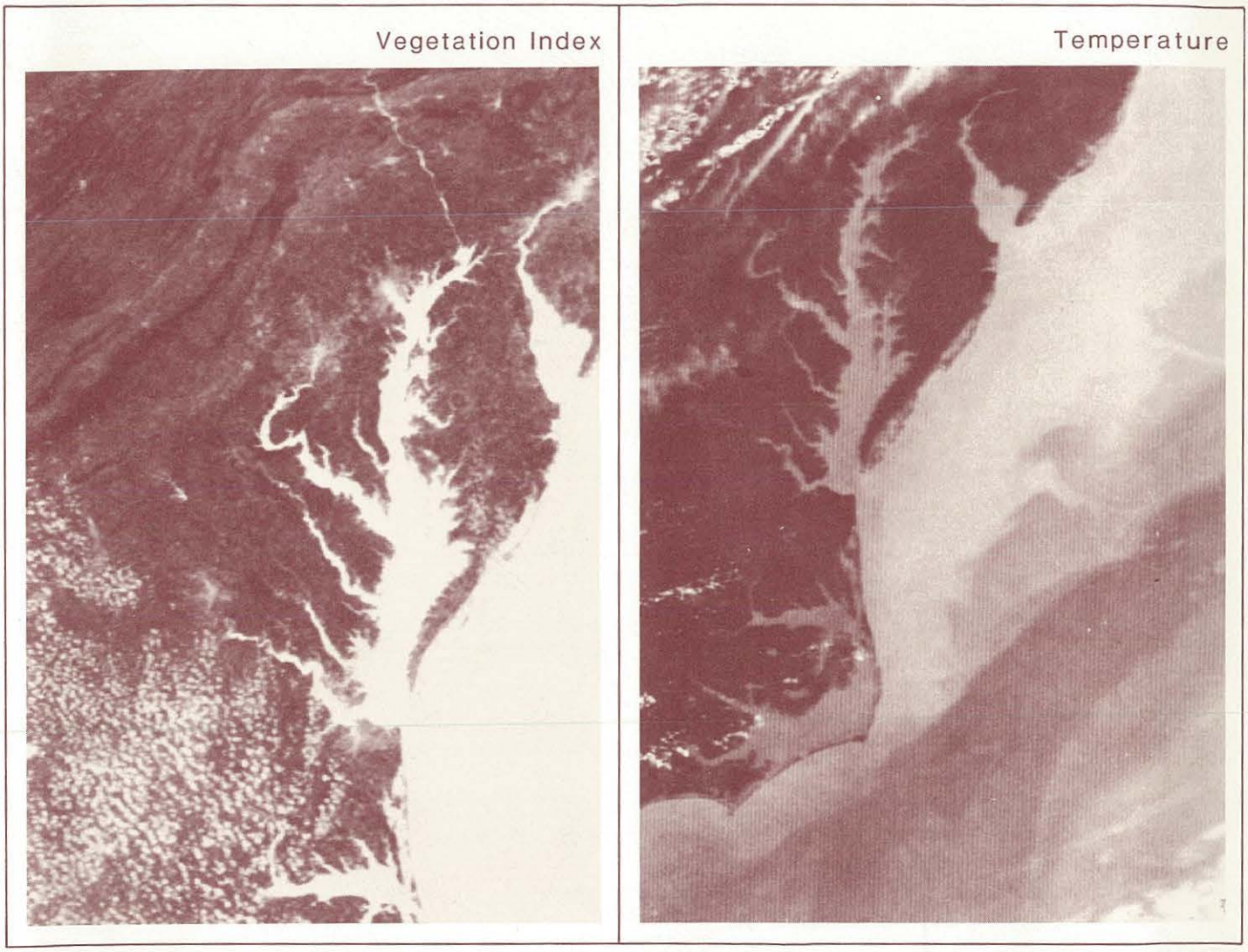
NESDIS Environmental Inventory No. 3

Environmental Data Sources for the Chesapeake Bay Area



CHESAPEAKE BAY AREA

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

NESDIS Environmental Inventory No. 3

Environmental Data Sources for the Chesapeake Bay Area

Washington, D.C.
June 1985

U.S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and Atmospheric Administration
Anthony J. Calio, Deputy Administrator

National Environmental Satellite, Data, and Information Service
John H. McElroy, Assistant Administrator

PREFACE

Among its principal tasks the National Oceanic and Atmospheric Administration (NOAA) is charged with collecting, processing, analyzing, sorting, and disseminating environmental data in support of U.S. research, business, commerce, and industry. Although all NOAA components share in this work, the responsibility for operating National repositories of historical earth, sea, and air data resides with NOAA's National Environmental Satellite, Data, and Information Service (NESDIS).

NESDIS includes offices responsible for the operation of U.S. meteorological and earth-observation satellites, plus four centers that acquire and disseminate global environmental data and information. These centers are the:

- National Climatic Data Center (NCDC), Asheville, N.C.;
- National Geophysical Data Center (NGDC), Boulder, Colo.;
- National Oceanographic Data Center (NODC), Washington, D.C.; and
- Assessment and Information Services Center (AISC), Washington, D.C.

Working in close cooperation these centers have developed an integrated environmental data service capability that serves thousands of customers each year. This publication is one of a series designed to provide information on data holdings, products, and services of the NESDIS centers for selected areas or regions of the world.

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1. INTRODUCTION

Chesapeake Bay is one of the largest and most productive estuaries in the world. It is a unique, irreplaceable natural--as well as national--resource. Declining harvests of fish and shellfish, however, have served notice that the Bay's renewable living resources are endangered by deteriorating water quality and habitat destruction. Recognition of this fact has prompted a coordinated management and protection effort supported by state and Federal agencies, research institutions, citizens groups, and marine commerce and industry. One of the key elements in this program is the collection and analysis of environmental data and exchange of information.

Purpose of this Publication

The primary purpose of this publication is to provide information about environmental data for the Chesapeake Bay area that is available from the National Environmental Satellite, Data, and Information Service (NESDIS), one of the major components of the National Oceanic and Atmospheric Administration (NOAA). These data are held by the three discipline-oriented data centers operated by NESDIS that serve as national repositories and dissemination facilities for global climatological, geophysical, and oceanographic data. The NESDIS data centers acquire data from a variety of sources including government agencies, universities and research institutions, private industry, and foreign organizations. This publication was prepared to identify and describe environmental data held by the NESDIS data centers in the Chesapeake Bay area and to aid potential users in selecting and obtaining these data.

A secondary purpose of this publication is to provide information on other sources of data and information for Chesapeake Bay. These other sources include data referral services, NESDIS publications, and data collections and information services of other agencies and organizations. One of the most comprehensive and useful of these ancillary information sources is the National Environmental Data Referral Service (NEDRES), which is operated by NESDIS as a computerized national register and catalog of environmental data collections and services. NEDRES and the other information sources and services listed here can direct users to various special Chesapeake Bay data and information collections available outside the national repositories.

Area of Coverage

This data inventory publication covers Chesapeake Bay and surrounding land areas. In general the data inventory plots and tables cover the area from latitude 36° 45'N to 39° 45'N and from longitude 75° 30'W to 77° 30'W. This includes all of Chesapeake Bay and its tributaries as well as the ocean area immediately outside the mouth of the Bay.

Users and Applications

This publication is intended as a source of useful information for planners, resource managers, policy makers, research scientists, and others concerned with environmental conditions in Chesapeake Bay. The data inventory plots and tables show the types of data available from the NESDIS data centers, where they are located, and the time span of the data record. This information can serve to aid users in identifying available data in their area of interest, to identify gaps in the data record, and to encourage submission of appropriate data to the national repositories.

The Chesapeake Bay Program

The Chesapeake Bay watershed, which covers 64,000 square miles (165,760 km^2), includes portions of six states and all of the District of Columbia. Proper management of the Bay and its resources, therefore, can only be achieved through coordinated efforts. A new level of cooperation among political jurisdictions and Federal agencies was initiated with the signing on December 9, 1983, of the Chesapeake Bay Agreement. In this document the Commonwealths of Pennsylvania and Virginia, the State of Maryland, the District of Columbia, and the U.S. Environmental Protection Agency (EPA) pledged to initiate a coordinated plan of action to save the Bay.

In 1984 a management framework was instituted to implement this regional approach. This framework comprises:

- an Executive Council made up of representatives of the EPA and the revelant state agencies.

- an Implementation Committee appointed by the Executive Council that includes representatives of state and Federal agencies with water quality responsibilities, and

- a Chesapeake Bay Liaison Office (located in Annapolis, Md.) that supports the Council and Committee and coordinates program activities.

In 1984 Memoranda of Understanding were also established that detail the areas of responsibility of Federal agencies with regard to the Chesapeake Bay Program. The six agencies are: Environmental Protection Agency, Army Corps of Engineers, U.S. Fish and Wildlife Service, Soil Conservation Service, U.S. Geological Survey, and National Oceanic and Atmospheric Administration.

NOAA contributes to the Bay program in a number of areas including circulation studies, fish resource assessments, studies of effects of low dissolved oxygen in Bay waters, and data and information exchange. Special attention is being given to ensuring that all publicly-available collections of Chesapeake Bay data are included in the NEDRES data base. This task is being carried out as this publication is being prepared and is anticipated to require several years to complete. This effort will help ensure that program participants and outside users have a single comprehensive source of information on what Chesapeake Bay data are available and where they may be obtained. This publication describing NESDIS data holdings and information services for Chesapeake Bay should contribute to the goal of increasing user awareness of available Chesapeake Bay data and information resources.

Obtaining Data and Information

Data and information services described in this publication are available from the specified NESDIS and non-NESDIS contact points. A summary list of contact points for NESDIS data and information products and services is also included in the inside back cover. Data and information services are provided at costs that cover retrieval and reproduction. Customized searches tailored to user specifications can be made using both the National Environmental Data Referral Service (NEDRES) and an automated system describing Federal marine pollution projects, the National Marine Pollution Information System (NMPIS). In some cases selected subsets of data from digital data files can also be produced to meet user specifications. More detailed data inventory information may be available to help users in defining data selection criteria. User services personnel at the NESDIS centers can provide consultation to users and assist them in formulating data and information orders.

2. OCEANOGRAPHIC DATA

The waters of Chesapeake Bay form a complex dynamical system. They provide a wide range of living conditions for marine animals and plants and an ever-changing operating environment for man. Physical and chemical properties--for example, temperature, salinity, and concentration of nutrients--vary both with position in the Bay and with depth. These properties undergo characteristic annual cycles with significant variation from year to year.

As a true estuary system the Bay exhibits a salinity range from nearly fresh water at the head, the site of inflow from the Susquehanna River, to nearly full saline sea water at the Bay's mouth. In spring, when stream and river runoff is high, the salinity of Bay waters is at a minimum; in fall, when inflow of fresh water is lowest, salinity in the Bay is at a maximum. Because most marine organisms are adapted to specific salinity ranges, the distribution of salinity in the Bay strongly influences the distribution of marine plants and animals. Knowledge of water column properties is therefore the starting point for environmental assessments regarding alternative locations for offshore and onshore activities and of major development projects.

The NESDIS National Oceanographic Data Center (NODC) maintains an archive of worldwide data on the physical and chemical properties of the oceans. Although a large percentage of these data are for the open ocean, the NODC data files also include data for coastal seas, bays, and estuaries. Over the past decade the NODC has received large amounts of physical, chemical, and biological data collected within the U.S. Exclusive Economic Zone. These data derive primarily from programs organized to study the effects on marine ecosystems of offshore oil development, ocean dumping, and other human activities.

NODC holds data from government agencies, universities and research institutions, and private industry. These data--collected on numerous cruises over years and decades--are received in or processed into standard formats and merged into digital data files. The data may be selectively retrieved by geographic area and time period to meet user requirements. This section provides inventory information on NODC data holdings in the Chesapeake Bay for six major data files. These files include hydrographic station data collected by bottle casts (water samplers) or by newer electronic instruments; temperature-depth profiles from bathythermographs; water physics and chemistry data; and current data from current meter moorings.

Data and further information may be obtained from the:

National Oceanographic Data Center
NOAA/NESDIS E/OC21
2001 Wisconsin Avenue, NW
Washington, DC 20235

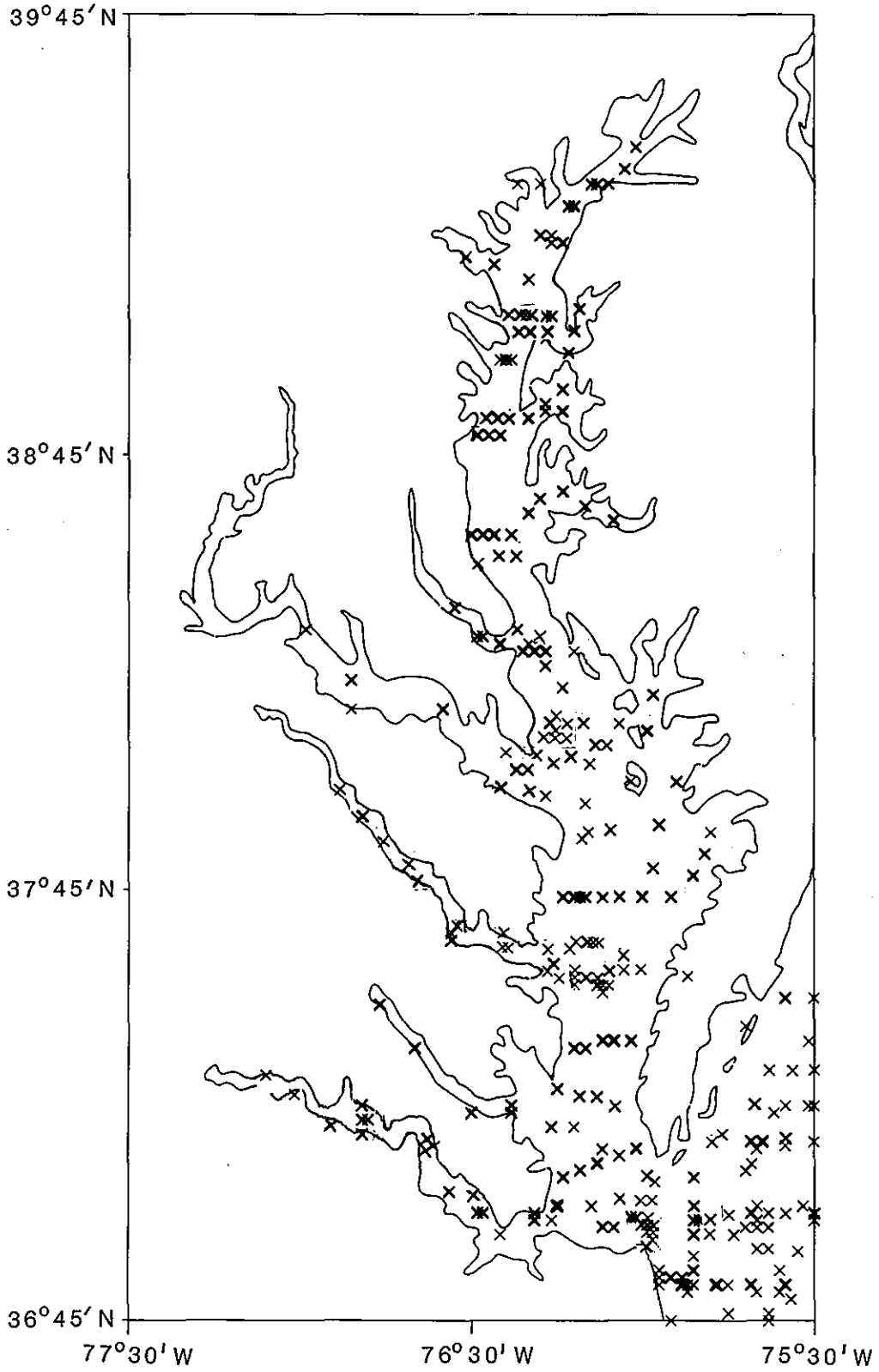
Phone: 202-634-7500
FTS 634-7500

Station Data

These are 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. 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 provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

Station locations that appear to be on land are actually observations taken in tributaries which are not shown due to the resolution of coastal land features in the digital map file used for the base chart.

Station Data



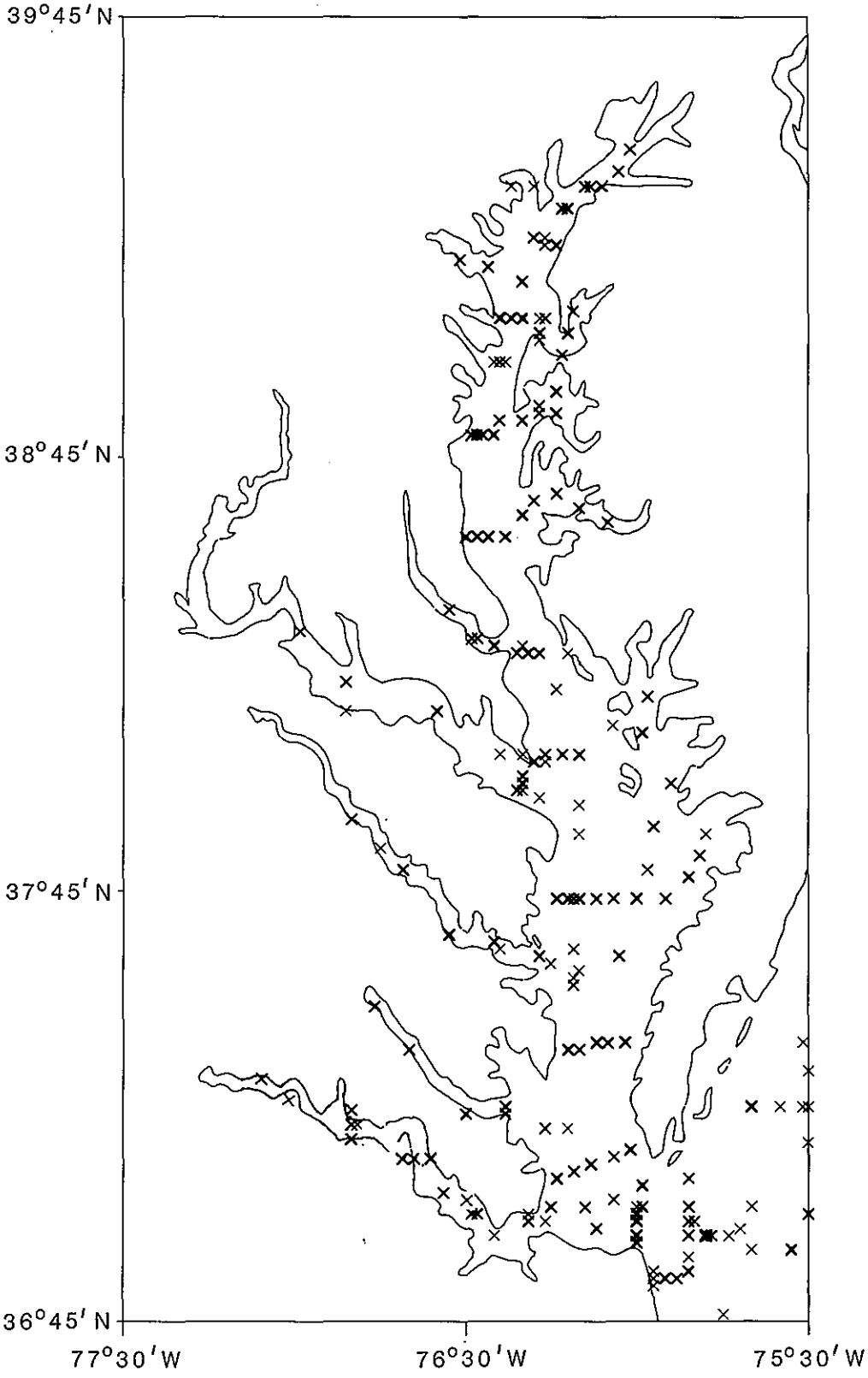
Stations 2006
File Time Coverage 1900 - 1984

Station Data--Dissolved Oxygen

These are 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 institutional affiliation, as well as position, date and time are reported for each station. Principal measured parameters are water temperature and salinity. 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 provided at interpolated standard depth levels. Data are available in both cruise-sorted and geographically-sorted modes.

Station locations that appear to be on land are actually observations taken in tributaries which are not shown due to the resolution of coastal land features in the digital map file used for the base chart.

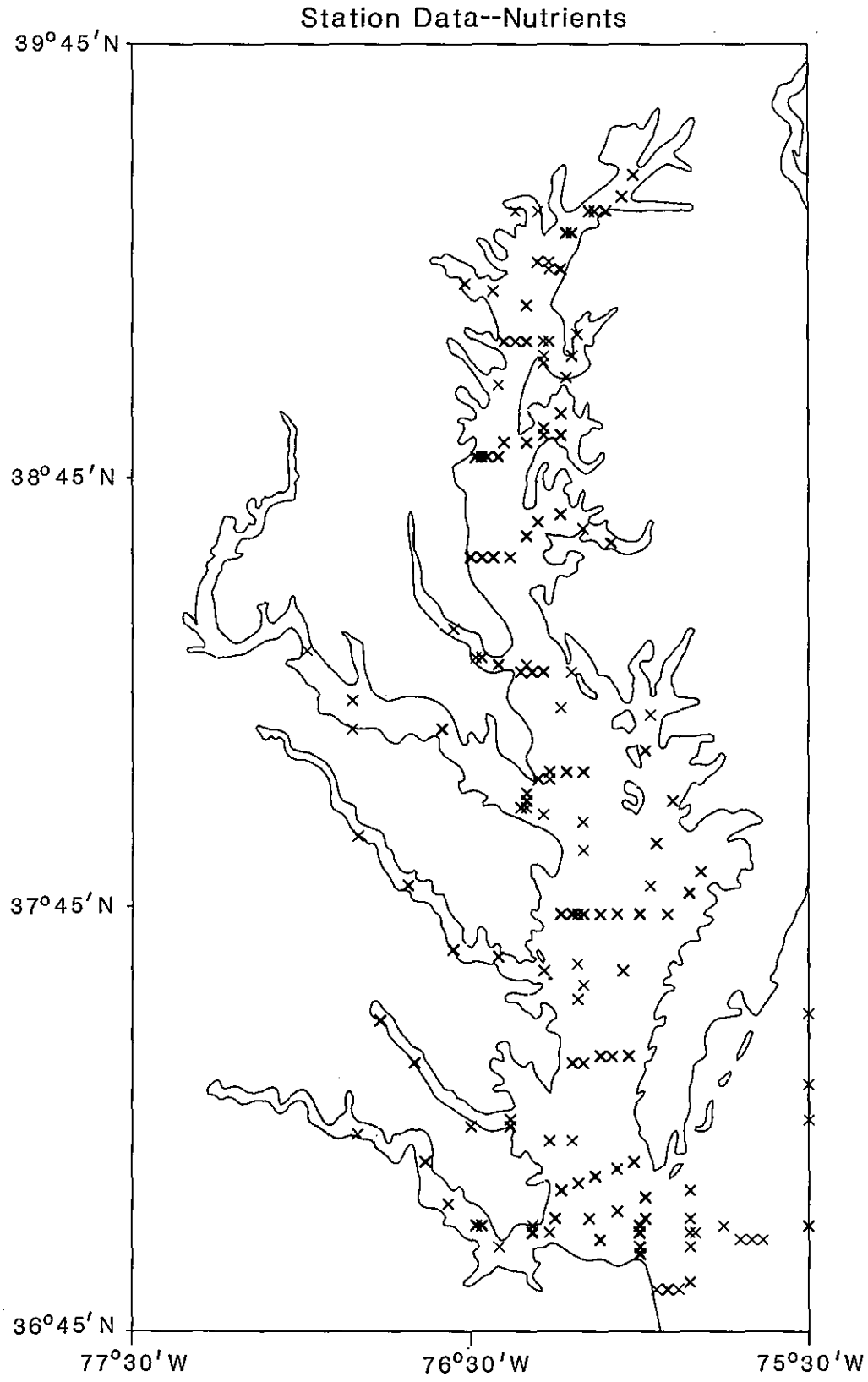
Station Data--Dissolved Oxygen



Stations 818
File Time Coverage 1932 - 1984

Station Data--Nutrients

These are 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. 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.



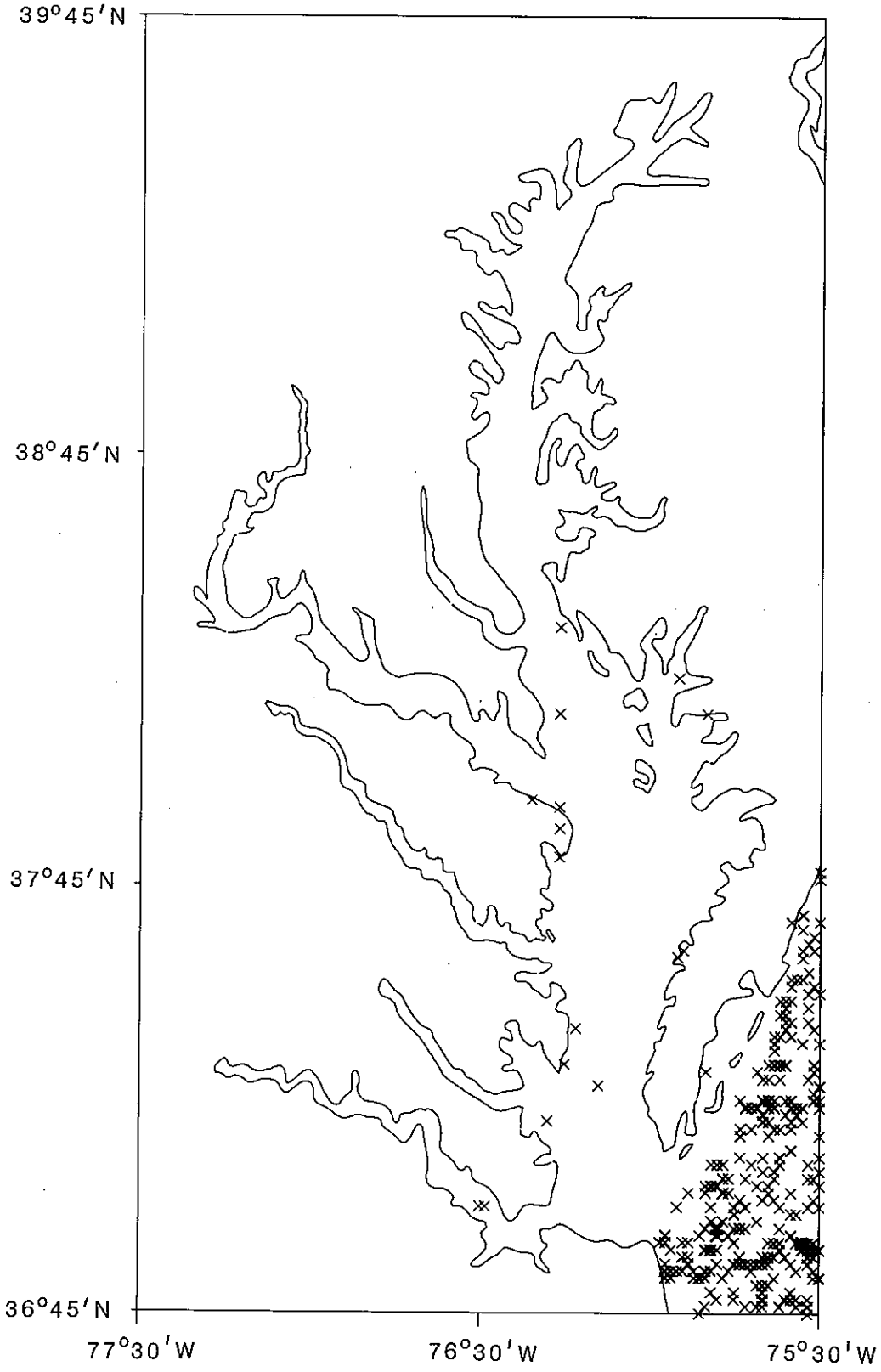
Stations 434
File Time Coverage 1931 - 1973

Expendable Bathythermograph Data

These are temperature-depth profile data obtained using the expendable bathythermograph (XBT). Standard XBT instruments obtain temperature profiles to depths of approximately 450 or 760 meters, depending upon the model. 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.

Station locations that appear to be on land are actually observations taken in tributaries which are not shown due to the resolution of coastal land features in the digital map file used for the base chart.

Expendable Bathythermograph Data



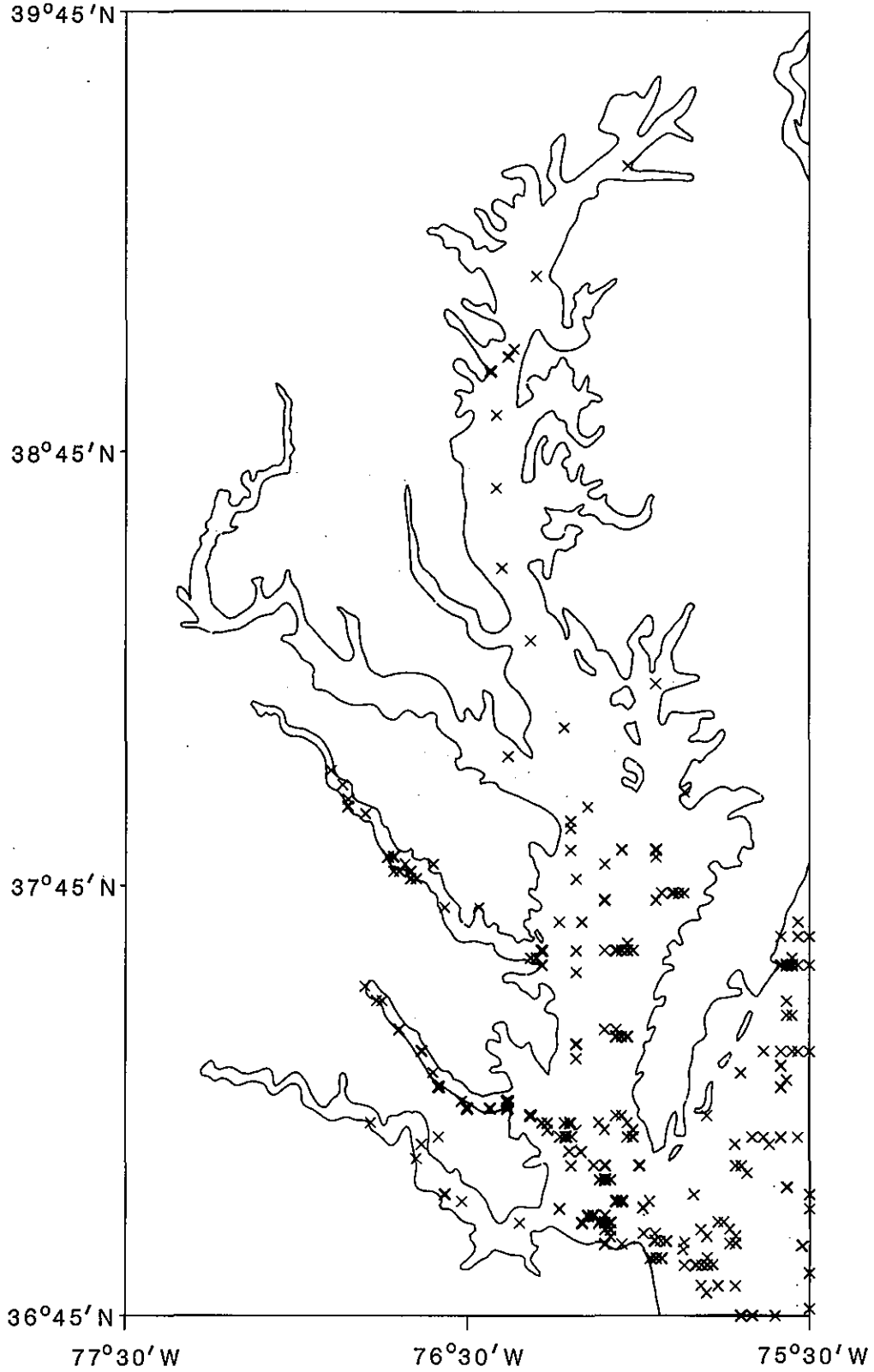
Stations 329
File Time Coverage 1967 - 1984

Mechanical Bathythermograph Data

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.

Station locations that appear to be on land are actually observations taken in tributaries which are not shown due to the resolution of coastal land features in the digital map file used for the base chart.

Mechanical Bathythermograph Data

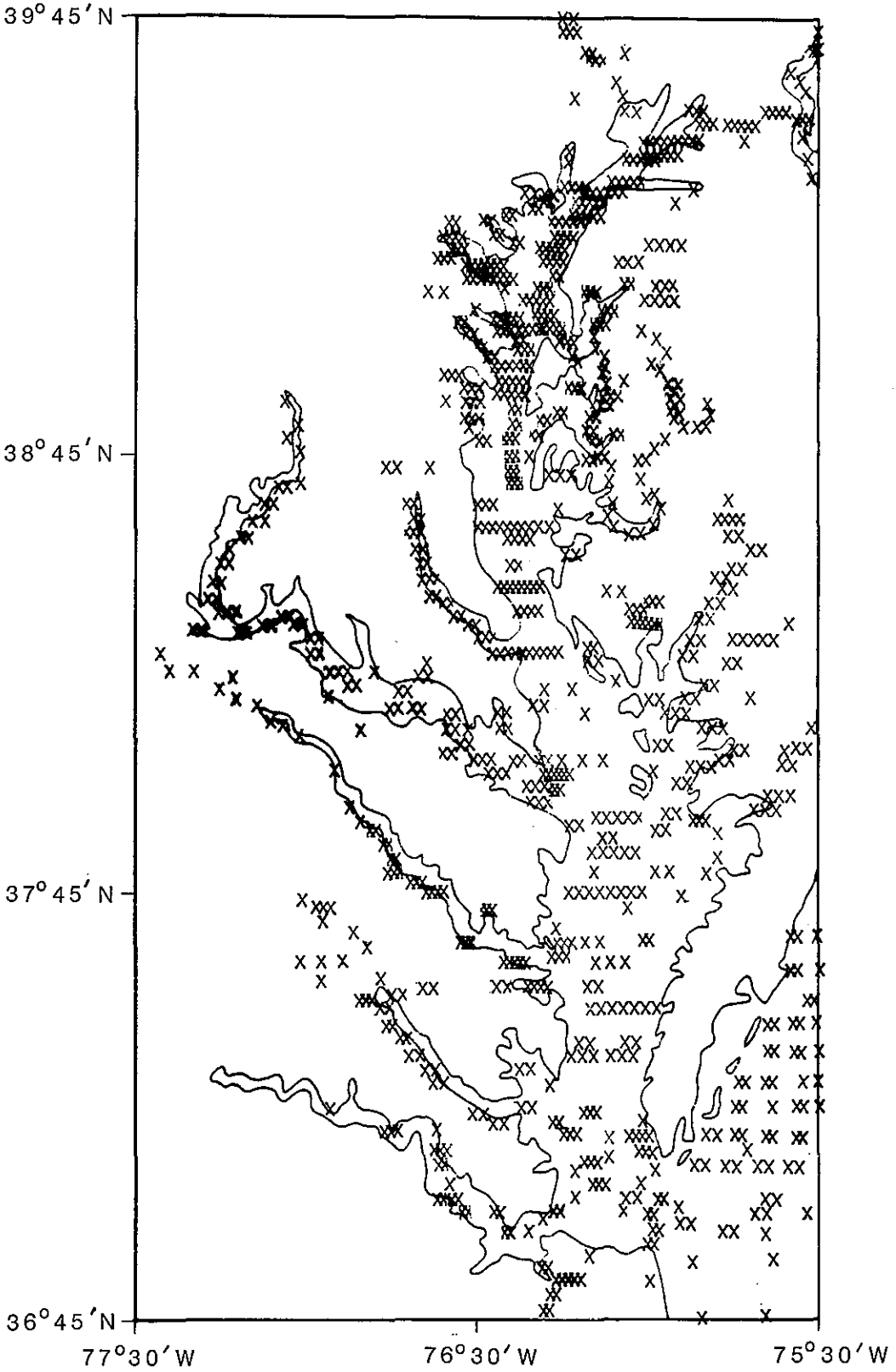


Stations 2777
File Time Coverage 1952 - 1973

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.

Station locations that appear to be on land are actually observations taken in tributaries which are not shown due to the resolution of coastal land features in the digital map file used for the base chart.

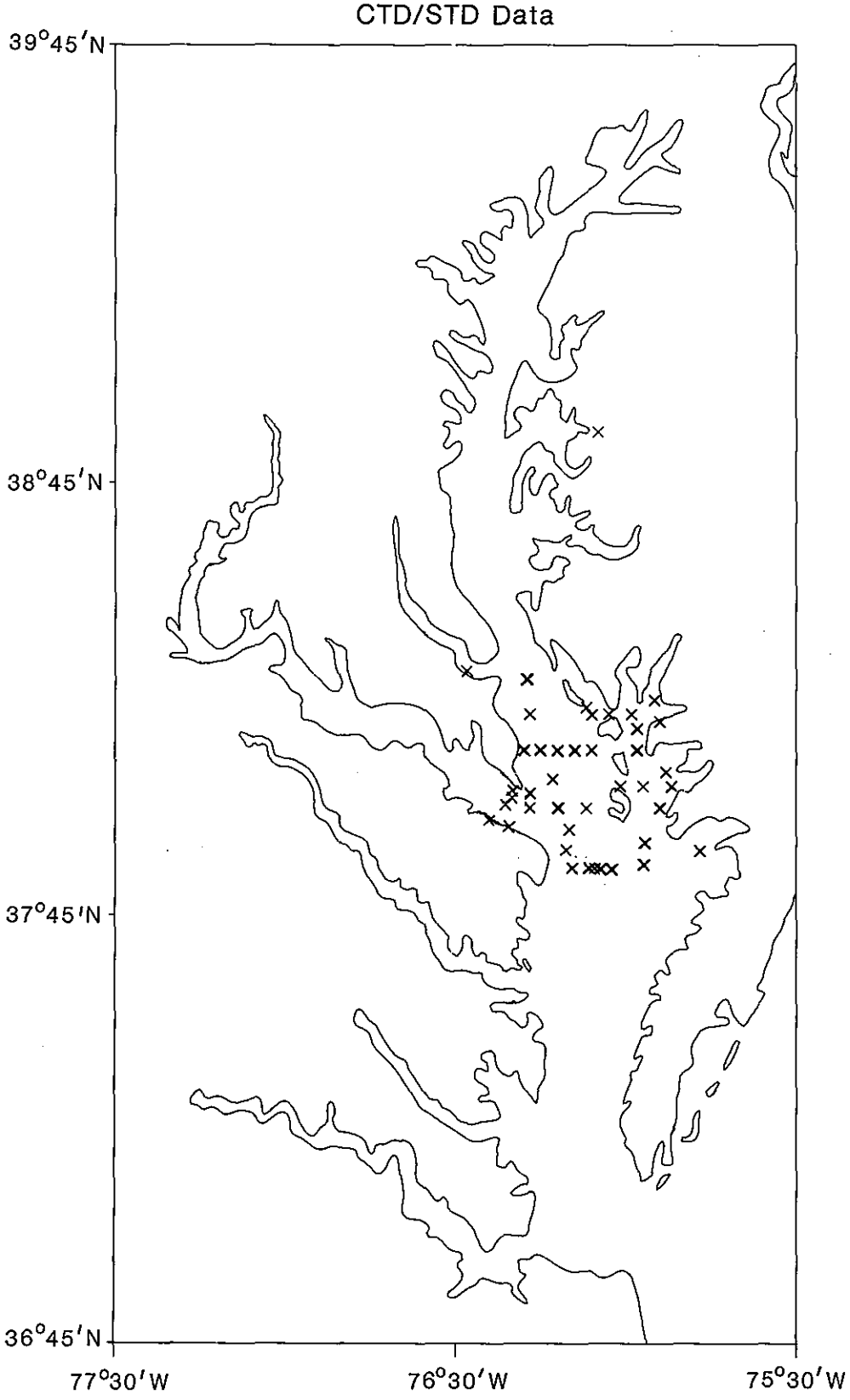


Observations 50,174
File Time Coverage 1949-1981

CTD/STD Data

High resolution CTD/STD data provide near-continuous profiles of conductivity and temperature versus depth or salinity and temperature versus depth obtained from electronic measuring devices that are raised and lowered through the water column. During processing NODC creates low-resolution versions of these same measurements, which are stored as a separate file. To create the low-resolution profiles, data values are picked off at up to 106 depth levels, including the 34 standard depth levels defined by the International Association of Physical Sciences of the Ocean (IAPSO). The term "low resolution" refers to values being stored at these selected depth levels rather than all the depth levels of the original profile. Principal measured parameters are temperature, salinity or conductivity, and meteorological conditions at the time of observation, such as air temperature, barometric pressure, and wind. Data are available in both high and low resolution form for the Chesapeake Bay.

Additional CTD/STD data collected by NOAA's National Ocean Service (NOS) are in processing and not yet in the NODC data base. These data, which cover the entire mainstem of the Bay, are expected to be available shortly.

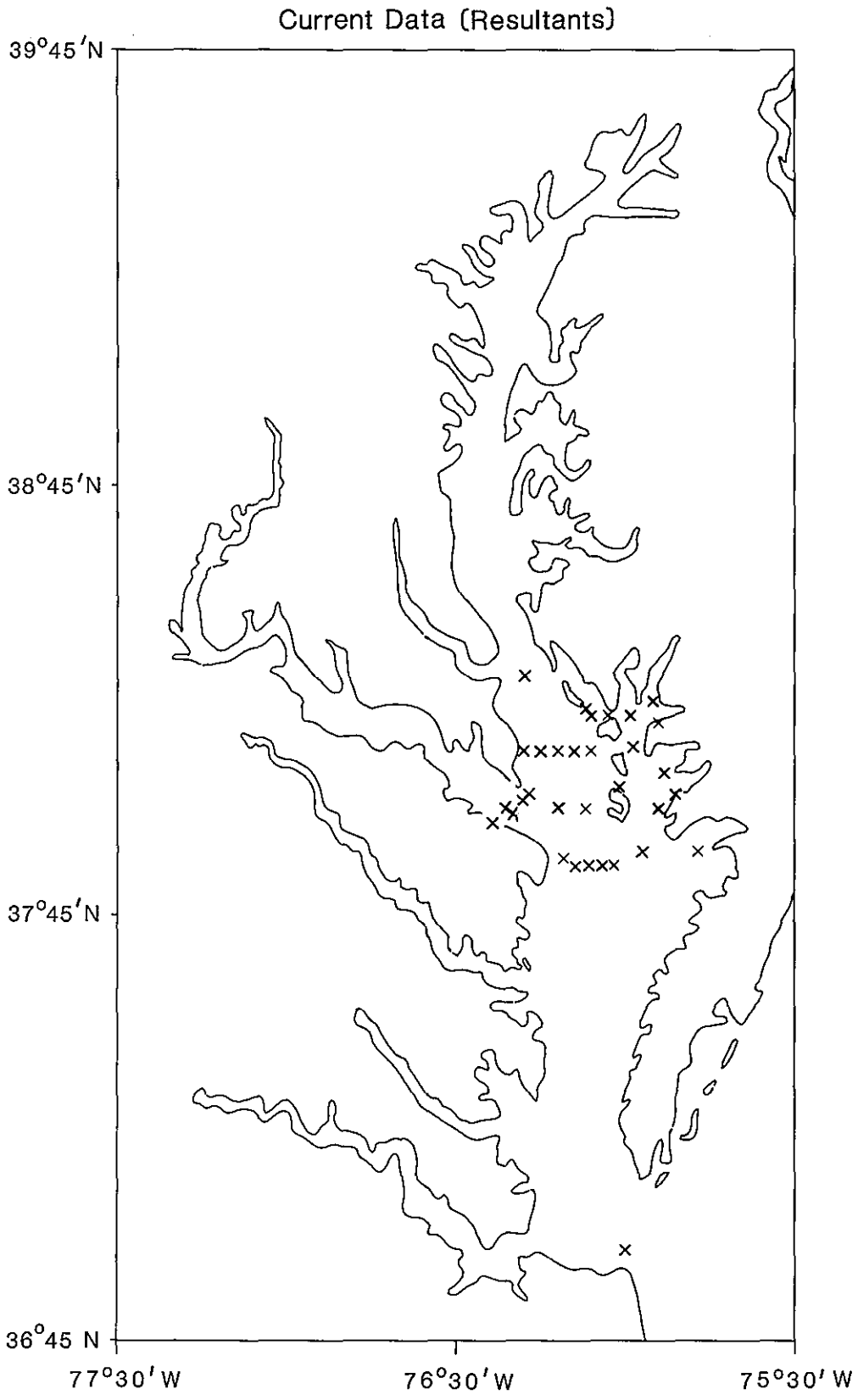


Stations 288
File Time Coverage Sept. - Dec. 1981

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.

Additional current data collected by NOAA's National Ocean Service (NOS) are in processing and not yet in the NODC data base. These data, which cover the entire mainstem of the Bay, are expected to be available shortly.



Observation Months 147
File Time Coverage Sept. - Dec. 1981

3. METEOROLOGICAL DATA

Chesapeake Bay is located in the mid-Atlantic section of the U.S East Coast. The main channel of the Bay runs nearly North-South and extends approximately between latitude 36° 45'N and 39° 45'N. The Bay thus lies in the region of westerly winds that dominate weather and climate over the conterminous United States. Like other regions in the eastern United States, the Chesapeake Bay area is subject to both marine and continental climatic influences.

The annual climatic cycle of the Chesapeake Bay area largely reflects alternating influence of the Polar High during the winter and Bermuda High during the summer. Localized effects of land and sea breezes can substantially modify conditions during the warmer months when strong land-sea temperature gradients exist. In addition to direct thermal and wind effects on Bay processes and conditions, climate very markedly affects the Bay environment through control on the inflow of fresh water from land runoff. During drought conditions invading sea water raises salinity in the Bay. Conversely during wet periods heavy precipitation can flush the Bay resulting in lower-than-normal salinities.

The National Climatic Data Center (NCDC) serves as the collection point, repository, and official custodian of the nation's original meteorological records and selected worldwide environmental data. All original United States weather records are sent to the NCDC for microfilming and archiving. Although the data archived are primarily recorded weather observations for the United States, numerous observations recorded in many parts of the world are also included.

These worldwide environmental data and environmental science information are a valuable national resource which are available to all users on the basis of exchange, loan, or sale at cost. This section provides information on cooperative stations, airway stations, and coastal stations in the Chesapeake Bay area from which meteorological data are available. These data can be selectively retrieved from the NCDC data files and provided to users in a variety of forms.

Data and further information may be obtained from the:

National Climatic Data Center
NOAA/NESDIS E/CC42
Federal Building
Asheville, NC 28801

Phone: 704-259-0682
FTS 672-0682

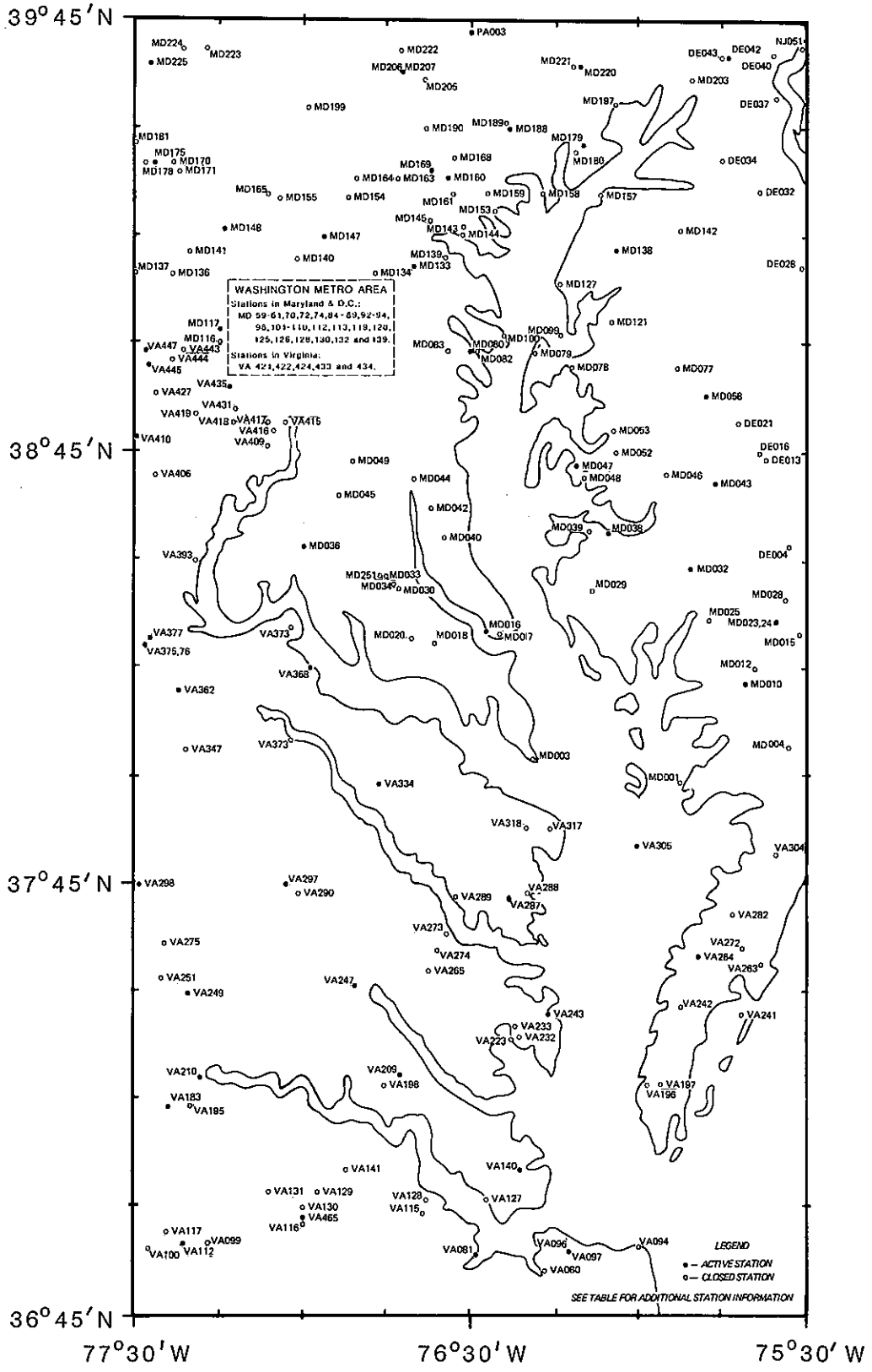
Current and Historical Station Sites of the NWS Cooperative Network

The NWS cooperative stations take weather observations once per day. Nearly all report precipitation, and some of these stations have recording rain gauges that provide hourly or 15 minute resolution. About half of the stations report daily maximum and minimum temperatures. A few stations report soil temperature, evaporation and weather occurence.

Data availability will be in original forms (sent monthly), microform, recording rain gauge charts, publications (of both daily and monthly summaries and other longer term summaries), and, for most stations after 1948, digital formats.

The table on pages 25 to 27 provides additional information for the cooperative stations shown.

Current and Historical Station Sites of the NWS Cooperative Network



NWS Cooperative Weather Stations

Tabular listings provided on pages 25 through 27 provide station name, period of record, and related information for cooperative weather stations plotted on page 23.

NWS Cooperative Weather Stations

NCDC ID #	STATION NAME	PERIOD OF RECORD	LAT LONG (deg, min)	ELEV (ft)	COOP NUM
DE004	LAUREL 2SW	1953-1954	3832 7534	33	075217
DE013	BRIDGEVILLE SP	1975-1981	3844 7536	40	071335
DE016	BRIDGEVILLE 1SW	1930-1978	3845 7537	50	071330
DE021	ADAMSVILLE	1967-1969	3849 7542	50	070093
DE028	DOVER	1948-1960	3909 7531	30	072730
DE032	SMYRNA 3NNW	1948-1952	3921 7538	49	078510
DE034	MIDDLETOWN 1WSW	1952-1976	3926 7545	60	075852
DE037	DELAWARE CITY	1948-1954	3934 7535	10	072625
DE040	WILMINGTON ARPT	1948-1950	3940 7536	79	079595
DE042	NEWARK U FARM	1976-CUR	3940 7544	90	076410
DE043	NEWARK PUMP STN	1938-1949	3940 7545	111	076405
MD001	CRISFIELD SOMER	1920-1982	3759 7552	8	182215
MD003	POINT LOOKOUT	1958-1966	3802 7619	6	187150
MD004	POCOMOKE CITY	1894-1979	3804 7533	20	187140
MD010	PRINCESS ANNE	1945-CUR	3813 7541	20	187330
MD012	LEONARDTOWN 4S	1950-1959	3815 7639	20	185200
MD015	SALISBURY ARPT	1948-1961	3820 7531	48	188005
MD016	SOLOMONS	1893-CUR	3819 7627	12	188405
MD017	PATUXENT RIVER	1943-1976	3820 7625	38	186915
MD018	LEONARDTOWN	1889-1959	3818 7636	100	185200
MD020	LEONARDTOWN 3NW	1959-1976	3819 7640	40	185201
MD023	SALISBURY	1906-CUR	3822 7535	10	188000
MD024	SALISBURY USGS	1950-1954	3822 7535	37	188007
MD025	QUANTICO 2SW	1971-1975	3822 7547	15	187399
MD028	SALISBURY POLIC	1948-1962	3825 7534	40	188003
MD029	BLACKWATER REF	1941-1976	3826 7608	10	180915
MD030	MECHANICSV'L 1S	1974-1983	3826 7643	100	185865
MD032	VIENNA	1949-CUR	3829 7550	12	189140
MD033	CHARLOTTE HALL	1936-1961	3828 7645	167	181685
MD034	MECHANICSVILLE	1927-1935	3827 7644	170	185863
MD036	LA PLATA 1W	1894-CUR	3832 7700	140	185080
MD038	CAMBRIDGE WATER	1977-CUR	3834 7604	5	181385
MD039	CAMBRIDGE 4W	1892-1977	3834 7609	5	181385
MD040	PR FREDERICK 1N	1953-1977	3833 7635	135	187325
MD042	HUNTINGTOWN	1936-1953	3837 7637	160	184485
MD043	FEDERALSBURG	1967-CUR	3841 7546	20	183090
MD044	OWINGS FERRY	1917-1984	3841 7640	160	186770
MD045	WALDORF POLICE	1948-1977	3839 7653	210	189195
MD046	PRESTON 1S	1949-1976	3842 7555	50	187310
MD047	ROYAL OAK 2SSW	1948-CUR	3843 7611	10	187806
MD048	OXFORD	1948-1954	3842 7610	10	186785
MD049	CHELTENHAM 1NW	1901-1956	3844 7651	230	181710
MD052	EASTON POLICE	1891-1977	3845 7604	40	182700
MD053	EASTON	1953-1961	3848 7604	60	182695
MD058	DENTON 2E	1891-CUR	3853 7548	50	182523

NCDC ID #	STATION NAME	PERIOD OF RECORD	LAT LONG (deg, min)	ELEV (ft)	COOP NUM
MD059	UPPER MARLBORO	1956-CUR	3852 7647	98	189070
MD060	DISTRICT HGTS	1945-1957	3851 7654	272	182585
MD061	SUITLAND	1962-1974	3851 7656	270	188656
MD070	NATL ARBORETUM	1946-CUR	3854 7659	50	186350
MD072	SOLDIER HOME DC	1944-1977	3856 7701	230	189035
MD074	DALECARLIA RES	1946-1965	3856 7707	146	182325
MD077	RIDGELY	1922-1952	3857 7553	68	187575
MD078	GRASONVILLE	1948-1952	3857 7612	10	183805
MD079	STEVENSVILLE	1926-1967	3859 7620	15	188557
MD080	ANNAPOLIS POLIC	1952-CUR	3859 7630	25	180193
MD082	ANNAPOLIS NA	1894-1976	3859 7629	5	180185
MD083	ANNAPOLIS WATER	1951-1952	3859 7634	10	180193
MD084	LANHAM	1958-1961	3858 7651	180	185050
MD085	GLENN DALE BELL	1921-CUR	3858 7648	150	183675
MD086	W LANHAM HILLS	1947-1952	3857 7653	165	189400
MD087	RIVERDALE	1946-1955	3858 7656	50	187615
MD088	BROOKSIDE MANOR	1945-1953	3858 7658	50	181180
MD089	BRIGHTWOOD DC	1941-1958	3857 7701	260	181135
MD092	BETHESDA	1944-1966	3858 7707	330	180795
MD093	BROOKDALE	1948-1974	3857 7706	260	181170
MD094	GLEN ECHO	1944-1966	3858 7709	150	183645
MD098	COLLEGE PARK	1861-CUR	3859 7657	90	181995
MD099	EASTERN NECK IS	1968-1975	3901 7614	20	182691
MD100	SANDY POINT	1952-1961	3901 7624	10	188030
MD101	GREENBELT	1949-1961	3900 7653	200	183860
MD102	BELTSVILLE P7	1949-1964	3901 7655	140	180707
MD103	BELTSVILLE P4	1949-1961	3902 7656	265	180704
MD104	BELTSVILLE P3	1949-1957	3902 7656	200	180703
MD105	BELTSVILLE P2	1949-1964	3902 7656	136	180702
MD106	BELTSVILLE P6	1949-1964	3901 7657	215	180706
MD107	SILVER SPRING	1967-1975	3900 7701	265	188300
MD108	BURNT MILLS RES	1948-1961	3902 7700	220	181278
MD109	TAKOMA PARK	1949-1961	3859 7700	230	188725
MD110	ROCK CRK FOREST	1945-1949	3900 7704	200	187690
MD112	BATTERY PARK	1945-1950	3900 7707	338	180565
MD113	BETHESDA NIH	1943-1960	3900 7706	310	180800
MD116	GREAT FALLS	1891-1950	3900 7715	200	183855
MD117	POTOMAC FILTER	1961-CUR	3902 7715	270	187272
MD119	BELTSVILLE P5	1949-1978	3901 7657	100	180705
MD120	BELTSVILLE	1931-CUR	3902 7653	120	180700
MD121	CENTREVILLE	1953-1980	3903 7604	60	181627
MD125	WHEATON REG PK	1961-1977	3904 7702	330	189502
MD126	VIERS MILL	1950-1960	3903 7705	300	189187
MD127	ROCK HALL	1898-1968	3908 7614	20	187700
MD128	FORT MEADE	1942-1975	3906 7645	140	183230

NWS Cooperative Weather Stations

NCDC ID #	STATION NAME	PERIOD OF RECORD	LAT LONG (deg, min)	ELEV (ft)	COOP NUM
MD130	LAUREL 3W	1895-CUR	3906 7654	400	185111
MD132	ROCKVILLE 1NE	1907-1983	3906 7706	440	187705
MD133	BALTIMORE ARPT	1948-CUR	3911 7640	196	180465
MD134	WATERLOO POLICE	1948-1962	3910 7647	230	189314
MD136	GERMANTOWN	1948-1953	3910 7723	459	183585
MD137	MARTINBURG	1963-1969	3910 7730	420	185706
MD138	CHESTERTOWN	1894-1913	3913 7604	40	181750
MD138	CHESTERTOWN	1936-CUR	3913 7604	40	181750
MD139	BALTIMORE SLEDD	1918-1957	3912 7634	135	180460
MD140	BRIGHTON DAM	1948-1950	3912 7701	330	181125
MD140	BRIGHTON DAM	1964-1978	3912 7701	330	181125
MD141	BOYDS	1920-1939	3913 7720	580	181032
MD141	BOYDS 2NW	1953-1978	3913 7720	580	181032
MD142	MILLINGTON 2WNW	1923-1977	3916 7552	30	185985
MD143	DUNDALK	1930-1960	3916 7631	50	182660
MD144	BALTIMORE	1947-1950	3915 7632	196	180465
MD145	BALTIMORE CITY	1893-1950	3917 7637	91	180470
MD147	CLARKSVILLE	1958-CUR	3915 7656	365	181862
MD148	DAMASCUS 2SW	1973-CUR	3916 7714	720	182335
MD153	MIDDLE RIVER	1950-1957	3918 7625	15	185916
MD154	WOODSTOCK	1893-1978	3920 7652	460	189750
MD155	LISBON	1949-1953	3920 7704	585	185302
MD157	COLEMAN 3WNW	1898-1971	3921 7608	78	181980
MD158	EDGEWOOD ARSNL	1959-1965	3921 7619	10	182795
MD159	MIDDLE RIVER 1N	1957-1976	3921 7627	60	185917
MD160	IOWSON	1968-CUR	3923 7634	390	188877
MD161	BALTIMORE HMLT	1948-1960	3921 7633	330	180475
MD163	PIKESVILLE POLI	1948-1962	3923 7643	500	187015
MD164	RANDALLSTOWN	1948-1961	3923 7650	625	187435
MD165	LISBON 1W	1949-1954	3921 7706	728	185302
MD168	LOCH RAVEN DAM	1950-1977	3926 7633	190	185340
MD169	TOWSON	1908-CUR	3924 7637	410	188877
MD170	FREDERICK	1963-1976	3925 7723	435	183350
MD171	FREDERICK 3E	1948-1950	3924 7722	385	183355
MD175	FREDERICK POLIC	1888-CUR	3925 7726	380	183348
MD178	FREDERICK WFMD	1963-1973	3925 7728	440	183350
MD179	ABERDEEN PHLPS	1919-CUR	3928 7610	57	180015
MD180	UNIONVILLE	1940-1977	3927 7711	430	189030
MD181	GAMBRILL ST PK	1964-1970	3928 7730	1610	183513
MD188	BENSON POLICE	1948-CUR	3930 7623	365	180732
MD189	FALLSTON	1893-1953	3931 7624	450	183050
MD190	COCKEYSVILLE	1948-1950	3930 7638	420	181960
MD197	PERRY POINT	1963-1979	3933 7604	40	186980
MD199	WESTMINSTER 2S	1893-1954	3933 7659	860	189435
MD203	ELKTON	1927-1979	3937 7550	40	182860
MD205	WHITE HALL	1948-1953	3937 7638	350	189507
MD206	PARKTON 2SW	1953-CUR	3938 7642	600	186844
MD207	PRETTYBOY DAM	1948-1953	3938 7642	780	187315
MD220	CONOWINGO DAM	1936-CUR	3939 7610	40	182060
MD221	CONOWINGO POLIC	1948-1962	3939 7611	195	182065
MD222	BENTLEY SPRINGS	1916-1960	3941 7642	730	180737
MD223	EMMITSBURG 2SE	1956-1977	3941 7718	416	182906
MD224	EMMITSBURG	1911-1978	3941 7721	720	182905
MD225	CATOCTIN MT PK	1965-CUR	3939 7727	1610	181530
MD251	CHARLOTTE HALL2	1961-1973	3828 7646	166	181686
NJ051	DEEPWATER	1940-1959	3941 7530	12	282209
PA003	NEW PARK	1924-CUR	3944 7630	781	366289
VA080	NORFOLK	1948-1965	3651 7617	66	446144
VA081	DRIVER 4NE	1941-CUR	3653 7629	17	442504
VA094	CAPE HENRY	1948-1969	3656 7600	43	441362
VA096	DIAMOND SPRNGS	1909-1980	3654 7612	25	442368
VA097	NORFOLK ARPT	1948-CUR	3654 7612	44	446139
VA099	SUSSEX	1952-1960	3655 7717	98	448249
VA100	STONY CRK 5SSW	1965-1980	3654 7727	151	448129
VA112	STONY CRK 3ESE	1980-CUR	3655 7721	70	448129
VA115	SMITHFIELD	1974-1975	3659 7638	40	447864
VA116	WAKEFIELD	1960-1965	3658 7700	100	448803
VA117	STONY CREEK	1948-1964	3657 7724	75	448129
VA127	NEWPORT NEWS	1948-1980	3701 7627	50	446054
VA127	NEWPORT NEWS	1898-1927	3700 7626	13	446054
VA128	SMITHFIELD 3NE	1941-1974	3701 7637	40	447864
VA129	DENDRON 1SW	1957-1960	3702 7657	59	442346
VA130	WAKEFIELD 1NW	1965-1978	3700 7700	100	448803
VA131	WAVERLY	1955-1982	3702 7706	110	448933
VA140	LANGLEY AFB	1930-CUR	3705 7621	13	444720
VA141	SURRY 4SW	1950-1955	3705 7652	121	448241
VA183	PETERSBURG	1979-CUR	3714 7724	15	446656
VA195	FORT LEE	1945-1974	3714 7720	60	443127
VA196	CHERITON	1948-1977	3717 7558	11	441636
VA197	OYSTER	1977-1984	3717 7556	27	446456
VA198	WILLMSBURG 2NW	1941-1950	3717 7645	102	449146
VA209	WILLMSBURG 2N	1951-CUR	3718 7642	70	449151
VA209	WILLIAMSBURG	1890-1941	3716 7642	69	449151
VA210	HOPEWELL	1931-CUR	3718 7718	40	444101
VA223	BOHANNON 2SW	1962-1964	3723 7623	6	440835
VA232	BOHANNON 1NE	1950-1979	3724 7621	5	440835
VA233	CARDINAL	1948-1950	3725 7622	10	441383
VA241	HOG ISLAND	1948-1964	3727 7541	1	444031
VA242	NASSAWADOX	1956-1976	3728 7552	35	445931
VA243	MATHEWS 2ENE	1979-CUR	3727 7617	5	445338

NWS Cooperative Weather Stations

NCDC ID #	STATION NAME	PERIOD OF RECORD	LAT LONG (deg, min)	ELEV (ft)	COOP NUM
VA247	WEST POINT 2SW	1954-CUR	3731 7650	18	449025
VA249	RICHMOND ARPT	1948-CUR	3730 7720	178	447201
VA251	RICHMOND C.PARK	1948-1954	3732 7725	171	447206
VA263	FARRAMORE BEACH	1964-1976	3734 7538	8	446528
VA264	PAINTER 2W	1955-CUR	3735 7549	30	446475
VA265	GLENNS 1S	1951-1952	3733 7637	112	443407
VA272	WACHAPREAGUE	1965-1973	3736 7541	10	448793
VA273	URBANNA	1948-1974	3738 7634	25	448642
VA274	SALUDA	1941-1951	3736 7636	112	447514
VA275	WESTBROOK SANT	1946-1948	3736 7724	200	448984
VA282	ONLEY 1S	1918-1955	3741 7543	40	446362
VA287	KILMARNOCK 1N	1979-CUR	3743 7623	60	444600
VA288	DITCHLEY 1S	1952-1954	3744 7620	10	442410
VA289	MOLLUSK 1SW	1974-1979	3743 7633	20	445646
VA290	WALKERTON	1932-1967	3744 7701	39	448829
VA297	WALKERTON 2NW	1967-CUR	3745 7703	50	448829
VA298	ASHLAND	1947-CUR	3745 7729	220	440327
VA298	ASHLAND	1891-1928	3745 7729	221	440327
VA304	NELSONIA	1959-1976	3749 7535	45	445983
VA305	TANGIER ISLAND	1952-CUR	3750 7600	5	448323
VA317	SUNNYBANK	1954-1970	3753 7616	15	448224
VA318	BURGESS 1ESE	1970-1974	3753 7620	100	441202
VA334	WARSAW 2NW	1941-CUR	3759 7646	140	448894
VA334	WARSAW (NEAR)	1892-1928	3757 7645	160	448894
VA347	BOWLING GREEN	1950-1962	3803 7721	230	440937
VA362	CORBIN	1959-CUR	3812 7722	220	442009
VA368	COLONIAL BEACH	1963-CUR	3815 7658	10	441913

NCDC ID #	STATION NAME	PERIOD OF RECORD	LAT LONG (deg, min)	ELEV (ft)	COOP NUM
VA373	DAHLGREN W.LAB	1948-1963	3820 7702	18	442195
VA375	FRED'BURG 2	1893-CUR	3818 7728	120	443200
VA376	FRED'BURG EMBR	1945-1969	3818 7728	20	443197
VA377	FRED'BURG NP	1978-CUR	3819 7727	90	443192
VA393	QUANTICO 1S	1896-1976	3830 7719	12	446979
VA406	MANASSAS 4S	1930-1950	3842 7726	171	445208
VA409	GROVETON	1951-1973	3846 7706	245	443635
VA410	MANASSAS	1930-CUR	3847 7730	330	445213
VA415	ALEXANDRIA YDS	1948-1962	3849 7703	20	440097
VA416	ALEXANDRIA CTY	1958-1975	3848 7705	70	440090
VA417	EPISCOPAL HS	1945-1958	3849 7706	249	442809
VA418	ANNANDALE	1946-1952	3849 7712	312	440216
VA419	FAIRFAX	1949-1964	3850 7719	449	442890
VA421	WASHINGTN NATL	1948-CUR	3851 7702	75	448906
VA422	WAVERLY HILLS	1945-1970	3853 7707	340	448938
VA424	BAILEYS XROADS	1945-1951	3851 7708	259	440403
VA427	CHANTILLY	1949-1954	3853 7726	320	441570
VA431	FALLS CHURCH	1945-1970	3851 7712	322	442922
VA433	CLARENDON LYON	1925-1963	3854 7705	220	441729
VA434	WALKERS CHAPEL	1945-1951	3855 7708	240	448821
VA435	VIENNA DUNN	1942-CUR	3854 7713	418	448737
VA443	DRANESVILLE	1953-1956	3859 7721	381	442491
VA444	HERNDON	1956-1960	3858 7723	371	443929
VA445	WASHNGT DULLES	1962-CUR	3857 7727	309	448903
VA447	STERLING RCS	1964-CUR	3859 7728	280	448084
VA465	WAKEFIELD 2	1981-CUR	3659 7700	90	448800

Current and Historical Station Sites of Hourly-Type Weather Stations (Including NWS, FAA, Other Airport Sites, and NWS City Offices)

Hourly-type stations take weather observations every hour or utilize instruments with continuous monitoring capabilities. Types of observations (elements) taken at these stations include: ceiling, visibility, wind direction and speed, temperature, dew point, pressure, precipitation, clouds and weather occurence. Stations also report derived elements such as relative humidity and heating and cooling degree days.

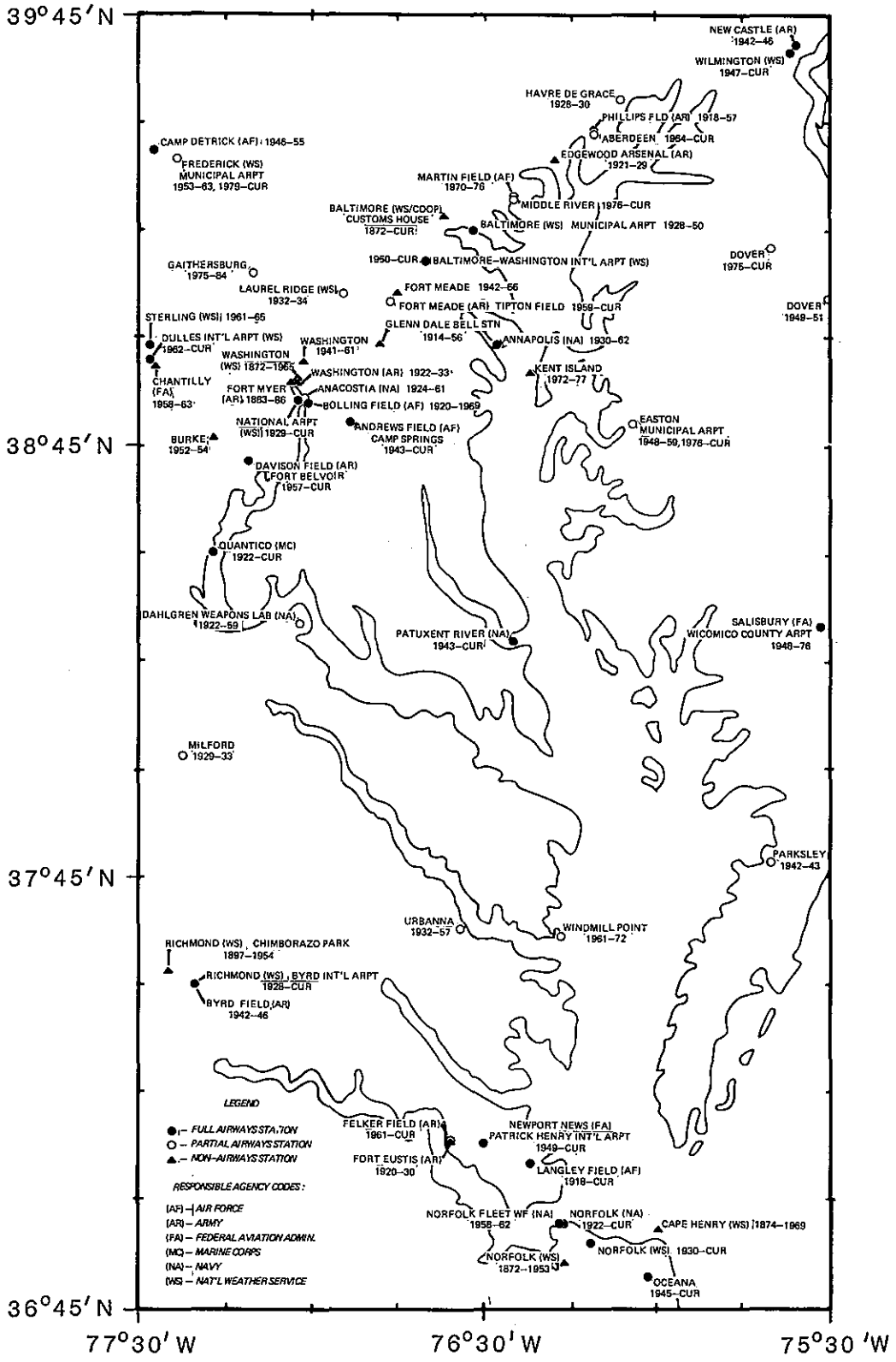
Full airways stations take 24 observations per day and are most likely to report all the elements listed above. Partial airways stations take hourly observations, but only during their hours of operation. Some elements may be omitted.

Non-airways hourly stations (called city offices when operated by the NWS) take hourly observations, but normally not all of the elements listed above, since they do not support aviation operations.

Stations from any of these types may also report synoptic observations.

Data availability will be in original forms, microform, and charts from recording instruments. For some major stations, publications and digital data are also available.

Current and Historical Station Sites of Hourly-Type Weather Stations (Including NWS, FAA, Other Airport Sites, and NWS City Offices)



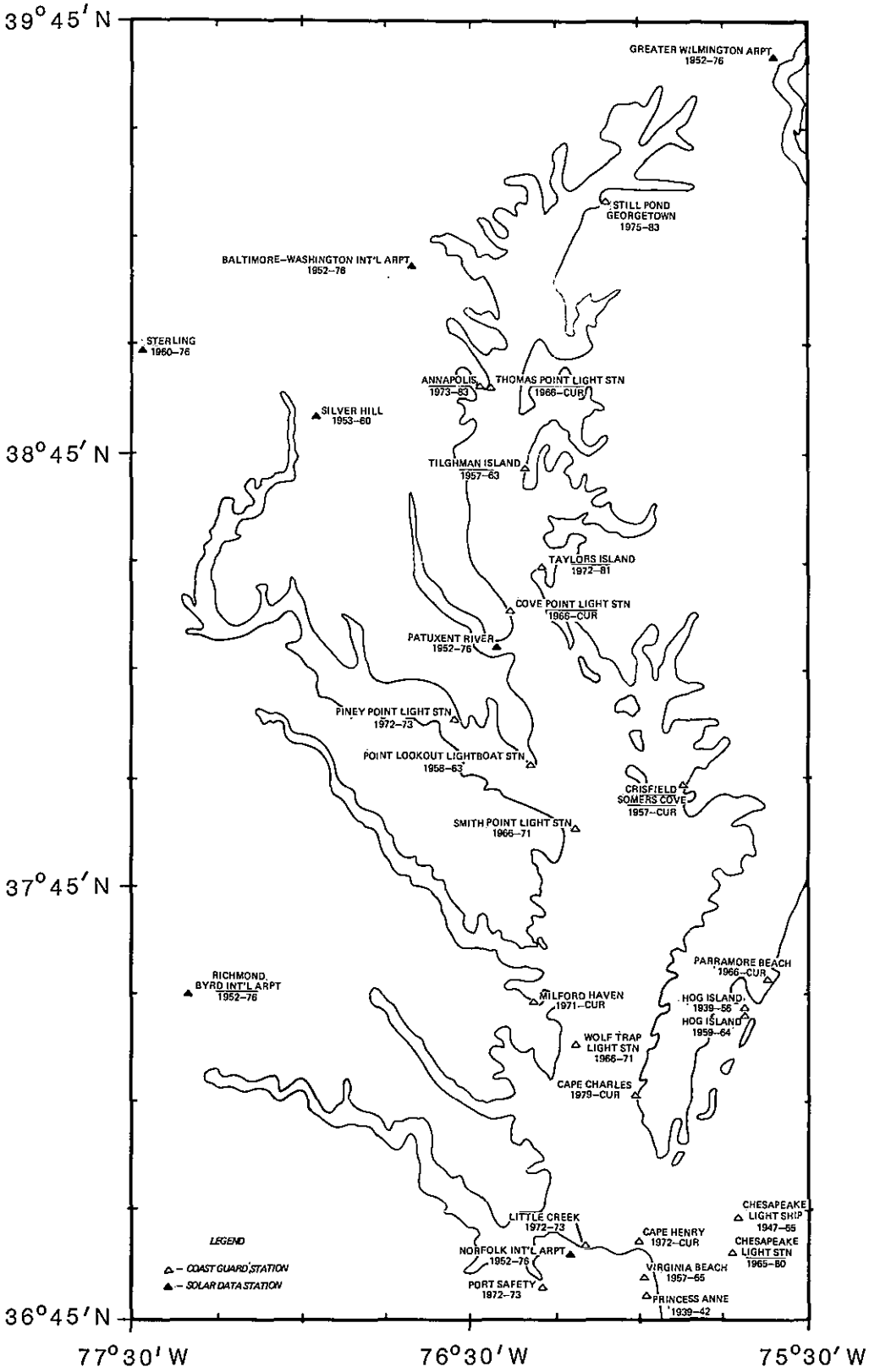
Current and Historical Station Sites of the Coast Guard Network and Stations with Solar Data

The Coast Guard network contains stations reporting 3-hourly observations similar to but usually less complete than the hourly-type stations shown previously. Hours of observation can be 24 hours per day or less. Some of these stations also report sea data.

Data availability will be in original form, microform, and charts from recording instruments.

Also shown here are stations with hourly solar data in the digital data set SOLMET (TD9724). Silver Hill, MD and Sterling, VA are the only sites in the region that had solar radiation instruments. For the other stations, solar data was derived by regression estimates from cloud, sky condition, and sunshine data. Detailed information about this data set can be obtained from NCDC.

Current and Historical Station Sites of the Coast Guard Network and Stations with Solar Data



4. GEOLOGICAL/GEOPHYSICAL DATA

Chesapeake Bay is a drowned valley created within the past 15,000 years as rising sea level flooded the lower valley of the Susquehanna River, the largest river that empties off the U.S. East Coast. The Bay is about 180 miles long (290 km), 5-30 miles wide (8-48 km), and up to 175 feet deep (53.3 m). The deeper channels lie closer to the eastern shores of the Bay and shallow areas occur along the sides of the Bay and in all tributaries. The average depth of the Bay, including tributaries, is slightly greater than 21 feet (6.4 m).

The bottom of Chesapeake Bay is covered with sediments ranging from coarse-grained sands and gravels to fine muds and silts. Sediments from shore and bank erosion and river runoff are continually deposited in the Bay and its tributaries and are gradually accumulating. Dredging operations are conducted in shoal areas near the Bay's head and mouth to maintain required depth for large ships. The channels leading to Baltimore Harbor, for example, are maintained by dredging. Water depth and bottom type are important factors that influence the distribution of marine organisms and data on these characteristics of the Bay support environmental assessment studies as well as all kinds of development site studies.

Worldwide marine geological and geophysical data--plus other types of data pertaining to the solid earth and to solar-terrestrial phenomena--are held by the NESDIS National Geophysical Data Center (NGDC). This section provides data inventory information on NGDC data files that contain data on Chesapeake Bay bathymetry and data on bottom samples obtained by sediment cores, grabs, and dredges.

Data and further information may be obtained from the:

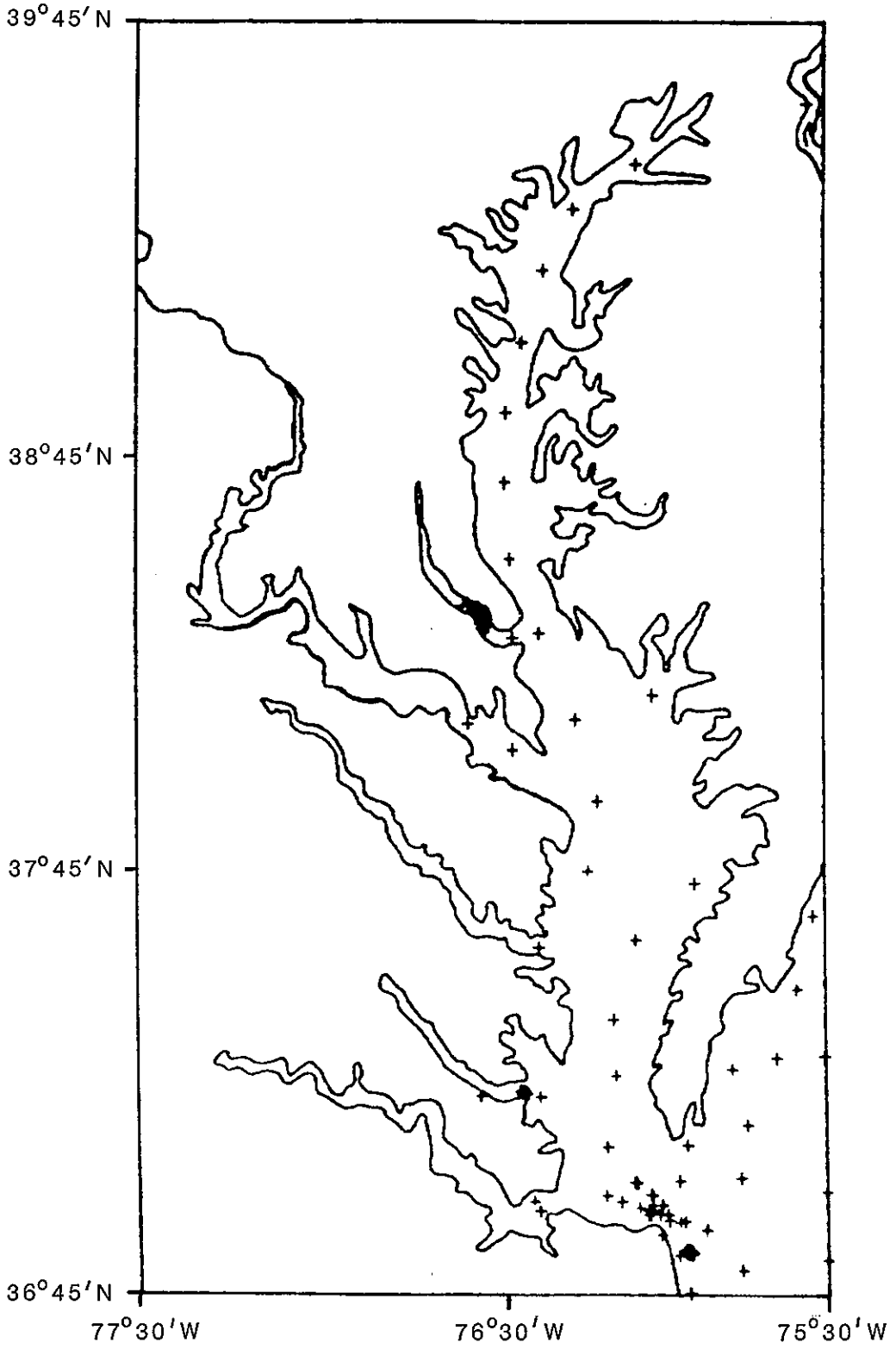
National Geophysical Data Center
NOAA/NESDIS E/GC3
325 Broadway
Boulder, CO 80303

Phone: 303-497-6215
FTS 320-6215

Marine Sediment Data

This plot depicts marine sediment samples in the Chesapeake Bay and adjoining ocean near the mouth of the Bay. Each of the 199 symbols represents the location of one or more sediment samples for which descriptive and/or analytical information (grain size, geochemistry, engineering properties) is available from NGDC. The sediment samples themselves may also be obtainable for further analysis, and the name, address, and telephone number of the curator to contact at the responsible facility is available through NGDC. All descriptive and analytical information is distributed on microfiche; most is available as paper copies and/or computer listings or magnetic tape copies. Custom plots of sample locations or data values are distributed on a wide variety of projections and scales on paper or mylar format.

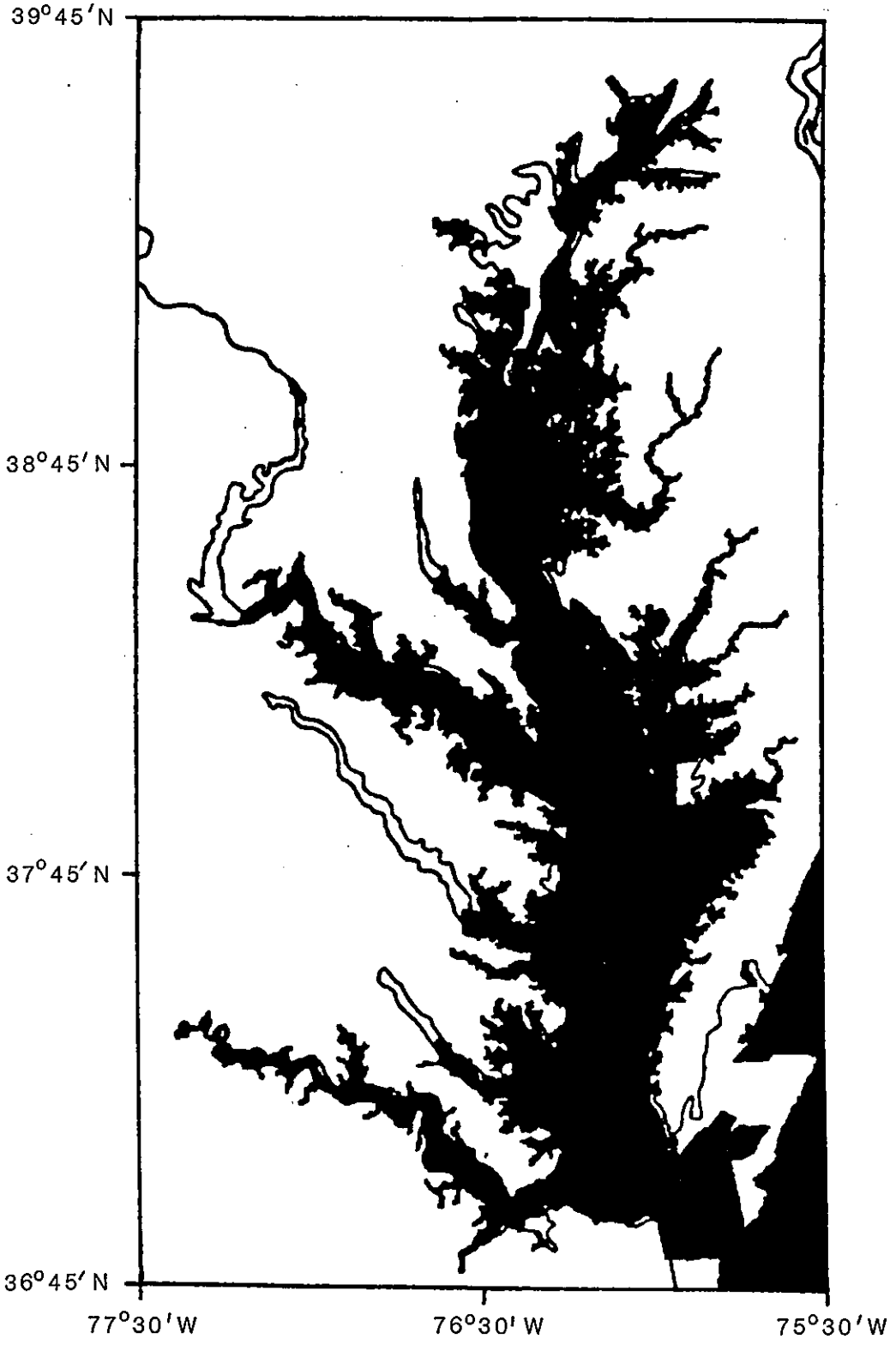
Marine Sediment Data



Digital Bathymetric Data

The shaded area shows the extent of digital bathymetric information available from the National Ocean Service (NOS) Hydrographic Data Base. Depths are available for most of Chesapeake Bay. These data were collected between 1930 and the present for the production of nautical charts and they provide a high-resolution picture of bottom topography. They are also available as a grid, giving the average depth for each 15-second square area where data exist. Other grids may be generated to customer specifications. Data are provided by NGDC on 9-track magnetic tape in ASCII or EBCDIC and at 800, 1600, or 6250 bpi. Custom plots may be made on a variety of projections and scales.

Digital Bathymetric Data



5. SATELLITE REMOTELY-SENSED DATA

Satellite sensors provide a new way of seeing the Chesapeake Bay. Improved data coverage in both time and space have provided fresh insights into the complex interaction of Bay processes. Although the primary function of NOAA satellites is to collect operational meteorological data, they have also proven extremely valuable for such applications as long-term climate studies, detection and monitoring of broad-scale land use and vegetation cover changes, calculations of sea surface temperatures, observations of marine sedimentation, observations of thermal fronts and ocean currents, and examination of snow and ice cover. These applications were further extended with the advent of the oceanographic satellites, SEASAT and Nimbus-7, which provided all-weather day and night observation capabilities. Refined sensors on these satellites allowed for more accurate sea-surface temperature measurements, estimates of wind speed, wind direction and wave heights, and examination of marine chlorophyll distribution. Some typical applications of data from these satellites are shown in table 1.

The National Climatic Data Center, Satellite Data Services Division maintains the archive of remotely sensed data and information from all of NOAA's operational polar orbiting and geostationary environmental satellites as well as several NASA experimental oceanographic satellites. This archive covers the time period from 1960 to the present and comprises over 10 million photographic film products, over 5000 analysis charts, and the equivalent of more than 250,000 computer digital tapes. Satellites for which data are contained in the archive are shown schematically in figure 1.

Polar orbiting and geostationary satellite data archived for the Chesapeake Bay area are identified by satellite and sensor in this section and information is provided on spatial and temporal resolution of measurements. Time coverage available for the Bay area is twice daily for polar orbiting satellites and every half-hour for geostationary satellites.

Data and further information may be obtained from the:

Satellite Data Services Division
NOAA/NESDIS E/CC61
World Weather Building, Room 100
Washington, DC 20235

Phone: 202-763-8111
FTS 763-8111

Table 1.

Some Typical Applications of Satellite Data

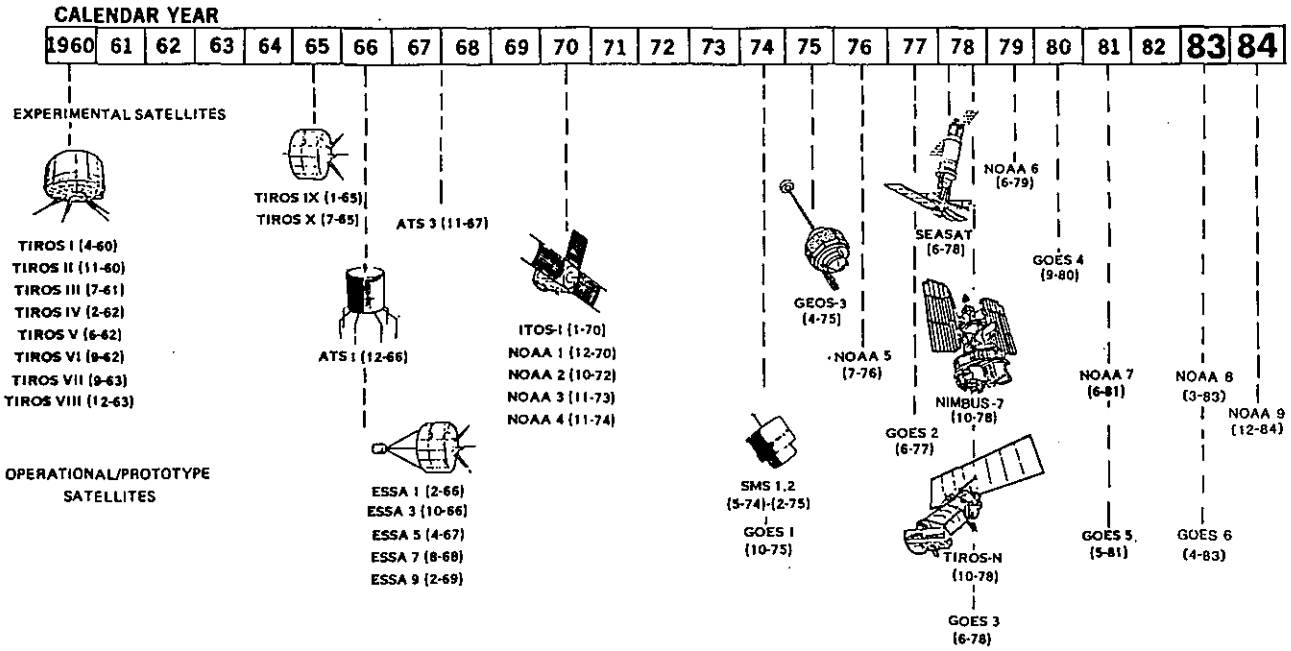
Satellite/Series	Type	Sensor(s)	Studies
ATS	Geostationary	SSCC, MSSCC	Meteorological/Climatological Phenomena and Atmospheric Soundings
TIROS	Polar Orbiter	Vidicon	Sea Surface Temperature, Sedimentation, Currents/Fronts, Vegetation, Snow/Ice Cover, Land Use, Atmospheric Soundings
ESSA	Polar Orbiter	AVCS, APT, LRIR	
ITOS/NOAA 1-5	Polar Orbiter	SR, VHRR, VTPR	
TIROS-N/NOAA 6-9	Polar Orbiter	AVHRR	Sea Surface Temperature, Sedimentation, Current/Fronts, Vegegation, Snow/Ice Cover, Land Use, Atmospheric Soundings
		TOVS	
Nimbus-7	Polar Orbiter	CZCS	Sea Surface Temperature, Chlorophyll, Sediment, Aerosol Radiance, Sub-surface Radiance, Diffuse Attenuation
SEASAT	Polar Orbiter	ALT	Significant Wave Height
	Polar Orbiter	SASS	Winds
	Polar Orbiter	SMMR	Winds
	Polar Orbiter	SAR	Land Use, Wetlands, Surface Fronts, Currents, Shipwakes

Sensor Acronyms

ALT - Altimeter
APT - Automatic Picture Transmission
AVCS - Advanced Vidicon Camera System
AVHRR - Advanced Very High Resolution Radiometer
CZCS - Coastal Zone Color Scanner
LRIR - Low Resolution Infrared Radiometer
MSSCC - Multicolor Spin-Scan Cloud Camera
SASS - SEASAT-A Scatterometer System
SAR - Synthetic Aperture Radar
SSCC - Spin Scan Cloud Camera
SMMR - Scanning Multi-channel Microwave Radiometer
SR - Scanning Radiometer
TOVS - TIROS Operational Vertical Sounder
VAS - VISSR Atmospheric Sounder
VHRR - Very High Resolution Radiometer
VISSR - Visible Infrared Spin Scan Radiometer
VTPR - Vertical Temperature Profile Radiometer

Figure 1.

U.S. Meteorological and Oceanographic Satellites
for which Data are Archived at NOAA



Geostationary Satellite Data over Chesapeake Bay

SATELLITE/SERIES	Applications Technology Satellite (ATS)			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	RESOLUTION TEMPORAL	PERIOD OF RECORD
Spin Scan Cloud Camera (SSCC) and Multicolor Spin Scan Cloud Camera (MSSCC)	Full Disc Images: 1) 25cm x 25cm negs	4,8 km	every 1/2 hour	01/01/67 - 09/02/74
	2) 35mm microfilm, 20 days/reel	4,8 km	every hour	01/01/67 - 05/25/70
	Sectors: 25cm x 25cm negs	1-8 km	variable	01/01/67 - 09/02/74

SATELLITE/SERIES	Synchronous Meteorological Satellite/ Geostationary Operational Environmental Satellite (SMS/GOES)			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	RESOLUTION TEMPORAL	PERIOD OF RECORD
Visible Infrared Spin Scan Radiometer (VISSR)	Full Disc Images: 1) 25cm x 25cm neg	4,8 km	every 1/2 hour	06/27/74 - present
	2) Cassette	1-8 km	every 1/2 hour	02/01/78 - present
	3) 9T/1600 BPI CCT	8 km	every 3 hours	07/01/76 - present
	4) 35mm microfilm	4,8 km	every hour	09/22/74 - present
	Sector images: 1) 25cm x 25cm neg	1-8 km	variable	06/27/74 - present
	2) Cassette	1-8 km	every 1/2 hour	02/01/78 - present
	3) 9T/1600 BPI CCT	8 km	every 3 hours	07/01/76 - present
	4) 16mm loops	1-8 km	variable	12/01/79 - 09/30/83
VISSR Atmospheric Sounder (VISSR/VAS)	Soundings/Multichannel Infrared Images: Cassette	14 km	variable	03/05/81 - present

Polar Orbiting Satellite Data over Chesapeake Bay

SATELLITE/SERIES		TIROS-N/ NOAA 6-9		
	PRODUCT NAME	RESOLUTION		
SENSOR	AND FORMAT	SPATIAL	TEMPORAL	PERIOD OF RECORD
Advanced Very High Resolution Radiometer (AVHRR)	Mosaics:			
	1) 25cm x 25cm negs	10-30 km	2/day	12/21/78 - present
	2) 35 mm microfilm, 2,3 months/reel	10-30 km	2/day	01/01/79 - present
	3) 9T/1600 BPI CCT 1 tape/day	10-30 km	2/day	12/22/78 - present
	Pole-to-pole strips:			
	1) 25cm x 25cm negs	4 km	1/day	11/30/78 - present
	2) TBM (Level 1b)	4 km	2/day	11/01/78 - present
	Picture frames:			
	1) 25cm x 25cm negs	1 km	2/day	10/19/78 - present
	2) TBM (Level 1b)	1 km	2/day	10/19/78 - present
	Veg. Index Composites:			
	1) 25cm x 25cm negs	15-30 km	1/week	05/10/82 - present
	2) 9T/1600 BPI CCT	15-30 km	1/week	05/10/82 - present
	Sea Surface Temp:			
	1) Gulf Stream Charts	4 km	1,3 days/week	06/73 - present
	2) GOSSTCOMP Contoured Charts	50-100 km	1/week	04/76 - present
	3) GOSSTCOMP tapes, 9T/1600 BPI	50-100 km	1/day	03/74 - present
	4) SST Obs.	50 km	1/day	05/01/73 - present
	Heat Budget Data: 9T/1600 BPI CCT	10-30 km	1/day	01/01/79 - present
TIROS Operational Vertical Sounder (TOVS)	Raw level 1b:			
	Terabit Memory System	42-168 km	2/day	01/01/79 - present
	Sounding product: 1 tape/week	42-168 km	2/day	01/01/79 - present

Polar Orbiting Satellite Data over Chesapeake Bay (Cont'd)

SATELLITE/SERIES	Improved TIROS Operational Satellite (ITOS/NOAA 1-5)			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	TEMPORAL	PERIOD OF RECORD
Scanning Radiometer (SR)	Mosaics:			
	1) 25cm x 25cm negs	10-30 km	2/day	11/72 - 03/78
	2) 35mm microfilm, 2,3 months/reel	10-30 km	2/day	01/01/71 - 03/15/78
	3) 7T/556 BPI CCT, 1,3 days/tape	10-30 km	2/day	01/01/71 - 03/15/78
	Pole-to-pole strips:			
	1) 25cm x 25cm negs	4-8 km	2/day	11/16/72 - 03/15/78
	2) 35mm microfilm, 1,2 months/reel	4-8 km	2/day	02/73 - 03/78
Very High Resolution Radiometer (VHRR)	Picture Frames:			
	1) 25cm x 25cm negs	1 km	2/day	11/21/72 - 01/01/79
	2) 9T/800 BPI CCT	1 km	variable	non-continuous record
Vertical Temperature Profile Radiometer (VTPR)	Radiance Data/ Soundings: 9T/800 BPI CCT	68 km	2/day	11/05/72 - 02/08/79

SATELLITE/SERIES	NIMBUS-7			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	TEMPORAL	PERIOD OF RECORD
Coastal Zone Color Scanner (CZCS)	LEVEL I&II			
	1) 25cm x 25xm negs	825 M	variable	10/24/78 - present*
	2) 9T/1600 BPI CCT	825 M	variable	10/24/78 - present*

* Note: non-continuous record during this period.

Polar Orbiting Satellite Data over Chesapeake Bay (Cont'd)

SATELLITE/SERIES	SEASAT			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	RESOLUTION TEMPORAL	PERIOD OF RECORD
Altimeter (ALT)	Sensor Data Record 9T/800 BPI CCT (1124 total)	1 km	variable	07/07/78 - 10/10/78
	GDR Geophysical File: 9T/1600 BPI CCT (14 total)	1-12 km	variable	07/07/78 - 10/10/78
	GDR Sensor File: 9T/1600 BPI CCT (26 total)	1-12 km	variable	07/07/78 - 10/10/78
SEASAT-A Scatterometer System (SASS)	GDR Geophysical and Sensor Records: 9T/1600 BPI CCT (381 total)	variable	variable	07/07/78 - 10/10/78
	GDR Geophysical File only: 9T/1600 BPI CCT (96 total)	variable	variable	07/07/78 - 10/10/78
	GDR Geophy. File, Basic Geoph. Record only: 9T/160 BPI CCT (48 total)	variable	variable	07/07/78 - 10/10/78
Scanning Multi-channel Microwave Radiometer (SMMR)	GDR Geophysical and Sensor Files: 9T/1600 BPI CCT (381 total)	variable	variable	07/07/78 - 10/10/78
	GDR Geophysical File only: 9T/1600 BPI CCT (24 total)	variable	variable	07/07/78 - 10/10/78
Synthetic Aperture Radar (SAR)	Raw Signal Tapes: 9T/1600 BPI CCT (6 per set)	25 m	variable	See page 47 for a complete list of all SEASAT SAR data available for the Chesapeake Bay.
	Optically Correlated Swaths: 70 mm negs	50 m	variable	
	Digitally Correlated Scenes: 1) 15cm x 15cm negs	25 m	variable	
	2) 9T/1600 BPI CCT	25 m	variable	

Polar Orbiting Satellite Data over Chesapeake Bay (Cont'd)

SATELLITE/SERIES	Television Infrared Operational Satellite (TIROS)			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	RESOLUTION TEMPORAL	PERIOD OF RECORD
Vidicon	Picture Frames: 35mm microfilm, 2/3 days per reel	3.8 km	1/day	04/01/60 - 04/20/66

SATELLITE/SERIES	Environmental Sciences Services Administration (ESSA)			
SENSOR	PRODUCT NAME AND FORMAT	RESOLUTION SPATIAL	RESOLUTION TEMPORAL	PERIOD OF RECORD
Advanced Vidicon Camera System (AVCS) (1,3,5,7,9)*	Picture Frames:			
	1) 35 mm microfilm 2 days/reel	2.2 km	1/day	02/04/66 - 11/16/71
	2) 25cm x 25cm negs, ESSA-9 only	2.2 km	1/day	11/16/71 - 11/15/72
	3) Pole-to-Pole strips	2.2 km	1/day	01/66 - 02/72
	Mosaics:			
	1) 25cm x 25cm negs	10-30 km	2/day	09/02/69 - 11/15/72
	2) 35mm microfilm, 1 reel/month	10-30 km	2/day	10/31/66 - 12/14/70
	3) 7T/556 BPI CCT, 3 days/tape	10-30 km	2/day	01/01/67 - 12/03/68
Automatic Picture Transmission (APT) (2,4,6,8)*	Mosiacs: 15cm x 20cm negs	10-30 km	1/day	01/66 - 02/72
Low Resolution Infrared Radiometer (LRIR)(3,5,7,9)*	Radiation Data: 7T/556 BPI CCT, 2 weeks/tape	variable	2/day	09/03/68 - 07/21/69 09/30/69 - 03/31/70

*Number indicates satellite number in series.

SEASAT SAR DATA AVAILABLE FOR THE CHESAPEAKE BAY REGION

1) Optically Correlated Swaths (70mm)

Ascending Passes

Orbit	Node	Date	Latitudes Start	Stop
909	297.53E	8/28/78	32N	39N
1210	297.86E	9/19/78	28N	37N
1253	297.85E	9/22/78	17N	43N
1296	297.85E	9/25/78	29N	43N
1339	297.84E	9/28/78	30N	43N
1425	297.84E	10/04/78	23N	42N
1468	297.84E	10/07/78	23N	43N

Descending Passes

Orbit	Node	Date	Latitudes Start	Stop
400	104.42E	7/25/78	44N	25N
558	101.37E	8/05/78	45N	32N
802	102.25E	8/12/78	39N	18N
845	103.96E	8/25/78	41N	24N

2) Digitally Correlated Scenes (One 9 track/1600 BPI CCT or one hardcopy image per scene)

Orbit	Image/Tape ID Number	Date	Target Identification
558	05580010	8/05/78	Washington, DC/DC1
802	08020279	8/21/78	Maryland/Upper Ches. Bay
1296	12960091	9/25/78	Virginia/Ches. Bay
1468	14680237	10/07/78	Washington, DC/DC2

3) Raw Signal Tapes (Six 9 track/1600 BPI CCTs per scene)

Orbit	Tape ID Numbers	Date	Target Identification
558	558001A-558006A	8/05/78	Washington, DC/DC1

Notes: 1) Each orbital swath is divided into four orbital strips, each being 70mm wide. Each quarter-swath corresponds to an across track distance of near twenty-six kilometers. 70mm products are available as strip prints, strip positives, or strip negatives.

2) Each digitally correlated scene is nominally 100 km by 100 km. Archive negatives are either 15 cm x 15 cm or 7.5 cm x 7.5 cm. Enlargement to 25 cm x 25 cm is recommended.

3) SDSD can initiate orders for new digitally correlated scenes or new sets of raw signal tapes. Consult SDSD for further details.

6. DATA REFERRAL SERVICES AND OTHER DATA SOURCES

Chesapeake Bay has been the focus of numerous studies conducted by Federal, state, and local government agencies; universities and research institutions; and other organizations. Although a wealth of data and information on the Bay is available, locating and obtaining it is not always easy. The NESDIS data centers are responsible for compiling global data files and generally receive data only from large-scale projects or standard observation networks. These data are suitable for being processed in standard formats and merged into large data banks. In general the NESDIS data centers do not receive data that derive from small-scale, localized, or specialized studies and that are not amenable for incorporation into one of the NESDIS data files. In addition to digital data held by the NESDIS data centers, there is a vast quantity of information held by originating organizations.

To help meet the needs of users seeking sources of environmental data, NESDIS developed and maintains the National Environmental Data Referral Service (NEDRES). NEDRES is based on a computer-searchable database that enables customers to locate data collections meeting their specific requirements. NESDIS also operates two other services that can provide information on data from other organizations. These are the Ocean Pollution Data and Information Network, (OPDIN) and the National Marine Pollution Information System (NMPIS). This section describes these three systems/services; it also includes selected non-NESDIS sources of data and information on Chesapeake Bay.

National Environmental Data Referral Service (NEDRES)

Description: NEDRES is a NOAA service designed to provide convenient, economical, and efficient access to information about environmental data files held by Federal, state, and local government agencies; universities and research institutions; and private organizations. NEDRES is both a publicly available service that identifies the existence, location, characteristics, and availability conditions of environmental data sets and a national network of Federal, state, and private organizations cooperating to improve access to environmental data. The key to this service is the NEDRES database, a computer-searchable catalog and index of environmental data. It contains descriptions of environmental data files, published data sources, data file documentation references, and organizations that make environmental data available. (Note: The NEDRES database contains only descriptions, not the actual data). The database covers climatological and meteorological, oceanographic, geophysical and geological, geographic, and hydrological and limnological data. A search of the NEDRES database provides users a listing of NEDRES records that describe data sources meeting user-defined selection criteria. This information enables the user to contact the data holder for specific details or to arrange to acquire the data.

Products/Services: NEDRES products and services are available from the NEDRES Program Office within the Assessment and Information Services Center (AISC). The NEDRES database is available on a commercial online information retrieval system (BRS, Inc.). Users may access NEDRES in several ways. Depending on their own needs and capabilities, users may arrange for direct online access, lease the full NEDRES database to run on their own computer system, or request searches to be performed by the NEDRES Office or a NEDRES member organization. Users pay those charges associated with their own use of the database according to a standard fee schedule. NOAA offers membership in NEDRES to organizations willing to cooperate in maintaining and updating the database. Members sign a Memorandum of Agreement that defines their level of participation. In return, members are eligible for reduced charges in proportion to their contribution.

The NEDRES database has also been used to generate published catalogs and indexes for special subjects. Specialized Data Catalog: Chesapeake Bay and Adjacent Wetlands is expected to be available later in 1985 at a price to be announced. This publication will serve as an interim catalog of Chesapeake Bay data sources listed in NEDRES. A multi-year project to review, update, and expand NEDRES entries for Chesapeake Bay is underway and an expanded catalog is planned to be issued in the future.

Contact: NEDRES Program Office
Assessment and Information Services Center
NOAA/NESDIS E/AIx3
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

202-634-7722 (commercial)
FTS 634-7722

Sources of NEDRES Records for the Chesapeake Bay

The NEDRES database includes descriptions of data in the categories of climatology and meteorology, oceanography, limnology and aquatic ecology geophysics and geology, geodesy and cartography, ocean and aquatic resources, terrestrial resources, and toxic and regulated substances. Listed are agencies, organizations and institutions which have contributed descriptions of their data holdings for incorporation in NEDRES. Agency names are listed as reported at the time of inclusion.

FEDERAL GOVERNMENT

DEPARTMENT OF COMMERCE/NOAA (Other than NESDIS Data Centers)

National Marine Fisheries Service

- Atlantic Estuarine Fisheries Center
- Middle Atlantic Coastal Fisheries Center
- Oxford Biological Laboratory

National Ocean Service

- Circulation Section
- Tide and Water Levels Branch

DEPARTMENT OF INTERIOR

U.S. Fish and Wildlife Service

- Patuxent Wildlife Research Center

DEPARTMENT OF THE ARMY

Coastal Engineering Research Center
Corps of Engineers-Philadelphia District
Edgewood Arsenal

- Ecology Group, Biomedical Laboratory

DEPARTMENT OF THE NAVY

Naval Ocean Research and Development Activity

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chesapeake Bay Ecological Program Office

ENVIRONMENTAL PROTECTION AGENCY

Annapolis Field Office-Region III

- Annapolis Science Center

SMITHSONIAN INSTITUTION

Chesapeake Bay Center for Environmental Studies
Department of Paleobiology

STATE/LOCAL GOVERNMENT

MARYLAND

Maryland Department of Natural Resources

- Fisheries Administration
- Chesapeake Biological Laboratory
- Natural Resources Institute-Hallowing Point Field Station
- Maryland Wildlife Administration
- Power Plant Siting Program
- Maryland Geological Survey
- Water Resources Administration-Water Quality Services

Department of Health and Mental Hygiene
Benedict Estuarine Laboratory
Anne Arundel County Health Department
Wye Mills Regional Station

VIRGINIA

Virginia State Water Quality Control Board
Virginia Bureau of Shellfish Sanitation
Virginia Beach Health Department
Virginia Institute for Scientific Research

DELAWARE

Delaware Geological Survey

PENNSYLVANIA

Philadelphia Academy of Natural Sciences

- Division of Limnology and Ecology

NEW YORK

Department of Environmental Conservation

MAINE

Department of Marine Resources
Ira C. Darling Center

COLLEGES, UNIVERSITIES AND RESEARCH INSTITUTIONS

MARYLAND

Johns Hopkins University

- Chesapeake Bay Institute
- School of Hygiene and Public Health
- Department of Pathobiology
- Department of Biology

University of Maryland

- Department of Microbiology
- Department of Chemistry
- Department of Meteorology
- Hallwing Point Field Station
- Horn Point Environmental Laboratory
- Center for Environmental Studies, Marine Products Laboratory

Frederick Community College

VIRGINIA

College of William and Mary-Virginia Institute Of Marine Science

- Division of Biological Oceanography and Fisheries
- Division of Physical and Engineering Sciences
- Department of Fisheries Science
- Department of Estuarine and Coastal Ecology
- Department of Wetlands

Old Dominion University

- Institute of Oceanography
- Department of Biological Sciences

Virginia Commonwealth University

Virginia Polytedmic Institute and State University

- Center for Environmental Studies
- Agronomy Department

DISTRICT OF COLUMBIA

American University

- Biology Department

Trinity College

DELAWARE

University of Delaware-College of Marine Studies

PENNSYLVANIA

Lafayette College

- Department of Geology

MASSACHUSETTS

University of Massachusetts

- National Park Service Cooperative Research Unit

Southeastern Massachusetts University

MAINE

University of Maine

- Zoology Department

GEORGIA

Skidaway Institute of Oceanography

WASHINGTON

University of Washington

- Fisheries Research Institute

OREGON

Oregon State University

- School of Oceanography

PRIVATE ORGANIZATIONS

MARYLAND

Chesapeake Bay Foundation Incorporated

Westinghouse Electric Corporation

- Oceanic Division
- Ocean Research Laboratory

Ecological Analysts Incorporated

VIRGINIA

Virginia Power

DELAWARE

Ichthyological Associates
DELMARVA Power and Light Company
Hercules Incorporated

PENNSYLVANIA

Wallace, McHarg, Roberts and Todd Incorporated
Philadelphia Electric Company
Ichthyological Associates

NEW JERSEY

Ichthyological Associates

MAINE

Maine Audobon Society

MASSACHUSETTS

Energy Resources Company Incorporated

Ocean Pollution Data and Information Network (OPDIN)

Description: The Ocean Pollution Data and Information Network serves as a coordinating mechanism to improve dissemination of data and information resulting from ocean pollution programs conducted or sponsored by agencies of the U.S. Federal government. The OPDIN was established to help implement Section 8 of the National Ocean Pollution Planning Act of 1978 (P.L. 95-273), which requires that data and information from Federal ocean pollution programs be disseminated "in a timely manner and useful forms". The network is managed by the National Oceanographic Data Center and headed by a Central Coordination and Referral Office (CCRO), which was established within the NODC in May 1981.

The goals of the Network are:

- to improve the accessibility and usefulness of Federal ocean pollution data and information to both Federal and non-Federal users, and

- to strengthen Federal interagency communication and coordination regarding ocean pollution data and information, as well as to increase state, regional, and private sector awareness of these resources.

Products/Services: One of the primary functions of the CCRO is to provide a single contact point for users who need ocean pollution data or information and are unsure of where to obtain it. The CCRO provides or assists in providing specific ocean pollution information or data and data products from Federal sources, as well as from state agencies, academic institutions, and other non-Federal facilities.

The OPDIN/CCRO has also produced a number of reports including a Handbook of Federal Systems and Services for Marine Pollution Data and Information and Marine Toxic Substances and Pollutants Data Exchange Format (NODC File 144), which describes the standard digital data format used at the NODC to support a marine pollution data file. A prototype personal computer-based Coastal Information Systems for the New York Harbor-Hudson-Raritan Estuary system has been developed under OPDIN/CCRO auspices. This pilot system was developed to show how a broad spectrum of coastal data could be assembled in a form easily accessible for use by researchers, planners, policy makers, and other regional interests. The CCRO is currently investigating application of this system to other estuaries such as Chesapeake Bay.

Contact: Ocean Pollution Data and Information Network
National Oceanographic Data Center
NOAA/NESDIS E/OCx8
2001 Wisconsin Avenue, NW
Washington, D.C. 20235

202-634-7510 (commercial)
FTS 634-7510

National Marine Pollution Information System (NMPIS)

Description: The National Marine Pollution Information System is an interactive database containing information submitted by principal investigators and program managers of marine pollution projects conducted or funded by U.S. Federal government agencies. NMPIS is used to generate the annual catalog of Federal Projects, a primary document for the Federal Plan for Ocean Pollution Research, Development, and Monitoring. The Plan is a report to Congress mandated by the National Ocean Pollution Planning Act. NMPIS supports the activities and users of the Ocean Pollution Data and Information Network, NOAA's National Marine Pollution Program Office, and NOAA's Estuarine Programs Office with tailored analyses of information in its database.

The NMPIS database is updated annually and includes project descriptions from Fiscal Year 1979 through Fiscal Year 1984. The FY84 database describes nearly 800 projects from 98 programs in 11 agencies. Each NMPIS record includes:

- project title and description;
- performing, funding, and managing organizations and personnel;
- funding levels from all sources (Federal and non-Federal);
- project objectives, pollution causes and pollutants of interest; and
- geographic areas and zones (including estuaries and coastal zones).

Products/Services: The principal products of NMPIS are the annual National Marine Pollution Program Catalog of Federal Projects and Directory of Estuarine Pollution Activities and Personnel for the National Oceanic and Atmospheric Administration. Custom searches, analyses, and reports are generated to answer specific requests. A number of standard analyses and report-generating programs are available to provide immediate responses to user inquiries.

Contact: National Marine Pollution Information System
National Oceanographic Data Center
NOAA/NESDIS E/OC13
2001 Wisconsin Avenue, NW
Washington, DC 20235

202-634-7441 (commercial)
FTS 634-7441

Chesapeake Bay Program Computer Center

Description: The Chesapeake Bay Liaison Office (located in Annapolis, Md.) coordinates all water-quality related actions taken as part of the Chesapeake Bay Program. It supports the Program's Executive Council and Implementation Committee in fulfilling the terms of the Chesapeake Bay Agreement of 1983. To carry out its responsibility for maintaining, managing, storing, and analyzing Chesapeake Bay data, the office operates the Chesapeake Bay Program Computer Center. The Computer Center facilities are used to maintain a Chesapeake Bay database that contains digital environmental data, as well as management information about the Bay Program, including program organization, budget, history, projects, investigators, research, and reports. The database is accessed via CHESSEE, an online, interactive query system. CHESSEE is a menu-driven system that enables users to browse through the database, to print out text or summary files, and to generate statistical analyses for specified data. It also includes an electronic mail system for communication among CHESSEE users.

Products/Services: Routine online access to the Chesapeake Bay Program Computer Center via CHESSEE is restricted to authorized users conducting work directly associated with the Chesapeake Bay Program or with state Chesapeake Bay initiatives. All new user account applications must be approved by the Chesapeake Bay Program Director and EPA, Region III. Users are billed monthly for services according to a standard charge algorithm that determines their use of the system. Private for-profit companies are not permitted access to the facilities of the Computer Center unless they are performing Chesapeake Bay related work on contract to Federal or state agencies, or universities or research institutions receiving Chesapeake Bay funds from Federal or state agencies. General requests for data and information from non-Program participants are handled on a case-by-case basis; these requests should be addressed to the Program Director. Detailed information about the facilities and technical capabilities of the Computer Center are contained in the Chesapeake Bay Program Computer Center User's Guide.

Contact: Chesapeake Bay Program
U.S. Environmental Protection Agency
Annapolis City Marina, Suite 109-110
410 Severn Avenue
Annapolis, MD 21403

301-266-6873
FTS 922-2285

CHESAPEAKE BAY PROGRAM DATA TYPES

NUTRIENTS - Measurements of a variety of chemical forms of nitrogen and phosporus, organic carbon, chlorophyll, phaeophytin, and other water quality parameters including temperature, salinity, dissolved oxygen, pH, conductivity, and turbidity. Sources of these data include Maryland's Department of Health and Mental Hygiene and Department of Environmental Programs, the Virginia State Water Control Board, the Chesapeake Bay Institute, the Virginia Institute of Marine Science, the University of Maryland, the Smithsonian Institution, the EPA Chesapeake Bay Program, the U.S. Geological Survey, and other activites.

TOXICS - Measurements of chemical concentrations in the water column, sediments, or biota, including heavy metals, organic compounds, and pesticides. Sources of data include EPA-STORET, the National Bureau of Standards, state agencies, academic and research organizations, private industry, and other sources of historical toxic data. Measurements coded as below the detection limit of the testing apparatus were not included in the final Bay data set for toxics.

RESOURCES - All data pertain to fisheries and submerged aquatic vegetation (SAV). The general fisheries harvest data were compiled for the entire Bay by the National Marine Fisheries Service and the U.S Fish and Wildlife Service. More detailed fisheries information, such as oyster data, has been compiled by the Maryland Department of Natural Resources and the Virginia Institute of Marine Science. Coverage of SAV throughout the Bay has been determined by EPA, VIMS, or USFWS.

DISCHARGE - Estimates of the amount of nutrients entering the Bay from both point and non-point sources and some estimates of toxic chemical loadings for municipal and industrial discharges. National and regional EPA files are the source of the point source data, which includes nutrients, heavy metals, and flow data. Coverage includes the entire Bay drainage area. These data are for 1980 only, with some nutrient load estimates made for 1970.

COLIFORM - Measurements of fecal coliform bacteria used as indicators of pathogenic bacteria and viruses. Data have been collected by the Maryland Department of Health and Mental Hygiene, Bureau of Shellfish Sanitation.

FLOW - Data relating to flow of water from Chesapeake Bay tributaries into the Bay. Source of the data is the U.S. Geological Survey, which maintains flow gauges in all major Bay tributaries. Most of the gauges have been in place for only the last 10 to 20 years.

PHYSICAL - Measurements of wind, rainfall, temperature, humidity, and tidal conditions. Data have been collected primarily by NOAA.

CULTURAL - Data on population statistics and land use. The population data include 1950, 1960, 1970, and 1980 census and projections for 1990 and 2000 for Delaware, Maryland, New York, Pennsylvania, West Virginia, Virginia, and the District of Columbia. The land use data are organized by watershed, state, county, and above and below the fall line.

SEDIMENT - Descriptions of composition and quality of bottom sediments, including concentrations of toxic compounds, nutrients and physical parameters (water content, grain size, and percent sand, silt, and clay). Coverage is for 1975 to 1981 only; sources include the Maryland Office of Environmental Programs, the Virginia State Water Quality Board, EPA-STORET, and the EPA Chesapeake Bay Program.

CHESAPEAKE BAY PROGRAM DATA HOLDINGS*
(mostly 1970-1980, but including some data before and after this period)

Bay Area+	Data Type**							
	Nutrients	Toxics			Resources	Discharge	Coliform	Flow
		Water	Sediment	Biota				
Northern Mainstem (CB1-3)	42,696	2,218	802	47	186	118	2,226	--
Central Mainstem (CB4-5)	63,570	611	2,524	127	569	85	5,097	--
Southern Mainstem (CB6-8)	15,879	380	228	110	--	21	--	--
Eastern Shore Embayments and Tributaries (EE/ET)	33,155	371	775	574	1,855	543	30,013	--
Western Shore Tributaries (WE/WT/TF/LE/RET/ELIZA)	193,853	5,501	1,299	2,302	1,434	2,302	27,372	4,187
Mouth/Ocean	7,834	161	2	--	--	--	--	--
Unspecified Area	--	1,213	5,722	1,382	64,719	32,824	10,381	75,901
TOTAL	355,987	10,381	11,352	4,636	68,643	35,893	75,089	80,088

* Additional data types not identified by Bay segments include almost 200,000 physical measurements (1950-1982), over 5,000 cultural observations (1950-1981), and over 10,000 sediment measurements (1975-1981).

** For description of data types, see page 58.

\+ Chesapeake Bay Program data analysis subdivides the Bay into 48 designated segments.

Selected Other Data Sources

Description: Two additional data types for use in studies of the Chesapeake Bay are LANDSAT satellite data and aircraft aerial photography from the National High Altitude Program. LANDSAT data are held by NOAA at the U.S. Geological Survey EROS Data Center, which is also the repository of color and black and white infrared imagery obtained from aircraft overflights at 80,000 feet during National High Altitude Program studies. Similar aircraft infrared and visible spectrum photographs are available from National High Altitude Program archives at the U.S. Department of Agriculture Aerial Photography Field Office for aircraft altitudes from 58,000 to 62,000 feet.

Contacts:

LANDSAT Data

NOAA/EROS Data Center
LANDSAT Customer Services
Mundt Federal Building
Sioux Falls, S.D. 57198

605-594-6151 (commercial)
FTS 784-7151

National High Altitude Program Aerial Photographs

U.S. Geological Survey
EROS Data Center Customer Services
Mundt Federal Building
Sioux Falls, S.D. 57198

605-594-6151 (commercial)
FTS 784-7151

U.S. Department of Agriculture
Aerial Photography Field Office
P.O. Box 30010
Salt Lake City, UT 84130

801-524-5856 (commercial)
FTS 588-5856

7. RELATED NESDIS PUBLICATIONS AND INFORMATION

Available from the National Oceanographic Data Center (NODC)

- Mariners Weather Log. Presents monthly and annual plots of principal tracks of sea level cyclone centers in the North Atlantic which may relate to conditions in the Chesapeake Bay area.

- National Oceanographic Data Center Users Guide. Provides information on data holdings, products, and services available through NODC.

Available from the National Climatic Data Center (NCDC)

- Historical Extreme Winds for the United States- Atlantic and Gulf of Mexico Coastlines. Presents tabular data, for stations surrounding the Chesapeake Bay area, namely Baltimore, MD, Washington, DC, Richmond, Norfolk, Cape Henry, and Chincoteague, VA. Provided are fastest-mile wind speed (mph) and direction when available, and predicted extreme wind speeds (mph) for return periods of 2 to 1000 years.

- National Thunderstorm Frequencies for the Contiguous United States. Provides monthly and annual analyzed charts of the United States depicting mean number of thunderstorms and tables of the monthly and annual mean number of thunderstorms for 450 stations, including those surrounding the Chesapeake Bay area.

- Solar Radiation Energy Resource Atlas of the United States. (Microfiche) Presents statistical summaries of insolation and meteorological data in the form of tables and graphs for stations surrounding the Chesapeake Bay area.

- Daily River Stages. Provides data for river gauge stations on rivers that empty into the Chesapeake Bay area.

- Summary of Synoptic Meteorological Observations - North American Coastal Marine Areas (Atlantic and Gulf Coasts, Volume 3, Area 16). Presents summaries of meteorological and oceanographic data that would be applicable to the mouth of the Chesapeake Bay area.

- Wind Energy Resource Atlas (WERIS). (Microfiche) Provides wind frequency distribution studies for stations surrounding the Chesapeake Bay area.

- Tropical Cyclones of the North Atlantic Ocean 1871-1980. Presents annual tracking charts depicting tracks of all known tropical cyclones, including tropical cyclones which have traversed the Chesapeake Bay area.

- U.S. Navy Marine Climatic Atlas of the World, Volume 1, North Atlantic Ocean (1974). Presents charts of Surface Tidal Currents, Type of Tides, and Tide Ranges for the Chesapeake Bay.

- Atlantic Tropical Cyclone Vector mean Charts.
- Atlantic Tropical Cyclone Strike Probabilities.
  Presents vector means of tropical cyclones which have historically traversed the Chesapeake Bay area and the strike probabilities.

- Input Data for Solar Systems. Provides monthly averages (actual or synthesized) of temperature, heating-degree and cooling-degree days, and total Hemispheric Mean Daily Solar Radiation for locations surrounding the Chesapeake Bay area (1941-1970).

- U.S. Weather Bureau TP No. 40. Presents charts and formulae that can be used to compute 2-hour to 24-hour precipitation amounts that can be expected at least once with return periods of 1 to 100 years for the Chesapeake Bay area.

- U.S. Weather Bureau TP No. 49. Presents charts and formulae that can be used to compute 2 to 10 day precipitation amounts that can be expected at least once with return periods of 2 to 100 years for the Chesapeake Bay area.

- NOAA Technical Memorandum NWS HYDRO-35. Presents charts and formulae that can be used to compute 5-minute to 60-minute precipitation amounts that can be expected at least once with return periods of 1 to 100 years for the Chesapeake Bay area.

- Use of Climatic Data in Estimating Storage Days for Soil Treatment Systems. Presents methodology and programs developed by the National Climatic Data Center, through support of the Environmental Protection Agency, that can be used to provide estimates of storage requirements for "Soils Treatment Systems" in the Chesapeake Bay area.

- STAR (Stability Array) Tabulations Master List. Provides listing of stability arrays previously computed for locations surrounding the Chesapeake Bay area.

- Selective Guide to Climatic Data Sources. Presents narrative information and exhibits, in some cases, of the climatological data bases in various forms (manuscript and autographic records, charts, digital, and satellite imagery) archived by the NCDC that may have application to the Chesapeake Bay.

Available from the National Geophysical Data Center (NGDC)

- Marine Geology and Geophysic Data Services and Publications. Presents information on geophysical data services and publications available through NGDC.

- Terrestrial Geophysics Data Services. Presents information on gravity, magnetic, geothermal, and topographic data available through NGDC.

Available from the Assessment Information Services Center (AISC)

- Marine Environmental Assessment, Chesapeake Bay. Provides annual and quarterly summary information on marine weather and oceanographic effects on the economic sectors of fisheries, recreation, and transporation in Chesapeake Bay.

USCOMM-NOAA-ASHEVILLE, N.C. 7/85/1000

SUMMARY OF NESDIS CONTACT POINTS

The following is a summary list of sources for NESDIS data and information products and services. Users who need more than one type of data or information should submit their request to an appropriate center that is most convenient to them. That center can make additional contacts for the user and have services personnel telephone the user if further consultation is required. Therefore, users need make only one initial contact.

OCEANOGRAPHIC DATA

National Oceanographic Data Center
NOAA/NESDIS E/OC21
2001 Wisconsin Avenue, NW
Washington, DC 20235
Phone: 202-634-7500
FTS 634-7500

CLIMATIC DATA

National Climatic Data Center
NOAA/NESDIS E/CC42
Federal Building
Asheville, NC 28801
Phone: 704-259-0682
FTS 672-0682

GEOLOGICAL/GEOPHYSICAL DATA

National Geophysical Data Center
NOAA/NESDIS E/GC3
325 Broadway
Boulder, CO 80303
Phone: 303-497-6215
FTS 320-6215

SATELLITE DATA

National Climatic Data Center
Satellite Data Services Division
NOAA/NESDIS E/CC61
Room 100
World Weather Building, Room 100
Washington D.C. 20233
Phone: 301-763-8111
FTS 763-8111

DATA REFERRAL/INFORMATION SERVICES

Assessment and Information Services Center
NOAA/NESDIS E/AI
3300 Whitehaven Street, NW
Washington, DC 20235
Phone: 202-634-7251
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NEDRES Program Office
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Ocean Pollution Data and Information Network
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Phone: 202-634-7510
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National Marine Pollution Information System Manager
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