

A Mariner's Guide to
Marine Weather Services
Coastal, Offshore and High Seas



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

NOAA PA 98054



Introduction

Few people are affected more by weather than the mariner. An unexpected change in winds, seas, or visibility can reduce the efficiency of marine operations and threaten the safety of a vessel and its crew. The National Weather Service (NWS), a part of the National Oceanic and Atmospheric Administration (NOAA), provides marine weather warnings and forecasts to serve all mariners who use the waters for livelihood or recreation. This pamphlet describes marine weather services available from the NWS and other agencies.

Warning and Forecast Services

The warning and forecast program is the core of the NWS's responsibility to mariners. Warnings and forecasts help the mariner plan and make decisions protecting life and property. NWS also provides information through weather statements or outlooks that supplement basic warnings and forecasts. The following are the basic marine warning products the NWS offers.

Small Craft Advisory:	Usually, forecast winds of 22 to 33 knots. NWS may also issue Small Craft Advisories for hazardous sea conditions or lower wind speeds that may affect small craft operations.
Gale Warning:	Forecast winds of 34 to 47 knots.
Storm Warning:	Forecast winds of 48 or higher not associated with a tropical cyclone
Hurricane Force Wind Warning:	Warning of a storm with forecast winds of 64 knots or higher not associated with a tropical cyclone.
Tropical Storm Warning:	Forecast winds of 34 to 63 knots associated with a tropical storm.
Hurricane Warning:	Forecast winds of 64 knots or higher associated with a hurricane.
Special Marine Warning:	Potentially hazardous over-water events of short duration (up to 2 hours).

These advisories and warnings are headlined in marine forecasts. (Details are included elsewhere in this brochure.) Small Craft Advisories may be issued up to 12 hours before the onset of adverse conditions and warnings up to 24 hours in advance.

Oceanic Products

Coastal Marine Forecasts

Issued by coastal NWS offices for mariners staying near shore at the following times. *Note:* Updates issued as necessary.

EAST	FL+	GULF	USVI/PR	WEST	ALASKA	HAWAII	MS/GUAM
#330AM	#330PM	#330PM	*430PM	#300PM	*400AM	*1200PM	*500PM
#330PM	#330PM	#330PM	*430PM	#300PM	*400AM	*1200AM	*500PM
*930AM	*930AM	*930AM	1030AM	930AM	*400PM	600AM	*600AM
*930PM	*930PM	*930PM	1030PM	930PM	*400PM	600 PM	*600PM

* Time in local year round.

Local standard time. Issuance times are one hour later in daylight savings time.

+ Except Florida panhandle.

Content and Format (Example)

COASTAL MARINE FORECAST
NATIONAL WEATHER SERVICE GRAY ME
1010 AM EDT THU JUL 10 2003

ANZ100-102100-
SYNOPSIS FOR STONINGTON ME TO MERRIMACK RIVER MA OUT TO 25 NM-
1010 AM EDT THU JUL 10 2003

.SYNOPSIS...HIGH PRES WILL MOVE E OF THE AREA THIS AFTERNOON AND TONIGHT.

\$\$

ANZ150-102100-
STONINGTON ME TO MERRIMACK RIVER MA OUT TO 25 NM-
1010 AM EDT THU JUL 10 2003

.THIS AFTERNOON...NE WIND 10 TO 15 KTS BECOMING E AROUND 15 KTS.
SEAS 1 TO 3 FT.

.TONIGHT...E WINDS AROUND 15 KTS. SEAS 1 TO 3 FT. VSBY 1 TO 3 NM IN ANY LATE NIGHT SHOWERS.

.FRI...SE WINDS INCREASING TO 20 TO 25 KTS. SEAS BUILDING TO 3 TO 5 FT. VSBY 1 NM OR LESS IN SHOWERS AND AREAS OF FOG. SCATTERED TSTMS.

.FRI NIGHT...S WINDS AROUND 25 KTS BECOMING W. SEAS 4 TO 6 FT. VSBY 1 NM OR LESS IN SHOWERS AND AREAS OF FOG. SCATTERED TSTMS.

.SAT THROUGH SUN...SW WINDS 15 TO 20 KTS. SEAS 3 TO 5 FT.

.MON...SE WINDS AROUND 15 KTS. SEAS 2 TO 4 FT. CHANCE OF SHOWERS.

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Offshore Forecasts

Issued by NWS marine centers and certain NWS offices. Forecasts are geared to those mariners operating farther offshore, a day or more from safe harbor. Issuance times are similar to adjacent coastal forecasts.

Marine Centers and NWS

Ocean Prediction Center...New England and Mid-Atlantic, West Coast
Tropical Prediction Center...Tropical Atlantic, Caribbean, and Gulf of Mexico
Honolulu Weather Forecast Office...Hawaii
Anchorage Weather Forecast Office...Bering Sea and Gulf of Alaska

Content and Format (Example)

OFFSHORE WATERS FORECAST
NATIONAL WEATHER SERVICE WASHINGTON DC
OCEAN PREDICTION CENTER/OCEAN FORECAST BRANCH
930 AM PDT THU 10 JUL 2003

WASHINGTON AND OREGON WATERS FROM 60 NM TO 250 NM OFFSHORE.

PZZ080-102330-

.SYNOPSIS...A COLD FRONT WILL WEAKEN AS IT MOVES ACROSS THE WATERS TODAY. HIGH PRES WILL BUILD OVER THE REGION TODAY INTO FRI NIGHT. A LOW PRES TROUGH WILL MOVE INTO THE WATERS FRI NIGHT AND SAT. HIGH PRES WILL BUILD OVER THE OREGON WATERS SUN AND MON WHILE A LOW PRES TROUGH PERSISTS ACROSS THE WASHINGTON WATERS.

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PZZ081-102330-

CAPE FLATTERY TO CAPE LOOKOUT
930 AM PDT THU 10 JUL 2003

.TODAY...S TO SE WINDS 10 TO 20 KT. SEAS 5 TO 10 FT...HIGHEST W. WIDELY SCATTERED SHOWERS W.

.TONIGHT AND FRI...S WINDS 5 TO 15 KT. SEAS SUBSIDING TO 4 TO 6 FT.

.FRI NIGHT...S WINDS 10 TO 20 KT. SEAS 4 TO 7 FT. WIDELY SCATTERED SHOWERS W.

.SAT...S TO SW WINDS 15 TO 25 KT. SEAS 4 TO 8 FT.

.SUN AND MON...S TO SW WINDS 10 TO 20 KT. SEAS 5 TO 9 FT.

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High Seas Warnings and Forecasts

Issued by NWS marine centers and some offices. Forecasts are geared to the largest ocean-going vessels. Emphasis is placed on gale force or worse conditions.

Issuing Offices - Issuance Times (UTC)

OPC/TPC - WEST ATLANTIC - 0430 1030 1630 2230
OPC/TPC - EAST PACIFIC - 0545 1145 1745 2345
HFO - NORTH PACIFIC - 0500 1100 1700 2300
HFO - SOUTH PACIFIC - 0530 1130 1730 2330
TPC - TROPICAL PREDICTION CENTER, Miami, FL
OPC - OCEAN PREDICTION CENTER, Washington, DC
HFO - NWS FORECAST OFFICE, Honolulu, HI

Content and Format (Example)

HIGH SEAS FORECAST FOR METAREA IV
NATIONAL WEATHER SERVICE WASHINGTON DC/TPC MIAMI FL
OCEAN PREDICTION CENTER/OFB 1630 UTC MAY 08 2003
SUPERSEDED BY NEXT ISSUANCE IN 6 HOURS

SECURITE
NORTH ATLANTIC NORTH OF 31N TO 67N AND WEST OF 35W.

SYNOPSIS VALID 1200 UTC MAY 08.
24 HOUR FORECAST VALID 1200 UTC MAY 09.
48 HOUR FORECAST VALID 1200 UTC MAY 10.

WARNINGS.

...GALE WARNING...
.AREA OF NW GALE WINDS 25 TO 35 KT SEAS 9 TO 15 FT FROM 55N TO 67N
E OF 53W.
.24 HOUR FORECAST LOW 60N 42W 1008 MB. FORECAST WINDS 25 TO 35 KT
SEAS 9 TO 15 FT E OF A LINE FROM 62N 51W TO 58N 49W TO 53N 38W.
.48 HOUR FORECAST LOW 60N 38W 1008 MB. FORECAST WINDS 25 TO 35 KT
SEAS 9 TO 15 FT E OF A LINE FROM 61N 50W TO 58N 48W TO 55N 37W.

...GALE WARNING...
.LOW 39N 71W 1008 MB MOVING E 25 KT. WINDS 25 TO 35 KT SEAS 8 TO
13 FT WITHIN 300 NM SE QUADRANT.
.24 HOUR FORECAST LOW 40N 58W 1004 MB. FORECAST WINDS 25 TO 35 KT
SEAS 8 TO 13 FT WITHIN 480 NM SE AND 420 NM SW QUADRANTS.
.48 HOUR FORECAST LOW 46N 57W 989 MB. FORECAST WINDS 25 TO 40 KT
SEAS 10 TO 18 FT FROM 38N TO 52N BETWEEN 41W AND 63W.

SYNOPSIS AND FORECAST.

.LOW 45N 60W 1011 MB MOVING NE 10 KT. WINDS 20 TO 30 KT SEAS TO 10
FT FROM 42N TO 48N BETWEEN 47W AND 59W.
.24 HOUR FORECAST AREA OF E WINDS 20 TO 30 KT SEAS TO 10 FT FROM
44N TO 50N BETWEEN 48W AND 60W.
.48 HOUR FORECAST CONDITIONS ABSORBED BY FORECAST LOW 46N 57W.

Special Marine Warnings

The NWS issues Special Marine Warnings for potentially hazardous over-water events, usually of short duration (up to 2 hours), not adequately covered by other marine warnings and forecasts. These events include thunderstorms, waterspouts, squalls, wind shifts, and other short-lived conditions. Special Marine Warnings are issued mainly for the coastal waters.

If a tornado or severe thunderstorm is expected to move over coastal waters, NWS issues a Special Marine Warning. If a severe thunderstorm or waterspout is expected to move ashore, NWS issues separate warnings (SVR and/or TOR) for land areas.

Content and Format (Example)

BULLETIN - EAS ACTIVATION REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE OXNARD CA
250 PM PDT WED AUG 6 1997

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

- * SPECIAL MARINE WARNING FOR...
THE EAST SANTA BARBARA CHANNEL
FROM PT CONCEPTION TO PT MUGU INCLUDING SANTA CRUZ ISLAND
- * UNTIL 400 PM PDT
- * AT 245 PM PDT...THE NATIONAL WEATHER SERVICE DOPPLER RADAR
INDICATED STRONG THUNDERSTORMS DEVELOPING BETWEEN OXNARD
AND SANTA CRUZ ISLAND...MOVING TO THE NORTHWEST AT 20 MPH.

THESE THUNDERSTORMS WILL PRODUCE WIND GUSTS TO 40 KNOTS...ROUGH
SEAS AND NEAR ZERO VISIBILITY. BOATERS IN EAST SANTA BARBARA CHANNEL
SHOULD TRY TO SEEK SAFE HARBOR.

Marine Weather Statements

Marine Weather Statements are used to follow up the Special Marine Warnings or to provide information on non-severe conditions such as low-water levels, dense fog, high surf conditions, hazardous materials spills, trends for increasing and/or decreasing winds, volcanic ash, or to advise for the potential development of warning conditions.

Hurricane and Tropical Storm Advisories

Hurricane and Tropical Storm Advisories are issued for the Atlantic, Pacific, Gulf of Mexico and Caribbean regions as needed by the Tropical Prediction Center in Miami and the Central Pacific Hurricane Center in Honolulu. These advisories are issued at least four times a day during the tropical cyclone season and extend out to 72 hours.

For the tropical West Pacific (between 130°E and the International Dateline), typhoon and tropical storm advisories are issued when necessary by the Joint Typhoon Warning Center. Tropical Cyclone Advisories are issued as needed by the NWS office in Guam.

Hurricane Warnings

Hurricane warnings are issued for forecast winds of 64 knots or higher associated with a hurricane.

Tropical Storm Warnings

Tropical Storm warnings are issued for forecast winds of 34 to 63 knots associated with a tropical storm.

Global Maritime Distress And Safety System (GMDSS)

The goals of GMDSS are to provide more effective and efficient emergency and safety communications and disseminate Maritime Safety Information (MSI) to all ships on the world's oceans regardless of location or atmospheric conditions. MSI includes navigational warnings, meteorological warnings and forecasts, and other urgent safety-related information. NWS takes part directly in the GMDSS by preparing meteorological warnings and forecasts for broadcast via NAVTEX, HF NBDP, and SafetyNET.

Volunteer Marine Observation Programs

The National Weather Service has a number of volunteer observation programs including the SKYWARN, MAREP, MAROB, MARS, APRSWXNET/Citizen Weather Observer Program (CWOP) and the Cooperative Observer Program (COOP) which are of benefit to the marine community. If you would like to participate or learn more about these volunteer programs, please call your local NWS office or visit <http://www.nws.noaa.gov/om/marine/voluntary.htm>.

Dissemination Of Marine Weather Products

Marine weather products are widely disseminated via U.S. Coast Guard (USCG) broadcasts, NOAA Weather Radio, Internet and other media. Schedules for marine broadcasts are listed in NIMA Publication 117 and NWS Marine Weather Service Charts. Details on the dissemination of NWS marine products may be found on the Marine and Coastal Weather Services Home Page.

NOAA Weather Radio (NWR):

The NWR network provides voice broadcasts of coastal and marine forecasts on a continuous cycle. This network covers nearly all of the continental United States, Hawaii, the populated Alaskan coastline, Puerto Rico and the Virgin Islands, and Guam and the Northern Mariana Islands. Typical coverage is 25 nm offshore. When severe weather threatens, an alarm tone is sent to automatically turn on compatible NWR receivers in the transmitter's coverage area.

NOAA Telephone Recordings

Many NWS forecast offices offer recorded marine and local forecasts by telephone. The numbers are usually listed in the telephone directory under "United States Government, Commerce Department, National Weather Service."

Alaska Marine HF VOICE

NOAA broadcasts offshore forecasts, coastal waters forecasts and marine warnings on 4125 kHz in Alaska.

USCG HF Radiofax

The USCG broadcasts graphic weather maps and other graphic images over HF radiofax. Transmitter sites are located at Boston (NMF), New Orleans (NMG), Kodiak (NOJ), Pt. Reyes (NMC), and Honolulu (KVM-70).

USCG VHF VOICE

USCG broadcasts coastal waters forecasts and marine warnings on VHF Channel 22A after an initial call on VHF Channel 16. The USCG VHF network provides near-continuous coverage of continental US coastline, Hawaii, the populated Alaskan coastline, Puerto Rico and the Virgin Islands, and Guam and the Northern Mariana Islands. Typical coverage is 20 nm offshore.

USCG MF VOICE

USCG broadcasts offshore forecasts and marine warnings on 2670 kHz following an initial call on 2182 kHz.

USCG HF Voice

USCG voice broadcast of high seas warnings and forecasts.

USCG HF NBDP

Also known as Narrow Band Direct Printing (NBDP) is a text broadcast of high seas warnings and forecasts.

NAVTEX

NAVTEX is a USCG radio teletype broadcast of marine warnings and forecasts. Typical coverage is 200 nm offshore.

INMARSAT-C SafetyNET

A satellite broadcast of Maritime Safety Information that includes high seas weather.

WWV and WWVH (time tick)

A summary of Atlantic and Pacific high seas storm information.

Web Sites of Interest

- ◆ NOAA Home Page: <http://www.noaa.gov>
- ◆ Marine and Coastal Weather Services Home Page: <http://www.nws.noaa.gov/om/marine/home.htm>
- ◆ NWS Local Office Links: <http://www.wrh.noaa.gov/wrhq/nwspage.html>
- ◆ NOS Home Page: <http://www.nos.noaa.gov>
- ◆ USCG Home Page: <http://www.uscg.mil>
- ◆ USCG Navigation Center: <http://www.navcen.uscg.gov/marcomms/> (Excellent description of marine communications)

DIAL-A-BUOY

Mariners can obtain the latest coastal and offshore weather observations through a telephone service called Dial-A-Buoy. This service provides wind and wave measurements taken within the last hour at stations located in the Atlantic, Pacific, Gulf of Mexico, and Great Lakes. To access Dial-a-Buoy, dial **228/688-1948** using a touch tone or cellular phone. Enter the five-digit station identifier when prompted. The Dial-a-Buoy menu tree has a selection for the caller to receive a map of buoy station identifiers via return call fax. Station identifiers can also be obtained at the following web site: <http://seaboard.ndbc.noaa.gov/dial.shtml>.

Marine Weather Service Charts

MSC charts are available for 15 segments of the continental United States, Alaska, Hawaii, Puerto Rico and the Virgin Islands, and Guam and the Northern Mariana Islands, and the Great Lakes. These charts are regularly updated.

MSC charts contain maps of the area including locations of NWR transmitters, USCG stations, and marine observation sites; helpful information such as locations, times and frequencies of marine broadcasts, locations of national marine sanctuaries, and NWS telephone numbers. MSC charts can be purchased from:

FAA Distribution Division (AVN-530)
National Aeronautical Charting Office
Greenbelt, MD 20770-1479
Telephone: **301-436-8301, 800-638-8972**

MSC charts can also be found at <http://www.nws.noaa.gov/om/marine/pub.htm>.

The NWS publishes Marine Weather Service Charts for the following segments of the US coastline.

MSC-1	Eastport, ME to Montauk Point, NY
MSC-2	Montauk Point, NY to Manasquan, NJ
MSC-3	Manasquan, NJ to Cape Hatteras, NC
MSC-4	Cape Hatteras, NC to Savannah, GA
MSC-5	Savannah, GA to Apalachicola, FL
MSC-6	Apalachicola, FL to Morgan City, LA
MSC-7	Morgan City, LA to Brownsville, TX
MSC-8	Mexican Border to Pt. Conception, CA
MSC-9	Pt. Conception to Pt. St. George, CA
MSC-10	Pt. St. George, CA to Canadian Border
MSC-11/12	Great Lakes
MSC-13	Hawaii Waters
MSC-14	Puerto Rico and Virgin Islands
MSC-14S	Puerto Rico and Virgin Islands (Spanish)*
MSC-15	Alaska Waters
MSC-16	Guam and the Northern Mariana Islands

*planned

For boating safety weather rules, see Safe Boating Weather Tips (NOAA PA 94058) at <http://www.nws.noaa.gov/om/brochures.shtml>.