

Astoria

OREGON-WASHINGTON

1:100 000-scale metric
topographic-bathymetric map

30 X 60 MINUTE QUADRANGLE SHOWING

- Contours and elevations in meters
- Highways, roads and other manmade structures
- Water features
- Woodland areas
- Geographic names
- Bathymetric contours in meters

1981

Produced by the United States Geological Survey and the National Ocean Service
 Compiled from 1:50,000 and 1:100,000-scale topographic maps dated 1968-1978. Bathymetry derived from aerial photogrammetry 1970-79 and other metric data. Revised information added to the map added 1981.
 Bathymetry compiled by the National Ocean Service from tide-contourment hydrographic surveys. This information is not intended for navigational purposes. Mean lower low water (MLLW) and mean high water (MHW) data are compiled by NOS from tide-contourment aerial photographs. Apparent shoreline (outer edge of vegetation) shown by light solid line. Projection and 10,000-meter grid, zone 18, Universal Transverse Mercator 20,000-foot grid (based on Washington coordinate system, with zone and Oregon coordinate system, north zone).
 To place on the unadorned North American Datum 1983 move the projection lines 20 meters south and 50 meters east.
 Bathymetry added 1981.
 There may be some obstructions within the boundaries of National or State reservations shown on this map.

CONTOUR INTERVAL 50 METERS
 NATIONAL GEODETIC VERTICAL DATUM OF 1929
 ELEVATION SHOWN TO THE NEAREST METER
 BATHYMETRIC CONTOUR INTERVAL 10 METERS WITH SUPPLEMENTARY 5-METER CONTOUR INTERVAL IN DEEPER LOWER LOW WATER
 THE RELATIONSHIP BETWEEN THE TWO DATINGS IS VARIABLE

BATHYMETRIC SURVEY DATA COMPARED WITH INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO) SPECIAL PUBLICATION NO. 13 ACCURACY STANDARDS AND STANDARDS USED AS OF THE DATE OF THE SURVEYS

Meters	Feet
1	3.2808
2	6.5617
3	9.8425
4	13.1234
5	16.4042
6	19.6850
7	22.9659
8	26.2467
9	29.5275
10	32.8084

To convert meters to feet multiply by 3.2808
 To convert feet to meters multiply by 0.3048

DECLINATION DIAGRAM

ADJOINING MAPS

1	2	3
1	Westport	1
2	Chehalis River	2
3	Cowlitz	3
4	Duane	4
5	Mt. St. Helens	5
6	Nahalem River	6
7	Vanuouver	7
8		8

FOR SALE BY U.S. GEOLOGICAL SURVEY
 DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
 AND NATIONAL OCEAN SERVICE, ROCKVILLE, MARYLAND 20852

Topographic Map Symbols

Primary highway, hard surface	—
Secondary highway, hard surface	—
Light duty road, principal street, hard or improved surface	—
Other road or street, trail	—
Route marker: Interstate, U. S., State	—
Railroad: standard gage; narrow gage	—
Bridge, overpass, underpass	—
Tunnel: road, railroad	—
Built up area, locality, elevation	—
Airport, landing field, landing strip	—
National boundary	—
State boundary	—
County boundary	—
National or State reservation boundary	—
Land grant boundary	—
U. S. public lands survey: range, township, section	—
Range, township, section line, protruded	—
Power transmission line, pipeline	—
Dam, dam with lock	—
Cemetery, building	—
Windmill, water well, spring	—
Mine shaft, adit or cave, mine, quarry, gravel pit	—
Campground, picnic area, U. S. location monument	—
Ruin, cliff dwelling	—
Distorted surface: strip mine, levee, sand	—
Contours: index, intermediate, supplementary	—
Bathymetric contours: index, intermediate	—
Stream, lake, perennial, intermittent	—
Rapids, large and small; falls, large and small	—
Area to be submerged; marsh, swamp	—
Land subject to controlled inundation, woodland	—
Swamp, meadow	—
Orchard, vineyard	—

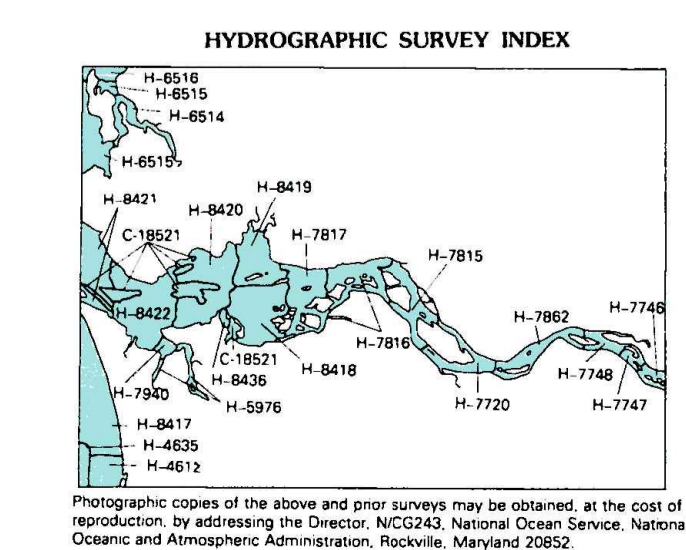
ASTORIA, OREGON-WASHINGTON
 46123-A1-TB-10
 1981
 BATHYMETRY ADDED 1989



HYDROGRAPHIC SURVEY INFORMATION

SURVEY NUMBER	SURVEY DATE	SURVEY SCALE	SURVEY LINE SPACING (NAUT. MILES)	SURVEY NUMBER	SURVEY DATE	SURVEY SCALE	SURVEY LINE SPACING (NAUT. MILES)
H-4813	1935	1:50,000	01.00	H-5816	1950	1:100,000	01.00
H-4825	1935	1:40,000	02.50	H-5817	1950	1:100,000	02.50
H-5816	1950	1:100,000	01.00	H-5818	1950	1:100,000	01.00
H-6014	1939	1:100,000	01.00	H-5819	1950	1:100,000	01.00
H-6015	1939	1:100,000	01.00	H-5820	1950	1:100,000	01.00
H-7720	1968	1:100,000	01.04	H-5821	1950	1:100,000	01.17
H-7748	1968	1:100,000	01.02	H-5822	1950	1:100,000	01.17
H-7748	1968	1:100,000	01.05	H-5823	1950	1:100,000	01.17
H-7815	1955	1:100,000	01.08	H-5824	1950	1:100,000	01.17

NOS CHART 19521 1982 1:40,000



Photographic copies of the above and prior surveys may be obtained at the cost of reproduction by addressing the Director, NSGDS, National Ocean Service, National Oceanic and Atmospheric Administration, Rockville, Maryland 20852