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NATIONAL WEATHER SERVICE INSTRUCTION 10-310

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Operations and Services

Marine, Tropical, and Tsunami Services Branch, NWSPD 10-3

COASTAL WATERS FORECAST

NOTICE: This publication is available at: https://www.nws.noaa.gov/directives/.

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SUMMARY OF REVISIONS: This instruction supersedes NWSI 10-310, *Coastal Waters Forecast*, dated June 18, 2019.

The following revisions were made to this directive:

1. Updated Examples, including one showing the ongoing wave detail experiment.
2. In Section 2.3.5, added Southern Region's definition for Small Craft Should Exercise Caution headline.
3. In section 2.3.8, added information and public links for the CWF Wave Detail Experiment
4. In sections 2.3.8 c (significant weather/visibility) and d (icing), updated information to include clearer recommended practices for visibility and the Alaska Region definition for heavy freezing spray.

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Coastal Waters Forecast

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1 Introduction

This procedural instruction provides product specifications for the main alphanumeric coastal weather products issued by the National Weather Service (NWS) Weather Forecast Offices (WFOs) and Weather Service Office (WSO) Pago Pago.

2 Coastal Waters Forecast (Product Category CWF)

2.1 Mission Connection

The Coastal Waters Forecast (CWF) is a text product issued by all coastal WFOs and WSO Pago Pago explicitly stating expected weather conditions within their marine forecast area of responsibility through Day 5. The CWF is used by a wide variety of marine users and partners including the media, emergency managers, and the public. It is primarily used as a tool for planning purposes to support and promote safe transportation across the coastal waters.

2.2 Issuance Guidelines

Forecasters should ensure the values included within the CWF are consistent with the values from the associated gridded forecast elements.

2.2.1 Creation Software

WFOs will produce the CWF using the Advanced Weather Interactive Processing System (AWIPS) software formatters. The Interactive Forecast Preparation System (IFPS) Graphical Forecast Editor (GFE) application formatting tools will be used for generation of product content. All WFOs, with the exception of American Samoa and WFO Guam (for the East and West Micronesia forecast) offices will use the Graphical Hazard Generator (GHG) to produce hazard headlines. American Samoa (WSO Pago Pago) and Guam (for Micronesia) offices will use regionally-approved creation software until AWIPS capabilities become available.

2.2.2 Issuance Criteria

The CWF will be issued twice per day with updates as necessary. Regions, as dictated by user requirements, may require scheduled updates.

2.2.3 Issuance Time

CWFs are issued routinely. Two daily issuances are mandatory. Some offices will issue more than two routine forecasts daily. Forecasters should make the CWF available to users by the scheduled issuance time. The issuance time is expressed in Coordinated Universal Time (UTC), while the mass media header is expressed in local time. The issuance time in the mass media header is the same time the product is issued by the WFO/WSO. WFOs/WSO should issue CWFs based on the following, except during tropical cyclone events, when the routine issuance time may be delayed:

Region/Office		Scheduled Issuance Time (UTC)	
Eastern(Standard/Daylight)		0900/0800	2100/2000
Southern	(EST/CST)	0900/1000	2100/2200
	(EDT/CDT)	0800/0900	2000/2100
WFO San Juan		0800	2000
Western	(Standard/Daylight)	1100/1000	2300/2200
Alaska	(Standard/Daylight)	1300/1200	0100/0000
WFO Honolulu		0145 0800	1345 2200
		0800-1000	2000-2200
WFO Guam	(Marianas/Guam)	0700	2000
WFO Guam	(East Micronesia)	0500	1700
WFO Guam	(West Micronesia)	0700	1900
WSO Pago Pago		0200 0900	1800

During a tropical cyclone event, WFOs/WSO may delay the “scheduled” issuance of the CWF until after advisories from the National Hurricane Center (NHC), Central Pacific Hurricane Center (CPHC) or Joint Typhoon Warning Center (JTWC) or RSMC Nadi Tropical Cyclone Center are issued. In these circumstances, the CWF should be issued as soon as reasonably possible but no later than one and a half hours after receiving the message from the appropriate hurricane center.

In all forecasts, include forecast periods as shown below. All forecast periods beyond the current

day will be described by the day of the week. For example, a forecast issued Sunday evening will include: TONIGHT, MONDAY, MONDAY NIGHT, TUESDAY, TUESDAY NIGHT, WEDNESDAY, THURSDAY, and FRIDAY. Forecast periods of the CWF are shown below:

The early morning forecast will cover:

Today	(Issuance time to 6PM local time)	1st Period
Tonight	(6PM to 6AM)	2nd Period
Day 2	(6AM to 6PM)	3rd Period
Day 2 Night	(6PM to 6AM)	4th Period
Day 3	(6AM to 6AM)	5th Period
Day 3 Night (Optional)	(6PM to 6AM)	6th Period
Day 4	(6AM to 6AM)	Day 4
Day 5	(6AM to 6AM)	Day 5

The last two 24-hour days may be broken up into two 12-hour periods:

Day 4	(6AM to 6PM)
Day 4 Night	(6PM to 6AM)
Day 5	(6AM to 6PM)
Day 5 Night	(6PM to 6AM)

The late afternoon forecast will cover:

Tonight	(Issuance time to 6AM local time)	1st Period
Tomorrow	(6AM to 6PM)	2nd Period
Tomorrow Night	(6PM to 6AM)	3rd Period
Day 2	(6AM to 6PM)	4th Period
Day 2 Night	(6PM to 6AM)	5th Period
Day 3	(6AM to 6AM)	6th Period
Day 3 Night (Optional)	(6PM to 6AM)	7th Period
Day 4	(6AM to 6AM)	Day 4
Day 5	(6AM to 6AM)	Day 5

The last two 24-hour days may be broken up into two 12-hour periods:

Day 4	(6AM to 6PM)
Day 4 Night	(6PM to 6AM)
Day 5	(6AM to 6PM)
Day 5 Night	(6PM to 6AM)

2.2.4 Valid Time

CWFs are valid from the time of issuance until the expiration time.

2.2.5 Universal Geographic Code (UGC)

CWFs will contain marine-based zone UGC codes.

2.2.6 Product Expiration Time

The CWF product expiration time is not more than 13 hours from the initial valid time, except up to 14 hours for OCONUS WFOs/WSO.

2.3 Technical Description

CWFs will follow the format and content described in this section.

2.3.1 Mass News Disseminator (MND) Broadcast Line

None.

2.3.2 MND Header

The CWF MND Header is "Coastal Waters Forecast [+ Optional Descriptor]".

2.3.3 Content

Follow the format for the CWF as shown in section 2.4. In each marine zone, include all required forecast periods and forecast parameters. Forecasters may subdivide areas (e.g., NORTHERN HALF, SOUTHERN HALF, WATERS WITHIN 5 NM OF SHORE, OPEN WATERS; etc.) to describe significant differences. If geographical reference points are used in the subdivision, forecasters should ensure they are well known. Forecasters should combine marine zones for which they are responsible if conditions are expected to be homogeneous. However, do not combine one marine zone with just a part of another.

Forecasters should include applicable National Marine Sanctuaries (NMS), as noted in NWS Instruction (NWSI) 10-302, in the appropriate CWF. These NMS names should be included in the specific zone(s) and/or general area description.

The forecaster may combine forecast periods (beyond the first period) if, in the forecaster's opinion, the weather elements in each are consistent (Regional supplements should be consulted). In addition, the forecaster may subdivide the first period of the forecast to account for rapid weather changes.

2.3.4 Synopsis

The synopsis for the CWF is a brief description of surface weather features, which cause significant winds and seas over the forecast area during the forecast period. Areas in the tropics often have significant upper level features, which are the dominant cause of the weather (e.g., Tropical Upper Tropospheric Troughs (TUTTs)). The synopsis may mention these features. At a minimum, it should identify the strength, trend and movement of each major weather system affecting the area.

The synopsis may be broadcast over marine radio, and therefore, it should contain complete and grammatically correct sentences. All synopses will be meteorologically consistent with other products issued by the WFO/WSO. For consistency, all distances should be in nautical miles (NM).

When ashfall from a volcanic eruption is expected to affect marine areas, a brief statement will be included in the synopsis after coordination with the appropriate NWS Volcanic Ash Advisory Center (VAAC). For example, "Westdahl Volcano, 70 NM southwest of Cold Bay, is currently active."

If a tropical cyclone with winds of tropical storm force or higher is expected to impact the forecast

area, WFOs/WSO should include in the synopsis appropriate identification of the tropical cyclone, its last location (local time), and the direction and speed of movement. Give the location as distance (nautical miles) and direction (16-point compass) from a known landmark or breakpoint. The forecaster may use generic terms if a tropical cyclone is expected to develop in later periods of the forecast. See section 2.3.7 for an example.

2.3.5 Headlines

Use headlines to emphasize weather events likely to have a significant impact on mariners or marine operations. Marine warnings and advisories are mandated in the first 12-hour forecast period. In most situations, to reduce multiple headlines, the forecaster can leave off the hazards after the upgrade or the most severe hazard.

The headlines generated by GHG software are sorted in chronological order by start time, then by action, by significance, and alphabetically by phenomena. These headlines should contain the hazard, and the action and timing phrases. For offices that issue the Marine Weather Message, please refer to NWSI 10-315, Marine Weather Message, NWSI 10-1703, Valid Time Event Code (VTEC), NWSI 10-1701, Text Product Formats and Codes, and section 2.3.9 of this instruction for additional details.

Refer to NWSI 10-303, Marine and Coastal Services Standards and Guidelines, for Regionally-defined Small Craft Advisory issuance criteria, as well as definitions for Gale, Storm and Hurricane Force Wind Watches and Warnings.

a. Non-Tropical Cyclone Related Headlines.
Non-tropical cyclone watch and warning marine headlines are included in the CWF.

Watch headlines. WFOs/WSO should include watch headlines when criteria are met for the second, third, or occasionally fourth and fifth periods, when there is a significant chance of a hazardous marine weather event meeting or exceeding warning criteria. In areas where hazardous conditions are climatologically common, watches (other than convective), may be reserved for advanced notice of unusual or "first of the season" events. The following watch headlines are included in the CWF if a decision has been made by a WFO/WSO or the Storm Prediction Center (SPC) as appropriate, to issue one of these watches:

Tornado Watch (issued by SPC and only for CONUS)
Severe Thunderstorm Watch (issued by SPC and only for CONUS)
Gale Watch
Storm Watch
Hurricane Force Wind Watch
Heavy Freezing Spray Watch
Hazardous Seas Watch (Optional)

Warning Headlines. WFOs/WSO will include the following warning headlines when criteria are met for the first period, and may issue warning headlines for events that begin in the second, third or fourth periods when forecaster confidence is high.

Hurricane Force Wind Warning
Storm Warning
Gale Warning

Heavy Freezing Spray Warning
Ashfall Warning
Hazardous Seas Warning (Optional)

In situations where winds gust frequently to or above advisory/warning thresholds, forecasters should use discretion when issuing advisories or warnings. Gusts occurring for more than 2 hours during a 12-hour forecast period are considered frequent.

b. Tropical Cyclone Related Headlines.
WFOs/WSO issue tropical cyclone watches and warnings using the Marine Weather Message (MWW) in their coastal waters, and will coordinate their issuance with NHC, CPHC, JTWC, and adjacent WFOs. WSO Pago Pago may issue the Hurricane Local Statement in lieu of the MWW. WSO Pago Pago will coordinate with Samoa Meteorology Division, RSMC Nadi, and CPHC. Refer to NWSI 10-601, *Weather Forecast Office Tropical Cyclone Products* for additional details.

When tropical cyclone related headlines are issued, they will be included in the CWF. Existing headlines for marine zones should be replaced with applicable tropical cyclone headlines. Tropical Cyclone headlines have the highest priority of any headline included in the CWF. Tropical Cyclone headlines listed in priority order are:

1. Hurricane or Typhoon Warning
2. Tropical Storm Warning
3. Hurricane or Typhoon Watch
4. Tropical Storm Watch

As a tropical cyclone leaves an area, forecasters should headline watch and warning cancellations. A qualitative description of wind conditions in the wake of the tropical cyclone (e.g., gale force winds) should be included in the synopsis. Tropical cyclone cancellation headlines may co-exist with non-tropical warnings and advisories, but are not used for upgrading to higher priority warnings and watches. For example, the headline "Tropical Storm Warning Is Cancelled" is not used simultaneously within the CWF with a "Hurricane Warning In Effect".

Once a tropical cyclone is no longer impacting a marine zone, forecasters should again headline appropriate advisories or warnings not associated with the tropical cyclone.

b.1. Usage of Small Craft Advisories and Related Cautionary Statements.

When a tropical cyclone warning is in effect, the warning headline should supersede all other headlines in the area covered by the tropical cyclone warning.

When a tropical cyclone watch is in effect, or a tropical cyclone is approaching or departing, and conditions warrant, forecasters may include the headline "Small Craft Advisory." In addition, "Small Craft Should Remain in Port" may be manually appended.

c. Small Craft / Brisk Wind Advisory headlines.
The four headlines for Small Craft Advisories: Small Craft Advisory (SCA), Small Craft Advisory for Hazardous Seas (SCAHS), the Small Craft Advisory for Winds (SCAW), and the Small Craft Advisory for Rough Bar (SCARB) have been consolidated into one headline, Small Craft

Advisory. See NWSI 10-303 for a general definition of this advisory.

Based on Local or Regional policy, WFOs/WSO may manually include cautionary statements (e.g., "SMALL CRAFT SHOULD EXERCISE CAUTION") in situations below SCA criteria. For Southern Region, the criteria for Small Craft Should Exercise Caution (SCEC) is:

> a wind forecast of 15 to 20 knots (with 20 knot winds will not occurring for 2+ hours) and/or seas forecast at 6 feet during the first period

Advisory Headlines. WFOs/WSO should include the following advisory headlines when criteria are met for the first period, and may issue advisory headlines for events that begin in the second, third or fourth periods when forecaster confidence is high:

- Small Craft Advisory
- Brisk Wind Advisory

When sufficient observational data is available, WFOs/WSO should include the following advisory headlines when criteria are met for the first period, and may issue advisory headlines for events that begin in the second or third periods when forecaster confidence is high:

- Dense Fog Advisory
- Dense Smoke Advisory
- Freezing Spray Advisory
- Ashfall Advisory
- Low Water Advisory

2.3.6 1-3 Day Forecast Periods

Except as noted below, forecasts of wind and sea state will be included in each discrete forecast period of the CWF. When sufficient (supporting) data exists, forecasters should also include forecasts of other weather significantly impacting a marine zone(s) (e.g., ice accretion, precipitation, wave periods, low visibilities, ashfall, ice crystals, freezing fog, ice coverage, etc.). Always emphasize the most critical conditions.

Exception: WFO/WSOs, after coordinating with their Region, may specify certain bays, inlets, harbors, inland waters, and estuaries for which sea state need not be included in forecasts if complexities in these areas (e.g., fetch, water depth, currents, etc.) make wave forecasts impractical. In these areas, forecasters may use general descriptions of sea conditions (e.g., rough, moderate, etc.).

2.3.7 4-5 Day Forecast Periods

Aside from the two exceptions noted below, always include wind and sea height information in each 24-hour period, or optional 12-hour period. Above that, forecasters should include only the more threatening weather conditions.

Exception 1: When a tropical cyclone threatens to impact a marine zone, indicate the possible tropical cyclone conditions, based on NHC, CPHC, WFO Guam, WSO Pago Pago, and / or Weather Prediction Center (WPC) guidance, for the specific day(s) impacted. Because large positional and intensity errors are possible in these cases, forecasters should not give specific wind and sea values.

Example:

.FRIDAY...Southeast winds 25 kt increasing. Seas 12 ft.
.SATURDAY...Tropical storm conditions possible.
.SUNDAY...Hurricane conditions possible.

Exception 2: For marine areas heavily influenced by topography, (e.g., Puget Sound, Southeast Alaska), forecasters may give trend forecasts in lieu of specific wind and sea heights.

Example:
Tuesday and Wednesday...Increasing East winds and higher seas enhanced by a strong southeast swell."

2.3.8 CWF - Forecast Parameters

a. Wind. Wind represents predominant conditions 10 meters above the surface of the water. Forecasters should give direction to eight points of the compass. Avoid such phrases as "North to Northeast winds". Wind speed forecasts should use knots as the unit of measurement with the term "knot(s)" or "kt" acceptable according to World Meteorological Organization (WMO) policy. One knot is equal to 1 nautical mile per hour. Forecasters should round speeds to the nearest 5 knots in forecasting specific wind speeds and ranges in wind speed.

In the CWF, include only sustained winds unless there are significant differences between sustained winds and peak gusts (e.g., Northwest wind 20 kt with gusts to 35 kt).

Reference NWSI 10-303 for more detailed instructions on wording on wind and seas forecasts. Where there is sufficient open water (ice-free seas) to include a sea state forecast, an SCA will be issued when appropriate. If sea heights are omitted due to ice coverage, the proper hazard type is Brisk Wind Advisory. The Brisk Wind Advisory should use the same regionally determined wind thresholds as the SCA.

b. Seas (or Combined Seas). Include sea state as a combined sea height or break it down into appropriate components (e.g., Wind waves 2 to 4 ft, Northeast swell 10 ft, or seas 12 ft). Whenever a swell is specified, include the direction from which the swell is propagating, to 8 points of the compass. Mention of swell period and secondary swell (i.e., height, period, and direction) are a regional option. Forecasters may only use descriptive words such as Moderate or Rough in regionally specified bays, inlets, harbors, estuaries, etc.

Transition terms such as "building" and "subsiding" should be used to add clarity to forecast trends. Forecast changes in sea state should be meaningful (at least 3 feet in outer coastal waters and at least 2 feet in sheltered bays, inlets, etc.). Trends may be used to express more subtle changes, e.g., "seas 4 ft subsiding Wed afternoon."

Sea state forecasts will be included for marine areas or portions of marine areas not covered by ice. For other marine areas where coverage of 7/10 or more of sea ice is expected, forecasts of sea state are usually omitted; however, if the area has at least 10% contiguous open water, sea state forecasts may be given. In these cases, use the phrase "seas in ice free waters".

An SCA headline should be included for sea state, even if the wind threshold is not met. Thresholds for a small craft advisory due to rough seas (and winds) are locally and regionally-defined based upon expressed user needs specific to the area.

Some NWS offices are experimenting with forecast wave components in the CWF, including wave height, period and direction. See this Public Information Statement (22-49: https://www.weather.gov/media/notification/pdf2/pns22-49_cwf_wave_component_update_aaa.pdf) or this webpage (https://www.weather.gov/marine/WaveDetail) for more details.

c. Significant Weather / Visibility. Forecasters should include significant weather posing a hazard to navigation when it is expected (i.e., widespread fog or other restrictions lowering visibilities to 1 NM or less, or thunderstorms). Forecasters should emphasize thunderstorms in the CWF product. They may include the phrase "winds and waves higher near thunderstorms" for the areas over which significant thunderstorms are anticipated. Forecasters may use precipitation probability terms such as "chance", "occasional", etc., as defined in NWSI 10-204, and they may include specific visibility distances. However, do not include sky cover.

Based on forecaster discretion, and/or expected impact to users, forecasters should include restrictions to visibility when it is expected to be less than 1 NM. Based on forecaster discretion, and/or expected impact to users, forecasters may include obstructions to visibility ranging between 1 NM and 5 NM. World Meteorological Organization (WMO) guidelines for visibility are below.

WMO Guidelines and descriptions for visibility

Very Poor: Less than 0.5 nautical miles
Poor: 0.5 to less than 2 nautical miles
Moderate: 2 to 5 nautical miles
Good: Greater than 5 nautical miles

d. Icing. Forecasters should include the headline "…HEAVY FREEZING SPRAY WARNING…" in the coastal waters forecast (CWF) when a Heavy Freezing Spray Warning is in effect. The definition of heavy freezing spray is an ice accretion rate greater than or equal to 2 cm per hour, except in the Alaska Region, where heavy freezing spray is an ice accretion rate greater than or equal to 0.7 cm per hour. See definitions in NWSI 10-303.

e. Air Temperatures. Air temperatures are optional, and may be included if they are forecast to be at or below freezing and if the forecaster considers this information to be significant.

2.3.9 CWF - Forecast Time Phrases

The selection of the time phrases used in advisory and warning headlines within the CWF is dependent upon the number of hours that have transpired since the time of product creation rather than the product issuance time. The selection of time phrases used in Watch, Warning, and Advisory headlines also depends upon the type of event.

Timing phrases described in Tables 1, 2 and 3 are included in headlines issued for the following Watches, Warnings and Advisories:

- Gale Watch
- Storm Watch
- Hurricane Force Wind Watch
- Heavy Freezing Spray Watch
- Hazardous Seas Watch
- Hurricane Force Wind Warning
- Storm Warning
- Gale Warning
- Heavy Freezing Spray Warning
- Hazardous Seas Warning
- Small Craft Advisory
- Freezing Spray Advisory
- Dense Fog Advisory
- Dense Smoke Advisory
- Ashfall Advisory
- Brisk Wind Advisory
- Low Water Advisory

Headlines for the following Watches and Advisories include explicit times at offices, which use VTEC operationally:

- Tornado Watch
- Severe Thunderstorm Watch
- Dense Fog Advisory
- Dense Smoke Advisory
- Ashfall Advisory

Headlines for the following Watches and Warnings do not include explicit times or timing phrases:

- Hurricane, Typhoon, or Tropical Storm Warnings
- Hurricane, Typhoon, or Tropical Storm Watches

a. First Period. An advisory or warning event in effect for the first period will use explicit time phrases. When the issuance time and event start and/or end time occur on the same calendar day, the warning and advisory headline will include the time phrase listed in Table 1, except for products issued from the Pacific and Alaskan WFOs.

Time Period Covered	**Time Phrases**
Midnight – 5:59 AM	EARLY THIS MORNING
6 AM – 11:59 AM	THIS MORNING
Noon	TODAY
12.01 PM – 5:59 PM	THIS AFTERNOON
6 PM – 11:59 PM	THIS EVENING

Table 1. Time Phrase Format for Coastal Waters Forecast (CWF) Advisory and Warning Headlines for Events Beginning in First Forecast Period on Same Calendar Day of Issuance.

For products issued with GHG software and VTEC from the Pacific and Alaskan WFOs, an advisory or warning event in effect for the first period on the same calendar day of issuance will use time phrases as described in Table 2.

Time Period Covered	Time Phrases
Midnight – 2:59 AM	LATE TONIGHT
3:00 AM – 5:59 AM	EARLY THIS MORNING
6:00 AM – 8:59 AM	THIS MORNING
9:00 AM – 11:59 AM	LATE THIS MORNING
12:00 PM – 2:59 PM	EARLY THIS AFTERNOON
3:00 PM – 5:59 PM	LATE THIS AFTERNOON
6:00 PM – 8:59 PM	THIS EVENING
9:00 PM – 11:59 PM	TONIGHT

Table 2. Time Phrase Format for Coastal Waters Forecast (CWF) Advisory and Warning Headlines Issued with GHG software (except for offices which do not have AWIPS) by Pacific and Alaska Region WFOs and WSO Pago Pago for Events Beginning in First Forecast Period on Same Calendar Day of Issuance.

b. Beyond the First Period. A headline for an advisory or warning event in effect not meeting criteria described in part a above will use generic time phrases as described in Table 3.

Time Period Covered	Same Calendar Day Time Phrases	Day + 1 Time Phrases	Day + n Time Phrases Where $1 < n \leq 5$
Midnight – 5:59 AM		LATE TONIGHT	LATE (Day + (n -1)) NIGHT
6 AM – 11:59 AM		(Day + 1) MORNING	(Day + n) MORNING
NOON – 5:59 PM	THIS AFTERNOON	(Day + 1) AFTERNOON	(Day + n) AFTERNOON
6 PM – 11:59 PM	THIS EVENING	(Day + 1) EVENING	(Day + n) EVENING

Table 3. Time Phrase Format for Coastal Waters Forecast (CWF) Watch, Warning and Advisory Headlines in Effect or Ending Beyond First Period.

2.3.10 Coordination and Collaboration

Field offices with adjoining or overlapping areas of responsibility should coordinate and collaborate to ensure products are consistent and compatible. This effort includes communication with appropriate governmental forecast agencies outside the United States.

Forecasters should refer to Section 5, Digital Forecast Collaboration, of NWSI 10-201, *National Digital Forecast Database and Local Database Description and Specifications*, for detailed information on the coordination and collaboration processes for gridded forecasts and analyses, available at: http://www.nws.noaa.gov/directives/sym/pd01002001curr.pdf.

2.4 Format

The format of the CWF is in in Figure 1. For more detailed product format information, consult NWSI 10-1701, *Text Product Formats and Codes*. Please refer to NWSI 10-1701 sections 3.3 - 3.5, for information on the character line and total character limitations of the

CWF. This product is available in industry standard encoding and languages, and may include, but not limited to, American Standard Code for Information Interchange (ASCII), Extensible Markup Language (XML), Wireless Markup Language (WML) and HyperText Markup Language (HTML).

2.4.1 Updates, Amendments and Corrections

CWFs and the appropriate gridded forecast fields will be updated or corrected when the on- duty forecast team believes the current forecast is not representative, or when significant format or content errors are detected. See NWSI 10-303 for detailed information.

(WMO ID)(UTC ISSUANCE DATE TIME)
(AWIPS ID)

Coastal Waters Forecast [+ Optional Descriptor]
National Weather Service (City)(State)
(Issuance Time) AM/PM (Local Time Zone)(Day)(Date)

(Overall Area Covered By This Forecast)

(Synopsis UGC Code)-(Expiration Time)-
(Issuance Time) AM/PM (Local Time Zone)(Day)(Date)

.SYNOPSIS FOR (WFO/WSO Marine Area)...Text.

$$
(Areal UGC Code[S])-(Expiration Time)-
(Forecast Areal Descriptor[S])
(Issuance Time) AM/PM (Local Time Zone)(Day)(Date)

...HEADLINES (If needed)...

.PERIOD 1...
.PERIOD 2...
.PERIOD 3...
.PERIOD 4...
.PERIOD 5...
.PERIOD 6 (Optional period for the morning issuance)...
.PERIOD 7 (Optional period for the afternoon issuance)…
.(DAY 4)...
.(DAY 5)...

$$
Forecaster Name (Optional)

Figure 1. Coastal Waters Forecast (CWF) Format.

2.4.2 CWF - Unscheduled Forecasts

As needed, append either "...UPDATED" or "...CORRECTED" to the product header whenever, respectively, an unscheduled CWF is issued or when an error in the CWF is corrected. A short description may be added for the updated or corrected items just below the areal header to highlight the change.

Coastal Waters Forecast**...Updated (Or ...Corrected)**
National Weather Service (City)(State)
(Valid Time) AM/PM (Local Time Zone)(Day)(Date)

(Reason For Corrected/Updated/Amended). [Optional]

(Overall Area Covered By This Forecast)

(Synopsis Ugc Code)-(Expiration Time)-

(Issuance Time) Am/Pm (Local Time Zone)(Day)(Date)

.Synopsis For (WFO Marine Area)...Text.

$$

Figure 2. Unscheduled Coastal Waters Forecast (CWF) Format.

Appendix A - Examples of NWS Coastal Waters Forecasts

Example 1: (Gale Warning headline)

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FZUS52 KMHX 071402
CWFMHX

Coastal Waters Forecast for North Carolina
National Weather Service Newport/Morehead City NC
1002 AM EDT Fri Apr 7 2023

From S of Currituck Beach Light to N of Surf City NC out 20 NM,
including the Albemarle and Pamlico Sounds and the Monitor
National Marine Sanctuary

AMZ100-080230-
1002 AM EDT Fri Apr 7 2023

.Synopsis for Eastern North Carolina coastal waters...
A cold front will cross the region late tonight and then stall
just to our south through the weekend providing an extended period
of windy, cold and wet weather. High pressure will build in from
the north by early next week.

$$

AMZ230-080230-
Albemarle Sound-
1002 AM EDT Fri Apr 7 2023

...GALE WARNING IN EFFECT FROM SATURDAY AFTERNOON THROUGH SUNDAY
EVENING...

.REST OF TODAY...NE winds 15 to 20 kt, increasing to 20 to 25 kt
this afternoon. Gusts up to 30 kt. Waves 2 to 3 ft. A chance of
rain late this morning and early afternoon, then rain likely
late.
.TONIGHT...NE winds 20 to 25 kt, diminishing to 15 to 20 kt after
midnight. Gusts up to 30 kt. Waves 2 to 3 ft. Rain likely.
.SAT...NE winds 15 to 20 kt, increasing to 20 to 25 kt in the
afternoon. Gusts up to 35 kt. Waves 2 to 3 ft. Rain.
.SAT NIGHT...NE winds 20 to 25 kt with gusts up to 35 kt. Waves
2 to 3 ft. Rain.
.SUN...NE winds 25 to 30 kt with gusts up to 35 kt. Waves 2 to
3 ft. Rain likely, mainly in the morning.
.SUN NIGHT...NE winds 20 to 25 kt with gusts up to 35 kt. Waves
2 to 3 ft.
.MON...NE winds 15 to 20 kt, diminishing to 10 to 15 kt. Waves
around 2 ft, then 1 ft.
.TUE...NE winds around 10 kt, becoming SE in the evening, then
becoming SW after midnight. Waves 1 ft or less.
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Example 2: (Fog)

FZUS54 KMOB 070835
CWFMOB

Coastal Waters Forecast
National Weather Service Mobile AL
335 AM CDT Fri Apr 7 2023

Gulf Coastal Waters Okaloosa Walton County Line To Pascagoula Out 60 NM

Seas are given as significant wave height...which is the average height of the highest 1/3 of the waves. Individual waves may be more than twice the significant wave height.

GMZ600-072115-
335 AM CDT Fri Apr 7 2023

.SYNOPSIS...A light to occasionally moderate onshore flow prevails through Saturday. A northeasterly flow develops Saturday night into Sunday as a cold front pushes south of the area. Fog development is possible late each night into the early morning hours over the near shore waters and bays and sounds for much of the period.

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GMZ633-072115-
Perdido Bay-
335 AM CDT Fri Apr 7 2023

...DENSE FOG ADVISORY IN EFFECT UNTIL 10 AM CDT THIS MORNING...

.TODAY...Southeast winds around 5 knots. Waves 1 foot or less. Areas of dense fog this morning. A slight chance of showers and thunderstorms this afternoon.
.TONIGHT...Southeast winds around 5 knots. Waves 1 foot or less. A chance of showers with a slight chance of thunderstorms in the evening, then showers likely with a chance of thunderstorms after midnight.
.SATURDAY...Southeast winds 5 to 10 knots. Waves 1 foot or less. Showers with a chance of thunderstorms.
.SATURDAY NIGHT...Northeast winds 5 to 10 knots. Waves 1 foot or less. A slight chance of thunderstorms. A chance of showers, mainly in the evening.
.SUNDAY...Northeast winds 10 to 15 knots. Waves 1 foot or less.
.SUNDAY NIGHT...Northeast winds 10 to 15 knots with gusts up to 20 knots. Waves 1 foot or less. A slight chance of showers and thunderstorms in the evening.
.MONDAY...Northeast winds 10 to 15 knots. Waves 1 foot or less. A

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slight chance of showers in the afternoon.
.MONDAY NIGHT...Northeast winds 10 to 15 knots. Waves 1 foot or
less. A slight chance of showers in the evening, then a chance of
showers with a slight chance of thunderstorms after midnight.
.TUESDAY...Northeast winds around 15 knots. Waves 1 foot or less.
A chance of showers with a slight chance of thunderstorms.
.TUESDAY NIGHT...Northeast winds 15 to 20 knots. Waves 1 foot or
less. A chance of showers with a slight chance of thunderstorms.

Winds and waves higher in and near thunderstorms.

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Example 3: (Small Craft Advisory)

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FZUS56 KLOX 071019
CWFLOX

Coastal Waters Forecast for California
National Weather Service Los Angeles/Oxnard CA
319 AM PDT Fri Apr 7 2023

Point Piedras Blancas to San Mateo Point CA out 60 NM including the
Channel Islands National Marine Sanctuary

PZZ600-072330-
319 AM PDT Fri Apr 7 2023

Synopsis for the southern California coast and Santa Barbara
Channel including the Channel Islands National Marine Sanctuary
and National Park...at 10Z, or 3 AM PDT, a a 1023 MB surface high
 was located 700 NM southwest of Los Angeles. A low pressure
system was off the coast of British Columbia with a weak cold
front extending through San Francisco.

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PZZ673-072330-
Waters from Pt. Sal to Santa Cruz Island CA and westward 60 nm
including San Miguel and Santa Rosa Islands-
319 AM PDT Fri Apr 7 2023

...SMALL CRAFT ADVISORY IN EFFECT THROUGH SATURDAY MORNING...

.TODAY...NW winds 15 to 20 kt with gusts to 25 kt. Strongest around
Point Conception. Combined seas 4 to 5 ft dominant period
9 seconds. A slight chance of rain in the afternoon.
.TONIGHT...W winds 15 to 20 kt with gusts to 25 kt in the evening,
becoming NW 10 to 20 kt with gusts to 25 kt. Strongest around Point
Conception. Combined seas 5 to 6 ft dominant period 10 seconds.
Patchy fog after midnight.
.SAT...NW winds 10 to 15 kt. Wind waves 2 ft or less. NW swell 5 ft
at 9 seconds. Patchy fog in the morning.
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.SAT NIGHT...NW winds 10 to 20 kt in the evening, becoming 10 to
15 kt. Wind waves 2 to 3 ft. NW swell 4 to 5 ft at 9 seconds.
.SUN...NW winds 10 to 15 kt. Wind waves 1 to 3 ft. NW swell 6 to
7 ft at 9 seconds, building to 8 ft at 9 seconds in the afternoon.
.SUN NIGHT...NW winds 15 to 20 kt with gusts to 25 kt in the
evening, becoming 10 to 15 kt with gusts to 20 kt. Wind waves 2 to
4 ft. NW swell 8 ft at 9 seconds. Patchy fog after midnight.
.MON...NW winds 15 to 25 kt. Combined seas 8 to 10 ft. Patchy fog.
.TUE...NW winds 20 to 30 kt with gusts to 45 kt. Combined seas
11 to 14 ft. Patchy fog.

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Example 4: (Freezing Spray Warning and Small Craft Advisory)

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FZAK52 PAFC 071153
CWFALU

Coastal Waters Forecast
National Weather Service Anchorage Alaska
353 AM AKDT Fri Apr 7 2023

Coastal Waters Forecast for Southwest Alaska+Bristol Bay+The
Alaska Peninsula Waters and the Aleutian Islands up to 100 nm out.

Wind forecasts reflect the predominant speed and direction
expected. Sea forecasts represent an average of the highest
one-third of the combined wind wave and swell height.

PKZ199-080030-
353 AM AKDT Fri Apr 7 2023
.SYNOPSIS FOR SOUTHWEST ALASKA+BRISTOL BAY+THE ALASKA
PENINSULA WATERS AND THE ALEUTIAN ISLANDS...

A 997 mb low 65 nm west of Saint Paul moves over the eastern
Aleutians Sat morning and dissipates. A Kamchatka front extends
across the western Aleutians on Sat afternoon and then pushes
eastward to the central and eastern Aleutians by Sun morning.

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PKZ756-080030-
Port Heiden to Nelson Lagoon out to 15 NM-
353 AM AKDT Fri Apr 7 2023

...HEAVY FREEZING SPRAY WARNING TONIGHT AND SATURDAY...
...SMALL CRAFT ADVISORY TONIGHT AND SATURDAY...

.TODAY...N wind 20 kt. Seas 3 ft. Freezing spray.
.TONIGHT...N wind 30 kt. Seas 7 ft. Heavy freezing spray.
.SAT...NW wind 30 kt. Seas 9 ft. Heavy freezing spray.
.SAT NIGHT...NW wind 25 kt. Seas 8 ft.
.SUN...NW wind 25 kt. Seas 6 ft.
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.MON...E wind 20 kt. Seas 4 ft.
.TUE...SW wind 20 kt. Seas 5 ft.

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Example 5: (Marine sanctuary and Alternate Language)

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FZZS50 NSTU 070809
CWFPPG

Coastal Waters Forecast
National Weather Service Pago Pago AS
909 PM SST Thu Apr 6 2023

American Samoa coastal waters out to 40 nautical miles including
National Marine Sanctuary of American Samoa

PSZ100-072115-
909 PM SST Thu Apr 6 2023

.Synopsis for American Samoa coastal waters...A pressure gradient
over the islands will generate breezy to strong winds on the
weekend. Seas will also build to rough and hazardous conditions on
the weekend and the beginning of the new week.

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PSZ152-154>159-072115-
Swains Island-Pago Pago Harbor-
Northern Coastal waters of Tutuila and Aunuu-
Southern Coastal waters of Tutuila and Aunuu-
Northern Coastal waters of Manua-Southern Coastal waters of Manua-
Coastal waters of Rose Atoll-
909 PM SST Thu Apr 6 2023

...There are no warnings...

.REST OF TONIGHT...East winds 10 to 15 knots. Seas 5 to 7 ft.
Scattered showers.
.FRIDAY...East winds 15 to 20 knots. Seas 6 to 8 ft. Scattered
showers.
.FRIDAY NIGHT AND SATURDAY...East winds 15 to 20 knots. Seas
building 7 to 9 ft. Scattered showers.
.SATURDAY NIGHT THROUGH SUNDAY NIGHT...East winds 20 to 25 knots.
Seas 7 to 9 ft. Scattered showers.
.MONDAY...East winds 20 to 25 knots diminishing 10 to 20 knots at
night. Seas 7 to 9 ft. Numerous showers.
.TUESDAY...East winds 10 to 15 knots. Seas subsiding 5 to 7 ft.
Numerous showers.

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The next scheduled forecast will be issued at 700 AM SST.
For the other forecasts and model data go to our web page
http://www.weather.gov/ppg

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.VAAIGA LAUTELE O LE TAU MO GATAIFALE O AMERIKA SAMOA...O le a
malolosi savili i luga o le atunuu i le faaiuga o lenei vaiaso. O
le a faapea foi ona sousou ma si'isi'i le sami seia oo atu i le
amataga o le vaiaso fou.

...E leai ni lapataiga...

.PO O TOTOE...Savili mai sasa'e 10 i le 15 note. Sami e 5 i le 7 ft.
E taape solo timu.
.ASO FARAILE...Savili mai sasa'e 15 i le 20 note. Sami e 6 i le 8
ft. E taape solo timu.
.PO ASO FARAILE MA LE ASO TOONA'I...Savili mai sasa'e 15 i le 20
note. Sami e si'isi'i 7 i le 9 ft. E taape solo timu.
.PO ASO TOONA'I E OO I LE PO ASO SA...Savili mai sasa'e 20 i le 25
note. Sami e 7 i le 9 ft. E taape solo timu.
.ASO GAFUA...Savili mai sasa'e 20 i le 25 note faaitiitia 10 i le
20 note i le po. Sami e 7 i le 9 ft. E toulu timuga.
.ASO LUA...Savili mai sasa'e 10 i le 15 note. Sami e faaitiitia 5
i le 7 ft. E toulu timuga.

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Example 6: (Brisk Wind Advisory and visibility 1 NM or less)

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FZAK51 PAFG 071304
CWFNSB

Coastal Waters Forecast for Arctic Alaska
National Weather Service Fairbanks AK
504 AM AKDT Fri Apr 7 2023

Arctic Alaska Coastal Waters out 100 NM

Wind forecasts reflect the predominant speed and direction
expected. Sea forecasts represent the average of the highest one-
third of the combined wind-wave and swell height.

PKZ298-080245-
504 AM AKDT Fri Apr 7 2023

.SYNOPSIS FOR ARCTIC COAST...
A 992mb low will develop about 250 nm east-northeast of Barter
Island this afternoon while high pressure will hold in the Arctic
Plain. The low will move north and be about 300 nm northeast of
Barter Island by Saturday morning. A second low at about 997mb
will develop about 100 nm northwest of Utqiagvik Saturday
morning and move west over the Chukchi Sea.
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PKZ861-080245-
Flaxman Island to Demarcation Point from 15 to 75 NM-
504 AM AKDT Fri Apr 7 2023

...BRISK WIND ADVISORY IN EFFECT FROM EARLY THIS AFTERNOON
THROUGH LATE FRIDAY NIGHT...

.TODAY...W winds 25 kt. Blowing snow. Snow. Vsby 1 NM or less.
.TONIGHT...W winds 25 kt. Blowing snow. Vsby 1 NM or less.
.SAT...W winds 15 kt.
.SAT NIGHT...NE winds 10 kt.
.SUN...E winds 15 kt.
.SUN NIGHT...NE winds 10 kt.
.MON...NW winds 15 kt.
.TUE...NW winds 10 kt.

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Example 7: (Experimental CWF including wave detail information from WFO Wilmington, NC)

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AMZ200-080500-
1205 PM EDT Fri Apr 7 2023

.Synopsis for coastal waters from Surf City North Carolina to
South Santee River South Carolina out to 20 nautical miles...
A strong cold front will slowly drop southward across the waters
during today. Hazardous marine conditions are expected after its
passage, culminating with SCA conditions tonight and reaching a
long term Gale during Easter Weekend across all waters. This the
result of strong high pressure wedging across the Carolinas in
conjunction with low pressure slowly moving along the stalled
front offshore. Improving conditions expected early next week as
the low moves finally further away from the U.S. mainland.

AMZ250-080500-
Coastal waters from Surf City to Cape Fear NC out 20 nm-
1205 PM EDT Fri Apr 7 2023

...SMALL CRAFT ADVISORY IN EFFECT FROM 6 PM EDT THIS EVENING
THROUGH SATURDAY MORNING...
...GALE WARNING IN EFFECT FROM SATURDAY MORNING THROUGH MONDAY
MORNING...

.THIS AFTERNOON...SE winds 5 to 10 kt, becoming E 15 to 20 kt
with gusts up to 25 kt late. Seas 2 to 4 ft. Wave Detail: SE 2 ft
at 8 seconds and SE 2 ft at 3 seconds. A slight chance of showers
early, then a chance of showers late.
.TONIGHT...NE winds 20 to 25 kt, increasing to 25 to 30 kt after
midnight. Seas 4 to 6 ft, building to 6 to 8 ft after midnight.
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Wave Detail: NE 5 ft at 5 seconds and SE 2 ft at 8 seconds, becoming E 7 ft at 6 seconds and SE 1 ft at 8 seconds. A chance of rain in the evening, then rain likely after midnight.
.SAT...NE winds 25 to 30 kt with gusts up to 40 kt. Seas 7 to 10 ft. Wave Detail: E 9 ft at 7 seconds. Rain.
.SAT NIGHT...NE winds 30 to 35 kt with gusts up to 45 kt. Seas 8 to 11 ft. Wave Detail: E 10 ft at 8 seconds. Rain.
.SUN...NE winds 30 to 40 kt. Seas 9 to 12 ft. Wave Detail: E 12 ft at 9 seconds. Rain in the morning, then showers likely in the afternoon.
.SUN NIGHT...NE winds 30 to 35 kt, diminishing to 25 to 30 kt after midnight. Gusts up to 45 kt. Seas 9 to 12 ft. Wave Detail: E 11 ft at 11 seconds and E 1 ft at 4 seconds. A chance of showers.
.MON...NE winds 25 to 30 kt, diminishing to 15 to 20 kt. Seas 7 to 10 ft, subsiding to 5 to 8 ft after midnight.
.TUE...NE winds 10 to 15 kt, diminishing to 5 to 10 kt. Seas 5 to 7 ft, subsiding to 4 to 5 ft.