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Operations and Services
Marine and Coastal Weather Services, NWSPD 10-3
MARINE WEATHER MESSAGE

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SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-315, *Marine Weather Message*, dated February 11, 2020. This directive includes the following changes:

1. Addition of WSO Pago Pago language in Section 1, Introduction.
2. Updated all examples in Appendix A. Added a Table of Contents within Appendix A and removed the Appendix A detail from the primary Table of Contents on page 3.

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Marine Weather Message

Table of Contents **Page**

1 Introduction ... 3
2 Marine Weather Event ... 3
2.1 Marine Weather Event Beginning Time ... 3
2.2 Marine Weather Event Ending Time ... 3
2.3 Event Tracking Number (ETN) and Storm/Cyclone Identifier Number ... 4
3 Multi-tiered Concept ... 4
4 Marine Weather Outlook (product category HWO or MWS) ... 4
4.1 Mission Connection ... 4
4.2 Issuance Guidelines ... 5
4.3 Technical Description ... 5
5 Marine Weather Watches (product category MWW) ... 5
5.1 Mission Connection ... 5
5.2 Issuance Guidelines ... 5
5.2.1 Creation Software ... 5
5.2.2 Issuance Criteria ... 5
5.2.2.1 Marine Weather Watch Products ... 5
5.2.3 Issuance Time ... 6
5.2.4 Valid Time ... 6
5.2.5 Product Expiration Time ... 6
5.2.6 Event Ending Time ... 7
5.3 Technical Description ... 7
5.3.1 Universal Geographic Code (UGC) Type ... 7
5.3.2 Mass News Disseminator (MND) Broadcast Instruction Line ... 7
5.3.3 MND Product Type Line ... 7
5.3.4 Marine Weather Watch Content ... 7
5.3.4.1 Segmented Forecast Information ... 7
5.4 Updates, Cancellations, and Corrections ... 10
5.5 Upgrade Watch to Warning or Advisory ... 11
5.5.1 Upgrade Watch to Warning Segment Examples ... 11
6 Marine Weather Warnings (product category MWW) ... 12
6.1 Mission Connection ... 12
6.2 Issuance Guidelines ... 12
6.2.1 Creation Software ... 12
6.2.2 Issuance Criteria ... 12
6.2.2.1 Marine Weather Warning Products ... 12
6.2.3 Issuance Time ... 13
6.2.4 Valid Time ... 13
6.2.5 Product Expiration Time ... 13
6.2.6 Event Ending Time ... 14
6.3 Technical Description ... 14
6.3.1 UGC Type ... 14
6.3.2 MND Broadcast Instruction Line ... 14
6.3.3 MND Product Type Line ... 14
6.3.4 Marine Weather Warning Content ... 14

6.3.4.1 Segmented Forecast Information....14
6.4 Updates, Cancellations, and Corrections....18
6.5 Downgrade Warning to Advisory....18
6.5.1 Downgrade Warning to Advisory Segment Example....18
6.6 Upgrade Tropical Storm Warning to Hurricane Warning....18
6.6.1 Upgrade Tropical Storm Warning to Hurricane Warning Segment Example....18
7 Marine Weather Advisories (product category MWW)....19
7.1 Mission Connection....19
7.2 Issuance Guidelines....19
7.2.1 Creation Software....19
7.2.2 Issuance Criteria....19
7.2.2.1 Marine Weather Advisory Products....19
7.2.3 Issuance Time....20
7.2.4 Valid Time....20
7.2.5 Product Expiration Time....21
7.2.6 Event Ending Time....21
7.3 Technical Description....21
7.3.1 UGC Type....21
7.3.2 MND Broadcast Instruction Line....21
7.3.3 MND Product Type Line....21
7.3.4 Marine Weather Advisory Content....21
7.3.4.1 Segmented Forecast Information....21
7.4 Updates, Amendments, and Corrections....24
7.5 Upgrade Advisory to Warning....25
7.5.1 Upgrade Advisory to Warning Segment Example....25

APPENDIX A — Marine Weather Message Product Examples....A-1

1 Introduction

This procedural directive describes the marine weather message products issued by National Weather Service (NWS) Weather Forecast Offices (WFOs) serving the U.S. coastal waters and Great Lakes (except in Alaska) and Weather Service Office (WSO) Pago Pago, guidelines associated with each product including detailed content and format.

2 Marine Weather Event

A marine weather event is a meteorological phenomenon that impacts public safety, transportation, and/or commerce. A marine weather event (watch/warning/advisory) will apply to an entire marine zone.

2.1 Marine Weather Event Beginning Time

A marine weather event begins either when the issuance criteria are forecast to be initially met or exceeded, or when public safety, transportation and/or commerce are adversely affected as a direct result of the expected or occurring meteorological conditions before criteria are met.

2.2 Marine Weather Event Ending Time

A marine weather event ends when the issuance criteria are forecast to no longer be met, when meteorological conditions are expected to no longer pose a threat to public safety, transportation and/or commerce, or when such conditions are forecast to end.

2.3 Event Tracking Number (ETN) and Storm/Cyclone Identifier Number

The ETN used for tropical hazards in the Marine Weather Message (MWW) comes from the storm/cyclone identifier number assigned in the tropical cyclone public advisory (TCP) associated with the storm. Section 1.1.3.4 of NWS Instruction (NWSI) 10-607, *Tropical Cyclone Forecasts Center Products*, points to the location of the storm/cyclone identifier number in the TCP Mass News Disseminator (MND) header. Information about the numbering process for ETNs and storm/cyclone identifier numbers for tropical cyclone watches and warnings is outlined in section 2.1.6.1 of NWSI 10-1703, *Valid Time Event Code (VTEC)*.

3 Multi-tiered Concept

The NWS marine weather warning program should use, when appropriate, the multi-tiered concept to increase public awareness and promote a proper response to the impending hazardous marine weather event. Generically, the multi-tiered concept is:

a. **Outlook:** An outlook is used to indicate that a hazardous marine weather event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event. Marine outlooks are issued with a Hazardous Weather Outlook (HWO) and/or a Marine Weather Statement (MWS).

b. **Watch:** A watch is used when the risk of a hazardous marine weather event has increased, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so.

c. **Warning:** A warning is used when a hazardous marine weather event is occurring, is imminent, or has a very high probability of occurrence. A warning is used for conditions posing a threat to life or property.

d. **Advisory:** An advisory is used for less serious conditions that cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property.

To properly apply the multi-tiered concept, it is important to have agreement between the forecast staff and other affected WFOs/WSOs to reach a forecast consensus. This will increase consistency and decrease geographical/time discontinuities, especially for the longer duration products like outlooks and watches. Proper coordination will enable the NWS to speak with one voice when alerting users to the potential for such an event.

4 Marine Weather Outlook (product category HWO or MWS)

4.1 Mission Connection

Marine Weather Outlooks provide our users and partners three- to five-day advance notice of a hazardous marine weather event which has the potential to threaten life or property. The primary goal of this product is to provide information to those who need considerable lead time to prepare for the event.

4.2 Issuance Guidelines

WFOs/WSOs should use the HWO and/or the MWS to highlight hazardous marine weather conditions beyond 48 hours.

4.3 Technical Description

Marine Weather Outlooks should follow the format and content described in NWSI 10-517, *Multi-Purpose Weather Products Specification*, section 4.3 for the HWO, and NWSI 10-314, *Marine Weather Statements*, section 2.3 for the MWS.

5 Marine Weather Watches (product category MWW)

5.1 Mission Connection

Marine Weather Watches provide our users and partners 12 to 48 hours advance notice of hazardous marine weather events which have the potential to threaten life or property. The primary goal of this product is to provide enough lead time for mariners who may wish to consider altering their plans.

5.2 Issuance Guidelines

5.2.1 Creation Software

WFOs will use the Advanced Weather Interactive Processing System (AWIPS) Graphical Hazard Generator (GHG) as the primary software to create and issue Marine Weather Watches.

5.2.2 Issuance Criteria

WFOs should issue a Marine Weather Watch when conditions are favorable for a hazardous marine weather event to develop over part or all of the marine forecast area, but the occurrence is uncertain. WFOs should issue a Marine Weather Watch for the second, third, fourth, or occasionally fifth forecast periods (i.e. 6 am to 6 pm) when there is a significant chance of a hazardous marine weather event meeting or exceeding warning criteria. See Section 2.2.3 of NWSI 10-310 for forecast period details.

5.2.2.1 Marine Weather Watch Products

All possible Marine Weather Watch products affecting marine areas and subsequent issuance criteria are listed in Table 1. Marine MWW Watch products in Table 1 will follow the WHAT, WHERE, WHEN, IMPACTS, ADDITIONAL DETAILS (optional), and PRECAUTIONARY/PREPAREDNESS format as described in section 5.3.4.1.

Table 1: Marine Weather Watch Product Table

Marine Watch Product Name	Issuance Criteria
Gale Watch	Conditions are favorable for a gale force wind event to meet the Gale Warning criteria of sustained winds or frequent gusts* of 34 knots (39 mph) to 47 knots (54 mph) in the next 12 to 60 hours.

Storm Watch	Conditions are favorable for a storm force wind event to meet Storm Warning criteria of sustained winds or frequent gusts* of 48 knots (55 mph) to 63 knots (73 mph) in the next 12 to 60 hours.
Hurricane Force Wind Watch	Conditions are favorable for a hurricane force wind event to meet or exceed Hurricane Force Wind Warning criteria of sustained winds or frequent gusts* of 64 knots (74 mph) or greater in the next 12 to 60 hours.
Heavy Freezing Spray Watch	Conditions are favorable for a heavy freezing spray event to meet Heavy Freezing Spray Warning criteria in the next 12 to 60 hours.
Hazardous Seas Watch	Conditions are favorable for a hazardous seas event to meet or exceed Hazardous Seas Warning criteria in the next 12 to 60 hours.
Tropical Storm Watch for the Atlantic, Eastern Pacific, Central Pacific, and western North Pacific Hurricane basins	Sustained winds of 34 to 63 knots (39 to 73 mph or 63 to 118 km/hour) are possible within the specified area within 48 hours in association with a potential or ongoing tropical cyclone, a subtropical cyclone, or a post-tropical cyclone.
Hurricane/Typhoon Watch for the Atlantic, Eastern Pacific, Central Pacific, and western North Pacific hurricane basins	Sustained winds of 64 knots (74 mph or 119 km/hour) or higher are possible within the specified area in association with a potential or ongoing tropical cyclone, a subtropical cyclone, or a post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane/typhoon watch is issued 48 hours in advance of the anticipated onset of tropical storm force winds.

*Frequent Gusts: For 2 or more hours during a 12-hour forecast period

5.2.3 Issuance Time

The Marine Weather Watch is an event-driven product. WFOs should issue the initial MWW when the watch issuance criteria are met. Subsequent updates are issued at least once every 12 hours until a warning or advisory is issued or the Marine Weather Watch is cancelled.

5.2.4 Valid Time

A Marine Weather Watch is valid for 12 to 60 hours after the issuance time. The valid time (event start and end time) is placed in the Product Valid Time Event Code (P-VTEC) line and described in the watch headline. For tropical storm, hurricane, and typhoon watches, the event starts upon issuance and is in effect until cancelled. Event start and end times are not included in the watch headline because of inherent uncertainties in forecasting tropical cyclones.

5.2.5 Product Expiration Time

The product expiration time is generally 12 hours after the issuance time and is placed at the end of the Universal Geographic Code (UGC) string. The product expiration time is the time when users can expect to receive an updated Marine Weather Watch.

5.2.6 Event Ending Time

The event ending time is when the marine hazardous event is expected to end. The event ending time is placed in the P-VTEC line and described in the watch headline (e.g., GALE WATCH IN EFFECT FROM LATE SUNDAY NIGHT TO MONDAY MORNING). See 5.2.4 for tropical exceptions.

5.3 Technical Description

Marine Weather Watches will follow the format and content described in this section.

5.3.1 Universal Geographic Code (UGC) Type

Marine Weather Watches will use the (Z) form of the UGC.

5.3.2 Mass News Disseminator (MND) Broadcast Instruction Line

Not applicable.

5.3.3 MND Product Type Line

The Marine Weather Watch MND line is “URGENT - MARINE WEATHER MESSAGE”.

5.3.4 Marine Weather Watch Content

The Marine Weather Watch will not contain an overview section, but will include segmented forecast information.

5.3.4.1 Segmented Forecast Information

Each segment of the Marine Weather Watch will include a watch headline. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

a. Watch Headline. The watch headline will include the following elements in the order shown:
   1. Leading ellipsis (...)
   2. Valid watch product name listed in Table 1
   3. Event action phrase defined in Table 2
   4. Appropriate event beginning day and time phrase from Tables 1-3 of NWSI 10-310. **
   5. Appropriate event ending day and time phrase from Tables 1-3 of NWSI 10-310. **
   6. Trailing ellipsis (...)

   Generic Watch Headline Format:
   (1) Used when watch product is in effect:
   ...<watch product name> <event action phrase> FROM <event beginning date and time phrase> THROUGH <event ending date and time phrase>...

   (2) Used to cancel a watch prior to event beginning date and time:
   ...<watch product name> IS CANCELLED...

Event Action Phrase: The event action phrase in the watch headline corresponds with the VTEC action code. Only the following event action phrases in Table 2 will be used in marine weather watch headlines:

Table 2: Event Action Phrases for Marine and Tropical Weather Watch Headlines

VTEC Action Code	Description	Required Event Action Phrase	Include Time/Date Phrase?
NEW	Initial Issuance	IN EFFECT	Yes**
EXA	Expansion of watch area	IN EFFECT	Yes**
EXB*	Expansion of watch area and change to watch valid time	IN EFFECT	Yes
CON	Continuation or update of event	REMAINS IN EFFECT	Yes**
EXT*	Extend/shorten event start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Product cancelled prior to event end time	IS CANCELLED	No
UPG	Upgrade watch - no headline		

* Not valid for tropical hazards.
** Except for tropical hazards.

b. Watch Headline Examples:

1) Initial Issuance:
...GALE WATCH IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

2) Update:
...GALE WATCH REMAINS IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

3) Extended event end time:
...GALE WATCH NOW IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY AFTERNOON...

4) Expansion of watch area and shortened event start and end time:
...GALE WATCH IN EFFECT FROM SATURDAY EVENING THROUGH SUNDAY EVENING...

5) Watch cancelled prior to event end time/date:
...GALE WATCH IS CANCELLED...

6) Initial Issuance:

…TROPICAL STORM WATCH IN EFFECT…

7) Update:
…TROPICAL STORM WATCH REMAINS IN EFFECT…

8) Cancel:
…TROPICAL STORM WATCH IS CANCELLED…

c. Bullet Format. Bullet format MWWs ensure brevity and more efficient communication of critical information. Bullets should be one or two sentences and used to present critical information for a hazardous event.

Watches - The following bullets will be used; "WHAT", "WHERE", "WHEN", and "IMPACTS" followed by "PRECAUTIONARY/PREPAREDNESS ACTIONS". Further details which have not been previously mentioned may be provided in an "ADDITIONAL DETAILS" bullet following the "WHEN" bullet.

The "WHAT" bullet will begin with the expected phenomenon followed by the word "possible". The wording of the phenomenon will remain editable for forecasters. For watch products, the word "possible" is mandatory and will always be followed by a period (.). The content of the "WHAT" bullet should be numerically-specific, when possible, particularly with respect to expected wind speeds, e.g. "Wind speeds 35 to 40 knots with gusts to 45 knots…". Wave hazards may also depend on steepness, but if a specific height range is expected, it should also be included.

Each bulleted segment will be followed by a brief precautionary/preparedness action.

See Figure 1: Generic Format for MWW Watches except for Tropical Storm and Hurricane/Typhoon Watches.

d. Order of Segments: Marine Weather Watches are usually placed last in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:

1. Cancellation
2. Warnings
3. Advisories
4. Watches

e. Multiple Headlines: More than one headline is allowed in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

Example:

Small Craft Advisory and Gale Watch in effect for the same geographical area:
...SMALL CRAFT ADVISORY IN EFFECT UNTIL 9 AM EST THIS MORNING...
...GALE WATCH IN EFFECT FROM THURSDAY AFTERNOON THROUGH FRIDAY AFTERNOON...

Figure 1: Generic MWW Format for Marine Watches

Product Format	Description of Entry
WHaaii cccc ddhhmm	*(WMO Header)*
MWWxxx	*(AWIPS ID)*
URGENT - MARINE WEATHER MESSAGE	*(Product Name* or *MND)*
National Weather Service city state	*(Issuing Office)*
time am/pm time_zone day mon dd yyyy	*(Issuance time/date)*
mmZxxx-xxx-xxx-ddhhmm-	(*UGC: Z and expiration time)*
/k.aaa.cccc.pp.s.####.yymmddThhnnZB- yymmddThhnnZE/	*(P-VTEC Line(s))*
zone-zone-zone-	*(Zone Names)*
time am/pm time_zone day mon dd yyyy	*(Issuance time/date)*
...WATCH HEADLINE...	
* WHAT	*(In bullet format)*
* WHERE	Bullets should be one or two sentences and used to present critical information.
* WHEN	
* IMPACTS	
* ADDITIONAL DETAILS	*(Optional)*
PRECAUTIONARY/PREPAREDNESS ACTIONS...	*(Start of CTA Marker)*
&&	*(End of CTA Marker)*
$$	
Name/Initials/Forecaster ID	*(UGC Delimiter)*
	(Optional after last segment)

5.4 Updates, Cancellations, and Corrections

WFOs will update Marine Weather Watches at least once every 12 hours, or when there is a significant change in timing, areal extent, or expected conditions. WFOs should issue the updated Marine Weather Watch before the product expiration time is reached.

Marine Weather Watches are either upgraded to warnings or advisories, or cancelled.

WFOs will issue a MWW to cancel a watch when the forecaster believes the threat of hazardous marine weather will not develop.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

5.5 Upgrade Watch to Warning or Advisory

When a Marine Weather Watch is upgraded to a Marine Weather Warning or Marine Weather Advisory for the same geographical area, the MWW segment will contain one headline and two P-VTEC lines. The headline will list the new warning or advisory only. The first P-VTEC line will use the upgrade (UPG) action code to show the old marine weather watch is being upgraded. The second P-VTEC line will either use the NEW action code to start the new marine weather warning or advisory, or use the expand in area (EXA) or expand in area and change time (EXB) action code to extend an existing marine weather warning or advisory into this geographical area.

5.5.1 Upgrade Watch to Warning Segment Examples

ANZ052-122200-
/O.UPG.KCAR.SR.A.0002.240113T1200Z-240114T0000Z/ *(P-VTEC line 1)*
/O.NEW.KCAR.SR.W.0001.240113T1200Z-240114T0000Z/ *(P-VTEC line 2)*
Intra Coastal Waters from Schoodic Point, ME to Stonington, ME-
332 AM EST Fri Jan 12 2024

...STORM WARNING IN EFFECT FROM 7 AM TO 7 PM EST SATURDAY...

(Only one headline used - lists active Marine Weather Warning)

<descriptive text>

$$

Tropical Example:

GMZ730-755-765-775-282315-
/O.UPG.KTAE.HU.A.1010.000000T0000Z-000000T0000Z/
/O.NEW.KTAE.HU.W.1010.230828T1506Z-000000T0000Z/
Apalachee Bay or Coastal Waters From Keaton Beach to Ochlockonee River FL out to 20 NM-
Coastal Waters From Ochlockonee River to Apalachicola Fl out to 20 NM-
Coastal waters from Suwannee River to Keaton Beach FL out 20 NM-
Waters from Suwannee River to Apalachicola FL from 20 to 60 NM-
1106 AM EDT Mon Aug 28 2023

...HURRICANE WARNING IN EFFECT...

(Only one headline used - lists active Tropical Weather Warning)

<descriptive text>

$$

6 Marine Weather Warnings (product category MWW)

6.1 Mission Connection

Marine Weather Warnings provide our users and partners advance notice of hazardous marine weather events that threaten life or property.

6.2 Issuance Guidelines

6.2.1 Creation Software

WFOs will use AWIPS GHG as the primary software to create and issue Marine Weather Warnings.

6.2.2 Issuance Criteria

WFOs will issue Marine Weather Warnings when hazardous marine weather is imminent, occurring or highly likely over part or all of the forecast area. WFOs should issue a Marine Weather Warning for the first, second, third, or occasionally fourth forecast periods, when there is high confidence of a hazardous marine weather event meeting or exceeding warning criteria.

6.2.2.1 Marine Weather Warning Products

The list of all possible warning products affecting marine areas and subsequent issuance criteria are listed in Table 3. MWW Marine products in Table 3 will follow the WHAT, WHERE, WHEN, IMPACTS, ADDITIONAL DETAILS (optional), and PRECAUTIONARY/PREPAREDNESS format as described in section 6.3.4.1.

Table 3: Marine Weather Warning Product Table

Warning Product Name	Issuance Criteria
Ashfall Warning	A warning issued for a volcano undergoing a major eruption where mariners will be affected to a significant extent such as greater than or equal to ¼” of ashfall accumulation, significant debris, lava or lahar flows.
Gale Warning	Sustained surface winds, or frequent gusts* in the range of 34 knots (39 mph) to 47 knots (54 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.
Storm Warning	Sustained surface winds, or frequent gusts* in the range of 48 knots (55 mph) to 63 knots (73 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.
Hurricane Force Wind Warning	Sustained winds, or frequent gusts* of 64 knots (74 mph) or greater, either predicted or occurring, and not directly associated with a tropical cyclone.

Heavy Freezing Spray Warning	An accumulation of freezing water droplets on a vessel at a rate of 2 cm per hour or greater caused by some appropriate combination of cold water, wind, cold air temperature, and vessel movement**.
Hazardous Seas Warning	Wave heights and/or wave steepness values meeting or exceeding locally defined warning criteria.
Tropical Storm Warning for the Atlantic, Eastern Pacific, Central Pacific, and Western North Pacific Hurricane basins	Sustained winds of 34 to 63 knots (39 to 73 mph or 63 to 118 km/hour) are expected somewhere within the specified area within 36 hours (24 hours for the western North Pacific) in association with a potential or ongoing tropical cyclone, a subtropical cyclone, or a post-tropical cyclone.
Hurricane/Typhoon Warning for the Atlantic, Eastern Pacific, Central Pacific, and western North Pacific Hurricane basins	Sustained winds of 64 knots (74 mph or 119 km/hour) or higher are expected somewhere within the specified area in association with a potential or ongoing tropical cyclone, a subtropical cyclone, or a post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane/typhoon warning is issued 36 hours in advance of the anticipated onset of tropical storm force winds (24 hours for the western North Pacific). A hurricane or typhoon warning can remain in effect when dangerously high water or a combination of dangerously high water and waves continue, even though winds may be less than hurricane or typhoon force.

*Frequent Gusts: For 2 or more hours during a 12-hour forecast period
**Refer to NWSI 10-303 (Appendix A) for Regional and Local Criteria

6.2.3 Issuance Time

A Marine Weather Warning is an event-driven product and is initially issued when a hazardous marine weather event is expected to meet or exceed local warning criteria. WFOs should issue updated warnings at least once every six to eight hours until the event ends or is cancelled.

6.2.4 Valid Time.

A Marine Weather Warning is valid up to 36 hours after the issuance time. The valid time (event start and end times) is placed in the P-VTEC line(s) and is described in the warning headline. In extreme cases, the valid time may exceed 36 hours from the time of issuance. For tropical storm, hurricane, and typhoon warnings, the event starts upon issuance and is in effect until cancelled. Event start and end times are not included in the warning headline because of inherent uncertainties in forecasting tropical cyclones.

6.2.5 Product Expiration Time

The product expiration time is generally 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC line.

6.2.6 Event Ending Time

The event ending time is when the hazardous marine weather event is expected to end. The event ending time can match the product expiration time if the warning is in effect for eight hours or less. The event ending time is placed in the P-VTEC line and is described in the warning headline (e.g., STORM WARNING IN EFFECT UNTIL 9 AM EST TODAY). The event ending time should generally not exceed 36 hours from the time of issuance. See 6.2.4 for tropical exceptions.

6.3 Technical Description

Marine Weather Warnings will follow the format and content described in this section.

6.3.1 UGC Type

Marine Weather Warnings will use the (Z) form of the UGC.

6.3.2 MND Broadcast Instruction Line

Not applicable.

6.3.3 MND Product Type Line

The Marine Weather Warning MND line is “URGENT - MARINE WEATHER MESSAGE”.

6.3.4 Marine Weather Warning Content

The Marine Weather Warning will not contain an overview section, but will include segmented forecast information.

6.3.4.1 Segmented Forecast Information

Each segment of a Marine Weather Warning will include a warning headline. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

a. Warning Headline. The warning headline should include the following elements in the order shown:
   1. Leading ellipsis (...)
   2. Valid marine weather warning product name listed in Table 3
   3. Event action phrase defined in Table 4
   4. Appropriate event beginning day and time phrase from Tables 1-3 of NWSI 10-310. **
   5. Appropriate event ending day and time phrase from Tables 1-3 of NWSI 10-310. **
   6. Trailing ellipsis (...)

   Generic Warning Headline Format:

   (1) Warning product issuance time prior to event beginning time:
   ...<warning product name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...

(2) Warning product issuance time equals event beginning time:
...<warning product name> <event action phrase> UNTIL <event ending date and time phrase>...

(3) Warning product cancellation or expiration statement:
...<warning product name> <event action phrase>...

Event Action Phrase: The event action phrase in the warning headline corresponds with the VTEC action code. Only the following event action phrases in Table 4 will be used in marine weather warning headlines:

Table 4: Event Action Phrases for Marine Weather Warning Headlines

VTEC Action Code	**Description**	**Required Event Action Phrase**	**Include Time/Date?**
NEW	Initial warning issuance	IN EFFECT	Yes**
EXA	Expansion of warning area	IN EFFECT	Yes**
EXB*	Expansion of warning area and change to warning valid time	IN EFFECT	Yes
CON	Continuation or update of warning	REMAINS IN EFFECT	Yes**
EXT*	Extend/shorten warning start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Warning cancelled prior to event end time	IS CANCELLED	No
EXP*	Advisory approaching the expiration time. Used up to 30 minutes prior to advisory end time.	WILL EXPIRE AT	Yes
	Advisory has expired. Used up to 30 minutes after advisory expiration has passed.	HAS EXPIRED	No
UPG	Upgrade applies only from Tropical Storm Warning to Hurricane Warning. Only Hurricane Warning headline used.	IN EFFECT	No

* Not valid for tropical hazards.
** Except for tropical hazards.

b. Warning Headline Examples:

(1) Initial issuance or expansion in area:
...STORM WARNING IN EFFECT FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...

(2) Update:
...STORM WARNING REMAINS IN EFFECT UNTIL 11 AM EST WEDNESDAY...

(3) Change to event end time:
...STORM WARNING NOW IN EFFECT UNTIL 5 PM EST WEDNESDAY...

(4) Cancelled prior to event end time/date:
...STORM WARNING IS CANCELLED...

(5) Expiration statement up to 30 minutes prior to event end time:
...STORM WARNING WILL EXPIRE AT 5 PM EST THIS AFTERNOON...

(6) Expiration statement up to 30 minutes after event end time:
...STORM WARNING HAS EXPIRED...

(7) Initial issuance:
…TROPICAL STORM WARNING IN EFFECT…

(8) Update:
…TROPICAL STORM WARNING REMAINS IN EFFECT…

(9) Cancel:
…HURRICANE WARNING IS CANCELLED…

c. Bullet Format. Bullet format MWWs ensure brevity and more efficient communication of critical information. Bullets should be one or two sentences and used to present critical information for a hazardous event.

Warning - The following bullets will be used; “WHAT”, “WHERE”, “WHEN”, and “IMPACTS” followed by “PRECAUTIONARY/PREPAREDNESS ACTIONS”. Further details which have not been previously mentioned may be provided in an “ADDITIONAL DETAILS” bullet following the “WHEN” bullet.

The “WHAT” bullet will begin with the expected phenomenon followed by the word “expected.” The wording of the phenomenon will remain editable for forecasters. For warnings the “expected” term may be amended during an event to other terms including “ongoing” or “continuing”, or the ongoing hazard may be described instead of using the word “expected”. The content of the “WHAT” bullet should be numerically-specific, when possible, particularly with respect to expected wind speeds, e.g., “Wind speeds 35 to 40 knots with gusts to 45 knots…”.
Wave hazards may also depend on steepness, but if a specific height range is expected, it should also be included.

Each bulleted segment will be followed by a brief precautionary/preparedness action.

See Figure 2: Generic MWW Format for Warnings

d. Order of Segments. Marine Weather Warnings are placed second in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:
1. Cancellation

2. Warnings
3. Advisories
4. Watches

e. Multiple Headlines. More than one headline is allowed in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

Example:

Gale Warning and Storm Watch in effect for the same geographical area:

...GALE WARNING IN EFFECT UNTIL 9 AM EST THIS MORNING...
...STORM WATCH IN EFFECT FROM THURSDAY AFTERNOON THROUGH FRIDAY AFTERNOON...

Figure 2: Generic MWW Format for Warnings

Product Format	Description of Entry
WHaaii cccc ddhhmm MWWxxx	*(WMO Header)* *(AWIPS ID)*
URGENT - MARINE WEATHER MESSAGE National Weather Service city state time am/pm time_zone day mon dd yyyy	*(Product Name* or *MND) (Issuing Office)* *(Issuance time/date)*
mmZxxx-xxx-xxx-ddhhmm- /k.aaa.cccc.pp.s.####.yymmddThhnnZB-yymmddThhnnZE/ one-zone-zone- time am/pm time_zone day mon dd yyyy	(*UGC: Z & expiration time) (P-VTEC Line(s))* *(Zone Names)* *(Issuance time/date)*
...WARNING HEADLINE...	
* WHAT * WHERE * WHEN * IMPACTS	*(In bullet format)* Bullets should be one or two sentences and used to present critical information.
* ADDITIONAL DETAILS	*(Optional)*
PRECAUTIONARY/PREPAREDNESS ACTIONS...	*(Start of CTA Marker)*
&&	*(End of CTA Marker)*
$$	*(UGC Delimiter)*

Name/Initials/Forecaster ID	*Optional after last segment)*

6.4 Updates, Cancellations, and Corrections

WFOs will update Marine Weather Warnings at least once every six to eight hours until the event ends or is cancelled. WFOs should issue the updated MWW before the product expiration time is reached. Frequent updates help to keep our users and partners informed on the current and short-term aspects of the hazardous weather event. Update warnings whenever there is a change in timing, areal extent, or expected conditions.

WFOs will issue a MWW to cancel a warning when the forecaster believes the weather threat has diminished before the valid time expires.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

6.5 Downgrade Warning to Advisory

When a Marine Weather Warning is downgraded to a Marine Weather Advisory or a lower level warning (e.g., Storm Warning to Gale Warning) for the same geographical area, the MWW segment will contain two P-VTEC lines.

6.5.1 Downgrade Warning to Advisory Segment Example

LHZ421-422-142045-
/O.CAN.KDTX.GL.W.0003.000000T0000Z-240114T0900Z/
/O.NEW.KDTX.SC.Y.0006.240114T0837Z-240115T1500Z/
Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner
Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-
337 AM EST Sun Jan 14 2024

...SMALL CRAFT ADVISORY IN EFFECT UNTIL 10 AM EST MONDAY...
...GALE WARNING IS CANCELLED...

(Two headlines used - lists new advisory, then cancelled warning)

<descriptive text>

$$

6.6 Upgrade Tropical Storm Warning to Hurricane Warning

When a Tropical Storm Warning is upgraded to a Hurricane Warning for the same geographical area, the MWW segment will contain two PVTEC lines but only one headline.

6.6.1 Upgrade Tropical Storm Warning to Hurricane Warning Segment Example

AMZ352-354-374-301715-
/O.UPG.KCHS.TR.W.1010.000000T0000Z-000000T0000Z/
/O.UPG.KCHS.HU.A.1010.000000T0000Z-000000T0000Z/

/O.NEW.KCHS.HU.W.1010.230830T0914Z-000000T0000Z/
Waters from Edisto Beach SC to Savannah GA out 20 NM-
Waters from Savannah GA to Altamaha Sound GA out 20 NM, including
Grays Reef National Marine Sanctuary-
Waters from Savannah GA to Altamaha Sound GA from 20 to 60 NM-
514 AM EDT Wed Aug 30 2023

...HURRICANE WARNING IN EFFECT...

(One headline used – for the new Hurricane Warning)

<descriptive text>

$$

7 Marine Weather Advisories (product category MWW)

7.1 Mission Connection

Marine Weather Advisories provide our users and partners advance notice of hazardous marine weather events which could lead to life-threatening situations if caution is not exercised.

7.2 Issuance Guidelines

7.2.1 Creation Software

WFOs will use AWIPS GHG as the primary software to create and issue Marine Weather Advisories.

7.2.2 Issuance Criteria

WFOs should issue Marine Weather Advisories for hazardous marine weather events that cause significant inconveniences and, if caution is not exercised, could lead to life-threatening situations over part or all of the forecast area.

WFOs should issue Marine Weather Advisories for the first, second, third, or occasionally fourth forecast periods, when there is high confidence of a hazardous marine weather event meeting or exceeding local advisory criteria.

7.2.2.1 Marine Weather Advisory Products

The list of all possible advisory products affecting marine areas and subsequent issuance criteria are listed in Table 5. Marine MWW products in Table 5 will follow the WHAT, WHERE, WHEN, IMPACTS, ADDITIONAL DETAILS (optional), and PRECAUTIONARY/PREPAREDNESS format as described in section 7.4.3.1.

Table 5: Marine Weather Advisory Product Table

Advisory Product Name	**Issuance Criteria**

Ashfall Advisory	An advisory issued for a volcano undergoing a minor eruption where there is the potential that mariners could be affected by a limited hazard extent such as less than ¼" of ashfall accumulation, pumice rafts or some floating debris.
Brisk Wind Advisory	Small Craft Advisory winds expected for ice covered waters.
Dense Fog Advisory	Widespread or localized fog reducing visibilities to 1 nautical mile or less (regionally or locally defined)**.
Dense Smoke Advisory	Widespread or localized smoke reducing visibilities to 1 nautical mile or less (regionally or locally defined)**.
Freezing Spray Advisory	Light to moderate accumulation of ice is expected on vessels.
Low Water Advisory	Water levels are significantly below average and may cause impact to safe marine navigation. The need for this product is locally determined**.
Small Craft Advisory	Sustained wind speeds or frequent gusts* of 20 to 33 knots (regionally defined**) and/or seas or waves 4 feet and greater and/or waves or seas are potentially hazardous due to wave period, steepness, or swell direction and/or waves in or near bars are hazardous to mariners due to the interaction of swell, tidal or river currents in relatively shallow water. (Regionally and locally defined**) Wind speeds are lower than Small Craft Advisory criteria, yet waves or seas are potentially hazardous due to wave period, steepness, or swell direction. The criteria are regionally defined**. Waves in or near bars are hazardous to mariners due to the interaction of swell, tidal or river currents in relatively shallow water. Threshold criteria are locally defined** and are specific to local geographic areas, and are based upon parameters such as wave steepness, wind speed and direction, and local bathymetry. When wave heights and/or wave steepness are lower than Small Craft Advisory criteria, yet wind speeds are potentially hazardous.

*Frequent Gusts: For 2 or more hours during a 12-hour forecast period
**Refer to NWSI 10-303 (Appendix A) for Regional and Local Criteria

7.2.3 Issuance Time

Advisories are event-driven products and are initially issued when a hazardous marine weather event is expected to meet or exceed local advisory criteria. WFOs should issue updated advisories at least once every six to eight hours until the event ends or is cancelled.

7.2.4 Valid Time

A Marine Weather Advisory is valid up to 36 hours after the issuance time. The valid time (event

start and end times) is placed in the P-VTEC line(s) and is described in the warning headline. In extreme cases, the valid time may exceed 36 hours from the time of issuance.

7.2.5 Product Expiration Time

The product expiration time should be 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC line.

7.2.6 Event Ending Time

The event ending time is when the hazardous marine weather event is expected to end. The event ending time can match the product expiration time if the advisory is in effect for eight hours or less. The event ending time is placed in the P-VTEC line and is described in the advisory headline (e.g., SMALL CRAFT ADVISORY IN EFFECT UNTIL 9 AM EST MONDAY). The event ending time should generally not exceed 36 hours from the time of issuance.

7.3 Technical Description

Marine Weather Advisories will follow the format and content described in this section.

7.3.1 UGC Type

Marine Weather Advisories will use the (Z) form of the UGC.

7.3.2 MND Broadcast Instruction Line

Not applicable.

7.3.3 MND Product Type Line

The Marine Weather Advisory MND line is “URGENT - MARINE WEATHER MESSAGE”.

7.3.4 Marine Weather Advisory Content

The Marine Weather Advisory will not contain an overview section, but will include segmented forecast information.

7.3.4.1 Segmented Forecast Information

Each segment of a Marine Weather Advisory will include the advisory headline. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

a. Advisory Headline. The advisory headline should include the following elements in the order shown:

1. Leading ellipsis (...)
2. Valid marine weather advisory product name listed in Table 5
3. Event action phrase defined in Table 6
4. Appropriate event beginning day and time phrase from Tables 1-3 of NWSI 10-310.
5. Appropriate event ending day and time phrase from Tables 1-3 of NWSI 10-310.
6. Trailing ellipsis (...)

Generic Advisory Headline Format:

(1) Advisory product issuance time prior to event beginning time:
...<advisory product name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...

(2) Advisory product issuance time equals event beginning time:
...<advisory product name> <event action phrase> UNTIL <event ending date and time phrase>...

(3) Advisory product cancellation or expiration statement:
...<advisory product name> <event action phrase>...

Event Action Phrase: The event action phrase in the advisory headline corresponds with the VTEC action code. Only the following event action phrases in Table 6 will be used in marine weather advisory headlines:

Table 6: Event Action Phrases for Marine Weather Advisory Headlines

VTEC Action Code	**Description**	**Required Event Action Phrase**	**Include Time/Date?**
NEW	Initial advisory issuance	IN EFFECT	Yes
EXA	Expansion of advisory area	IN EFFECT	Yes
EXB	Expansion of advisory area and change to advisory valid time	IN EFFECT	Yes
CON	Continuation or update of advisory	REMAINS IN EFFECT	Yes
EXT	Extend/shorten advisory start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Advisory cancelled prior to event end time	IS CANCELLED	No
EXP	Advisory approaching the expiration time. Used up to 30 minutes prior to advisory end time	WILL EXPIRE AT	Yes
EXP	Advisory has expired. Used up to 30 minutes after advisory expiration has passed	HAS EXPIRED	No
UPG	Upgrade to warning - no headline		

b. Advisory Headline Examples:

(1) Initial issuance or expansion in area:
...SMALL CRAFT ADVISORY IN EFFECT FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...

(2) Update:
...SMALL CRAFT ADVISORY REMAINS IN EFFECT UNTIL 11 AM EST WEDNESDAY...

(3) Extend event end time:
...SMALL CRAFT ADVISORY NOW IN EFFECT UNTIL 5 PM EST WEDNESDAY...

(4) Cancelled prior to event end time/date:
...SMALL CRAFT ADVISORY IS CANCELLED...

(5) Expiration statement up to 30 minutes prior to event end time:
...SMALL CRAFT ADVISORY WILL EXPIRE AT 5 PM EST THIS AFTERNOON...

(6) Expiration statement up to 30 minutes after event end time:
...SMALL CRAFT ADVISORY HAS EXPIRED…

c. Bullet Format. Bullet format MWWs ensure brevity and more efficient communication of critical information. Bullets should be one or two sentences and used to present critical information for a hazardous event.

The following bullets will be used; “WHAT”, “WHERE”, “WHEN”, and “IMPACTS” followed by “PRECAUTIONARY/PREPAREDNESS ACTIONS”. Further details which haven’t been previously mentioned may be provided in an “ADDITIONAL DETAILS” bullet following the “WHEN” bullet.

For MWW advisory products the “WHAT” bullet will begin with the expected phenomenon followed by the word “expected.” The wording of the phenomenon will remain editable for forecasters. For advisories the “expected” term may be amended during an event to other terms including “ongoing” or “continuing”, or the ongoing hazard may be described instead of using the word “expected”. The content of the “WHAT” bullet should be numerically-specific, when possible, particularly with respect to expected wind speeds, e.g. “Wind speeds 20 to 25 knots with gusts to 30 knots…”. Wave hazards may also depend on steepness, but if a specific height range is expected, it should also be included.

Each bulleted segment will be followed by a brief precautionary/preparedness action.

See Figure 3: Generic Format for a Marine Weather Advisory.

d. Order of Segments. Advisories are placed third in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:

1. Cancellation
2. Warnings
3. Advisories
4. Watches

e. Multiple Headlines. More than one headline is allowed in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

Example: Dense Fog Advisory and Storm Watch in effect for the same geographical area:

...DENSE FOG ADVISORY IN EFFECT UNTIL 9 AM EST THIS MORNING...
...STORM WATCH IN EFFECT FROM THURSDAY AFTERNOON TO FRIDAY AFTERNOON...

Figure 3: Generic Format for a Marine Weather Advisory

Product Format	Description of Entry
WHaaii cccc ddhhmm MWWxxx	*(WMO Header)* *(AWIPS ID)*
URGENT - MARINE WEATHER MESSAGE National Weather Service city state time am/pm time_zone day mon dd yyyy	*(Product Name* or *MND) (Issuing Office) (Issuance time/date)*
mmZxxx-xxx-xxx-ddhhmm- /k.aaa.cccc.pp.s.####.yymmddThhnnZB- yymmddThhnnZE/ zone-zone-zone- time am/pm time_zone day mon dd yyyy	(*UGC: Z & expiration time) (P-VTEC Line(s)) (Zone Names) (Issuance time/date)*
...ADVISORY HEADLINE... * WHAT * WHERE * WHEN	*(In bullet format)* Bullets should be one or two sentences and used to present critical information.
* IMPACTS	*(Optional)*
* ADDITIONAL DETAILS PRECAUTIONARY/PREPAREDNESS ACTIONS...	*(Start of CTA Marker)* *(End of CTA Marker)*
&&	*(UGC Delimiter)*
$$ Name/Initials/Forecaster ID	*(Optional after last segment)*

7.4 Updates, Amendments, and Corrections

WFOs will update advisories at least once every six to eight hours until the event ends or is cancelled. WFOs should issue the updated MWW before the product expiration time is reached. The frequent updates help to keep our users and partners informed on the current and short-term aspects

of the marine weather event. Update advisories whenever there is a change in timing, areal extent, or expected conditions. WFOs will issue a MWW to cancel an advisory when the forecaster believes the weather threat has ended before the valid time expires.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

7.5 Upgrade Advisory to Warning

When a Marine Weather Advisory is upgraded to a Marine Weather Warning for the same geographical area, the MWW segment will contain one headline and two P-VTEC lines. The headline will list the new warning only. The first P-VTEC line will use the UPG action code to show the old advisory is being upgraded. The second P-VTEC line will either use the NEW action code to start the new warning, or use the EXA or EXB action code to extend an existing advisory into this geographical area.

7.5.1 Upgrade Advisory to Warning Segment Example

PZZ210-140400-
/O.UPG.KPQR.SC.Y.0003.000000T0000Z-240114T0600Z/
/O.NEW.KPQR.GL.W.0004.240113T1627Z-240114T0400Z/
Columbia River Bar-
827 AM PST Sat Jan 13 2024

...GALE WARNING IN EFFECT UNTIL 8 PM PST THIS EVENING...

(One headline used - lists new warning only)

<descriptive text>

APPENDIX A – Marine Weather Message Product Examples

1. Gale Watch A-2
2. Gale Warning and Hazardous Seas Warning A-2
3. Hurricane Force Wind Warning and Gale Warning A-3
4. Ashfall Warning A-4
5. Small Craft Advisory A-6
6. Small Craft Advisory with Rough Bar Conditions A-6
7. Cancelled Small Craft Advisory A-6
8. Tropical Storm Watch..... A-7
9. Tropical Storm Warning A-7
10. Hurricane Watch Upgraded to a Hurricane Warning..... A-8
11. Tropical Storm Watch Upgraded to Tropical Storm Warning..... A-9
12. Tropical Storm Warning and Hurricane Watch..... A-10
13. Storm Warning and Gale Warning..... A-11

1. Gale Watch

```
WHUS76 KMFR 090928
MWWMFR

URGENT - MARINE WEATHER MESSAGE
National Weather Service Medford OR
228 AM PDT Fri Jun 9 2023

PZZ356-376-092230-
/O.CON.KMFR.GL.A.0020.230610T2100Z-230612T0300Z/
Coastal waters from Cape Blanco OR to Pt. St. George CA out 10 NM-
Waters from Cape Blanco OR to Pt. St. George CA from 10 to 60 NM-
228 AM PDT Fri Jun 9 2023

...GALE WATCH REMAINS IN EFFECT FROM SATURDAY AFTERNOON THROUGH
SUNDAY EVENING...

* WHAT...North winds 25 to 35 kt with gusts up to 50 kt and seas
  9 to 15 ft at 7 seconds possible.

* WHERE...South of Port Orford.

* WHEN...From Saturday afternoon through Sunday evening.

* IMPACTS...Strong winds and very steep seas could capsize or damage
vessels. Low visibility conditions are possible.

* View the hazard area in detail at https://go.usa.gov/x6hks

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should consider altering plans to avoid strong winds and
very steep seas. Remain in port, seek safe harbor, alter course,
and/or secure the vessel for severe conditions.

&&

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2. Gale Warning and Hazardous Seas Warning

```
WHUS76 KEKA 010944
MWWEKA

URGENT - MARINE WEATHER MESSAGE
National Weather Service Eureka CA
244 AM PDT Sun Oct 1 2023

PZZ470-011745-
/O.CON.KEKA.GL.W.0041.000000T0000Z-231001T1600Z/
```

```
/O.NEW.KEKA.SE.W.0030.231001T1600Z-231002T0700Z/
Pt St George to Cape Mendocino 10 to 60 NM-
244 AM PDT Sun Oct 1 2023

...GALE WARNING REMAINS IN EFFECT UNTIL 9 AM PDT THIS MORNING...
...HAZARDOUS SEAS WARNING IN EFFECT FROM 9 AM THIS MORNING TO
MIDNIGHT PDT TONIGHT...

* WHAT...For the Gale Warning, north winds 25 to 30 kt with
  gusts up to 40 kt and seas 10 to 13 feet. For the Hazardous
  Seas Warning, very steep and hazardous seas 9 to 11 feet
  expected.

* WHERE...Pt St George to Cape Mendocino 10 to 60 NM.

* WHEN...For the Gale Warning, until 9 AM PDT this morning. For
  the Hazardous Seas Warning, from 9 AM this morning to midnight
  PDT tonight.

* IMPACTS...Strong winds will cause hazardous seas which could
  capsize or damage vessels and reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should alter plans to avoid these hazardous conditions.
Remain in port, seek safe harbor, alter course, and/or secure the
vessel for severe conditions.

&&
```

3. Hurricane Force Wind Warning and Gale Warning

```
WHUS76 KMTR 040509
MWWMTR

URGENT - MARINE WEATHER MESSAGE
National Weather Service San Francisco Bay Area
909 PM PST Sat Feb 3 2024

PZZ565-041315-
/O.EXP.KMTR.GL.W.0009.000000T0000Z-240204T0500Z/
/O.UPG.KMTR.SR.W.0002.000000T0000Z-240205T0500Z/
/O.NEW.KMTR.HF.W.0001.240204T1100Z-240205T0000Z/
/O.NEW.KMTR.GL.W.0010.240204T0509Z-240204T1100Z/
Coastal Waters from Point Pinos to Point Piedras Blancas
California out to 10 NM-
909 PM PST Sat Feb 3 2024

...GALE WARNING IN EFFECT UNTIL 3 AM PST SUNDAY...
...HURRICANE FORCE WIND WARNING IN EFFECT FROM 3 AM TO 4 PM PST
SUNDAY...
```

* WHAT...For the Gale Warning, southeast winds 35 to 45 kt with gusts up to 65 kt and seas 10 to 14 ft. For the Hurricane Force Wind Warning, southeast winds 40 to 50 kt with gusts up to 75 kt and seas 19 to 24 ft expected.

* WHERE...Coastal Waters from Point Pinos to Point Piedras Blancas California out to 10 NM.

* WHEN...For the Gale Warning, until 3 AM PST Sunday. For the Hurricane Force Wind Warning, from 3 AM to 4 PM PST Sunday.

* IMPACTS...Extremely strong winds will cause hazardous seas which will likely capsize or damage vessels and severely reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should remain in port, alter course, and/or secure the vessel for extreme conditions.

&&

$$

4. Ashfall Warning

WHUS76 KSEA 071340
MWWSEA

URGENT - MARINE WEATHER MESSAGE
National Weather Service Seattle WA 640 AM PDT Fri May 7 2021

PZZ135-072200-
/O.NEW.KSEW.MH.W.0012.210507T1340Z-210508T0400Z/
Puget Sound and Hood
Canal- 640 AM PDT Fri
May 7 2021

...ASHFALL WARNING IN EFFECT UNTIL 9 PM PDT TONIGHT...

* WHAT...Heavy ashfall from the volcanic eruption of Mount Rainer.

* WHERE...Until 9 PM this evening.

* WHEN...Puget Sound and Hood Canal.

* IMPACTS...Falling volcanic ash and debris can cause respiratory distress in people, and render engines or electronics inoperative.

* ADDITIONAL DETAILS...Additional information is available at

```
vulcan.wr.usgs.gov.

PRECAUTIONARY/PREPAREDNESS ACTIONS...
Vessels should consider remaining in port or avoiding the warning
area. Those with respiratory sensitivities should take extra
precautions to minimize exposure. Protect electronics and cover air
intakes. Remove ash from surfaces with water if possible, to prevent
excessive accumulation.

&&

$$
```

5. Small Craft Advisory

```
WHGM72 PGUM 041824
MWWPQ2

URGENT - MARINE WEATHER MESSAGE
National Weather Service Tiyan GU
424 AM ChST Mon Jun 5 2023

PMZ171-050900-
/O.NEW.PGUM.SC.Y.0044.230604T1824Z-230606T0800Z/
Yap Coastal Waters-
424 AM ChST Mon Jun 5 2023

...SMALL CRAFT ADVISORY IN EFFECT UNTIL 6 PM LST TUESDAY...

* WHAT...West to southwest winds 15 to 20 kt with gusts up to 30
kts. Combined seas of 4 to 6 feet may build to between 6 and 8 feet.

* WHERE...Yap Coastal Waters.

* WHEN...Until 6 PM LST Tuesday.

* IMPACTS...Conditions will be hazardous to small craft.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Inexperienced mariners, especially those operating smaller vessels,
should avoid boating in hazardous conditions.

&&

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6. Small Craft Advisory with Rough Bar Conditions

```
WHUS76 KPQR 141759
MWWPQR

URGENT - MARINE WEATHER MESSAGE
National Weather Service Portland OR
959 AM PST Sat Jan 14 2023

PZZ210-141900-
/O.CON.KPQR.SC.Y.0008.000000T0000Z-230114T1900Z/
Columbia River Bar-
959 AM PST Sat Jan 14 2023

...SMALL CRAFT ADVISORY REMAINS IN EFFECT UNTIL 11 AM PST THIS
MORNING...

* WHAT...Rough bar conditions expected. Seas 6 to 9 ft, except to 10
ft during the 3.72 kt ebb current at 931 AM Saturday morning. East
wind 10 to 15 kt with gusts to 25 kt.

* WHERE...In the Main Channel of the Columbia River Bar.

* WHEN...Until 11 AM PST this morning.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A Small Craft Advisory means that wave conditions are expected to be
hazardous to small craft in or near harbor entrances.

&&

$$
```

7. Cancelled Small Craft Advisory

```
WHHW70 PHFO 071332
MWWHFO

URGENT - MARINE WEATHER MESSAGE
National Weather Service Honolulu HI
332 AM HST Fri Apr 7 2023

PHZ115-117-118-071445-
/O.CAN.PHFO.SC.Y.0012.000000T0000Z-230407T1600Z/
Oahu Leeward Waters-Maui County Windward Waters-Maui County Leeward
Waters-
332 AM HST Fri Apr 7 2023

...SMALL CRAFT ADVISORY IS CANCELLED...

Winds have fallen below advisory criteria.
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$$
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8. Tropical Storm Watch

```
WHUS72 KKEY 272138
MWWKEY

URGENT - MARINE WEATHER MESSAGE
National Weather Service Key West FL
538 PM EDT Sun Aug 27 2023

GMZ033-034-055-075-280400-
/O.NEW.KKEY.TR.A.1010.230827T2138Z-000000T0000Z/
Gulf of America waters from East Cape Sable to Chokoloskee 20 to 60 NM
out and beyond 5 fathoms-
Gulf of America including Dry Tortugas and Rebecca Shoal Channel-
Straits of Florida from Halfmoon Shoal to 20 NM west of Dry Tortugas out
20 NM-
Straits of Florida from Halfmoon Shoal to 20 NM west of Dry Tortugas 20
to 60 NM out-
538 PM EDT Sun Aug 27 2023

...TROPICAL STORM WATCH IN EFFECT...

* WHAT...Southeast winds 25 to 35 kt with gusts up to 50 kt and seas 8 to
13 ft.

* WHERE...Gulf of America beyond 5 fathoms including the Dry Tortugas,
Straits of Florida from Halfmoon Shoal to 20 NM west of Dry Tortugas out
20 NM, and Straits of Florida from
  Halfmoon Shoal to 20 NM west of Dry Tortugas 20 to 60 NM out.

* WHEN...Tropical Storm force winds possible from early Tuesday morning
until early Wednesday morning.

* IMPACTS...A Tropical Storm Watch is issued when sustained winds of 34
to 63 knots associated with a tropical storm are possible within 48
hours.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should consider altering plans to avoid possible hazardous
conditions. Remain in port, seek safe harbor, alter course, and/or
secure the vessel for severe wind and seas.

&&

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9. Tropical Storm Warning

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WHUS72 KMFL 292111
MWWMFL

URGENT - MARINE WEATHER MESSAGE
National Weather Service Miami FL
511 PM EDT Tue Aug 29 2023

GMZ656-657-676-300515-
/O.CON.KMFL.TR.W.1010.000000T0000Z-000000T0000Z/
Coastal waters from Chokoloskee to Bonita Beach FL out 20 NM-
Coastal waters from East Cape Sable to Chokoloskee FL out 20 NM-
Waters from Chokoloskee to Bonita Beach FL from 20 to 60 NM-
511 PM EDT Tue Aug 29 2023

...TROPICAL STORM WARNING REMAINS IN EFFECT...

* WHAT...Northeast winds 25 to 35 kt with gusts up to 50 kt and seas
9 to 14 ft.

* WHERE...Coastal waters from Chokoloskee to Bonita Beach FL out 20
NM, Coastal waters from East Cape Sable to Chokoloskee FL out 20 NM
and Waters from Chokoloskee to Bonita Beach FL from 20 to 60 NM.

* WHEN...Tropical Storm force winds possible until early Wednesday
morning.

* IMPACTS...Very strong winds will cause hazardous seas which could
capsize or damage vessels and reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should alter plans to avoid these hazardous conditions.
Remain in port, seek safe harbor, alter course, and/or secure the
vessel for severe conditions.

&&

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10. Hurricane Watch Upgraded to a Hurricane Warning

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WHUS72 KTBW 281507
MWWTBW

URGENT - MARINE WEATHER MESSAGE
National Weather Service Tampa Bay Ruskin FL
1107 AM EDT Mon Aug 28 2023
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GMZ830-850-853-870-873-876-282315-
/O.UPG.KTBW.HU.A.1010.000000T0000Z-000000T0000Z/
/O.NEW.KTBW.HU.W.1010.230828T1507Z-000000T0000Z/
Tampa Bay waters-
Coastal waters from Tarpon Springs to Suwannee River FL out 20 NM-
Coastal waters from Englewood to Tarpon Springs FL out 20 NM-
Waters from Tarpon Springs to Suwannee River FL out 20 to 60 NM-
Waters from Englewood to Tarpon Springs FL out 20 to 60 NM-
Waters from Bonita Beach to Englewood FL out 20 to 60 NM-
1107 AM EDT Mon Aug 28 2023

...HURRICANE WARNING IN EFFECT...

* WHAT...Southeast winds 40 to 60 kt with gusts up to 90 kt and
seas 19 to 24 ft.

* WHERE...Portions of the Gulf of America.

* WHEN...Hurricane force winds possible Tuesday through Wednesday
afternoon.

* IMPACTS...Extremely strong winds will cause hazardous seas which
will likely capsize or damage vessels and severely reduce
visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should remain in port, alter course, and/or secure the
vessel for extreme conditions.

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11. Tropical Storm Watch Upgraded to Tropical Storm Warning

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WHUS72 KILM 292059
MWWILM

URGENT - MARINE WEATHER MESSAGE
National Weather Service Wilmington NC
459 PM EDT Tue Aug 29 2023

AMZ250-252-254-256-300500-
/O.UPG.KILM.TR.A.1010.000000T0000Z-000000T0000Z/
/O.NEW.KILM.TR.W.1010.230829T2059Z-000000T0000Z/
Coastal waters from Surf City to Cape Fear NC out 20 NM-
Coastal waters from Cape Fear NC to Little River Inlet SC out 20 NM-
Coastal waters from Little River Inlet to Murrells Inlet SC out 20 NM-
Coastal waters from Murrells Inlet to South Santee River SC out 20 NM-
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459 PM EDT Tue Aug 29 2023

...TROPICAL STORM WARNING IN EFFECT...

* WHAT...East winds 30 to 40 kt with gusts up to 55 kt and seas 7 to
12 ft.

* WHERE...Southeast North Carolina and Northeast South Carolina
coastal waters.

* WHEN...Wednesday night through Thursday.

* IMPACTS...Very strong winds will cause hazardous seas which could
capsize or damage vessels and reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should alter plans to avoid these hazardous conditions.
Remain in port, seek safe harbor, alter course, and/or secure the
vessel for severe conditions.

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12. Tropical Storm Warning and Hurricane Watch

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WHUS72 KMFL 072106
MWWMFL

URGENT - MARINE WEATHER MESSAGE
National Weather Service Miami FL
406 PM EST Mon Nov 7 2022

AMZ650-670-080515-
/O.CAN.KMFL.SC.Y.0034.000000T0000Z-221108T1200Z/
/O.NEW.KMFL.TR.W.1017.221107T2106Z-000000T0000Z/
/O.CON.KMFL.HU.A.1017.000000T0000Z-000000T0000Z/
Coastal waters from Jupiter Inlet to Deerfield Beach FL out 20 NM-
Waters from Jupiter Inlet to Deerfield Beach FL from 20 to 60 NM-
406 PM EST Mon Nov 7 2022

...TROPICAL STORM WARNING IN EFFECT...
...HURRICANE WATCH REMAINS IN EFFECT...
...SMALL CRAFT ADVISORY IS CANCELLED...

* WHAT...For the Tropical Storm Warning and Hurricane Watch, north winds
35 to 55 kt with gusts up to 75 kt and seas 22 to 27 ft.

* WHERE...Coastal waters from Jupiter Inlet to Deerfield Beach FL out 20
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NM and Waters from Jupiter Inlet to Deerfield Beach FL from 20 to 60 NM.

* WHEN...Tropical Storm force winds possible from Wednesday morning until Friday.

* IMPACTS...Extremely strong winds will cause hazardous seas which will likely capsize or damage vessels and severely reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should remain in port, alter course, and/or secure the vessel for extreme conditions before conditions deteriorate further.

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13. Storm Warning and Gale Warning

WHUS73 KMQT 050839
MWWMQT

URGENT - MARINE WEATHER MESSAGE
National Weather Service Marquette MI
439 AM EDT Wed Apr 5 2023

LSZ162-051645-
/O.EXT.KMQT.SR.W.0002.000000T0000Z-230406T0300Z/
/O.NEW.KMQT.UP.W.0012.230406T0600Z-230406T1500Z/
Lake Superior west of a line from Saxon Harbor WI to Grand Portage MN beyond 5NM-
439 AM EDT Wed Apr 5 2023 /339 AM CDT Wed Apr 5 2023/

...STORM WARNING NOW IN EFFECT UNTIL 11 PM EDT /10 PM CDT/ THIS EVENING...
...HEAVY FREEZING SPRAY WARNING IN EFFECT FROM 2 AM EDT /1 AM CDT/ TO 11 AM EDT /10 AM CDT/ THURSDAY...

* WHAT...For the Storm Warning, initially east winds 30 to 40 kt with gusts up to 50 kt and waves 15 to 20 ft occurring until late this morning; then, after a quick lull, southwest winds 30 to 40 kt with gusts up to 50 kt and waves 14 to 19 ft occurring from late this afternoon into this evening. For the Heavy Freezing Spray Warning, heavy freezing spray at a rate of 2 cm per hour or greater expected, and may rapidly accumulate on vessels.

* WHERE...Lake Superior west of a line from Saxon Harbor WI to Grand Portage MN beyond 5NM.

* WHEN...For the Storm Warning, until 11 PM EDT /10 PM CDT/ this evening. For the Heavy Freezing Spray Warning, from 2 AM EDT /1 AM CDT/ to 11 AM EDT /10 AM CDT/ Thursday.

* IMPACTS...Operating a vessel in heavy freezing spray is hazardous. Freezing spray may render mechanical and electronic components inoperative. Rapid ice accretion on decks and superstructures may result in a catastrophic loss of stability. Very strong winds will cause hazardous waves which could capsize or damage vessels and reduce visibility.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Mariners should prepare for dangerous accumulation of ice on their vessel. If possible, remain in port, avoid the warning area or conduct mitigation.

Mariners should remain in port, alter course, and/or secure the vessel for severe conditions.

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