

***NATIONAL WEATHER SERVICE EASTERN REGION SUPPLEMENT 06-2004  
APPLICABLE TO NWSI 10-515  
MARCH 15, 2004***

***Operations and Services  
Public Weather Warnings Services, NWSPD 10-5  
WFO Non-Precipitation Weather Products Specification, NWSI 10-515  
FREEZE WARNINGS AND FROST ADVISORIES***

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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**OPR:** W/ER1x1 (R. Watling)  
**Type of Issuance:** Initial

**Certified by:** W/ER1 (J. Guiney)

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***SUMMARY OF REVISIONS:*** This instruction supercedes Regional Operations Manual Letter (ROML) E-06-01, "Freeze Warnings and Frost Advisories," filed with WSOM Chapters C-42 and C-44, dated September 28, 2001.

< Signed >

March 2, 2004

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Director, Eastern Region

Date

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1. **Purpose.** The purpose of this Supplement is to define when the Eastern Region (ER) freeze/frost program should begin and end each year and to set regional guidelines on how to operate the program where national policy permits.
  
2. **Background.** Temperatures at or below the freezing point of water can seriously affect outdoor operations (e.g. gardening or construction). The probability of freezing temperatures occurring varies by location and time of year; this variation causes uncertainty as to when a Weather Forecast Office's freeze/frost program should begin and end. This Supplement describes a uniform process for determining the annual starting and ending date to provide a consistent level of service to NWS customers and partners.
  
3. **Procedures.**
  - 3.1 **Freeze/Frost Season.** All ER Weather Forecast Offices (WFOs) will start their freeze/frost program on the average (mean) date of the last spring freeze, using a minimum shelter temperature of 32 degrees Fahrenheit (32°F) for groups of zones. A zone group is constructed by using the average date of the last spring freeze. Zones where the average date of the last spring freeze falls within days 1-10 of the month, 11-20 of the month, and 21-30,31 of the month should be grouped together. The mean date of each grouping will be used to activate the entire group. The program will remain active in each individual zone until a minimum shelter temperature of 32°F or less, covering half or more of the zone for 3 or more hours, occurs in the autumn.



- 3.2 **Product Issuances.** When a freeze/frost event is expected 24 to 48 hours in the future during the freeze/frost season, issue a watch using a Non-Precipitation Warning (NPW) product, highlighting the potential for such an event. Whenever the minimum shelter temperature is forecast to be 32°F or less in the next 12 to 36 hours during the freeze/frost season, a Freeze Warning will be issued. Whenever the minimum shelter temperature is forecast to be 33-36°F in the next 12 to 36 hours during the freeze/frost season, on nights with light wind and good radiational cooling, a Frost Advisory will be issued.

General thresholds and terminology are shown in the table below.

Minimum Shelter Temperature (°F)	<b>&lt; 28°</b>	<b>28° - 32°</b>	<b>32° - 36°</b>
TERMINOLOGY	Hard Freeze	Normal Freeze	Light Freeze
PRODUCTS	<b>FREEZE WARNING</b>		<b>FROST ADVISORY</b>

The lower limit of the forecast temperature range will be used to trigger warning or advisory issuances.

Freeze Warnings, Frost Advisories, updates and cancellations are issued using the NPW. See Appendix A and B for examples.

4. Handling Anomalous Seasons. During anomalous climate patterns (e.g. La Niña, El Niño/Southern Oscillation), vegetation may begin growing several weeks ahead of normal in the spring while the first freeze in the autumn may occur very late in the year, or not at all. Under such situations, WFOs have the discretion to begin the freeze/frost season early, or terminate it four weeks after the normal first freeze date in the autumn. WFOs will issue an SPS to announce the end of the growing season. Transient start or end dates will be coordinated with Eastern Region Headquarters (ERH) Meteorological Services Division (MSD) and surrounding WFOs, to assure program consistency.

**Appendix A - Sample Combined Freeze Warning/Frost Advisory**

WWUS71 KBOX  
NPWBOX

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE TAUNTON MA  
351 PM EDT FRI OCT 12 2001

..STRONG HIGH PRESSURE WILL CONTINUE TO BUILD ACROSS SOUTHERN NEW ENGLAND OVERNIGHT. CLEAR SKIES AND LIGHT WINDS WILL DEVELOP AFTER MIDNIGHT...ALLOWING TEMPERATURES TO DROP NEAR OR BELOW FREEZING.

MAZ013-017-018-RIZ001>004-131400-  
WESTERN NORFOLK-NORTHERN BRISTOL-WESTERN PLYMOUTH-NORTHWEST PROVIDENCE-SOUTHEAST PROVIDENCE-WESTERN KENT-EASTERN KENT-INCLUDING THE CITIES OF...BOSTON...BROCKTON...TAUNTON... WEST GREENWICH...  
351 PM EDT FRI OCT 12 2001

...FREEZE WARNING FOR INTERIOR SECTIONS OF SOUTHEAST MASSACHUSETTS AND NORTHERN RHODE ISLAND AFTER MIDNIGHT...

TEMPERATURES WILL FALL TO AROUND 30 AFTER MIDNIGHT. TENDER VEGETATION SHOULD BE BROUGHT INDOORS...OR IF LEFT OUTDOORS... SHOULD BE PROTECTED.

\$\$

MAZ020>024-RIZ006-007-131400-  
BARNSTABLE-DUKES-NANTUCKET-NEWPORT-SOUTHERN BRISTOL-SOUTHERN PLYMOUTH-WASHINGTON-INCLUDING THE CITIES OF...HYANNIS...NANTUCKET...NEW BEDFORD... NEWPORT...VINEYARD HAVEN...WAREHAM...WARWICK...WESTERLY  
351 PM EDT FRI OCT 12 2001

...FROST ADVISORY FOR SOUTH COASTAL MASSACHUSETTS AND RHODE ISLAND AFTER MIDNIGHT...

MINIMUM TEMPERATURES WILL FALL TO THE MID 30S WITH SCATTERED FROST DEVELOPING. TENDER VEGETATION SHOULD BE BROUGHT INSIDE OR PROTECTED.

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**Appendix B - Sample Freeze Warning**

WWUS72 KCAE  
NPWCAE

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE COLUMBIA SC  
334 PM EST SAT NOV 3 2001

.A STRONG COLD FRONT PASSING THROUGH THE AREA THIS AFTERNOON WILL  
USHER IN A MUCH COLDER AIRMASS TONIGHT. BRISK NORTHWEST WINDS WILL  
HELP TO DRIVE TEMPERATURES DOWN TO THE UPPER 20S TONIGHT.

SCZ015-016-018-020-021-022-025-026-027-028-029-030-031-035-036-  
037-038-041-GAZ040-063-064-065-077-251700-  
AIKEN-BAMBERG-BARNWELL-CALHOUN-CHESTERFIELD-CLARENDON-  
EDGEFIELD-  
FAIRFIELD-KERSHAW-LANCASTER-LEE-LEXINGTON-MCCORMICK-NEWBERRY-  
ORANGEBURG-RICHLAND-SALUDA-SUMTER-BURKE-COLUMBIA-LINCOLN-  
MCDUFFIE-RICHMOND-  
INCLUDING THE CITIES OF...AIKEN...BISHOPVILLE...COLUMBIA...  
LANCASTER...LEXINGTON...MANNING...ORANGEBURG...SUMTER...AUGUSTA  
334 PM EST SAT NOV 3 2001

...FREEZE WARNING FOR TONIGHT...

NORTHWEST WINDS OF 15 TO 25 MPH WILL USHER IN A MUCH COLDER AIRMASS  
TONIGHT...WITH TEMPERATURES FALLING TO THE UPPER 20S.  
SENSITIVE PLANTS SHOULD BE BROUGHT INDOORS OR IF LEFT  
OUTDOORS...SHOULD BE PROTECTED.  
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