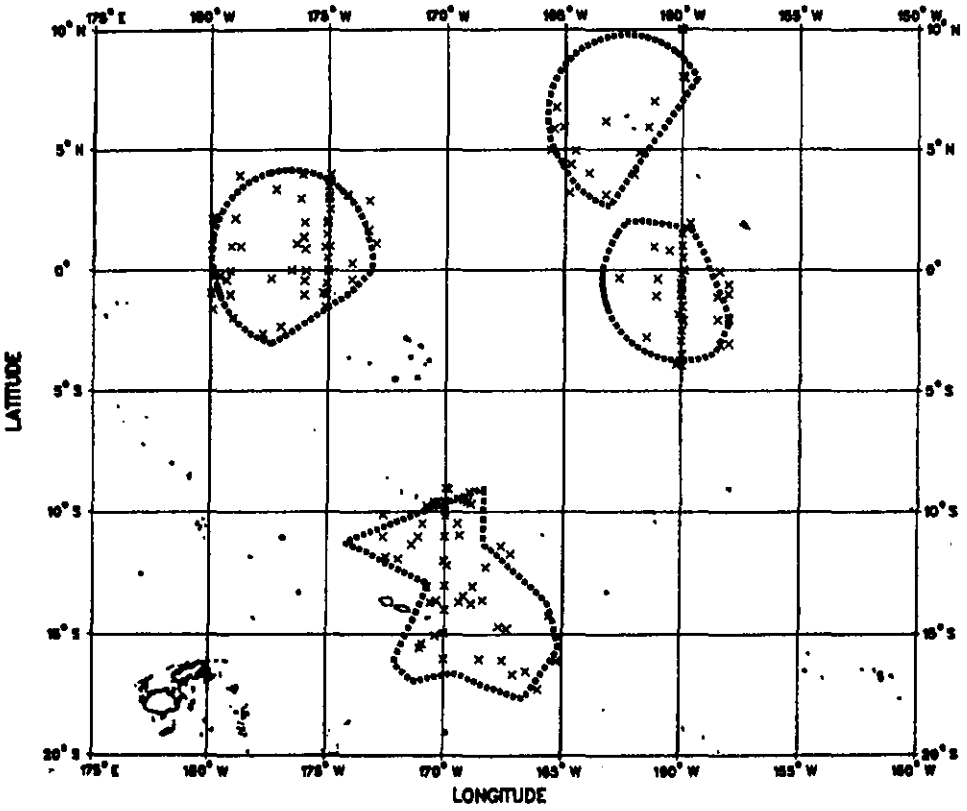
PACIFIC ISLANDS

HOWLAND AND BAKER ISLANDS, PALMYRA ATOLL, JARVIS ISLAND, AND AMERICAN SAMOA



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

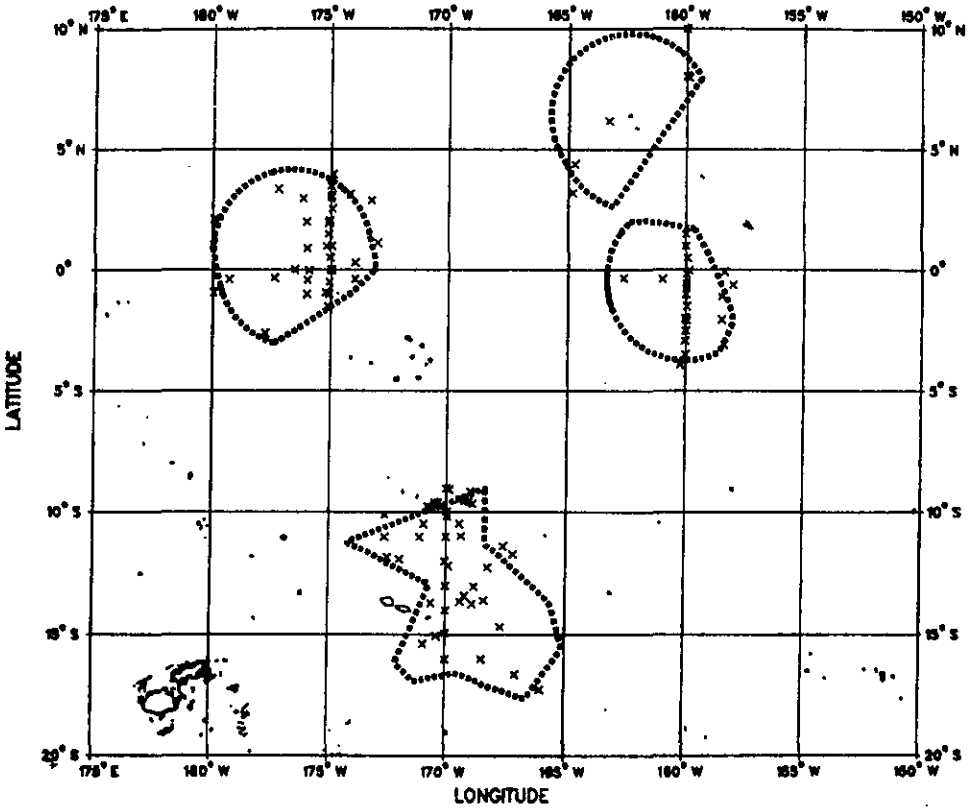
OCEANOGRAPHIC STATION DATA



Stations 163
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

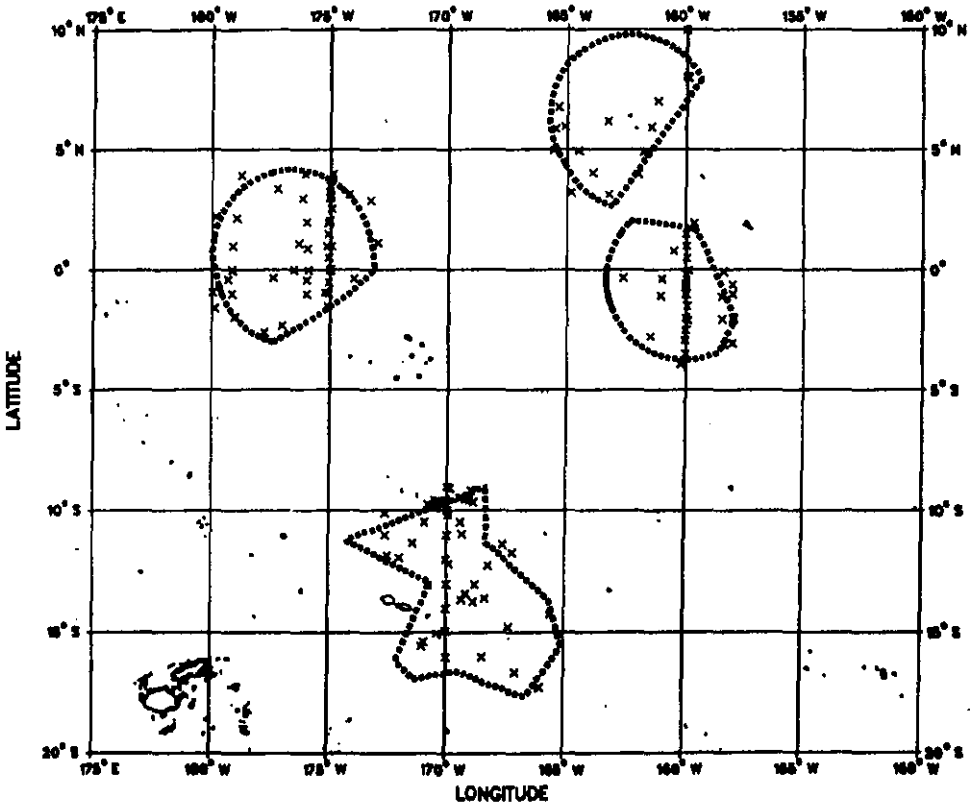
OCEAN STATION-NUTRIENT DATA



Stations 110
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

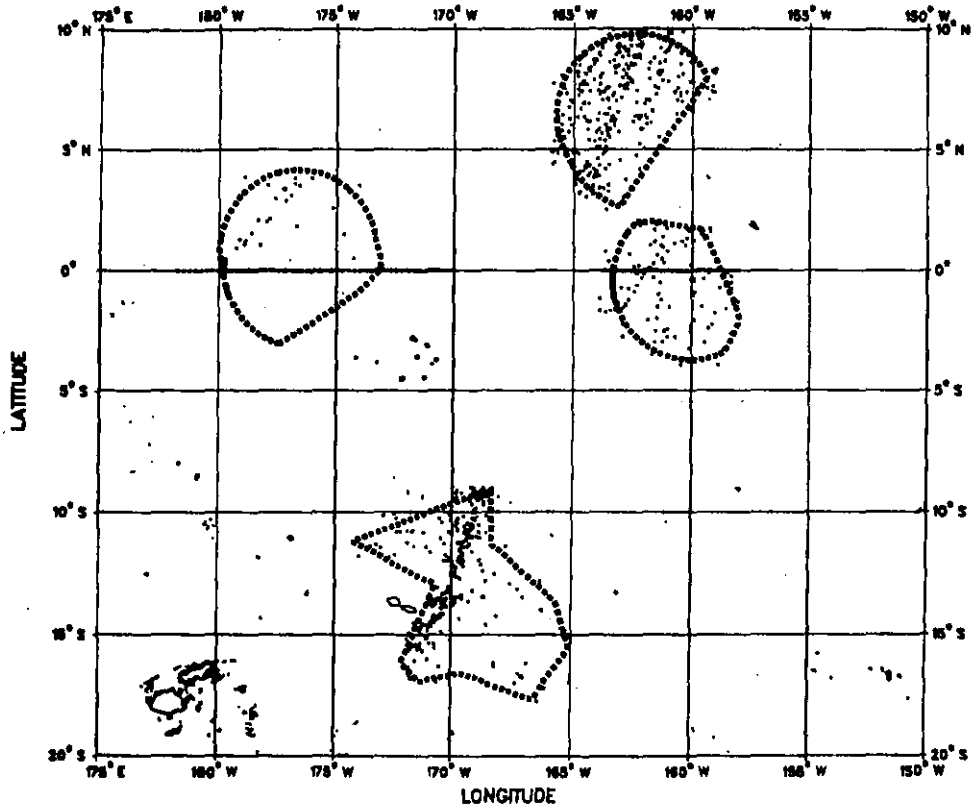
OCEAN STATION-DISSOLVED OXYGEN DATA



Stations 139
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

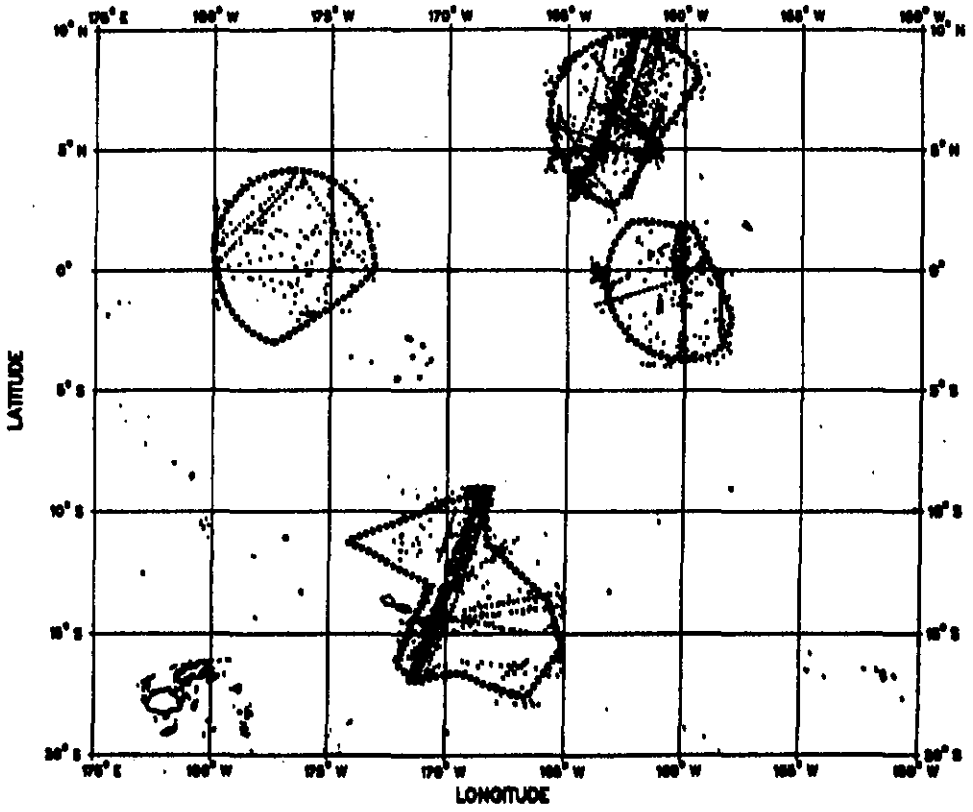
EXPENDABLE BATHYTHERMOGRAPH DATA



Stations 902
File Time Coverage 1966-1980

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

MECHANICAL BATHYTHERMOGRAPH DATA

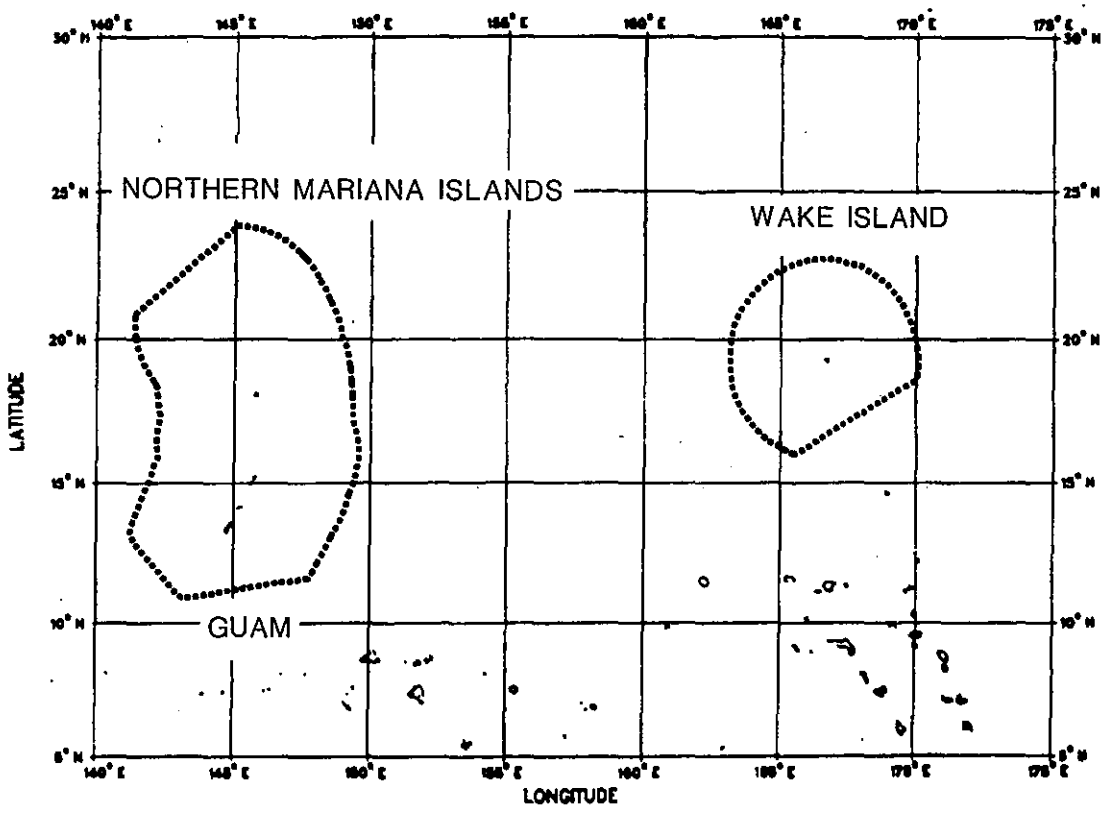


Stations 2,195
File Time Coverage 1941-1984

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

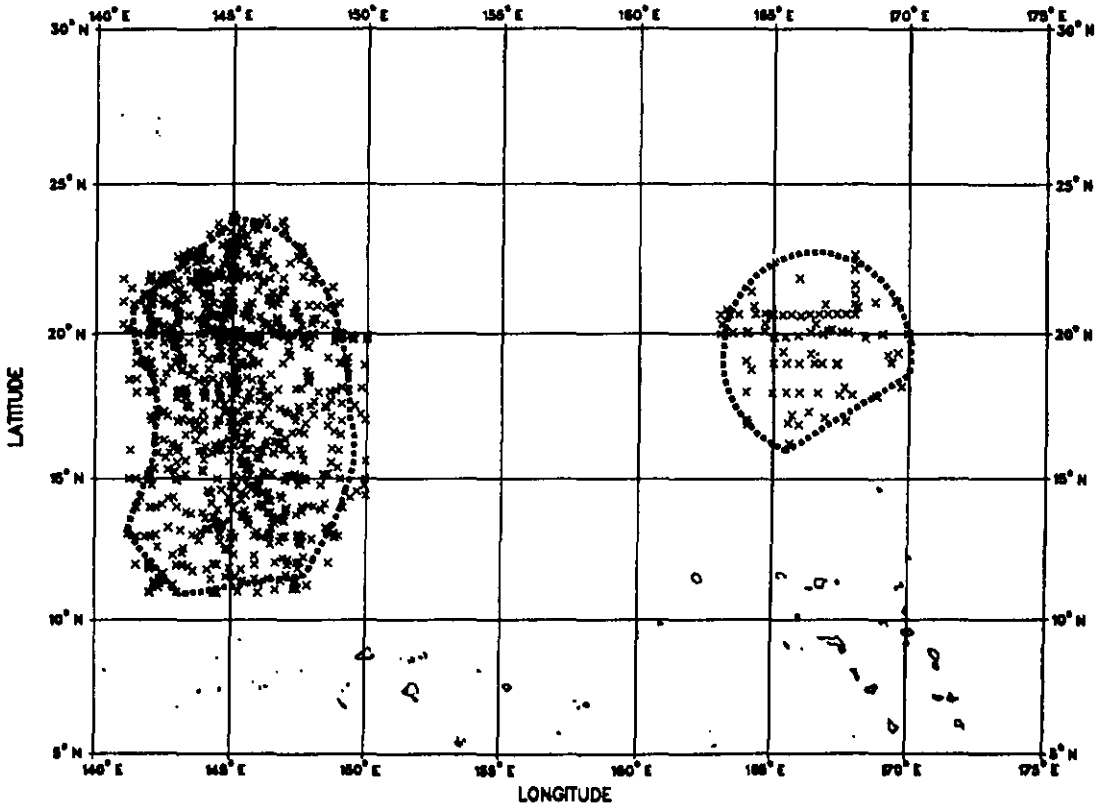
PACIFIC ISLANDS

THE NORTHERN MARIANA ISLANDS, GUAM, AND WAKE ISLAND



The location of the U.S. Exclusive Economic Zone is indicated by dashed lines in the above illustration.

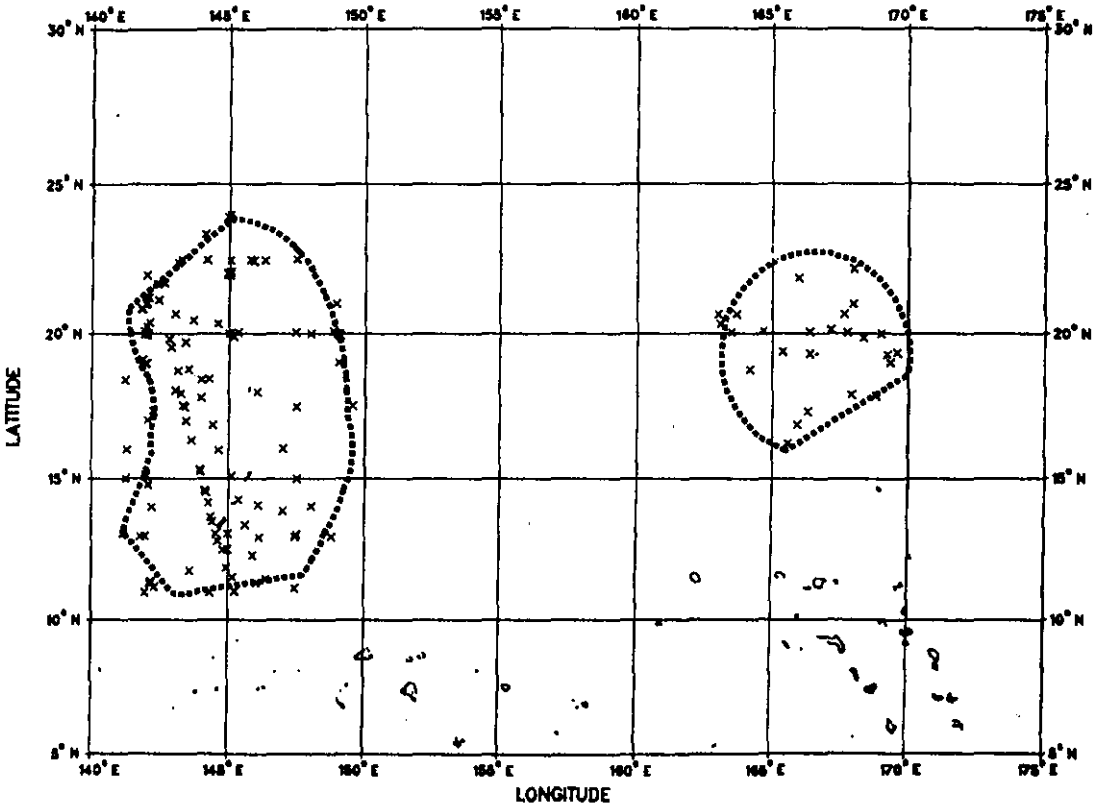
OCEANOGRAPHIC STATION DATA



Stations 923
File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorlogical conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-NUTRIENT DATA

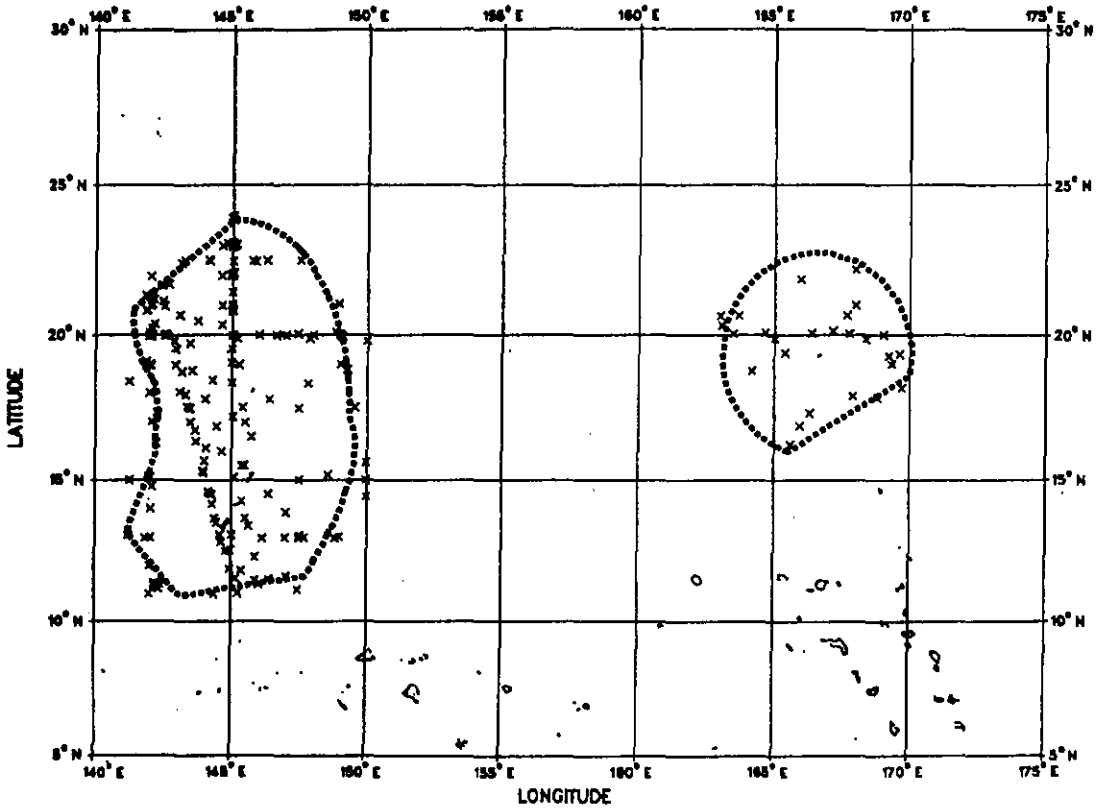


Stations 150

File Time Coverage 1900-1980

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include nutrient data (nitrate, silicate, phosphate, nitrite, total phosphorous, or a combination of these parameters). Associated cruise information, such as vessel name, country and institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure, and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data are available in both cruise-sorted and geographically-sorted modes.

OCEAN STATION-DISSOLVED OXYGEN DATA

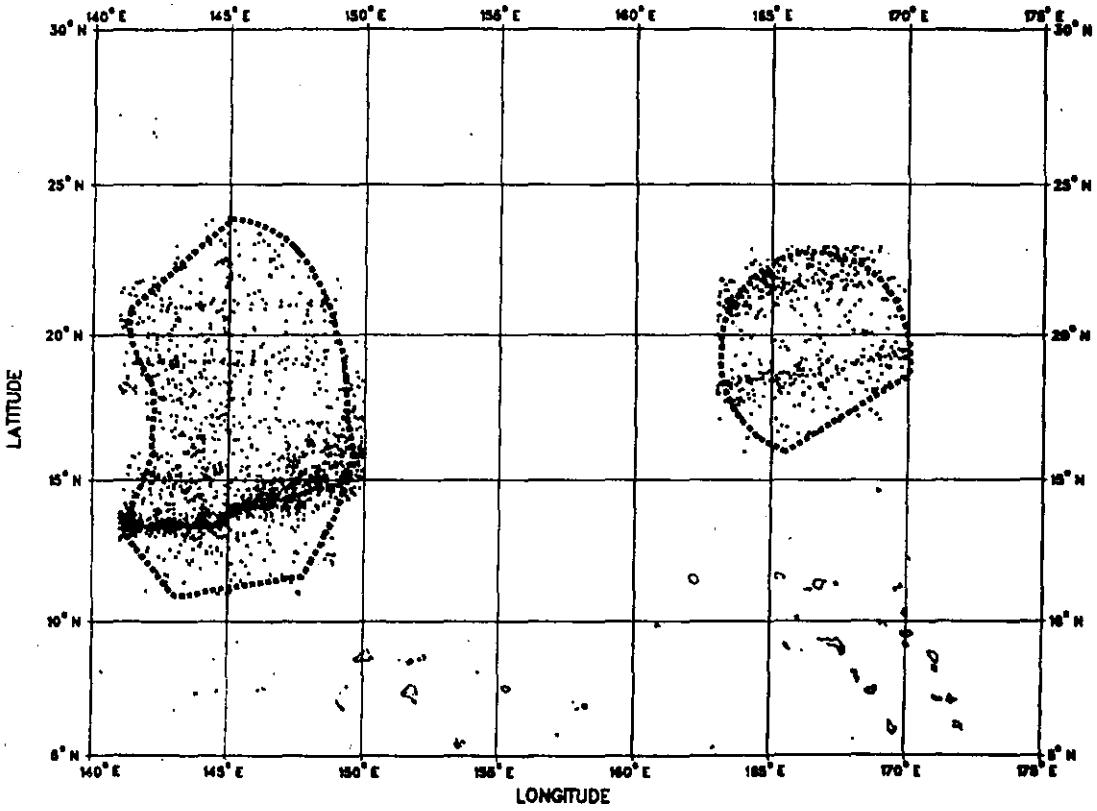


Stations 214

File Time Coverage 1900-1984

These are oceanographic station data obtained using multibottle Nansen casts or other types of water samplers. All stations shown in the plot include dissolved oxygen measurements. Associated cruise information, such as vessel name, country and insitutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity and associated meteorological conditions, such as air temperature, barometric pressure and wind and wave information, are usually reported at the time of sampling. Each station consists of measurements at observed levels in the water column. Data values are also provides at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

EXPENDABLE BATHYTHERMOGRAPH DATA

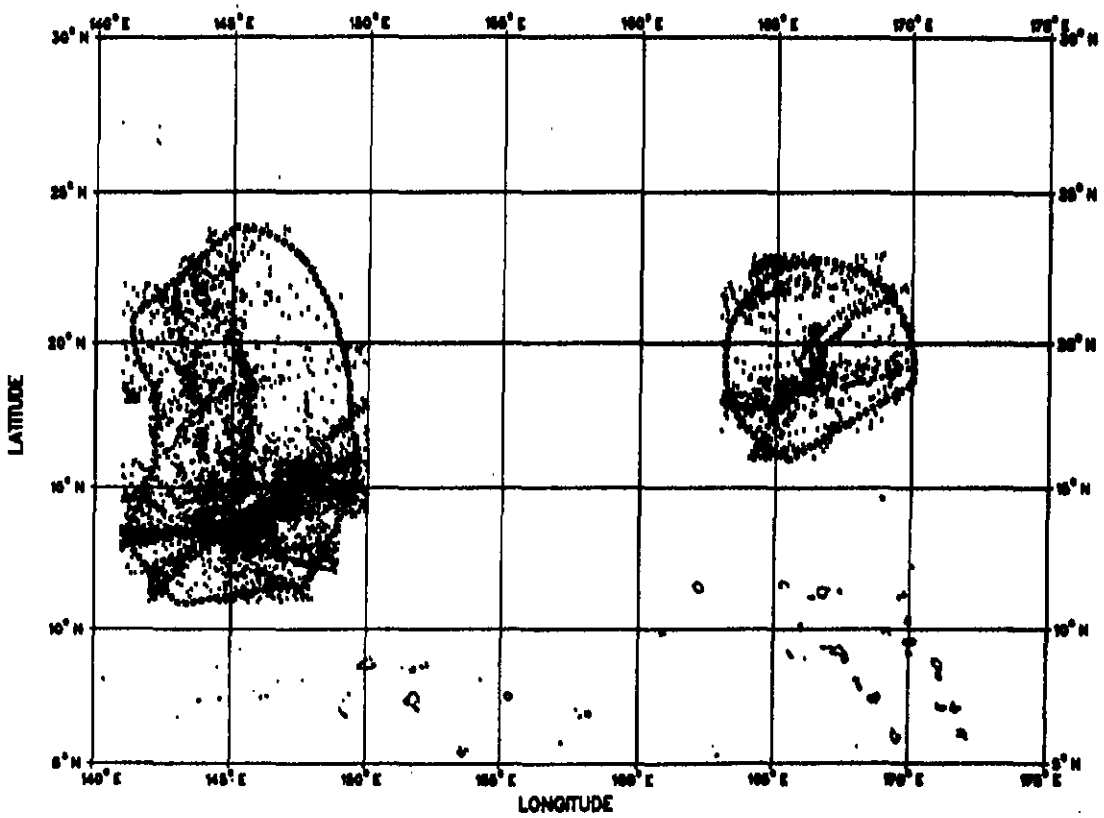


Stations 2,181

File Time Coverage 1966-1984

These are temperature-depth profile data obtained using the expendable bathythermograph. Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. With special instruments, however, this technique can be used to obtain measurements to approximately 1800 meters. Cruise information, position, date, and time are reported for each observation. The data record comprises pairs of temperature-depth values. Observation depths are recorded in the data file at the minimum number of inflection points needed to accurately record the original temperature-depth curve. Data are available in both cruise-sorted and geographically-sorted modes.

MECHANICAL BATHYTHERMOGRAPH DATA



Stations 5,668

File Time Coverage 1941-1980

These are temperature-depth profile data obtained using the now-obsolete mechanical bathythermograph. Maximum observation depth of this instrument is approximately 285 meters. Cruise information, position, date, and time are reported with each observation. The data record comprises pairs of temperature-depth values which are recorded at uniform 5 meter intervals. Data are available in both cruise-sorted and geographically-sorted modes.

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