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**Operations and Services**

**Marine And Coastal Weather Services, NWSPD 10-3**

**SURF ZONE FORECAST AND COASTAL/LAKESHORE HAZARD SERVICES**

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Updated sections 2.3.3, 2.4, 2.6, 2.7 for reformatting of the Surf Zone Forecast

Updated Appendix A Surf Zone Forecast examples.

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**Surf Zone Forecast and Coastal/Lakeshore Hazard Services**

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## **1 Introduction**

This procedural directive describes routine and non-routine products issued by National Weather Service (NWS) Weather Forecast Offices (WFOs) and Weather Service Offices (WSOs) that are associated with the coastal/lakeshore (beach) and surf zone areas. The surf zone is the narrow area of water between high tide level on the beach and the seaward side of the breaking waves. NWS beach and surf zone products are contained within the Surf Zone Forecast (no Valid Time and Event Code (VTEC)) and the Coastal/Lakeshore Hazard Message (VTEC). This instruction provides requirements and guidelines associated with these products, and detailed content and format. Great Lakes offices will issue a Lakeshore Hazard Message and coastal offices will issue a Coastal Hazard Message.

## **2 Surf Zone Forecast (product category SRF)**

### **2.1 Mission Connection**

The Surf Zone Forecast (SRF) provides valuable and life-saving information pertaining to hazards in the surf zone to the beachfront community, including the general public and providers of beachfront safety services, such as lifeguards.

### **2.2 Issuance Guidelines**

#### **2.2.1 Creation Software**

WFOs/WSOs will produce the SRF using Advanced Weather Interactive Processing System (AWIPS) formatters. Outside the contiguous U.S. (OCONUS) WFOs/WSOs without AWIPS will use regionally approved software.

#### **2.2.2 Issuance Criteria**

The SRF should be issued for beach areas as defined by the local WFO in concert with Regional Headquarters. Regional and local WFO policy will govern the specific issuance criteria of the SRF. The main audience for the SRF is the public and local public safety officials. See section 2.3.3 for the content of the SRF.

#### **2.2.3 Issuance Time**

Regional policy will govern the issuance time of the SRF. Based on user and partner needs and/or requirements, the SRF should be issued at least once per day on a seasonal basis (e.g., Memorial Day weekend through Labor Day); however, the SRF can be issued year-round. The season should be determined by the WFO in coordination with neighboring offices and Regional Headquarters.

#### **2.2.4 Valid Time**

Surf Zone Forecasts are valid from the time of issuance until the expiration time.

#### **2.2.5 Universal Geographic Code (UGC)**

SRFs will contain land-based zone UGC codes.

### **2.2.6 Product Expiration Time**

The SRF product expiration time is not more than 24 hours from the initial issuance.

## **2.3 Technical Description**

SRFs 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 SRF MND Header is “Surf Zone Forecast.”

### **2.3.3 Content**

SRF content should be developed in coordination with local safety agencies. At a minimum, the SRF should contain wave/surf height and any headlines for hazardous conditions expected. WFOs/ WSOs are encouraged to include additional information on weather conditions, beach/surf zone hazards, and other important beach/surf zone information that fit their local partner and user needs, e.g., rip currents, UV index, water temperature, winds, and tides. See Figure 1, Surf Zone Format for parameters which can be used.

The SRF should contain a two-day forecast with the option to include the following:

- a) Discussion – Free text format. WFOs/WSOs may provide information they expect to be significant over the next 5 days.
- b) Nighttime periods
- c) 3 to 5 Day Extended Forecast – Condensed free text format which may include Rip Current/Swim Risk, Surf/Wave height, weather, temperature, and winds.

For offices that issue the SRF on a seasonal basis, the SRF should include a message near the end of the season indicating when it will end (current season) and when it will begin next season.

## **2.4 Format**

The SRF is a segmented, formatted, text product and will comply with the requirements of NWSI 10-1701, *Text Product Formats and Codes*. See Appendix A, pages A-2 through A-6 for product format examples.

This product is available in industry standard encoding and languages, such as American Standard Code for Information Interchange (ASCII), Extensible Markup Language (EML), Wireless Markup Language (WML), and Hypertext Markup Language (HTML).

| <u>Product Format</u>   | <u>Description of Entry</u>  |
|---|--|
| FPaaii cccc ddhhmm<br>SRFxxx  | WMO Heading)<br>(AWIPS ID)   |
| Surf Zone Forecast<br>National Weather Service City, State<br>time am/pm time _zone day mon dd yyyy   | (Product Name)<br>(Issuing Office)<br>(Issuance time/date)   |
| .For the beaches of state...for day...  | (Optional Statement)   |
| stZ001-005>015-ddhhmm-<br>/k.aaa.cccc.pp.s.####.yymmddThhnnZB-<br>yymmddThhnnZE/<br>zone st-zone st-zone st-<br>Including <the cities of> location...location<br>time am/pm time _zone day mon dd yyyy  | (UGC: Z & expiration time)<br>(P-VTEC Line(s))<br>(Zone Names)<br>(City/Location - optional)<br>(Issuance time/date) |
| ...WATCH, WARNING, ADVISORY,<br>INFORMATIONAL HEADLINE(S)   |  |
| Discussion (optional)   | Free text format   |
| .Day 1 (Required, i.e., TODAY, THIS AFTERNOON)  | <u>Parameters available – Listed in order of<br/>priority</u>  |
| Rip Current/Swim Risk... (Included if forecasted)<br>Surf/Wave Height...<br>Swell...(optional)<br>Period (Optional)<br>Thunderstorm Potential...(Optional)<br>Water Spout Potential...(Optional)<br>UV Index...(Optional)<br>Water Temperature... (Included if available and<br>representative)<br>Weather...(Optional)<br>Temperature...(Optional)<br>Max Heat Index...(Optional)<br>Winds...(Optional)<br>Tides...(Optional)<br>Sunrise/Sunset...(Optional)<br>Remarks...(Optional) | Repeat parameters used in Day 1 except<br>max heat index, UV Index, and water<br>temperature                         |
| .TONIGHT...(Optional)   | Repeat parameters used in Day 1 except<br>water temperature  |

|                                      |  |
|--------------------------------------|--|
| .Day 2...(Required)                  | 3 to 5 day forecast  |
| .EXTENDED FORECAST...(Optional)      |  |
| .Day 3...                            |  |
| .Day 4...                            |  |
| .Day 5...                            |  |
| \$\$                                 | Included only for offices which forecast<br>Rip Current/ Swim Risk |
| Definitions of Rip Current/Swim Risk |  |

**Figure 1: Surf Zone Forecast (SRF) Format**

## **2.5 Relationships Between the SRF and Other WFO products**

### **2.5.1 Advisories or Warnings**

Forecasters will not use SRFs to issue Advisories or Warnings.

#### **2.5.1.1 Coastal Hazard Message (product category CFW)**

Current or expected issuance of Coastal Hazard Messages should be referenced within the SRF. For example, High Surf Advisories should be issued using the CFW but current or expected High Surf Advisories may be referenced within the SRF, as this would be of interest to the beachfront community. See section 3 for additional information regarding Coastal Hazard Messages and the relationship between the SRF and CFW.

#### **2.5.1.2 Hazardous Weather Outlook (product category HWO)**

WFOs/WSOs forecasting a high risk of rip currents in the Day 1 forecast period of the SRF will include this information in the Day 1 Marine/Surf portion of the Hazardous Weather Outlook product (HWO); except in Pacific Region and Alaska Region, which do not issue HWOs. See NWSI 10-517, *Multi-purpose Weather Products Specification*. WFOs/WSOs forecasting a high risk of rip currents for the Day 2 period of the SRF with high confidence may include this in the Day 2 Marine/Surf portion of the Hazardous Weather Outlook (HWO).

#### **2.5.1.3 Hurricane Local Statements (product category HLS)**

When WFOs/WSO begin to issue the HLS, they will continue (during their normal seasonal period) to issue the SRF when tropical cyclone watches/warnings are in effect.

## **2.6 Rip Currents**

The SRF is the primary product for providing routine rip current information. Rip current information in the SRF should be introduced using the phrase “Rip Current Risk” followed by

the text qualifier (See 2.6.1 for definitions). Rip current forecasts should be provided (if forecasted) in the Day 1 and Day 2 forecast with the option to include in the Extended Forecast.

For the Great Lakes, information about dangerous currents and waves should be provided in the SRF using “Swim Risk”. See section 2.7.

When a Moderate or High Risk of Rip Currents is forecast, refer to section 3.9 for the appropriate way to reference in the CFW and section 2.5.1.2 for the appropriate way to reference in the HWO.

### **2.6.1 Three-Tiered Qualifiers**

Rip Current Outlooks in the SRF (and Rip Current Statement) will use the following, 3-tiered text qualifiers. The qualifiers indicate the likelihood of rip currents occurring. WFOs/WSOs should include the following definitions in their rip current associated text products:

**Low Risk** – The risk for rip currents is low, however, life threatening rip currents often occur in the vicinity of groins, jetties, reefs, and piers.

**Moderate Risk** – Life threatening rip currents are possible in the surf zone.

**High Risk** – Life threatening rip currents are likely in the surf zone.

### **2.6.2 Moderate or High Risk**

WFOs/WSOs forecasting a Moderate or High Risk of Rip Currents will headline this information in the SRF (only required for High Risk of Rip Currents for WFO Guam). To ensure maximum notification of users, WFOs/WSOs forecasting a Moderate or High Risk of Rip Currents will refer to section 3.9 for specifications on how it can be addressed in the CFW, and 2.5.1.2 for how to address in the HWO. Offices may include call to action statements in the SRF.

## **2.7 Swim Risk (Great Lakes)**

WFOs in the Great Lakes use the SRF as the primary product for providing routine information on swimming conditions (waves and currents). Swimming information in the SRF should be introduced using the phrase “Swim Risk” followed by the text qualifier (See section 2.7.1 for definitions). Swim Risk forecasts should be provided in the Day 1 and Day 2 forecast with the option to include in the Extended Forecast.

When a High Risk is forecast, refer to section 3.10 for the appropriate way to reference in the CFW and section 2.5.1.2 for the appropriate way to reference in the HWO.

### **2.7.1 Three-Tiered Qualifiers**

Swim Outlooks in the SRF (and Beach Hazard Statement) will use the following, 3-tiered text qualifiers. The qualifiers indicate the likelihood of dangerous waves and currents. WFOs should include the following definitions in their swim outlook associated text products:

**Low Risk** – Large waves and dangerous currents are not expected, however dangerous currents may exist at any time near piers, breakwalls, and river outlets.

**Moderate Risk** – Breaking waves and currents are expected.

**High Risk** – Life threatening waves and currents are expected.



**2.7.2 High Risk**

WFOs forecasting a High Swim Risk will headline this information in the SRF. To ensure maximum notification of users, WFOs forecasting a High Swim Risk will refer to section 3.10 for specifications on how it can be addressed in the CFW, and 2.5.1.2 for how to address in the HWO. Offices may include call to action statements in the SRF.

**2.8 Updates, Amendments and Corrections**

SRFs will be updated when forecast conditions change significantly, especially when hazardous conditions arise. WFOs/WSOs will correct SRFs for format and grammatical errors.

**3 Coastal/Lakeshore Hazard Message (product category CFW)**

**3.1 Mission Connection**

Coastal/Lakeshore Hazard Message products (Advanced Weather Interactive Processing System (AWIPS) product category CFW) provide the public with detailed information on significant coastal/lakeshore events. Coastal/lakeshore events impact land-based and near shore interests along much of the United States coastline.

**3.2 CFW Products**

All CFW products contain VTEC, except outside of WFO Guam’s gridded zones. A single segmented product with more than one VTEC can be issued for situations with multiple hazards. See Appendix A, pages A-4 and A-5 for examples. The Event Names and Phenomena Codes are in Table 1. CFW products will follow the WHAT, WHERE, WHEN, IMPACTS, ADDITIONAL DETAILS (optional), and PRECAUTIONARY/PREPAREDNESS format as described in section 3.10.4.1.

**Table 1: CFW Products Table**

| Warnings  | Watches  |
|---|--|
| Coastal Flood Warning /CF.W/<br>Lakeshore Flood Warning /LS.W/<br>High Surf Warning /SU.W/    | Coastal Flood Watch /CF.A/<br>Lakeshore Flood Watch /LS.A/   |
| Advisories  | Informational Statements   |
| Coastal Flood Advisory /CF.Y/<br>Lakeshore Flood Advisory /LS.Y/<br>High Surf Advisory /SU.Y/ | Used for coastal / lakeshore hazards that do not meet Advisory, Watch, or Warning criteria, as well as hazards that do not have Advisory, Watch, or Warning criteria (e.g., oil spill, rip current risk, redirecting to HLS). /CF.S/, /LS.S/, /RP.S BH.S |

**3.2.1 Issuance Guidelines**

**3.2.2 Creation Software**

WFOs/WSOs will use AWIPS Interactive Forecast Preparation System (IFPS) Graphical Hazards Generation (GHG) software to generate CFW products. OCONUS WFOs/WSOs without GHG will use regionally approved software.

### **3.2.3 Issuance Criteria**

CFW products are issued to provide the general public, shoreline, and surf zone interests with detailed information on a wide spectrum of coastal/lakeshore hazards. WFOs/WSOs with Great Lakes or Coastal Waters Forecast areas of responsibility (see NWSI 10-302) issue Coastal/Lakeshore Hazard products.

### **3.2.4 Issuance Time**

CFW products are non-scheduled, event-driven products. WFOs/WSOs should issue the initial warning, watch, advisory, informational CFW products when a coastal/lakeshore hazardous event is expected to meet or exceed warning, advisory, watch, informational criteria. WFOs/WSOs should issue updates at least every six to eight hours until the event ends or is cancelled.

### **3.2.5 Valid Time**

CFW products are valid from the time of release or specified time until cancelled, updated, replaced, or until the expiration time of the product. The valid time (event beginning and end time) is placed in the P-VTEC line and described in the headline.

### **3.2.6 Product Expiration Time**

The product expiration time is the time when users can expect to receive an updated CFW.

#### **3.2.6.1 Watch Expiration Time**

The product expiration time is generally 12 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 string.

#### **3.2.6.2 Warning, Advisory and Informational Statement 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 string.

### **3.3 Coastal/Lakeshore Flood Watch**

A Coastal/Lakeshore Flood Watch informs users of coastal/lakeshore flooding that may have significant impacts. A Watch should be issued 12 to 48 hours in advance. See Appendix A, pages A-8, A-9 and A-10 for examples.

### **3.4 Coastal/Lakeshore Flood Warning**

A Coastal/Lakeshore Flood Warning informs users that coastal/lakeshore flooding which poses a serious threat to life and property is occurring, imminent, or highly likely in the first to second forecast periods (first 12 to 24 hours). WFOs may occasionally issue warnings valid after the second forecast period when a strong likelihood of the event exists or when a longer advance notice is needed for public response. See Appendix A, pages A-11, A-12, and A-13 for examples.

### **3.5 Coastal/Lakeshore Flood Advisory**

A Coastal/Lakeshore Flood Advisory informs users that minor flooding, such as minor tidal overflow, is occurring or is possible within 12 hours. Issuance of Coastal/Lakeshore Flood Advisories is an NWS Regional option. See Appendix A, page A-7 and A-8 for an example.

### **3.6 High Surf Advisory and Warning**

A High Surf Advisory is issued when breaking wave action in the surf zone becomes a threat to life and property along the coast.

A High Surf Warning is issued when breaking wave action results in an especially heightened threat to life and property along the coast. Issuance of High Surf Warnings are at the option of each NWS Region. High Surf Warnings should be headlined in the SRF, if the SRF is routinely issued by the WFO/ WSO.

#### **3.6.1 High Surf and Rip Currents**

In many situations, life threatening rip currents occur along with high surf (advisory or warning) conditions. If rip currents are not the primary hazard, then rip current information can be included in a High Surf Advisory or Warning; however, the recommendation is to issue a High Surf Advisory/Warning (SU.Y or SU.W VTEC) in conjunction with a RP.S VTEC as a single segmented product. Both the High Surf and Rip Current Risk headlines should be headlined. See an example in Appendix A, page A-7. If rip currents are the primary hazard then rip current information should be issued using the Rip Current Statement (RP.S VTEC). See section 3.9 for more information on the Rip Current Statement.

### **3.7 Informational Statements**

Informational statements may be used to describe hazards that do not meet Advisory, Watch, or Warning criteria, as well as hazards that do not have Advisory, Watch, or Warning criteria (e.g., rip currents, oil spill). Informational statements can also direct users to a Hurricane Local Statement (HLS) in certain situations. See the HLS discussion in Section 2.5.1.3. A WFO/WSO may choose to not issue informational statements for coastal areas where the shoreline is unsuitable for recreational swimming or difficult to access.

#### **3.7.1 Increasing Awareness of Surf Zone and Beach Hazards**

To further heighten awareness of rip currents or other hazards not meeting Advisory/Warning criteria in the surf zone, WFOs/WSOs can issue appropriate information using the Rip Current Statement (rip currents only) or the Beach Hazards Statement (multiple or other hazards) which are contained within the Coastal/Lakeshore Hazard Message (CFW). The Beach Hazards Statement has been designed to issue information on multiple hazards. If surf conditions are unusual but do not meet criteria, that information may be included in the Beach Hazards Statement. Only rip current information should be included in the Rip Current Statement.

### **3.8 Rip Current Statement**

The Rip Current Statement (VTEC RP.S) informs the public and public safety officials that life threatening rip currents are expected to occur. WFOs/WSOs should issue the Rip Current Statement to highlight an increased threat (moderate or high risk) from rip currents. Only rip

current information should be included in the Rip Current Statement. Multiple hazards can be conveyed in the Beach Hazard Statement.

Rip Currents are the primary threat along coastal locations of the Gulf Coast and southern U.S. Atlantic. WFOs serving those areas will primarily issue the Rip Current Statement to highlight rip current information. Rip current information may also be highlighted in the Beach Hazard Statement or High Surf Advisory/Warning in certain situations (See section 3.10 for Beach Hazard Statement information and 3.7 for High Surf Advisory/Warning information).

WFOs should use the Surf Zone Forecast or the Beach Hazards Statement to highlight information on other surf zone or beach hazards.

WFOs/WSOs should work with their Regional Headquarters to define seasons in which they will issue the Rip Current Statements.

See Appendix A, pages A-15 and A-16 for examples of Rip Current Statement formatting and content.

### **3.9 Beach Hazards Statement (BHS)**

The Beach Hazards Statement (VTEC BH.S) highlights information on many different beach hazards that do not meet advisory or warning criteria. WFOs/WSOs will issue the BHS to provide additional, more targeted information to its users and partners on hazards along beach/coastal areas and the waters of the surf zone. The BHS can be issued for (but not limited to) dangerous currents in the surf zone, unusually cold water temperatures, potential for lightning along the beach/shoreline, or unusual surf /wave conditions which do not meet advisory criteria. In coordination with other agencies, the product may also be issued to inform users of various types of environmental hazards (e.g., chemical spills, harmful algal blooms, high bacteria levels in the water, or potentially hazardous marine wildlife which may be impacting the area).

A BHS may be issued for “Dangerous Swimming Conditions” in the surf zone, which are created by different types of hazards occurring simultaneously. Hazards such as rough surf, longshore currents, structural currents and rip currents can combine to create especially dangerous swimming conditions.

Rip current information can be included in the BHS in forecast areas where rip currents often occur simultaneously along with other surf zone hazards. For example, coastal WFOs along the U.S. west coast and in the Great Lakes primarily use the BHS (in addition to the SRF) to highlight information on all surf zone and beach hazards because the hazards typically occur simultaneously. If rip currents are the only hazard, a Rip Current Statement (VTEC RP.S) should be issued to address the situation.

WFOs/WSOs should work with their Regional Headquarters to define seasons in which they will issue the BHS.

See Appendix A, pages A-16, A-17 and A-18 for examples of BHS formatting and content.

### 3.10 Technical Description

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

#### 3.10.1 UGC Type

CFWs will use the (Z) form of the UGC.

#### 3.10.2 MND Broadcast Instruction Line

For watches and warnings, the phrase “URGENT – IMMEDIATE BROADCAST REQUESTED” is used.

#### 3.10.3 MND Product Type Line

Only two headlines are permitted in the Product Type Line: Coastal Hazard Message or Lakeshore Hazard Message.

#### 3.10.4 Content

The CFW will not contain an overview section but will include segmented forecast information.

##### 3.10.4.1 Segmented Forecast Information

Each segment of the CFW will include a coastal/lakeshore hazard headline followed by a descriptive text describing why the product was issued. Each segment describes a specific hazardous CFW event(s) for the same geographical area.

1. Headline – The CFW headline will include the following elements in the order shown:
  - a. Leading ellipsis (...)
  - b. Valid event names listed in Table 1
  - c. Event action phrase defined in Table 2
  - d. General event beginning day and time phrase
  - e. General event ending day and time phrase
  - f. Trailing ellipsis (...).

#### Generic Headline Format:

Used when CFW event is in effect:

...<CFW event name> <event action phrase> FROM <event beginning date and time phrase>  
TO <event ending date and time phrase>...

Used when CFW event product issuance time equals event beginning time:

...<CFW event name> <event action phrase> UNTIL <event ending date and time phrase>...

Used to cancel a watch, warning, or advisory prior to event beginning date and time:

...<CFW event name> IS CANCELLED...

Event Action Phrase. The event action phrase in the CFW headline corresponds with the VTEC action code. Table 2 lists appropriate phrases for CFW headlines:

**Table 2: CFW Products Table**

| VTEC Action Code | Description   | Required Event Action Phrase | Include Time / Date phrase? |
|------------------|---|------------------------------|-----------------------------|
| NEW              | Initial Issuance  | IN EFFECT                    | Yes                         |
| EXA              | Expansion of event area   | IN EFFECT                    | Yes                         |
| EXB              | Expansion of event area and change to event 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                         |
| EXP              | Event approaching the expiration time. Used up to 30 minutes prior to event end time. *Note: Not valid for Watches. | WILL EXPIRE AT               | Yes                         |
|                  | Event has expired. Used up to 30 minutes after event expiration time has passed. *Note: Not valid for Watches.      | HAS EXPIRED                  | No                          |
| CAN              | Event canceled prior to event end time  | IS CANCELLED                 | No                          |
| UPG              | Upgrade watch to warning/advisory or advisory to warning. No headline. *Note: Warnings cannot be upgraded.          |                              |                             |

2. Order of Segments. If multiple segments are needed, they will follow the order below. 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:

- a. Cancellation
- b. Warnings
- c. Advisories
- d. Watches
- e. Informational

3. Order of Headlines. If multiple headlines are required in a single segment, then the order of headlines will follow the order of segments above.

4. Bullet Format. Bullet format CFWs ensure brevity and more efficient communication of critical information. Bullets should be one or two sentences and used to present critical information for a coastal/lakeshore 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 “IMPACTS” bullet.

For all CFW watch products the “WHAT” bullet will begin with the expected phenomenon followed by the word “**possible.**” For CFW warning, advisory and statement 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 watch products, the word “possible” is mandatory and will always be followed by a period (.). For warnings, advisories, and statements 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” (i.e. “Coastal Flooding”).

Coastal WFOs, except for Alaska, will reference water levels relative to height above ground (inundation) for coastal flooding. Mean Higher High Water (MHHW) should be used as a proxy for ground level in most locations, but the WFO determined ground level may use other vertical references. This information should follow any references to above ground inundation and should be enclosed in parenthesis (e.g. 8 feet above ground (10 feet MLLW)). See Appendix A, pages A-8, A-10, A-12, and A-13 for examples.

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

**3.10.4.2 Format**

| <u>Product Format</u>  | <u>Description of Entry</u>  |
|--|--|
| WHaaii cccc ddhhmm<br>CFWxxx   | (WMO Heading)<br>(AWIPS ID)  |
| URGENT - IMMEDIATE BROADCAST REQUESTED <sup>(+)</sup><br>Coastal/Lakeshore Hazard Message<br>National Weather Service City, State<br>time am/pm time _zone day mon dd yyyy   | (Broadcast Instruction Line)<br>(Product Name)<br>(Issuing Office)<br>(Issuance time/date)                           |
| stZ001-005>015-ddhhmm-<br>/k.aaa.cccc.pp.s.####.yyymmddThhnnZ <sub>B</sub> -yyymmddThhnnZ <sub>E</sub> /<br>zone st-zone st-zone st-<br>Including <the cities of> location...location<br>time am/pm time _zone day mon dd yyyy | (UGC: Z & expiration time)<br>(P-VTEC Line(s))<br>(Zone Names)<br>(City/Location - optional)<br>(Issuance time/date) |
| ...WATCH, WARNING, ADVISORY, INFORMATIONAL<br>HEADLINE(S)...   |  |
| * WHAT...  | Bullets should be one or two sentences and used to present critical information.                                     |
| * WHERE...   |  |
| * WHEN...  |  |
| * IMPACTS...   |  |
| * ADDITIONAL DETAILS...  | Optional   |
| PRECAUTIONARY/PREPAREDNESS ACTIONS...<br>(Call to Action (CTA) statements)   | CTA Begin Marker   |
| &&   | CTA End Marker   |
| \$\$   | (UGC Delimiter)  |
| Name/Initials/Forecaster ID  | (Optional after last segment)  |

**Figure 2: Generic Format for CFWs**

<sup>+</sup> Broadcast Instruction Line used only for watches and warnings.

\* Bullets should be one or two sentences and used to present critical information.



### **3.11 Updates, Cancellations, and Corrections**

WFOs/WSOs should update CFWs as follows:

- a) Coastal/Lakeshore Flood Watch: at least once every 12 hours until the event ends or is canceled, or when there is a change in timing, areal extent, or expected conditions.
- b) Warning/advisory/informational products: at least once every 6 to 8 hours until the event ends or is canceled, or when there is a change in timing, areal extent, or expected conditions.

Watches are either upgraded into warnings or advisories, or canceled. WFOs/WSOs will issue a CFW to upgrade an advisory to a warning or to downgrade a warning to an advisory.

WFOs/WSOs will issue a CFW to cancel a warning, advisory, or watch when the forecaster believes there is no longer a threat of the coastal/lakeshore hazard.

### **3.12 Consistency with other NWS Products**

Forecasters will coordinate and ensure consistency among products within their WFO/WSO, and with neighboring WFOs/WSOs, the River Forecast Center(s) (RFC(s)), and the National Centers. For example, coordination with the RFC ensures product consistency when the combined effects of river discharge and storm surge or tidal piling affect river outlets to increase the severity of coastal/lakeshore flooding.

#### **3.12.1 Zone, Coastal/Surf Zone Forecasts**

CFW advisory/watch/warning products will be headlined in associated public zone forecasts. CFW advisory /watch/warning products will not be headlined in routine marine forecasts but should be headlined in Surf Zone Forecasts.

#### **3.12.2 Hazardous Weather Outlook (product category HWO)**

The HWO provides the public, media, and emergency managers with early notice of potentially hazardous conditions. Events valid within 48 hours may be referenced in the HWO, directing users to the CFW products for specific details on events. Coastal hazards not expected within 48 hours may be addressed in the HWO as an outlook product. See NWSI 10-517 for details on the HWO.

#### **3.12.3 Short Term Forecast (product category NOW)**

The Short Term Forecast provides users with a plain language description of current and short-term weather and flooding conditions for the County Warning Area (CWA) of a WFO/WSO. To comply with the intention of the product, coastal hazard information in the Short-term Forecast will be as brief as possible. Therefore, the Short-Term Forecast augments, but does not replace, the CFW and its more specific details. See NWSI 10-517 for details on the NOW.

#### **3.12.4 Tropical Cyclone Local Watch/Warning Product and Hurricane Local Statement (product category TCV, HLS)**

If tropical cyclone watches/warnings are issued, CFW products should also be issued when conditions warrant. These products should provide ranges of values for above ground inundation

and be consistent with values in the WFO TCV/HLS and the NHC/CPHC Tropical Cyclone Public Advisory (TCP). For guidance on issuing CFW products during tropical cyclone events:

- For the Atlantic Basin and WFO Honolulu, see NWSI 10-601 section 1.1.3.7, Table 2A and 2B.
- For the Pacific Basin (except WFO Honolulu, see NWSI 10-601 section 1.3.3.13, Table 4.

## **4 Water Level Observations and Dissemination**

### **4.1 Tide and Water Level Observations**

Real-time access to accurate water level data is especially important during times of potential inundation. WFOs/WSOs should maintain close contact with officials in coastal communities having access to, and interest in, water level data augmenting official gauging systems/networks. Forecasters should be familiar with terminology associated with tide and water level measurements.

The National Ocean Service (NOS) collects and distributes real-time tidal observations and predictions. The NOS Center for Operational Oceanographic Products and Services web site includes Physical Oceanographic Real Time System and Predictions with current tidal observations and daily high and low water tide predictions for tidal reference stations. The web site is: <http://tidesandcurrents.noaa.gov>.

### **4.2 Tide and Water Level Reports**

WFOs/WSOs that issue routine tide reports should issue them using the AWIPS product identifier TID. Other offices that only issue tide reports on an as-needed basis during significant coastal events may append the tide data to a Coastal/Lakeshore Message. See Appendix A, page A-19 for an example.

Reference tide reports to standard datums used by the NOS. For most areas the reference tidal datum is MLLW.

### **4.3 Great Lakes Water Levels**

Lake water levels are available from the U.S. Army Corps of Engineers and the NOS.

#### **4.3.1 NWS Great Lakes Water Level Report**

Some WFOs disseminate periodic water level reports, while other offices only issue reports on an as-needed basis. Water level reports are issued using the AWIPS product identifier OMR. See Appendix A, page A-20 for an example.

**Appendix A    Examples of Surf Zone Forecasts and  
Coastal/Lakeshore Hazard Products**

1 Surf Zone Forecast.....  
    Example 1 – Headlining Beach Hazards Statement. ....A-2  
    Example 2 – Headlining Beach Hazards Statement and Rip Current Statement.....A-3  
    Example 3 – Headlining Beach Hazards Statement with extended forecast.....A-5

2 Multiple CFW VTECs in a Single Product.....A-7  
    Example 1 – High Surf Advisory and Rip Current Statement.....A-7  
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3 Coastal /Lakeshore Flood Watch, Warnings and Advisories.....A-9  
    Example 1 – Lakeshore Flood Watch.....A-9  
    Example 2 – Coastal Flood Watch.....A-9  
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    Example 5 – Lakeshore Flood Advisory.....A-12  
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4 Informational Statements.....A-15  
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5 NWS Tide Report.....A-19

6 Great Lakes Water Level Report.....A-20

1 Surf Zone Forecasts

Example 1: Headlining Beach Hazards Statement

FZUS52 KMHX 020806  
SRFMHX

Surf Zone Forecast for Eastern North Carolina  
National Weather Service Newport/Morehead City\_NC  
406 AM EDT Sat Sep 2 2017

NCZ103-021815-  
Outer Banks Dare-  
Including the beaches of Duck, Kitty Hawk, Kill Devil Hills,  
Nags\_Head, Rodanthe, Avon, Buxton, and\_Cape Hatteras  
National Seashore  
406 AM EDT\_Sat Sep 2 2017

...BEACH HAZARDS STATEMENT IN EFFECT FROM 8 AM EDT THIS MORNING  
THROUGH SUNDAY EVENING...

.TODAY...

Rip Current Risk\*...

- Duck to Rodanthe .....High.
- Rodanthe to Cape Hatteras..... High.
- Cape Hatteras to Hatteras Inlet... ..Moderate.

Surf Height...

- Duck to Rodanthe. ....2 to 3 feet.
- Rodanthe to Cape Hatteras..... 2 to 3 feet.
- Cape Hatteras to Hatteras Inlet. ....2 to 3 feet.

Thunderstorm Potential\*\* ..... High.

UV Index\*\* ..... Very High.

Water Temperature...

- Duck Pier .....77.
- Jennettes Pier .....80.
- Oregon Inlet Marina..... 78.

Weather..... Showers and thunderstorms likely.

High Temperature ..... Lower 80s.

Winds..... South wind 10 mph.

Tides...

- Cape Hatteras. .... High 2.6 feet (MLLW) 5:10 AM EDT.  
Low\_0.5 feet (MLLW) 11:08 AM EDT.  
High 3.4 feet (MLLW) 5:42 PM EDT.

.SUNDAY...

Rip Current Risk\*...  
 Duck to Rodanthe. ....High.  
 Rodanthe to Cape Hatteras..... High.  
 Cape Hatteras to Hatteras Inlet.....Moderate..  
 Surf Height...  
 Duck to Rodanthe. ....2 to 4 feet.  
 Rodanthe to Cape Hatteras..... 2 to 4 feet.  
 Cape Hatteras to Hatteras Inlet. ....2 to 3 feet.  
 Thunderstorm Potential\*\*..... None.  
 Weather..... Partly cloudy in the morning, then clearing.  
 High Temperature ..... Lower 80s.  
 Winds..... South wind 10 mph.  
 Tides...  
 Cape Hatteras..... High 2.6 feet (MLLW) 5:10 AM EDT.  
 Low 0.4 feet (MLLW) 11:54 AM EDT.  
 High 3.6 feet (MLLW) 6:24 PM EDT.

&&

Rip Current Risk Category  
 \* Low Risk - The risk for rip currents is low, however, life threatening rip currents often occur in the vicinity of groins, jetties, reefs, and piers.  
 \* Moderate Risk - Life threatening rip currents are possible in the surf zone.  
 \* High Risk - Life threatening rip currents are likely in the surf zone.

\*\* For lightning, water spout and UV definitions see: <http://www.weather.gov/beach/mhx>

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**Example 2: Headlining Beach Hazard Statement and High Rip Current Risk**

FZUS56 KSGX 100831  
SRFSGX

Surf Zone Forecast  
National Weather Service San Diego CA  
131 AM PDT Wed Oct 10 2018

CAZ552-102345-  
Orange County Coastal Areas-  
131 AM PDT Wed Oct 10 2018

...BEACH HAZARDS STATEMENT THROUGH 6 PM THURSDAY...  
...HIGH RIP CURRENT RISK THROUGH 6 PM THURSDAY...

.TODAY...





...BEACH HAZARDS STATEMENT IN EFFECT THROUGH TUESDAY EVENING....

.TODAY...

Swim Risk\*..... High.  
 Wave Height .....5 to 8 feet.  
 UV Index\*\*..... High.  
 Water Temperature .....55 - 58.  
 Weather..... Mostly sunny.  
 High Temperature ..... 60-65.  
 Winds... ..... North winds 15 to 20 mph with gusts to 30 mph.  
 Sunrise.....5:15 AM CDT.  
 Sunset..... 8:24 PM CDT.

.TUESDAY...

Swim Risk\*.....High..  
 Wave Height .....3 to 6 feet.  
 UV Index\*\*..... High.  
 Weather..... Sunny.  
 High Temperature ..... Lower 60s.  
 Winds. .... North winds 15 to 20 mph. Gusts to 25 mph.  
 Sunrise.....5:15 AM CDT.  
 Sunset..... 8:24 PM CDT.

.EXTENDED...

.WEDNESDAY...Low Swim Risk\*. Wave height 1 to 3 feet. Sunny. High in the mid 60s. Northeast winds 5 to 10 mph.

.THURSDAY...Low Swim Risk\*. Wave height 1 foot or less. Mostly sunny. High in the mid 70s. Southwest winds around 5 mph.

.FRIDAY...Low Swim Risk\*. Wave height 1 to 3 feet. Partly cloudy with a chance of thunderstorms. High in the lower 70s. West winds 5 to 10 mph shifting to the north in the afternoon.

\$\$

- \* Low Risk - Large waves and dangerous currents are not expected, however dangerous currents may exist at any time near piers, breakwalls, and river outlets.
- \* Moderate Risk - Breaking waves and currents are expected. Stay away from dangerous areas like piers, breakwalls, and river outlets. Always have a flotation device with you in the water.
- \* High Risk - Life threatening waves and currents are expected. Stay out of the water and stay away from dangerous areas like piers and breakwalls.

\*\* For lightning, water spout and UV definitions see: <http://www.weather.gov/beach/lot>



## 2 Multiple CFW VTECs in a single product

### Example 1: High Surf Advisory and Rip Current Statement

WHUS42 KJAX 180657  
CFWJAX

Coastal Hazard Message  
National Weather Service Jacksonville FL  
257 AM EDT SAT APR 16 2019

FLZ033-038-124-125-GAZ154-166-170000-  
/O.NEW.KJAX.SU.Y.0002.190416T0657Z-190417T0000Z/  
/O.EXT.KJAX.RP.S.0004.000000T0000Z-190418T0000Z/  
St. Johns-Flager-Coastal Nassau-Coastal Duval-Coastal Glynn-  
Coastal Camden-  
257 AM EDT Sat Apr 18 2019

...HIGH SURF ADVISORY IN EFFECT UNTIL 8 PM EDT THIS EVENING...  
...HIGH RIP CURRENT RISK NOW IN EFFECT THROUGH SUNDAY EVENING...

\* WHAT...For the High Surf Advisory, large breaking waves of 4 to 6 feet in the surf zone expected. For the High Rip Current Risk, dangerous rip currents expected.

\* WHERE... St. Johns, Flager, Nassau, Duval, Glynn, and Camden County beaches.

\* WHEN...Through this evening.

\* IMPACTS...Life threatening rip currents are expected. Rough surf may also knock you down. Minor beach erosion may occur due to the high surf.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Swim near a lifeguard. If caught in a rip current, relax and float. Don't swim against the current. If able, swim in a direction following the coastline. If unable to escape, face the shore and call or wave for help.

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### Example 2: Coastal Flood Advisory and Rip Current Statement

WHUS42 KMFL 170717  
CFWMFL

Coastal Hazard Message

National Weather Service Miami FL  
317 AM EDT Mon Oct 17 2019

FLZ168-172-173-180200-  
/O.EXT.KMFL.CF.Y.0002.000000T0000Z-191019T1200Z/  
/O.EXT.KMFL.RP.S.0032.000000T0000Z-191021T1200Z/  
Coastal Palm Beach- Coastal Broward-Coastal Miami-Dade-  
317 AM EDT Mon Oct 17 2016

...COASTAL FLOOD ADVISORY NOW IN EFFECT UNTIL 8 AM EDT  
WEDNESDAY...

...HIGH RIP CURRENT RISK NOW IN EFFECT THROUGH FRIDAY MORNING...

\* WHAT...For the Coastal Flood Advisory, up to one-half foot of inundation expected in low-lying coastal areas. For the High Rip Current Risk, dangerous rip currents expected.

\* WHERE...Coastal Palm Beach, Broward and Miami-Dade Counties.

\* WHEN...Minor coastal flooding through Wednesday. Dangerous rip currents through Friday morning.

\* IMPACTS...Minor flooding of roads and parking lots. Life threatening rip currents will create dangerous conditions for swimmers.

\* ADDITIONAL DETAILS...The time of the next high tides at Miami Harbor are 10:10 AM this morning and 10:24 PM this evening. The time of the next high tides at Lake Worth are 9:22 AM this morning and 9:42 PM this evening.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Anyone entering the water could face significant injury or death. A Coastal Flood Advisory indicates that onshore winds and tides will combine to generate flooding of low areas along the shore.

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**3 Coastal/Lakeshore Flood Watch, Warnings and Advisories**

### **Example 1: Lakeshore Flood Watch**

WHUS41 KCLE 070141  
CFWCLE

Lakeshore Hazard Message  
National Weather Service Cleveland OH  
941 PM EDT Sat Jul 6 2019

OHZ003-007>009-070945-  
/O.CON.KCLE.LS.A.0009.190707T0900Z-190708T0300Z/  
Lucast-Ottawa-Sandusky-Erie-  
941 PM EDT Sat Jul 6 2019

...LAKESHORE FLOODING AND DANGEROUS SWIMMING CONDITIONS POSSIBLE  
ON SUNDAY...

\* WHAT...Lakeshore flooding possible. The combination of record high lake levels and a brief period of moderate northeast winds may result in greater wave action and lakeshore flooding.

\* WHERE...Along the immediate lakeshore of the western basin of Lake Erie.

\* WHEN...Early Sunday morning through Sunday evening.

\* IMPACTS...Flooding along with beach and shoreline erosion are possible. Rising water levels in marinas and waterways into the lake may also submerge docks and shoreline structures.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Residents on or near the shore should begin to take the necessary actions to protect flood-prone property.

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### **Example 2: Coastal Flood Watch**

WHUS46 KEKA 092016  
CFWEKA

URGENT - IMMEDIATE BROADCAST REQUESTED  
Coastal Hazard Message  
National Weather Service Eureka CA  
1216 PM PST Wed Dec 9 2019

CAZ001-002-100430-  
/O.CON.KEKA.CF.A.0001.191210T1600Z-191210T2100Z/  
Redwood Coast-Mendocino Coast-  
1216 PM PST Wed Dec 9 2019

...COASTAL FLOOD WATCH REMAINS IN EFFECT FROM THURSDAY MORNING  
THROUGH THURSDAY AFTERNOON...

\* WHAT...Significant coastal flooding possible with inundation of 1.5 to 2 feet above ground.

\* WHERE...Northwest California coast.

\* WHEN...Thursday morning and afternoon.

\* IMPACTS...Low-lying areas may experience minor flooding including, but not limited to, roadways in King Salmon and the Arcata Bottoms. Wave runup may cause water to wash onto some coastal roads and parking lots.

**PRECAUTIONARY/PREPAREDNESS ACTIONS...**

If travel is required, allow extra time as some roads may be closed. Do not drive around barricades or through water of unknown depth. Take the necessary actions to protect flood-prone property.

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**Example 3: Coastal Flood Warning**

WHUS42 KMHX 191300  
CFWMHX

URGENT - IMMEDIATE BROADCAST REQUESTED  
Coastal Hazard Message for North Carolina  
National Weather Service Newport/Morehead City NC  
900 AM EDT Tue Sep 19 2019

NCZ103-200100-  
/O.NEW.KMHX.CF.W.0001.190919T1300Z-190920T0400Z/  
Outer Banks Dare-  
900 AM EDT Tue Sep 19 2019

...COASTAL FLOOD WARNING IN EFFECT UNTIL MIDNIGHT EDT TONIGHT...

\* WHAT...Significant coastal flooding expected with water levels rising to 1 to 2 feet above ground.

\* WHERE...Highway 12 from Cape Hatteras north will likely be flooded and impassable at times. Beach and dune erosion at vulnerable areas around the time of high tide, which will occur again around 730 PM this evening.

\* WHEN...Until Midnight tonight.

\* IMPACTS...Highway 12 from Cape Hatteras north will likely be flooded and impassable at times. Beach and dune erosion at vulnerable areas around the time of high tide, 730 pm, will occur this evening.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take the necessary actions to protect flood-prone property. If travel is required, do not drive around barricades or through water of unknown depth.

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**Example 4: Lakeshore Flood Warning**

WHUS41 KBUF 291732  
CFWBUF

URGENT - IMMEDIATE BROADCAST REQUESTED  
Lakeshore Hazard Message  
National Weather Service Buffalo NY  
132 PM EDT SAT APR 29 2019

NYZ001>003-300145-  
/O.UPG.KBUF.LS.A.0001.190430T1000Z-190501T0300Z/  
/O.NEW.KBUF.LS.W.0001.190430T1000Z-190501T0300Z/  
Niagara-Orleans-Monroe-  
132 PM EDT Sat Apr 29 2019

...LAKESHORE FLOOD WARNING IN EFFECT FROM 6 AM TO 11 PM EDT SUNDAY...

- \* WHAT...Significant lakeshore flooding expected.
- \* WHERE...Niagara, Orleans, and Western Monroe Counties.
- \* WHEN...Late tonight through late Sunday.
- \* IMPACTS...The combination of high lake levels, moderate to strong northeast winds, and high waves will result in increased flooding and shoreline erosion in areas along the immediate Lake Ontario shore.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

If travel is required, allow extra time as some roads may be closed. Do not drive around barricades or through water of unknown depth. Take the necessary actions to protect flood-prone property.

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**Example 5: Lakeshore Flood Advisory**

LAKESHORE HAZARD MESSAGE...UPDATED  
National Weather Service Marquette MI  
853 AM EST Wed Nov 15 2019

MIZ005-161100-  
/O.EXA.KMQT.LS.Y.0004.191116T0600Z-191116T1500Z/  
Marquette-  
853 AM EST Wed Nov 15 2019

...LAKE SHORE FLOOD ADVISORY IN EFFECT FROM 1 AM TO 10 AM EDT  
THURSDAY...

- \* WHAT...Minor lakeshore flooding expected.
- \* WHERE...Along the Lake Superior Shoreline east of Harvey to Shot Point.
- \* WHEN...1 AM to 10 AM EST Thursday.
- \* IMPACTS...Minor coastal erosion.
- \* ADDITIONAL DETAILS...Large waves of 14 to 17 feet combined with above average Lake Superior water levels for this time of year will produce areas of minor beach erosion and lakeshore flooding.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Residents on or near the shore should take appropriate action to protect property from rising water levels.

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**Example 6: Coastal Hazard Message during a Tropical Event**

URGENT - IMMEDIATE BROADCAST REQUESTED  
Coastal Hazard Message  
National Weather Service Mobile AL  
1019 PM CDT Tue Jun 20 2019

ALZ265-266-211000-  
/O.UPG.KMOB.CF.Y.0003.000000T0000Z-190623T0000Z/  
/O.NEW.KMOB.CF.W.0001.170621T0119Z-190622T2000Z/  
/O.CON.KMOB.SU.Y.0005.000000T0000Z-190623T1200Z/  
/O.CON.KMOB.RP.S.0018.000000T0000Z-190623T1200Z/

Mobile Coastal-Baldwin Coastal-  
1019 PM CDT Tue Jun 20 2019

...COASTAL FLOOD WARNING IN EFFECT UNTIL 3 PM CDT THURSDAY...  
...HIGH SURF ADVISORY REMAINS IN EFFECT UNTIL 7 AM CDT FRIDAY...  
...HIGH RIP CURRENT RISK REMAINS IN EFFECT THROUGH FRIDAY  
MORNING...

\* WHAT...For the Coastal Flood Warning, inundation of two to three feet above ground. For the High Surf Advisory, large breaking waves of 6 to 10 feet in the surf zone. For the High Rip Current Risk, dangerous rip currents.

\* WHERE...Coastal Mobile and Baldwin Counties.

\* WHEN...Through Friday morning.

\* IMPACTS...Numerous closed roads. Low-lying property including homes, business, and some critical infrastructure will be inundated. Some shoreline erosion will occur. Dangerous swimming and surf conditions can be expected.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Stay out of the water. Take the necessary actions to protect flood-prone property. If travel is required, do not drive around barricades or through water of unknown depth.

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**Example 7: Lakeshore Hazard Message Canceling Lakeshore Warning**

WHUS43 KIWX 252104  
CFWIWX

Lakeshore Hazard Message  
National Weather Service Northern Indiana  
404 PM EST Thu Feb 25 2019

INZ003-MIZ077-252215-  
/O.CAN.KIWX.LS.W.0001.000000T0000Z-160226T0300Z/  
La Porte-Berrien-  
404 PM EST Thu Feb 25 2019 /304 PM CST Thu Feb 25 2019/

...LAKESHORE FLOOD WARNING IS CANCELLED...

The threat of lakeshore flooding has diminished along the southeastern shores of Lake Michigan. Therefore the Lakeshore Flood Warning has been cancelled. Wave heights will continue to slowly subside.

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**Example 8: High Surf Advisory**

WHHW40 PHFO 021330  
CFWHFO

Coastal Hazard Message  
National Weather Service Honolulu HI  
330 AM HST Tue Feb 2 2019

HIZ001>003-006>008-012-013-017-019-020-030230-  
/O.CON.PHFO.SU.Y.0011.000000T0000Z-190203T1600Z/  
Niihau-Kauai Windward-Kauai Leeward-Waianae Coast- Oahu North Shore-  
Oahu Koolau-Molokai Windward-Molokai Leeward-Maui Windward West-  
Maui Central Valley-Windward Haleakala-  
330 AM HST Tue Feb 2 2019

...HIGH SURF ADVISORY REMAINS IN EFFECT UNTIL 6 AM HST WEDNESDAY...

- \* WHAT...Large breaking waves of 15 to 20 feet, building to 20 to 24 feet.
- \* WHERE... North and west facing shores of Niihau, Kauai, Oahu, Molokai and north facing shores of Maui.
- \* WHEN...Until 6 am Wednesday.
- \* IMPACTS...Moderate. Expect strong breaking wave, shore break, and strong longshore and rip currents making swimming difficult and dangerous.
- \* ADDITIONAL DETAILS...Surf 15 to 20 feet this morning building to 20 to 24 feet this afternoon and evening. Along west facing shores of Niihau, Kauai, Oahu and Molokai, 10 to 14 feet this morning building to 12 to 18 feet this afternoon and evening.

**PRECAUTIONARY/PREPAREDNESS ACTIONS...**

Inexperienced swimmers should remain out of the water due to dangerous surf conditions. If caught in a rip current, relax and float. Do not swim against the current. If unable to escape, face the shore and call or wave for help.

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#### 4 Informational Statements

##### Example 1: Rip Current Statement

WHUS41 KPHI 290924  
CFWPHI

Coastal Hazard Message for PA, NJ, DE, and MD  
National Weather Service Mount Holly NJ  
524 AM EDT Sat Jul 29 2019

DEZ004-NJZ014-024>026-300000-  
/O.CON.KPHI.RP.S.0002.190729T1200Z-190730T0000Z/  
Delaware Beaches-Eastern Monmouth-Atlantic Coastal Cape May-  
Coastal Atlantic-Coastal Ocean-  
524 AM EDT Sat Jul 29 2019

...HIGH RIP CURRENT RISK REMAINS IN EFFECT THROUGH THIS EVENING...

- \* WHAT...Life threatening rip currents expected.
- \* WHERE...New Jersey and the Delaware beaches.
- \* WHEN...Through Sunday.
- \* IMPACTS...Dangerous surf conditions.
- \* ADDITIONAL DETAILS...High risk for the development of dangerous rip currents is expected to continue into tonight and Sunday.

##### PRECAUTIONARY/PREPAREDNESS ACTIONS...

Swim near a lifeguard. If caught in a rip current, relax and float. Do not swim against the current. If unable to escape, face the shore and call or wave for help.

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##### Example 2: Rip Current Statement Highlighting Beach Flags and Closing of a Beach

Coastal Hazard Message  
National Weather Service Tallahassee FL  
709 AM EDT Mon Apr 7 2019

FLZ108-112-114-115-081100-

/O.NEW.KTAE.RP.S.0022.190407T1200Z-190408T1100Z/  
South Walton-Coastal Bay-Coastal Gulf-Coastal Franklin-  
709 AM EDT Mon Apr 7 2019 /609 AM CDT Mon Apr 7 2019/

...A HIGH RIP CURRENT RISK IS IN EFFECT THROUGH TUESDAY MORNING...

\* WHAT...Life threatening rip currents expected. Surf 3 to 5 feet at the Panhandle beaches and 2 to 4 feet at the Big Bend beaches.

\* WHERE...The beaches of Walton, Bay, Gulf, and Franklin Counties.

\* WHEN...Through Tuesday morning.

\* IMPACTS...Dangerous surf conditions due to strong rip currents.

\* ADDITIONAL DETAILS...Beaches are forecasted to be closed with double red flags present.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Stay out of the water and away from dangerous areas like piers and breakwalls.

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### **Example 3: Beach Hazards Statement for Dangerous Swimming Conditions**

WHUS43 KGRR 061949  
CFWGRR

Coastal Hazard Message  
National Weather Service Grand Rapids MI  
349 PM EDT Mon Jun 6 2019

MIZ037-043-050-056-064-071-070400-  
/O.NEW.KGRR.BH.S.0003.190607T0900Z-190608T0000Z/  
Mason-Oceana-Muskegon-Ottawa-Allegan-Van Buren-  
349 PM EDT Mon Jun 6 2019

...BEACH HAZARDS STATEMENT IN EFFECT FROM 5 AM TUESDAY THROUGH  
TUESDAY EVENING...

\* WHAT...Life threatening waves and currents expected.

\* WHERE...Beaches from St. Joseph to Manistee.

\* WHEN...5 AM Tuesday through Tuesday evening.

\* IMPACTS...Dangerous swimming conditions.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Stay out of the water and away from dangerous areas like piers and breakwalls.

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#### **Example 4: Beach Hazards Statement for Elevated Surf and Rip Currents**

WHUS46 KLOX 310144

CFWLOX

Coastal Hazard Message

National Weather Service Los Angeles/Oxnard CA

644 PM PDT Mon May 30 2019

CAZ041-087-310945-

/O.NEW.KLOX.BH.S.0018.190601T1300Z-190603T0500Z/

Los Angeles County Coast including downtown Los Angeles-

Catalina and Santa Barbara Islands-

644 PM PDT Mon May 30 2019

...BEACH HAZARDS STATEMENT IN EFFECT FROM WEDNESDAY MORNING  
THROUGH THURSDAY EVENING...

\* WHAT...4 to 6 feet breaking waves and strong rip currents will create hazardous swimming conditions.

\* WHERE...Los Angles, Catalina, and Santa Barbara County beaches.

\* WHEN...Wednesday morning through Thursday evening.

\* IMPACTS...Dangerous swimming conditions due to large waves and strong currents.

\* ADDITIONAL DETAILS...Surf building from 4 to 6 feet across south facing beaches early Wednesday morning then subsiding late Thursday evening into Friday. There will also be strong rip currents and longshore currents.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Swim near a lifeguard. If caught in a rip current, relax and float. Don't swim against the current. If able, swim in a direction following the coastline. If unable to escape, face the shore and call or wave for help.

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**Example 5: Beach Hazards Statement for Red Tide**

WHUS42 KTBW 291520  
CFWTBW

Coastal Hazard Message  
National Weather Service Tampa Bay Ruskin FL  
1120 AM EDT Fri May 29 2019

FLZ160-162-165-292330-  
/O.NEW.KTBW.BH.S.0001.190529T1520Z-190530T1800Z/  
Coastal Sarasota-Coastal Charlotte -Coastal Lee-  
1120 AM EDT Fri May 29 2019

...BEACH HAZARDS STATEMENT NOW IN EFFECT THROUGH FRIDAY EVENING...

- \* WHAT...High respiratory irritation associated with Florida Red Tide expected.
- \* WHERE...Some areas of Charlotte and Lee Counties.
- \* WHEN...Through Saturday.
- \* IMPACTS...Symptoms may include coughing, sneezing, and tearing eyes. People with respiratory conditions such as asthma, emphysema and other pulmonary diseases may be more sensitive. Irritation may vary locally and throughout the day
- \* ADDITIONAL DETAILS...For red tide forecast information visit <http://tidesandcurrents.noaa.gov/hab>

**PRECAUTIONARY/PREPAREDNESS ACTIONS...**

Persons with severe respiratory conditions should avoid exposure to Red Tide affected areas until conditions improve.

**FLORIDA RED TIDE OBSERVATIONS...**You can find unaffected beaches by checking reports of recent local observations and data: Mote Marine Laboratory (Mote) daily beach conditions – <http://www.mote.org/beaches> and the Florida Fish and Wildlife Conservation Commission (FWC) red tide status – <http://myfwc.com/redtidestatus>.

**FLORIDA RED TIDE HEALTH INFORMATION...**Consult the Florida Department of Health - <http://www.floridahealth.gov/envirnomenal-health/aquatictoxins/red-tide.html> or call the Poison Control Center: 1-800 222-1222. Inclusion of external links does not constitute endorsement by the Department of Commerce (DOC)/(NOAA) of these external web sites or the information, products or services contained therein.

FLORIDA RED TIDE INFORMATION SOURCES...Red tide forecasts are provided by the National Ocean Service with data provided by the FWC and MOTE.

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## 5 NWS Tide Report

SOUS42 KCHS 231245  
TIDCHS

Tide Report  
National Weather Service Charleston SC  
845 AM EDT Mon May 23 2016

SCZ050-052-231545-  
Charleston-Tidal Berkeley-  
845 AM EDT Mon May 23 2016

The upcoming tides for Charleston Harbor SC...

High tide at 9:38 AM today...  
Low tide at 3:37 PM today...  
High tide at 10:05 PM today...  
Low tide at 4:28 AM Tue...

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Astronomical Tide Heights in MLLW.

|     |          |               |
|-----|----------|---------------|
| Mon | 9:38 AM  | 4.8 feet High |
| Mon | 3:37 PM  | 0.2 feet Low  |
| Mon | 10:05 PM | 5.8 feet High |
| Tue | 4:28 AM  | 0.2 feet Low  |

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**6 Great Lakes Water Level Report**

SXUS83 KDTX 220825  
OMRDTX

Great Lakes Water Levels  
National Weather Service Detroit/Pontiac MI  
425 AM EDT Sun May 22 2016

The following are the average lake levels forecast for this week.

Lake Level... inches from chart datum

|                    |    |
|--------------------|----|
| Superior           | 12 |
| Michigan and Huron | 31 |
| St Clair           | 43 |
| Erie               | 46 |
| Ontario            | 36 |

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