SAFESEAS

(***S***ystem on ***A***WIPS for ***F***orecasting and ***E***valuation of ***Se***as and L***a***ke***s***)

User's Guide
AWIPS OB5 Release

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1 *Introduction*

SAFESEAS is a set of AWIPS applications which continuously monitor marine and adjacent overland conditions for specific marine weather hazards. It automatically alerts the forecasters whenever such conditions are detected. SAFESEAS provides capabilities to display observed marine threats in ways that help forecasters focus on what they consider most important. Thus SAFESEAS helps forecasters make faster, earlier, and higher quality decisions regarding marine watches and warnings. SAFESEAS capabilities are being designed, developed, and deployed in multiple phases. This manual describes the usage and capabilities of the AWIPS OB5 release of SAFESEAS, which is limited to the monitoring of point observations. SAFESEAS is primarily intended to support any Weather Forecast Office (WFO) with marine forecast responsibilities; however, non-marine WFOs also may find its monitoring capabilities to be of practical use. Table 1-1 defines key terms used throughout this document.

Table 1-1: Key Terms for SAFESEAS descriptions.

area of responsibility	An office's marine "area of responsibility" (AOR) consists of all the marine zones for which it issues forecasts, watches, and warnings. In some contexts, the office's area of responsibility also includes the overland "county warning area" (CWA) for which it issues non-marine forecasts, watches, and warnings.
monitoring area	An office's "monitoring area" consists of all the marine zones and land area watched by the SAFESEAS monitor. By default, the monitoring area for most WFOs consists of (1) its own marine AOR and overland CWA, (2) the marine AOR and overland CWA for each adjacent office having marine responsibilities, and (3) all marine zones adjacent to (1) and (2) but not in another WFO's area of responsibility. Different default definitions will apply to WFOs whose area of responsibility borders Canada or Mexico, to WFOs not in the contiguous 48 states, and to non-WFO offices. Each office may modify its monitoring area definition; see "The Editor for the SAFESEAS Set-Up" below for details.
product	A SAFESEAS "product" corresponds to a specific NWS marine watch or warning type, such as the Small Craft Advisory or the Storm Warning. Conditions defining a product may require that thresholds be independently met for possibly more than one variable. For example, for Small Craft Advisory, monitoring is for wind speed over some threshold *or* wind gust over some threshold *or* wave height over some threshold.
report	A "report" is an external product which contains observed values of weather and/or marine variables for a specific time and station location. An example of a report is a METAR.
station	A "station" is a location where weather and/or marine conditions are observed. A station may be either fixed-location (e.g., ASOS) or mobile (e.g., ships), and either marine (e.g., buoys) or over land.
variable	A SAFESEAS "variable" corresponds to a single meteorological or marine state variable. Examples include wind speed and wave height.

2 What's New in OB5?

SAFESEAS for AWIPS OB5 includes several new enhancements. First, you may notice that the SAFESEAS table looks smaller – it's been tightened up, with space used more efficiently, to decrease the table's screen footprint. Users can now configure the table to align vertically (the SCAN table has the same functionality), to further improve D-2D pane visibility. There's also a new table which will provide 24 hour observation histories for each station. The SAFESEAS button at the top right of the D-2D has also undergone some changes, with a new color-condition added (to alert the user that the SAFESEAS processor is not running), and a user-configurable time threshold for the button to retain its alert color.

3 SAFESEAS Functional Overview

SAFESEAS consists of four monitoring/display components and four set-up/configuration components. The monitoring/display components are the:

a) SAFESEAS monitor,
b) SAFESEAS D-2D plan-view plots,
c) SAFESEAS tabular display, and the
d) SAFESEAS trend plot.

The set-up/configuration components are the:

a) localization script,
b) Graphical User Interface (GUI) for editing the SAFESEAS monitoring area,
c) GUI for editing the SAFESEAS monitor thresholds, and the
d) GUI for editing the SAFESEAS tabular display thresholds.

The localization script will not be further discussed in this user's guide.

3.1 SAFESEAS Localization

SAFESEAS localization uses the following files to produce your default monitoring area:

a) US county "shape" files;
b) marine zone "shape" files;
c) the "maritimeStationInfo.txt" file; and
d) the "metarStationInfo.txt" file.

It is the responsibility of each office to make sure that it has the current versions of these files *before* localization is run. In addition, for mesonet stations, SAFESEAS localization uses the following files in directory "/awips/fxa/ldad/data/":

a) "LDADinfo.txt";

b) one location information file for each external data source. These files have names of the form “xxxStation.txt, where “xxx” is a “data_root” value from file “LDADinfo.txt”.
c) one dataset information file for each external data source. These files have names of the form “yyy.desc”, where “yyy” is a “data_type” value from file “LDADinfo.txt”.

It is the responsibility of each office to make sure these files are correct and up-to-date before localization is run. See documentation in file “/awips/fxa/data/localization/scripts/SS_mesonetStationInfo.sh” for more information.

SAFESEAS localization is automatically run as a part of the full AWIPS localization that is done after an AWIPS build is installed. An office should not need to run SAFESEAS localization manually unless unusual, severe problems (such as the corruption of the files produced by SAFESEAS localization) occur. If you never try to manually edit those files except by using the GUIs provided with SAFESEAS, then you probably will never have to run SAFESEAS localization manually.

In the highly unlikely event that running SAFESEAS localization really becomes necessary, here is how to do it:

1) close all D-2D SAFESEAS displays on all lx workstations.
2) log on to the px1 system as user “fxa”.
3) change to directory “/awips/fxa/bin/”.
4) run the “stopSSprocessor” script.
5) change to directory “/awips/fxa/localization/scripts/”.
6) enter the command “mainScript.csh -safeseas”.
7) change to directory “/awips/fxa/bin/”.
8) run the “startSSprocessor” script.
9) log off.

You are done.

3.2 SAFESEAS Monitor Description

The SAFESEAS monitor automatically monitors observations in the WFO-configured monitoring area for conditions that are hazardous to marine interests. It regularly evaluates and updates a single, overall threat level for the monitoring area. This threat level is displayed near the upper right corner of the D-2D display as a colored-coded icon containing a black anchor (Figure 3.2-1). The icon’s background color represents the threat level. The threat levels and their colors are as defined in Table 3.2-1.

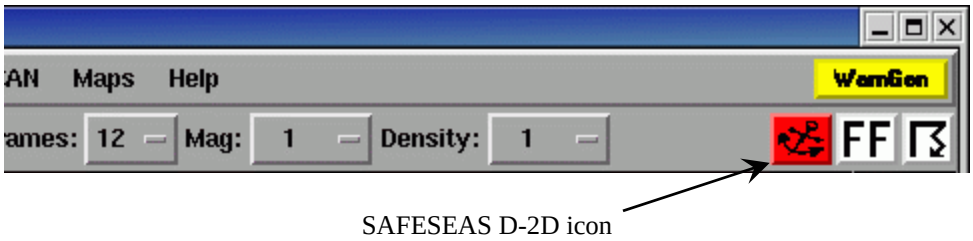


Figure 3.2-1: D-2D icon indicating SAFESEAS monitor threat level.

Table 3.2-1: Threat level/color definitions for SAFESEAS monitor and tables.

COLOR	THREAT LEVEL DESCRIPTION
WHITE	SAFESEAS processor on px1 is not running (new in OB5)
GRAY	no data are available for determining the threat level
GREEN	conditions throughout the monitoring area are well below hazardous levels
YELLOW	conditions somewhere in the monitoring area are approaching hazardous levels
RED	conditions somewhere in the monitoring area are within hazardous levels

The SAFESEAS monitor checks for new observations and updates the threat level display approximately every four minutes. At any point in time, the displayed overall threat level represents the maximum threat level over:

- all monitored variables
- all zones/counties in the monitoring area
- all stations linked to zones/counties in the above area
- all reports for stations with valid times within a time window specified by the user

Caesar Cioppi says:

Within the user-specified time window of observation evaluated by the monitor, newer reports from a station have no precedence over older reports still within the time window. The observation with the highest threat level, regardless of station, valid time, or variable, is the observation that determines the overall threat level displayed by the icon.

The SAFESEAS monitor compares individual meteorological variables (sustained wind, wind gusts, wave height, visibility, primary swell period, primary swell height, primary swell direction, secondary swell period, secondary swell height, and secondary swell direction) against thresholds defining the threat levels. It does not currently monitor marine products which may involve more than one variable (e.g., Small Craft Advisory) or multiple levels of a single variable (e.g., Gale, Storm, and Hurricane Force for wind speed). This latter capability is provided by the SAFESEAS zone and station table displays (Section 2.3). A factory-default set of monitor threshold values for each threat level of each variable is provided with SAFESEAS. The SAFESEAS monitor threat-level thresholds can be modified by the user, and may be specified individually by zone/county and by variable. Instructions for modifying the SAFESEAS monitor thresholds are described in Section 4.2.2.

3.3 SAFESEAS D-2D Plan-View Plot Description

The SAFESEAS D-2D plan-view plot (Figure 4.3-2) consists of modifications of the following four D-2D surface observation plots: (1) the METAR plot, (2) the fixed buoy plot, (3) the drifting buoy and ship report plot, and (4) the mesonet plot. The SAFESEAS plots differ from their non-SAFESEAS counterparts in that the SAFESEAS plots include only those reports within the WFO-configured monitoring area. All four SAFESEAS D-2D plots are loaded together as a multi-load graphic.

Caesar Cioppi says:

The SAFESEAS plan-view plots for a given frame time (nominal hour) include reports from 30 minutes before the hour to 29 minutes past the hour. The plotted report is always the report nearest the top of the hour (D-2D default behavior), regardless of whether a newer report has been received. Thus, the plotted observations do not necessarily correspond to the threat level displayed by the monitor icon or by the zone/station table.

3.4 SAFESEAS Tabular Display Description

The SAFESEAS tabular display consists of two types of display GUIs: the configurable zone/station table, and the trend plot. In both the zone and the station configuration, individual columns of the table display the current threat level for each product, and both the observed value and the threat level for each variable. In the zone configuration (Figure 4.4-1), each row of the table shows these threat levels for a zone or county, for all zones and counties in the monitoring area. In the station configuration (Figure 4.5-1), each row of the table shows these threat levels for the stations within (or related to) a single user-selected zone or county. The trend plots (Figures 4.5.1-1, 4.5.1-2, 4.5.1-3) display a meteogram of a selected variable, or a composite meteogram of the values of the variables comprising a selected product, for single stations. The trend covers the most recent 24 hours.

Caesar Cioppi says:

The SAFESEAS zone/station table for a given frame time (nominal hour) considers reports from 30 minutes before the hour to 29 minutes past the hour. For a given station, the threat level is determined using only the most recent report within this period. When multiple stations are associated to a zone, the zone threat level is the highest threat level from among these individual threat levels for stations in the zone, regardless of which station's latest report is more recent. Thus, the threat level displayed by the zone/station table may differ from the threat level shown by the monitor icon, and may not correspond to the data values of the station in the plotted reports.

3.5 SAFESEAS Set-up/Configuration GUI Descriptions

The SAFESEAS monitoring area set-up GUI allows the user to configure the zones and counties included in the SAFESEAS monitoring area, and to specify the fixed-location stations associated with each zone or county.

The SAFESEAS monitor thresholds editing GUI allows the user to specify the variable thresholds used by the SAFESEAS monitor to determine the threat level for each variable. The thresholds are zone-specific, that is, they may vary from zone to zone. ***The monitor thresholds do not control the threat level computation for the SAFESEAS zone/station table display.***

The SAFESEAS zone/station display thresholds editing GUI allows the user to (1) enter and save new sets of display thresholds, (2) select and apply a previously-defined set of display thresholds for current use, and (3) edit a set of display thresholds. The zone/station table display thresholds are used in the zone and station tables when determining threat levels. The thresholds are zone-specific, that is, they may vary from zone to zone. ***The zone/station table display thresholds do not control the threat level computation for the SAFESEAS monitor.***

4 Operation and Configuration of SAFESEAS

4.1 The SAFESEAS Monitoring Area

To achieve "No Surprises" marine watch/warning service, a forecaster needs to know about not only the hazards that are currently present within the AOR, but also the hazards that are developing within the AOR and the hazards that are advecting toward the AOR. SAFESEAS monitors observations near as well as in the AOR, thus helping the forecaster to be aware of hazards advecting toward his AOR. Let's examine the area (called the "monitoring area") in which SAFESEAS monitors observations.

The monitoring area is created by the SAFESEAS "localization" script. To construct the default monitoring area, localization starts with the office's AOR. Next, the AOR for each adjacent office with marine responsibilities is added. Then localization finds all the fixed stations (METAR stations, C_MAN stations, and fixed buoys) within this monitoring area, and associates each such station with the zone/county in which it is located. All stations known to AWIPS, including mesonet stations, are considered in this step.

a note from Windsor Gusti:

Fixed stations known to AWIPS are those in "$FXA_HOME/data/metarStationInfo.txt", "$FXA_HOME/data/marineStationInfo.txt", and "$FXA_HOME/data/localizationDataSets/$FXA_LOCAL_SITE/mesonetStationInfo.txt".

If the office's AOR borders Canadian or Mexican space, an additional step is taken. SAFESEAS localization defines three new "imaginary" zones. A location is in:

- the first imaginary zone if it is less than 25 statute miles from the centroid of the closest actual zone within the monitoring area as defined in the paragraph above;
- the second imaginary zone if it is between 25 and 75 statute miles from the centroid of the closest actual zone within the monitoring area as defined in the paragraph above; or
- the third imaginary zone if it is between 75 and 125 statute miles from the centroid of the closest actual zone within the monitoring area as defined in the paragraph above.

Now for each non-US fixed station known to AWIPS, localization determines its distance from the centroid of the nearest zone in the monitoring area as defined in the paragraph above. If the distance is less than 125 statute miles, then that station is considered to be in the fictitious zone corresponding to that distance.

You may wonder what this zone-station association is all about. When SAFESEAS determines the threat level for a zone, it compares the observations for all the stations associated with that zone with the zone's thresholds. The default zone-station associations produced by localization are that each station is associated only with the zone in which it is located. In other words, the only stations that localization associates with a zone are those located within that zone.

a note from Windsor Gusti:

Station and zone border locations are known to AWIPS only approximately. So a few default zone-station associations may not be what you expect, especially for stations on or very close to zone boundaries. Also, in the default set-up, a station located sufficiently close to a zone boundary may be associated with more than one zone.

To improve the monitoring for hazards advecting toward a zone, you may wish to associate stations from other nearby zones with that zone. You do this by customizing the monitoring area. A set-up editor is provided for this purpose. See Section 4.2.1, "Configuring the SAFESEAS Monitoring Area", for instructions on how to do this.

SAFESEAS also monitors reports from moving platforms (ships and drifting buoys) while they are inside the monitoring area or within 200 nautical miles of the centroid of at least one zone that is inside the monitoring area. A moving platform is associated with the zone in which it is located while it is inside the monitoring area. If a moving platform is outside the monitoring area, but located within 200 nautical miles of the centroid of a monitoring area zone, then it is associated with the monitoring area zone whose centroid is closest.

4.2 The SAFESEAS Monitor

The SAFESEAS monitor process runs continuously on the px1 system, and is launched automatically by AWIPS when the startIngest.px1 script is run. It requires no interactive user input. Its only output to users is the small SAFESEAS threat indicator near the upper right corner of the D-2D display. The threat indicator is a small rectangle containing a black anchor (Figure 3.2-1). It is color-filled, with the color corresponding to the threat level for the office's area of responsibility.

The monitor is a clock-driven process. At regular time intervals (currently four minutes), the monitor obtains new reports received by AWIPS in the preceding interval. The reports that are within the monitoring area and less than 32 hours old are extracted from the METAR, maritime, and mesonet netCDF files by the monitor, and saved in hourly SAFESEAS netCDF files for access by the SAFESEAS D-2D zone table, the station table, and the trend. The monitor determines an individual threat level for each newly received report within a user-defined time window and within the monitoring area. This threat level is determined by comparing the reports' observations to the monitor thresholds for the zone(s) or county(ies) to which the observation is linked. The monitoring area's overall threat level is then computed as the highest threat level from the previously processed reports and the threat levels for the reports just processed, over those reports within the time window. The monitor now updates the color of the SAFESEAS threat indicator near the upper right corner of the D-2D display, and then "sleeps" for the next four minutes.

The SAFESEAS localization process produces a first-guess zone/county/station monitoring area set up, and a default set of monitoring thresholds for these zones/counties. The first-guess monitoring area is described in section 3.1 ("The SAFESEAS Monitoring Area") above. Editors are provided to allow the forecaster to modify: (1) the first-guess monitoring area counties, zones, and stations and their associations, and (2) the factory-default monitoring thresholds for the monitored variables for these zones/counties.

4.2.1 Configuring the SAFESEAS Monitoring Area

The editor for the SAFESEAS monitoring area is launched from the AWIPS menu icon. It is located in the Panel along the edge of the screen background, along with such menu items as IFPS and Start D-2D. Left click the AWIPS menu icon to bring up the AWIPS Startup Menu. At the bottom of the AWIPS Startup Menu, left-click "SAFESEAS Apps" to bring up the menu of SAFESEAS applications. Click the "Configure Zone/Station Setup" entry to start the editor for the SAFESEAS monitoring area.

There are two options on how to edit the monitoring area. In the zone mode, you specify which zones/counties are in the monitoring area, and then associate observing stations with the zones/counties. In the station mode, you specify which stations are in the monitoring area and

then associate zones and counties with the stations. The edit mode is selected via the "Zone" and "Station" buttons in the "Configure" area, which is near the upper left corner of the GUI.

4.2.1.1 Zone Mode

To enter the zone mode of the SAFESEAS Monitor Area Set Up GUI (Figure 4.2.1.1-1), select the "Zone" pushbutton in the "Configure" area near the top of the GUI. When editing in zone mode, the GUI's upper left list (the "Monitor Area Zones" list) consists of the IDs for all the zones and counties currently comprising the monitoring area, and the lower left list (the "Additional Zones" list) consists of the IDs for other nearby zones/counties. The one-line window near the GUI's upper right corner, just above the list title "Associated Stations", gives the name of the active zone whose associated stations list is being edited. The GUI's "Associated Stations" list shows the IDs for the fixed stations currently associated with the active zone.

The contents of the GUI's lower right list are configured by the "MA Stns" and "Regional Stns" pushbuttons. If "MA Stns" is selected, the IDs for all fixed stations associated with one or more zones/counties in the monitoring area are listed. In essence, "**MA Stns" is the list of all fixed stations whose reports are monitored by SAFESEAS** (i.e., players on the field). When "Regional Stns" is selected, the IDs for all the fixed stations within the regional area not currently associated with any zone or county in the monitoring area are shown. **Fixed stations in the "Regional Stns" list are not monitored by SAFESEAS** (i.e., they are players on the bench waiting for the call).

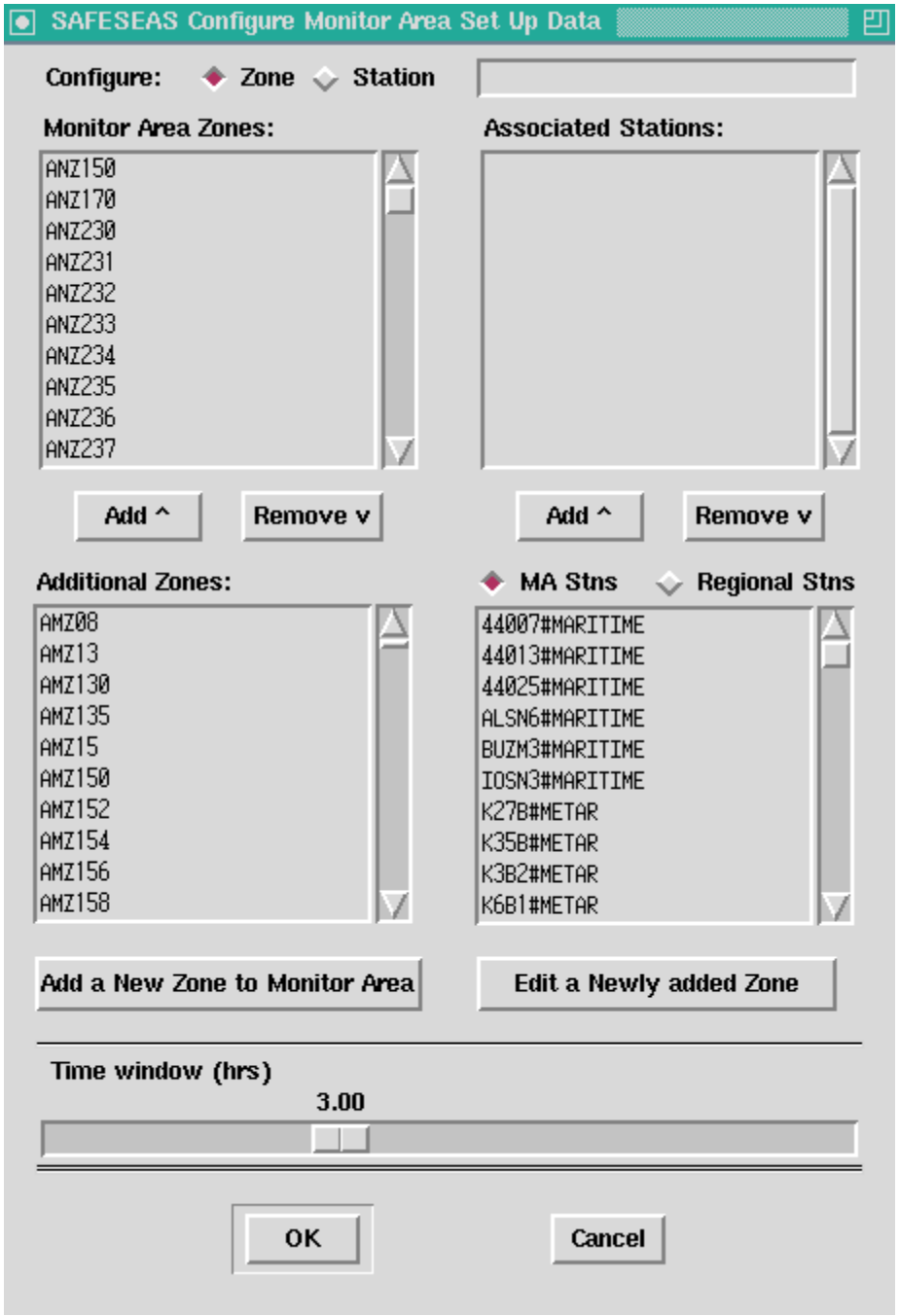


Figure 4.2.1.1-1: Monitoring Area Editor, in zone mode.

To Add Zones/Counties from the Additional Zones list:

In addition to generating a first-guess monitoring area, SAFESEAS localization also builds additional lists of zones/counties and stations outside the monitoring area, but still within the regional area (defined by the D-2D regional scale). Zones may be added to the monitoring area by selecting them from the "Additional Zones" list, then clicking the "Add" button above the list

to move the selected zones into the "Monitor Area Zones" list. Zone selection capabilities are as follows:

- to select a zone, left-click on its ID. Multiple zones may be selected in this manner.
- to select a contiguous range of zones within the list, first left-click on the zone ID on one end of the desired range, and while holding down the mouse button, drag the cursor across the zone IDs in the desired range. Release the mouse button. The selected range of zones is added to any zones already selected.
- to de-select a zone, left click on its ID. De-selection can only be done one zone at a time.

To Remove a Zone/County from the Monitoring Area:

To remove a zone from the monitoring area, click on the zone's ID in the "Monitor Area Zones" list. Then click the "Remove" button located between the "Monitor Area Zones" list and the "Additional Zones" list. This can only be done one zone at a time. When a zone or county is removed from the monitoring area, its associated fixed stations are also removed from the list of monitored stations, except for those stations associated with another zone still contained in the monitoring area.

To associate Fixed Stations with a Zone or County in the Monitoring Area:

To edit the list of fixed stations associated with a zone, first double-left-click the zone's ID in the "Monitor Area Zones" list. The stations currently associated with the zone will then be loaded into the "Associated Stations" list. The list may be empty, indicating no fixed stations are currently associated with the zone. This will be the case quite often because many marine zones have no fixed stations (fixed buoys, C-MANs, etc.) located within or near them. Note that a given station may be associated with zero, one, or several counties and zones. To associate additional stations to the zone, first select their IDs from the "MA Stns" list or the "Regional Stns" list (whichever you are using). This is done the same way you selected zones from the "Additional Zones" list to add to the monitoring area. When you are done selecting stations, click the "Add" button located below the "Associated Stations" list.

To remove Fixed Stations associations from a Zone or County in the Monitoring Area:

To remove the association of a fixed station to a given zone, first double-left-click the zone's ID in the "Monitor Area Zones" to load the stations currently associated with the zone into the "Associated Stations" list. To remove a station association from the zone, click on the station's ID in the "Associated Stations" list, then click the "Remove" button located below the "Associated Stations" list. This can only be done one station at a time.

To Define and Add Zones/Counties not present in the Additional Zones list:

Zones not present in the "Additional Zones" list may be defined and added to the monitoring area. For example, for WFOs bordering on Canada or Mexico, there are no zone/county definitions available to AWIPS from which to build those portions of the first-guess monitoring area and the additional zones/counties list outside the U.S. borders. To define and add a zone to

the monitoring area that is not contained in the “Monitoring Area” or “Additional Zones” lists, click the “Add a New Zone to Monitor Area” button located just below the “Additional Zones” list. This will bring up an “Add a New Zone” GUI (Figure 4.2.1.1-2).

Near the top of the GUI, click either the “Marine Zone” button if the new zone is a marine zone, or the “County” button if the new zone is a county, parish, or other land political area. Now enter the zone’s ID, the latitude of the zone’s centroid, and the longitude of the zone’s centroid. Latitude is positive in the northern hemisphere, and negative in the southern hemisphere. East longitude values are positive; west longitude values are negative. When all the fields are filled in, click the “Add” button to add the new zone to the monitoring area. To abort the addition, click the “Close” button before pressing the “Add” button. After adding a zone, the GUI remains open so you can add additional zones. When you are done adding zones, click the “Close” button.

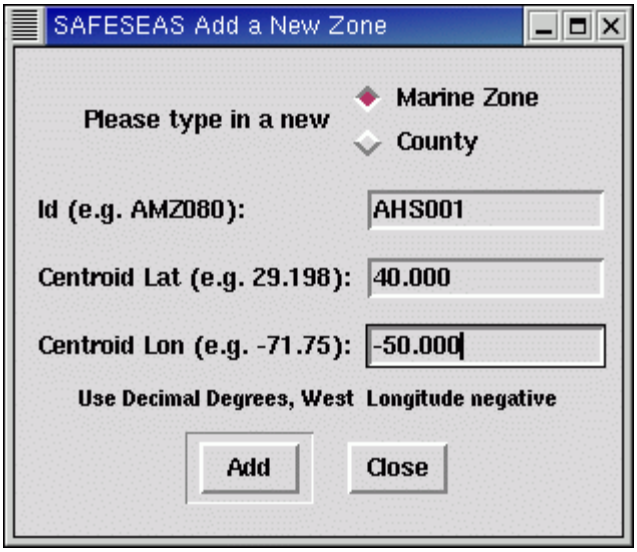


Figure 4.2.1.1-2: GUI for manually defining and adding a new zone to the monitoring area.

To Modify or Delete a User-Defined Zone/County:

To edit zones added to the monitoring area via the “Add a New Zone” GUI, click the “Edit a Newly Added Zone” button located above the “Cancel” button in the Configure Monitor Area main GUI. This will bring up another smaller GUI (Figure 4.2.1.1-3) for editing zone information. The left part of this GUI contains a list of zones added to the monitoring area lists via the “Add a New Zone” GUI. Select the zone to be edited by double-left-clicking on its ID within the list. The GUI will fill in the “ID”, “Lat”, and “Lon” editing boxes with the zone’s current values. To correct these values, change them in the editing boxes, then click the “Save” button. To delete the selected zone from both the “Monitor Area Zones” and the “Additional Zones” lists (in the parent GUI), click the “Delete” button. When finished deleting zones and/or editing zone information, click the “Close” button.

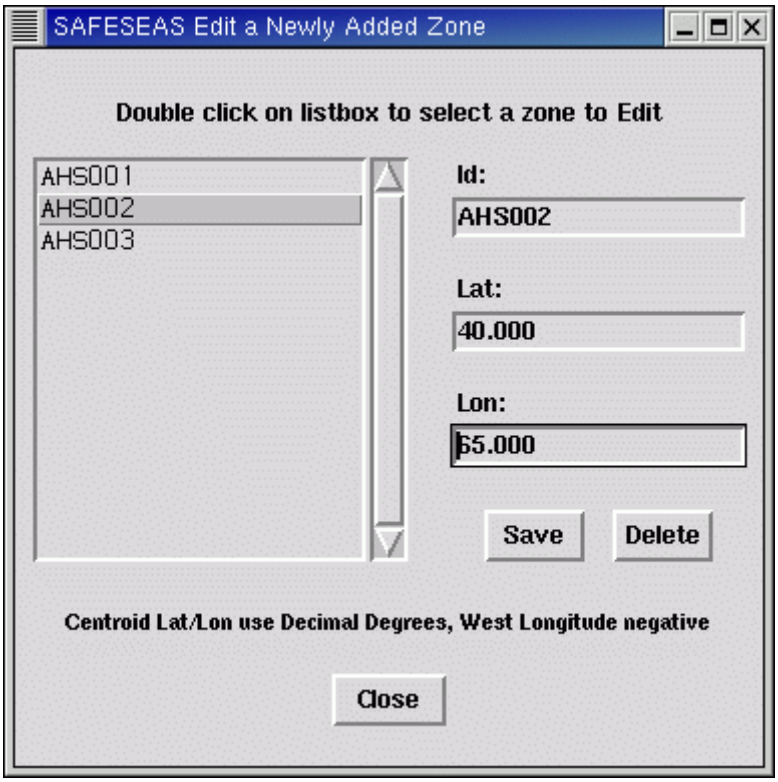


Figure 4.2.1.1-3: GUI for editing manually-added zones.

4.2.1.2 Station Mode

When editing in station mode (Figure 4.2.1.2-1), the GUI's "Monitor Area Stns" list contains the IDs for all the fixed stations currently located within the monitoring area, and the "Additional Stations" list consists of the IDs for other fixed stations located within the regional area. The one-line window near the GUI's upper right corner, just above the list title "Associated Zones", gives the ID of the "active" fixed station whose associated zones list is being edited. The GUI's upper right list (the "Associated Zones" list) consists of the IDs for the zones associated with the

active fixed station. You have a choice as to what the GUI's lower right list is. If "MA Zones" is selected, the list consists of the IDs for all the zones in the monitoring area. If "Regional Zones" is selected, the list consists of the IDs for all the zones within the broader region.

The contents of the GUI's lower right list are configured by the "MA Zones" and "Regional

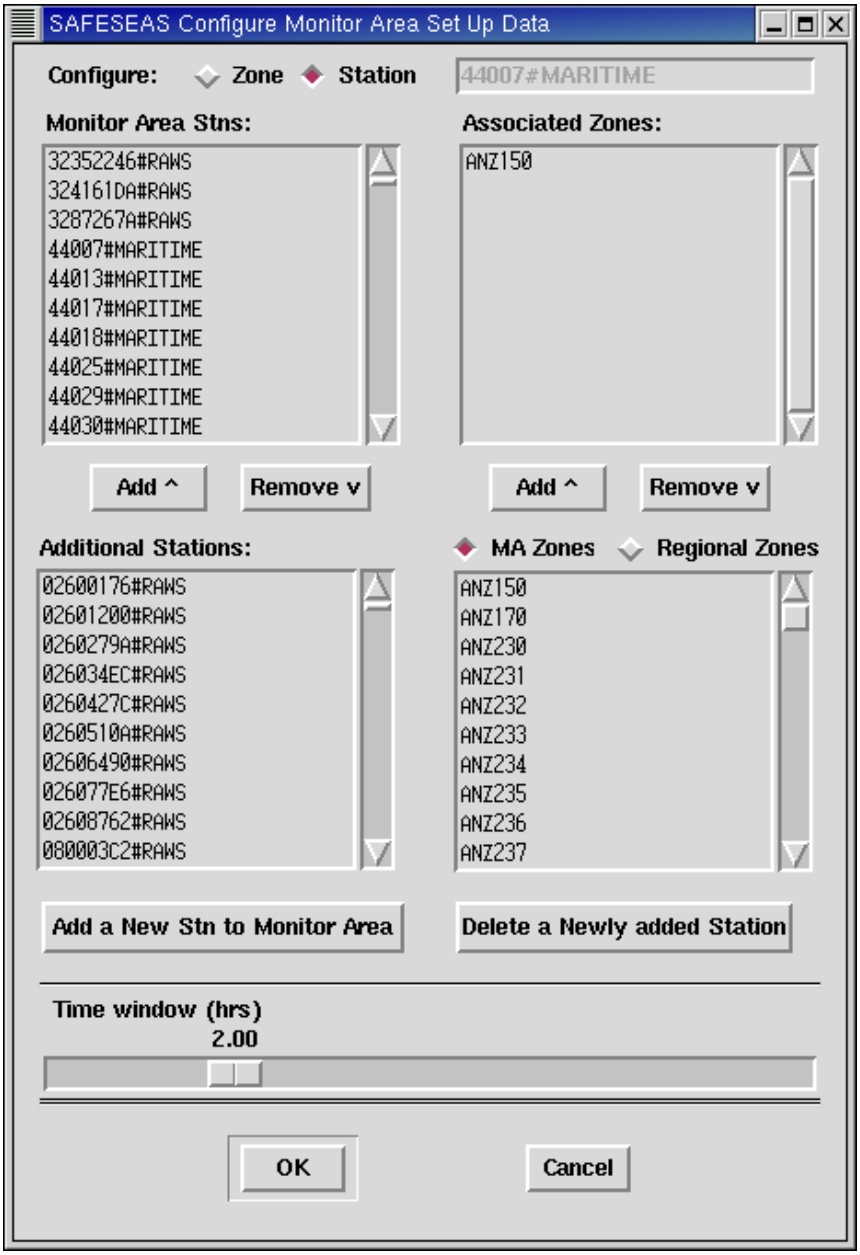


Figure 4.2.1.2-1: Monitoring Area Editor, in station mode.

Zones" pushbuttons. If "MA Zones" is selected, the IDs for all zones/counties currently

configured to be contained in the monitoring area are listed. The list of fixed stations associated with a given zone/county contained in the monitoring area may be empty. When "Regional Zones" is selected, the IDs for all the zones/counties within the regional area not currently in the monitoring area are shown.

Caesar Cioppi says:

A zone or county may be configured to be contained in the monitoring area, whether or not a fixed station is associated with the zone or county. This allows for the possibility that a mobile observation station (ship, drifting buoy) may move into the zone/county and become monitorable.

A fixed station cannot be configured to be contained in the monitoring area unless it is associated to a zone or county in the area, since all monitoring thresholds are associated to zones/counties, not stations.

To Add Stations to the Monitoring Area:

In addition to generating a first-guess monitoring area, SAFESEAS localization also builds additional lists of zones/counties and stations outside the monitoring area, but still within the regional area (defined by the D-2D regional scale). Stations may be added to the monitoring area by selecting them from the "Additional Stations" list, then clicking the "Add" button above the list to move the selected zones into the "Monitor Area Stns" list. Station selection capabilities are as follows:

- to select a station, left-click on its ID. Multiple stations may be selected in this manner.
- to select a contiguous range of stations within the list, first left-click on the station on one end of the desired range, and while holding down the mouse button, drag the cursor across the stations in the desired range. Release the mouse button. The selected range of stations is added to any stations already selected.
- to de-select a station, left click on its ID. De-selection can only be done one item at a time.

To Remove a Station from the Monitoring Area:

To remove a fixed station from the monitoring area, click on the station's ID in the "MA Stns" list to select it. Then click the "Remove" button located between the "MA Stns" list and the "Additional Stations" list. This can only be done one station at a time. The removed station is disassociated from any zones in the monitoring area to which it was previously associated.

To associate a Zone or County with a Fixed Station in the Monitoring Area:

To edit the set of zones associated with a fixed station, first double-left-click the station's ID in the "MA Stns" list to make the station "active". The zones currently associated with the active station are then displayed in the "Associated Zones" list. Note the list may be empty, indicating no zones are currently associated with the station. To add zones to the set of zones associated with the station, first select from the "MA Zones" list or the "Regional Zones" list (whichever you are using) the IDs for the zones to be added. This is done the same way you selected stations from the "Additional Stations" list to add to the monitoring area. When you are done selecting zones, click the "Add" button located below the "Associated Zones" list.

To remove Zone or County associations from a Station in the Monitoring Area:

To remove a zone from the set of zones associated with a fixed station, click on the zone's ID in the "Associated Zones" list. Then click the "Remove" button located below the "Associated Zones" list. This can only be done one zone at a time.

To Define and Add Fixed Stations not present in the Additional Stations list:

To add to the monitoring area a station that is not in the "Additional Stations" list, click the "Add a New Stn to Monitor Area" button located just below the "Additional Stations" list. This will bring up an "Add a New Station" GUI (see figures 4.2.1.2-2 and 4.2.1.2-3). Near the top of the GUI, there are three buttons: a "Metar" button, a "Maritime" button, and a "Mesonet" button. Click only one of these buttons.

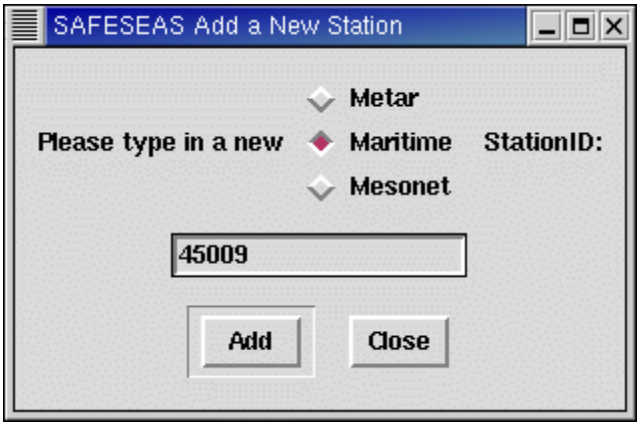


Figure 4.2.1.2-2: GUI for adding a new fixed station for the SAFESEAS monitoring area.

- Click the "Metar" button if the new station is a METAR station;
- Click the "Maritime" button if the new station is a non-mesonet buoy, C-MAN, or other stationary marine observation platform;
- Click the "Mesonet" button if the new station is a mesonet (land or marine) platform.

Now enter the station's ID (the ID as contained in the body of the report, e.g., KSTL, 44001, etc.). Then click the "Add" button to add the new station to the monitoring area. To abort the addition, click the "Close" button. After adding a station, the GUI remains open so you can add additional stations. When you are done, click the "Close" button. Note that for METAR and non-mesonet maritime stations, you should enter only the station's ID. But for a mesonet station, you must follow the station's ID with the '#' character and the station's "provider" (see Figure 4.2.1.2-3). This "provider" is the name or identifier of the mesonet to which the station belongs. The "provider" must match that found for the station in file "$FXA_HOME/data/localizationDataSets/$FXA_LOCAL_SITE/mesonetStationInfo.txt".

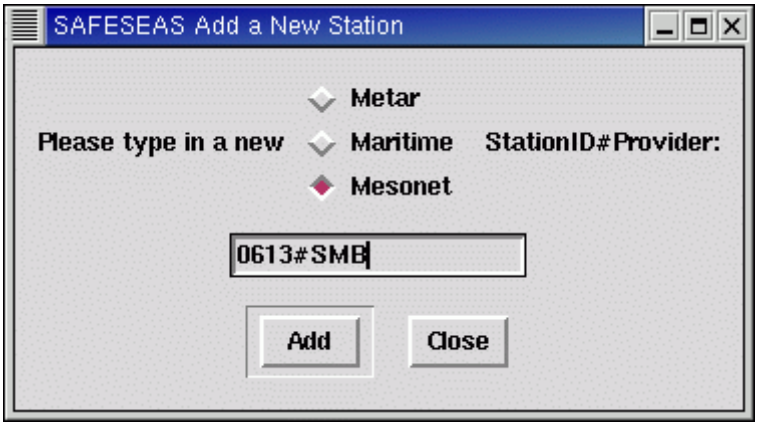


Figure 4.2.1.2-3: GUI for adding a new fixed mesonet station for the SAFESEAS monitoring area.

To Delete a User-entered Station:

To delete any station you added to the monitoring area via the "Add a New Station" GUI, click the "Delete a Newly added Station" button located above the "Cancel" button in the monitoring area editor. This will bring up a "Delete a Newly Entered Station" GUI (Figure 4.2.1.2-4). The left part of this GUI contains a list of stations added to the monitoring area via the "Add a New Station" GUI. To select a station to delete, click its ID in the list. To add a station to the set of stations selected for deletion, click its ID in the list. To deselect a station, click its ID in the list. To delete all selected stations, click the "Delete" button. When you are done deleting stations, click the "Close" button. A deleted station is disassociated from any zones in the monitoring area to which it was previously associated.

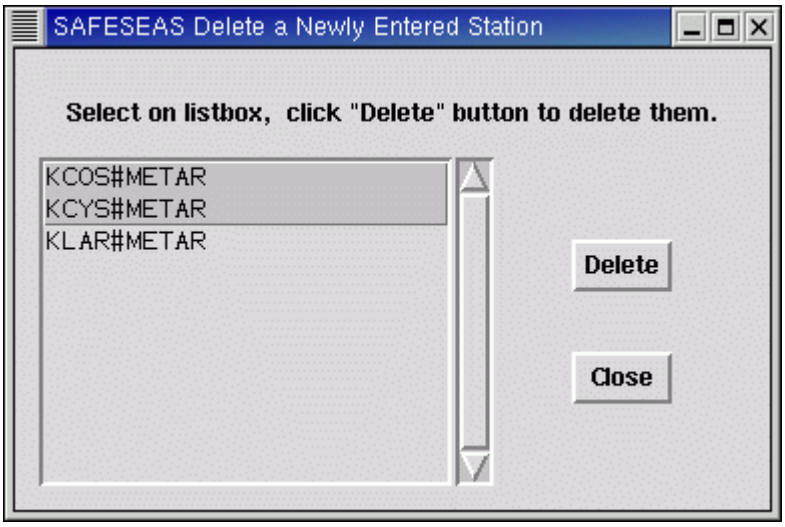


Figure 4.2.1.2-4: GUI for deleting a newly added station.

4.2.1.3 Modifying the SAFESEAS Button Time Window Value

At the bottom of the setup, GUI, a scroll bar is available to select the time widow for the monitoring button (see Fig. 3.2-1). The color of the button will reflect the highest threat level detected within the time window.

4.2.1.4 Saving Editing Changes to the Monitoring Area

When you are done editing the monitoring area in station or zone mode, click the "OK" button at the bottom of the "Configure Monitor Area Set Up Data" GUI to save the changes, or "Cancel" to abandon the changes and abort the editor. If you click "OK", a confirmation box (Figure 4.2.1.4-1) will appear. If you click the "Update" button in the confirmation box to save the changes, then the user may have to take special actions depending on whether zones were added to the monitoring area.

Figure 4.2.1.4-1: First monitor area setup change confirmation.

If Zones were added to the Monitoring Area:

The SAFESEAS zone/station configuration files are read once by the SAFESEAS D-2D tabular displays, when SAFESEAS is loaded into D-2D. If the SAFESEAS set-up is changed, the SAFESEAS displays must be cleared from D-2D, and then reloaded to pick up the new zone/station configuration. When you click the "Update" button in the first confirmation box, a second confirmation box (Figure 4.2.1.4-2) will appear. As indicated in the confirmation message, if the SAFESEAS display is running on any workstation in the office, bring SAFESEAS into the main D-2D panel and clear it by clicking the "Clear" button in the D-2D menu bar.

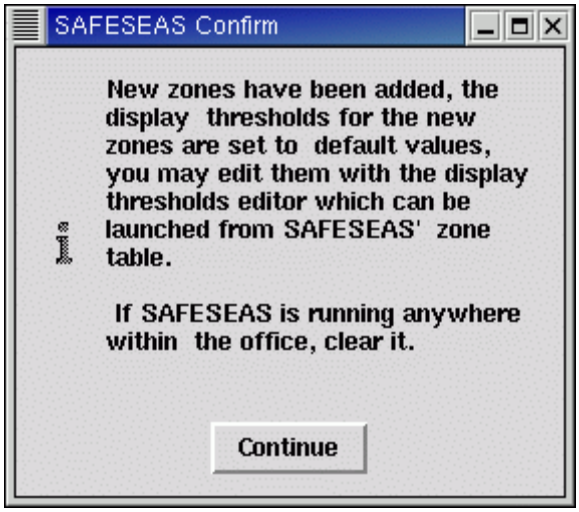


Figure 4.2.1.4-2: Display thresholds status confirmation box, for setup changes where new zones were added. "Continue" will proceed to monitor thresholds notification (Figure 4.2.1.4-3).

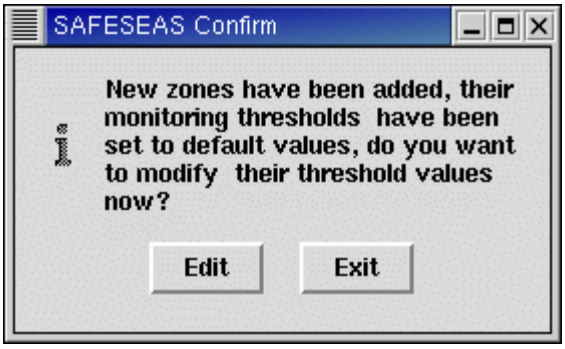


Figure 4.2.1.4-3: Monitor thresholds status confirmation box, for setup changes where new zones were added. "Edit" button will launch the monitor thresholds editor (Figure 4.2.2-1).

Once you are certain the SAFESEAS display is not running anywhere in the office, click the "Continue" button. A third confirmation box (Figure 4.2.1.4-3) will appear. As noted in the confirmation message, any new zones/counties added to the SAFESEAS monitoring area will be assigned with factory-default monitoring and display thresholds. If you click the "Edit" button for this confirmation, then the editor for the monitor thresholds will be launched automatically at this point to allow the user to customize the monitoring thresholds for the added zones. Note that zones newly added to the monitoring area are highlighted when the editor for the monitor thresholds is launched. See Section 4.2.2 ("Configuring the Monitor Thresholds") below for instructions on how to use this editor.

Display thresholds for the zone table (also used by the station table and the trend plot) will be set to default values, and must be manually edited if other thresholds are desired. Unlike in the monitor thresholds editor, new zones will not be highlighted in the display thresholds editor. It will be up to the user to make note of which new zones have been added to the monitoring area so that their display thresholds may be configured. Refer to Section 4.6 for procedures to edit display thresholds.

If Zones were Not Added to the Monitoring Area:

If no new zones were added to the SAFESEAS zone/county/station (i.e., if the only changes were to the station associations to zones, and/or removal of zones from the monitoring area), then the only action SAFESEAS takes is to send a signal to alert the SAFESEAS monitoring process of the setup changes.

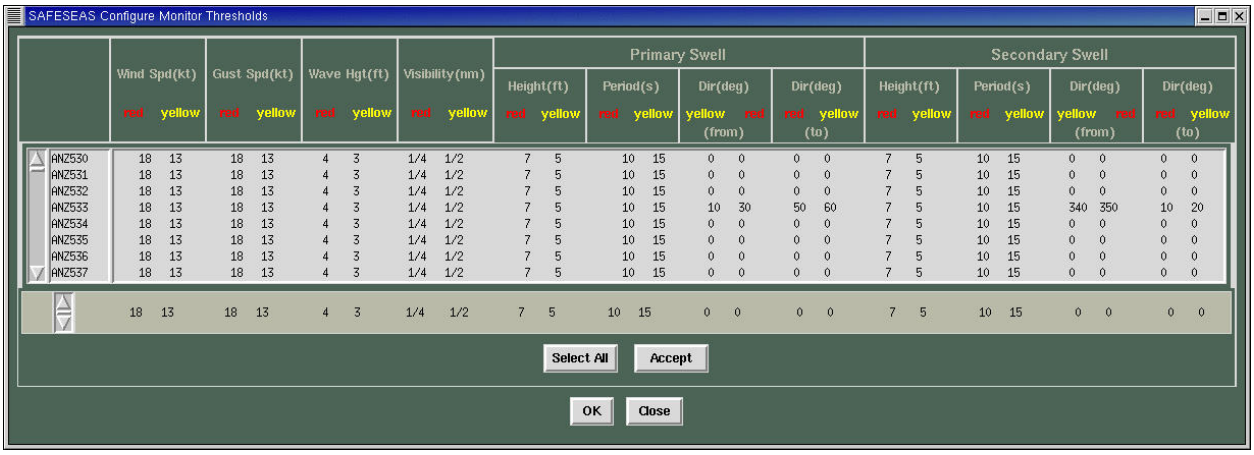
4.2.2 Configuring the Monitor Thresholds

The SAFESEAS monitor compares observation values (within the user-specific time window) against thresholds for alert levels to determine a single, overall threat level for the entire monitoring area. The most severe individual observation value threat level becomes the threat level for the entire monitoring area. The thresholds for the alert levels are both variable- and zone/county-specific. The editor for the monitor thresholds allows each site to customize the thresholds.

The SAFESEAS monitoring thresholds editor (Figure 4.2.2-1) is launched from the AWIPS menu icon. It is located in the Panel along the edge of the screen background, along with such menu items as IFPS and Start D-2D. Left click the AWIPS menu icon to bring up the AWIPS Startup menu. At the bottom of the AWIPS Startup menu, left-click "SAFESEAS Apps" to bring up the SAFESEAS editors menu. Click the "Configure Monitor Thresholds" entry to start the editor for the SAFESEAS monitoring area thresholds.

Monitoring threshold levels may be set for multiple zones simultaneously, or for a single zone. Selection of zones in the monitor thresholds editor is similar to the same feature in the monitor area setup GUI, with additions as follows:

- to select a zone, left-click on its ID. Multiple zones may be selected in this manner.
- to select a contiguous range of zones within the list, first left-click on the zone ID on one end of the desired range, and while holding down the mouse button, drag the cursor across the zone IDs in the desired range. Release the mouse button. The selected range of zones is added to any zones already selected.
- to select all zones when no zones are yet selected, click the "Select All" button near the bottom of the GUI. This button is enabled only when no zones are currently selected.



	Wind Spd(kt)		Gust Spd(kt)		Wave Hgt(ft)		Visibility(nm)		Primary Swell						Secondary Swell					
									Height(ft)		Period(s)		Dir(deg)	Dir(deg)	Height(ft)		Period(s)		Dir(deg)	Dir(deg)
	red	yellow	red	yellow	red	yellow	red	yellow	red	yellow	red	yellow	yellow (from)	red (to)	red	yellow	red	yellow	yellow (from)	red (to)	red (to)	yellow (to)
ANZ530	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ531	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ532	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ533	18	13	18	13	4	3	1/4	1/2	7	5	10	15	10	30	50	60	7	5	10	15	340	350	10	20
ANZ534	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ535	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ536	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
ANZ537	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0
	18	13	18	13	4	3	1/4	1/2	7	5	10	15	0	0	0	0	7	5	10	15	0	0	0	0

Figure 4.2.2-1: Monitoring thresholds editor.

- to de-select a zone, left click on its ID. De-selection can only be done one zone at a time.
- to de-select all selected zones, click the "De-Select All" button near the bottom of the GUI. This button is enabled only when at least one zone is already selected.

Once the zones have been selected, their thresholds may be set. First, in the pale green area near the bottom of the GUI, click on the threshold value to be changed. Click the up or down arrows (near the left edge of the pale green area) to raise or lower the threshold's value. Repeat this procedure for each threshold value you wish to change for the selected zones. The GUI will not allow a red level threshold to be set to a less hazardous value (higher or lower, depending on variable) than the yellow level threshold's value. You also cannot set a yellow level threshold to a value more severe than the red level threshold's value. When all the thresholds for the selected zones are set, click the "Accept" button to hold the changes until they are ready to be saved, and select the next set of zones whose thresholds are to be specified.

Monitoring thresholds for primary and secondary swell directions must be handled in a special fashion. Those parameters each have "From" and "To" thresholds for red and yellow levels. Those two thresholds are used to define an arc of azimuth values which can be alerted for. There are two rules to follow when choosing these azimuthal limits:

- The “From” and “To” bearings will be assumed by SAFESEAS to be in a clockwise order. For Example: A “From” value of 359 and a “To” value of 1 will produce an arc of 2 degrees, while a “From” value of 1 and a “To” value of 359 will produce a near-circle of 358 degrees.
- The red alerting area must always be contained within the yellow alerting area. The settings will not be accepted by SAFESEAS otherwise.

Once the thresholds have been set to the desired values and accepted for all zones and variables, click the “OK” button near the bottom of the GUI to commit and save the editing changes. When the changes are saved by pressing OK, then:

- the old threshold values will be permanently overwritten by the new ones,
- the SAFESEAS monitor will re-evaluate observations (withind the user-selected time window) using the new threshold values, update the threat level on the D-2D, and continue to use the new thresholds until they are changed again, and
- the threshold editor GUI will be closed.

To abandon the changes without saving, click the “Close” button near the bottom of the GUI.

4.3 The SAFESEAS Plot

The SAFESEAS plot is launched from the "Obs" tear-away submenu (Figure 4.3-1) in the D-2D menu bar. Clicking on "SAFESEAS" at the bottom of the "Maritime" section of the "Obs" menu loads the SAFESEAS plan-view plots in the D-2D main panel, and loads the SAFESEAS zone table in its own window (Figure 4.3-2).

This graphic behaves just like any other AWIPS D-2D plan-view display, such as the METAR plot. You can zoom, re-center, loop, etc. just as you can with the METAR plot. See the AWIPS User's Manual for more information.

The SAFESEAS plot consists of four AWIPS D-2D station plots packaged together, and nearly identical to their D-2D counterparts: a "METAR" plot, a "Fixed Buoys" plot, a "Moving Buoys/Ships" plot, and a "Mesonet" plot. The SAFESEAS plots differ from the D-2D plots only in that SAFESEAS plots only those reports within the office's monitoring area, as defined by the monitoring area station setup.

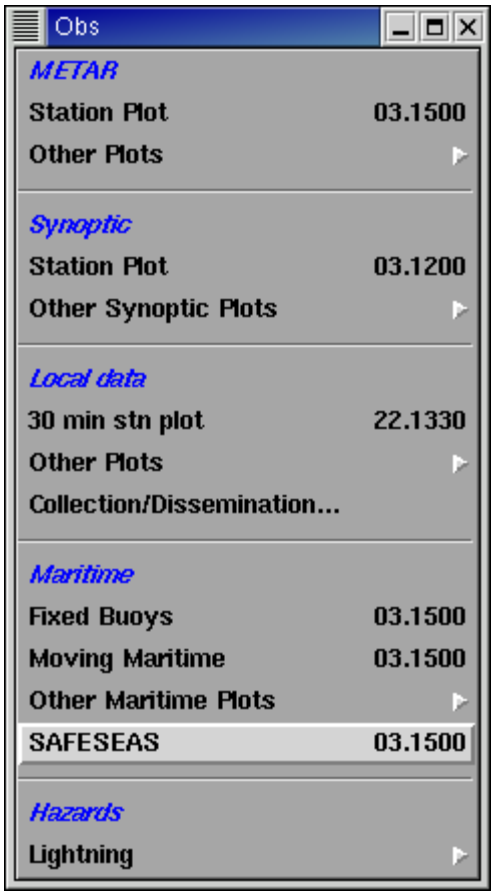


Figure 4.3-1: D-2D Obs submenu with SAFESEAS option.

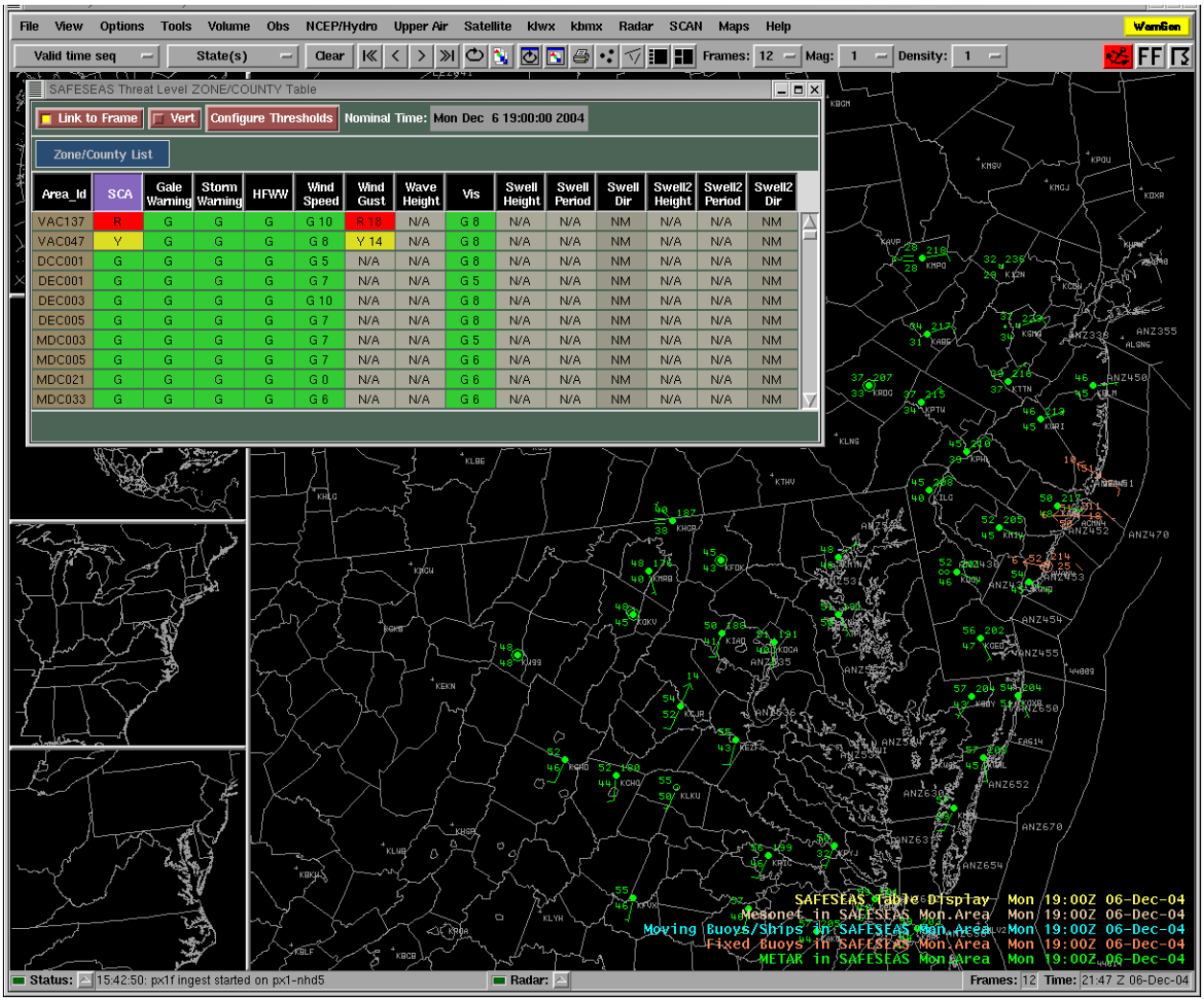
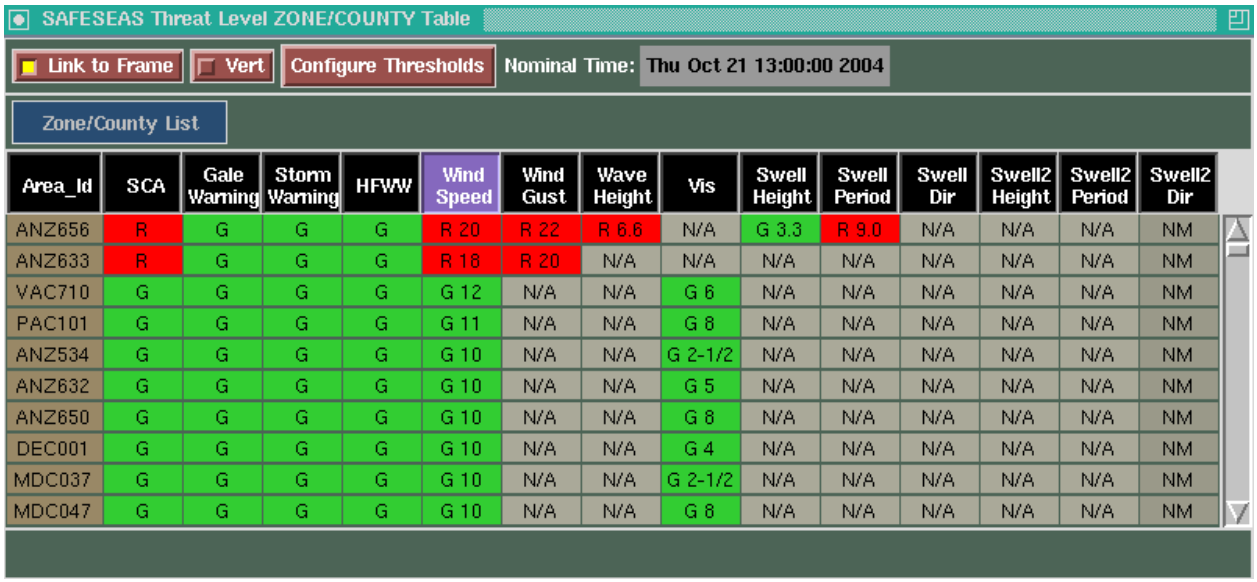


Figure 4.3-2: D-2D display with SAFESEAS plan-view plots loaded in the main panel, showing the automatically-loaded SAFESEAS zone table in a separate window.

4.4 The Zone Table

To launch the zone table (Figure 4.4-1), select the SAFESEAS multiload (see above). The zone table is automatically constructed and displayed when the SAFESEAS plot is launched. If the station table is displaying, you can return to the zone table by left-clicking the "Zone/County" button which is located directly above the column headings in the GUI. The definitions of the columns and cell contents in the zone and station tables are as defined in Table 4.4-1. Table 4.4-2 summarizes the features and actions available in the zone table display.



Area_Id	SCA	Gale Warning	Storm Warning	HFWW	Wind Speed	Wind Gust	Wave Height	Vis	Swell Height	Swell Period	Swell Dir	Swell2 Height	Swell2 Period	Swell2 Dir
ANZ656	R	G	G	G	R 20	R 22	R 6.6	N/A	G 3.3	R 9.0	N/A	N/A	N/A	NM
ANZ633	R	G	G	G	R 18	R 20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NM
VAC710	G	G	G	G	G 12	N/A	N/A	G 6	N/A	N/A	N/A	N/A	N/A	NM
PAC101	G	G	G	G	G 11	N/A	N/A	G 8	N/A	N/A	N/A	N/A	N/A	NM
ANZ534	G	G	G	G	G 10	N/A	N/A	G 2-1/2	N/A	N/A	N/A	N/A	N/A	NM
ANZ632	G	G	G	G	G 10	N/A	N/A	G 5	N/A	N/A	N/A	N/A	N/A	NM
ANZ650	G	G	G	G	G 10	N/A	N/A	G 8	N/A	N/A	N/A	N/A	N/A	NM
DEC001	G	G	G	G	G 10	N/A	N/A	G 4	N/A	N/A	N/A	N/A	N/A	NM
MDC037	G	G	G	G	G 10	N/A	N/A	G 2-1/2	N/A	N/A	N/A	N/A	N/A	NM
MDC047	G	G	G	G	G 10	N/A	N/A	G 8	N/A	N/A	N/A	N/A	N/A	NM

Figure 4.4-1: SAFESEAS Zone Table. In this example, sorting of the table's contents is by Wind Speed.

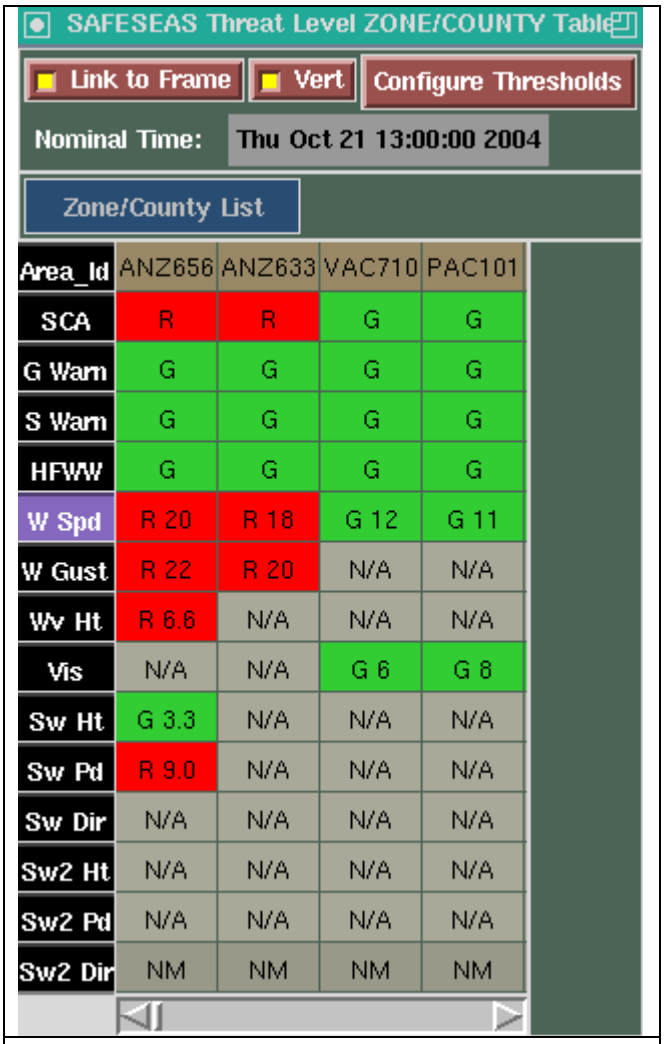
Table 4.4-1: Contents of the zone and station table displays, by column.

COLUMN LABEL	DEFINITION	UNITS
Area_Id	Identifier for zone/county or station.	none (alphanumeric)
SCA	Small Craft Advisory. This is based on wind speed, speed of wind gust, and wave height.	none (letter indicating threat level)
Gale Warning	Gale Warning. This is based on wind speed and speed of wind gust.	none (letter indicating threat level)
Storm Warning	Storm Warning. This is based on wind speed and speed of wind gust.	none (letter indicating threat level)
HFWW	Hurricane Force Wind Warning. This is based on wind speed and speed of wind gust.	none (letter indicating threat level)
Wind Speed	wind speed	knots
Wind Gust	speed of wind gust	knots
Wave Height	Significant wave height	feet
Vis	horizontal visibility	nautical miles
Swell Height	Swell Height	feet
Swell Period	Swell Period	seconds
Swell Dir	Swell Direction	azimuth degrees
Swell2 Height	Secondary Swell Height	feet
Swell2 Period	Secondary Swell Period	seconds
Swell2 Dir	Secondary Swell Direction	azimuth degrees

Table 4.4-2: Features and Action options for the zone table display.

Link to Frame	Clicking the "Link to Frame" button toggles link-to-frame behavior. When link-to-frame is active, the nominal time in the zone and station tables always matches the valid time in the D-2D frame, and the data in the tables animates with the D-2D looping. Otherwise, the nominal time of the zone table remains unchanged at the last frame time in the D-2D display, until either you cause the table to be redrawn, or the D-2D frame advances to a new nominal hour valid time.
Configure Thresholds	Left-clicking the "Configure Thresholds" button near the top of the GUI brings up the editor for the display thresholds. Refer to Section 4.6.
Zone Detail (Zoom/Recenter D-2D, and show station table)	Left-clicking on a zone ID (in the first (leftmost) column) causes the SAFESEAS plots to zoom in and re-center on the selected zone, and the zone table to be replaced by a station table (a table showing threat levels and variable values for the latest report for each station in the zone). Refer to Section 4.5 for the station table.
Sort by Threat Level	Left-clicking on a product or variable name causes the table to be sorted by the threat levels in that column. Zones are first sorted into decreasing order based on the selected product's or variable's threat level values. Zones with the same threat level for the selected column are secondarily sorted alphabetically by zone ID.
Vert	Selecting this button will cause the Zone Table to align itself vertically, with the highest-ranking values on the left hand side. De-selecting the button will cause the table to realign itself back to its horizontal configuration. See Figure 4.4-2.

No matter what the "Link to Frame" mode is, the zone table will auto-update to display new data in the current frame(s), and/or with a new frame time when the next hour's observation data begins to become available.

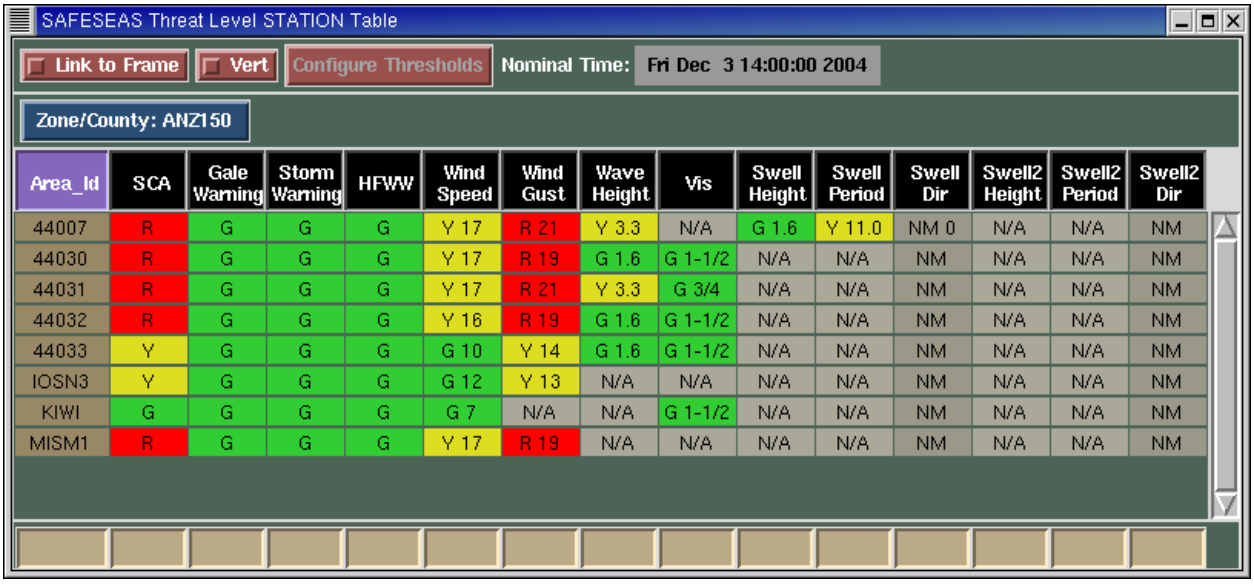


Area_Id	ANZ656	ANZ633	VAC710	PAC101
SCA	R	R	G	G
G Warn	G	G	G	G
S Warn	G	G	G	G
HFWW	G	G	G	G
W Spd	R 20	R 18	G 12	G 11
W Gust	R 22	R 20	N/A	N/A
Wv Ht	R 6.6	N/A	N/A	N/A
Vis	N/A	N/A	G 6	G 8
Sw Ht	G 3.3	N/A	N/A	N/A
Sw Pd	R 9.0	N/A	N/A	N/A
Sw Dir	N/A	N/A	N/A	N/A
Sw2 Ht	N/A	N/A	N/A	N/A
Sw2 Pd	N/A	N/A	N/A	N/A
Sw2 Dir	NM	NM	NM	NM

Figure 4.4-2: SAFESEAS Zone Table, in vertical mode (Vert button active). In this example, sorting of the table's contents is by Wind Speed, with highest values on the left.

4.5 The Station Table

To launch the station table (Figure 4.5-1), left-click on the zone ID in the first (leftmost) column of the zone table. Only those stations associated in the monitoring area with the selected zone will be shown in the station table. Table 4.5-1 summarizes the features and actions available in the station table display.



Area_Id	SCA	Gale Warning	Storm Warning	HFWW	Wind Speed	Wind Gust	Wave Height	Vis	Swell Height	Swell Period	Swell Dir	Swell2 Height	Swell2 Period	Swell2 Dir
44007	R	G	G	G	Y 17	R 21	Y 3.3	N/A	G 1.6	Y 11.0	NM 0	N/A	N/A	NM
44030	R	G	G	G	Y 17	R 19	G 1.6	G 1-1/2	N/A	N/A	NM	N/A	N/A	NM
44031	R	G	G	G	Y 17	R 21	Y 3.3	G 3/4	N/A	N/A	NM	N/A	N/A	NM
44032	R	G	G	G	Y 16	R 19	G 1.6	G 1-1/2	N/A	N/A	NM	N/A	N/A	NM
44033	Y	G	G	G	G 10	Y 14	G 1.6	G 1-1/2	N/A	N/A	NM	N/A	N/A	NM
IOSN3	Y	G	G	G	G 12	Y 13	N/A	N/A	N/A	N/A	NM	N/A	N/A	NM
KIWI	G	G	G	G	G 7	N/A	N/A	G 1-1/2	N/A	N/A	NM	N/A	N/A	NM
MISM1	R	G	G	G	Y 17	R 19	N/A	N/A	N/A	N/A	NM	N/A	N/A	NM

Figure 4.5-1: SAFESEAS Station Table. As shown, the table is sorted by Area ID. Right-clicking on a cell in the table will launch a 24-hour trend (meteogram) plot (see figures 4.5.1-1, 4.5.1-2, and 4.5.1-3) for the station and the product or variable corresponding to the cell.

Table 4.5-1: Features and Action options for the station table display.

Link to Frame	Clicking the "Link to Frame" button toggles link-to-frame behavior. When link-to-frame is active, the nominal time in the zone and station tables always matches the valid time in the D-2D frame, and the data in the tables animates with the D-2D looping. Otherwise, the nominal time of the station table remains unchanged at the last frame time in the D-2D display, until either you cause the table to be redrawn, or the D-2D frame advances to a new nominal hour valid time.
Zoom/Recenter D-2D	Left-clicking on a station ID in the "Area ID" column causes the SAFESEAS plots to zoom in and re-center on the selected station.
Sort by Threat Level	Left-clicking on a product or variable name causes the table to be sorted by the threat levels in that column. Stations are first sorted into decreasing order based on the selected product's or variable's threat level values. Stations with the same threat level for the selected column are secondarily sorted alphabetically by station ID.
Display Trend	Right-clicking on a threat-level cell within the table produces a 24-hour trend for the station and variable/product corresponding to the cell. See Section 4.5.1.
Revert to Zone Table	The "Zone/County" button immediately above the column headings in the station table indicates which zone or county's stations are being displayed in the table. Left click on this button to return to the zone table mode.

Vert	Selecting this button will cause the Zone Table to align itself vertically, with the highest-ranking values on the left hand side. De-selecting the button will cause the table to realign itself back to its horizontal configuration.

4.5.1 The Trend Plot

A trend can only be launched from the station table (Figure 4.5-1). Within the station table, right-click on the cell in the row/column corresponding to the station and variable or product of interest. The trend plot for the selected data will be displayed. When you are finished viewing the plot, click the "Exit" button below the graph.

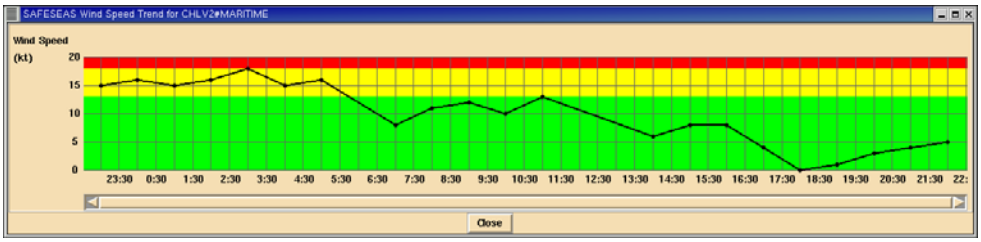


Figure 4.5.1-1: Trend plot for a variable (wind gust in the example shown).

A variable's trend (Figure 4.5.1-1) consists of a plot (meteogram) of the selected variable's values versus time for the past 24 hours. The background within the plot is colored to show where the plotted values lay within the display table's threat levels. Dots representing individual observations are not connected when there are known to be other observations missing between the plotted points. A product's trend (Figure 4.5.1-2) consists of a stacked set of variable trends, with a separate trend displayed for each variable comprising the product.

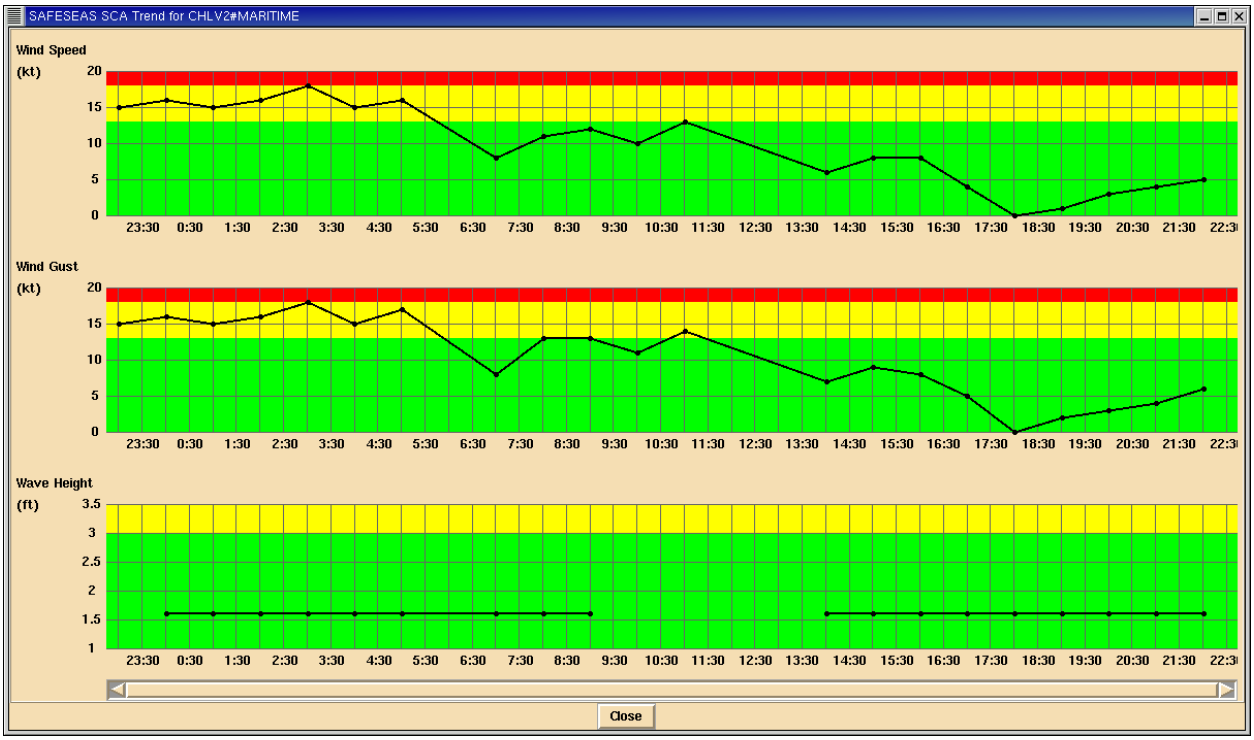


Figure 4.5.1-2: Trend plot for a product (Small Craft Advisory).

A right-click on primary and secondary swell directions will bring up a hodograph-type chart to represent directional trends (see **4.5.1-3**). The direction of the swell is represented by a point's bearing on a polar plot. Concentric circles represent the observation times. Azimuthal alert thresholds (discussed in the next section) are colored in red and yellow arcs.

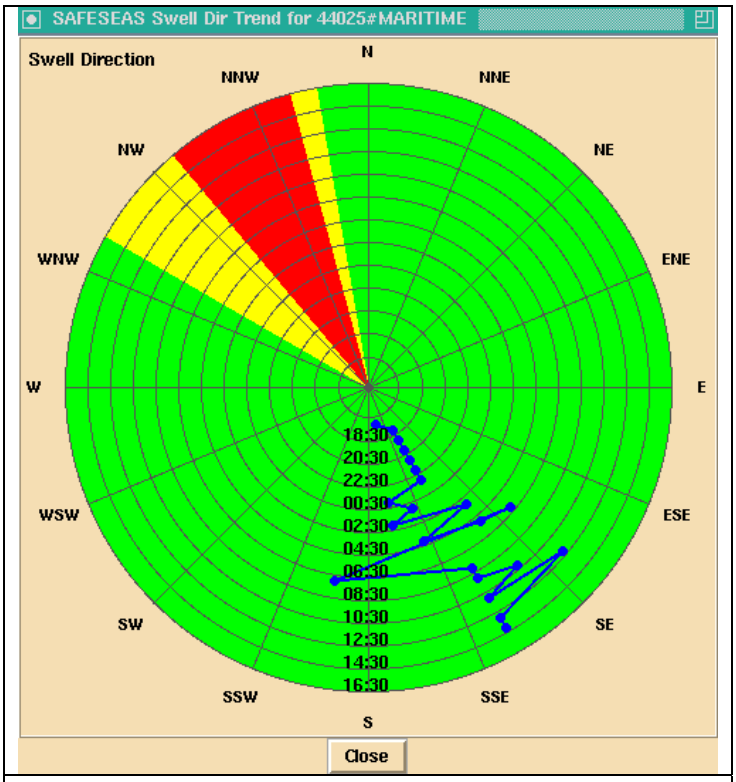


Figure 4.5.1-3: Trend plot for a swell direction. The outermost circle represents the latest time. The points indicate that the swells have mostly been coming from the SE – SSE direction. The yellow threat area ranges from about 300 to 345 degrees. The red threat area is always contained inside the yellow area.

4.5.2 Observation History Table.

In the SAFESEAS stations table, right-clicking on a station ID will produce a 24 hour observation history table (see Fig 4.5.2-1). The appearance of the table will depend on the type of station being interrogated. Maritime stations, for example, will have wave information, while METARS stations will not. The user can choose which fields will appear by clicking on the **Configure** button on the top right of the table. The OH Table configuration GUI will appear (Fig. 4.5.2-2)

SAFESEAS Observation History Table

Station ID: 44013#MARITIME (42.40/-70.70) Configure Update Close

Time (UTC)	Wind Spd (kt)	Wind Gust (kt)	Vis (nm)	P (in)	P Tendency (in)	Significant Wave Hgt (ft)	Swell Hgt (ft)	Swell Per (sec)	Swell Dir (deg)
19:00 Nov 04	14.0	16.0	N/A	29.97	-0.121	1.6	1.6	10.0	N/A
18:00 Nov 04	8.0	12.0	N/A	30.01	N/A	1.6	1.6	9.0	N/A
17:00 Nov 04	0.0	6.0	N/A	30.06	-0.071	1.6	N/A	N/A	N/A
16:00 Nov 04	2.0	4.0	N/A	30.09	-0.050	1.6	1.6	10.0	N/A
14:00 Nov 04	0.0	4.0	N/A	30.14	-0.015	1.6	1.6	10.0	N/A
13:00 Nov 04	2.0	8.0	N/A	30.14	-0.009	1.6	1.6	5.0	N/A
12:00 Nov 04	6.0	10.0	N/A	30.15	0.000	1.6	1.6	5.0	N/A
11:00 Nov 04	8.0	14.0	N/A	30.15	0.000	1.6	1.6	10.0	N/A
10:00 Nov 04	12.0	16.0	N/A	30.15	-0.000	3.3	1.6	5.0	N/A
08:00 Nov 04	19.0	25.0	N/A	30.15	-0.015	3.3	1.6	10.0	N/A
07:00 Nov 04	17.0	23.0	N/A	30.16	0.000	3.3	1.6	9.0	N/A
06:00 Nov 04	19.0	23.0	N/A	30.16	0.000	3.3	1.6	6.0	N/A
05:00 Nov 04	16.0	21.0	N/A	30.16	+0.024	3.3	1.6	10.0	N/A
04:00 Nov 04	17.0	23.0	N/A	30.16	+0.024	3.3	1.6	10.0	N/A
03:00 Nov 04	19.0	23.0	N/A	30.15	+0.050	3.3	1.6	10.0	N/A
02:00 Nov 04	19.0	25.0	N/A	30.14	+0.074	3.3	1.6	6.0	N/A
01:00 Nov 04	19.0	27.0	N/A	30.13	+0.109	3.3	1.6	10.0	N/A
00:00 Nov 04	21.0	27.0	N/A	30.10	+0.118	3.3	1.6	7.0	N/A
23:00 Nov 03	19.0	27.0	N/A	30.06	+0.094	3.3	1.6	11.0	N/A
22:00 Nov 03	21.0	27.0	N/A	30.02	+0.094	3.3	1.6	10.0	N/A
21:00 Nov 03	21.0	27.0	N/A	29.98	+0.053	4.9	1.6	10.0	N/A
20:00 Nov 03	19.0	27.0	N/A	29.97	+0.053	4.9	N/A	N/A	N/A

Figure 4.5.2-1. Observation History Table, configured for a maritime station. The parameters in the table will change depending on whether the site is land or sea-based, and also by how the user configures it.

Caesar Cioppi says…..

Unlike the SAFESEAS zone/station table, the OH table's columns cannot sort by value. The latest values are always at the top, the oldest at the bottom.

Inside the configuration GUI will be two columns of parameters, one for METAR stations and one for maritime stations. Selecting or de-selecting each parameter will determine whether the parameter appears in the OH table for that type of station. Clicking on the **Maritime** or **METAR** buttons will automatically cause all parameters to be selected. Select the **Save** button to store the configuration, and select the OH Table's **Update** button (which will have turned white) to see the new configuration in the OH Table.

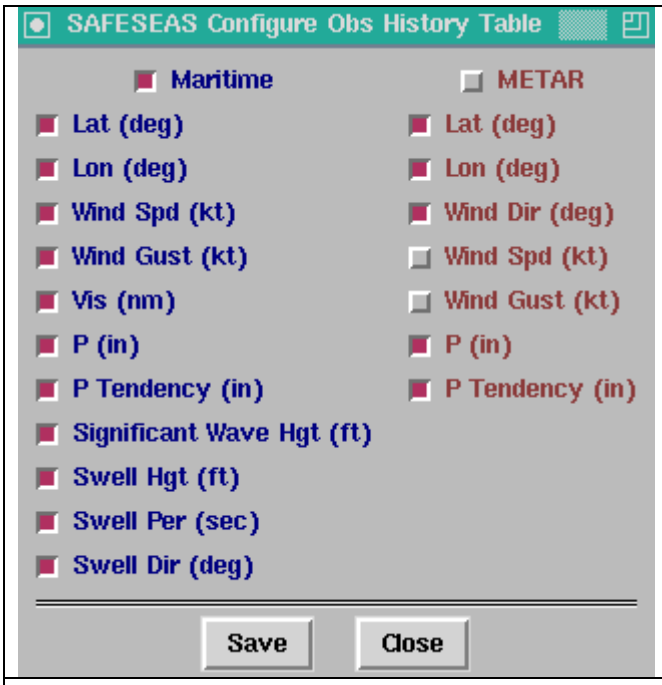


Figure 4.5.2-2. The OH Table configuration GUI. With the Maritime button selected, all the maritime parameters in the left column will appear in the OH Table. On the right side, wind speed and wind gust have be de-selected, so they will not be seen in the OH Table.

4.6 Editing Zone/Station Table Display Thresholds

To determine the threat level for a cell in the zone table, SAFESEAS compares observation values for the most recent report for each station within the zone against thresholds for two alert levels. The most severe individual observation value threat level becomes the threat level for the zone. The thresholds for the two alert levels are both variable- and zone-specific. The editor for the display thresholds allows each site to customize the thresholds.

The editor for the display thresholds can be launched from the zone table only. Click the "Configure Thresholds" button near the top of the zone table (Figure 4.4-1) to bring up the editor for the display thresholds (Figure 4.6-1). The current display thresholds for each variable and product, for each zone in the monitoring area, are shown in the scrolling list in the center of the editor.

To change display threshold values, first select the zones to which the new threshold values will apply.

- to select a zone, left-click on its ID. Multiple zones may be selected in this manner.
- to select a contiguous range of zones within the list, first left-click on the zone ID on one end of the desired range, and while holding down the mouse button, drag the cursor across the zone IDs in the desired range. Release the mouse button. The selected range of zones is added to any zones already selected.
- to select all zones when no zones are yet selected, click the “Select All” button near the bottom of the GUI. This button is enabled only when no zones are currently selected.
- to de-select a zone, left click on its ID. De-selection can only be done one zone at a time.
- to de-select all selected zones, click the “De-Select All” button near the bottom of the GUI. This button is enabled only when at least one zone is already selected.

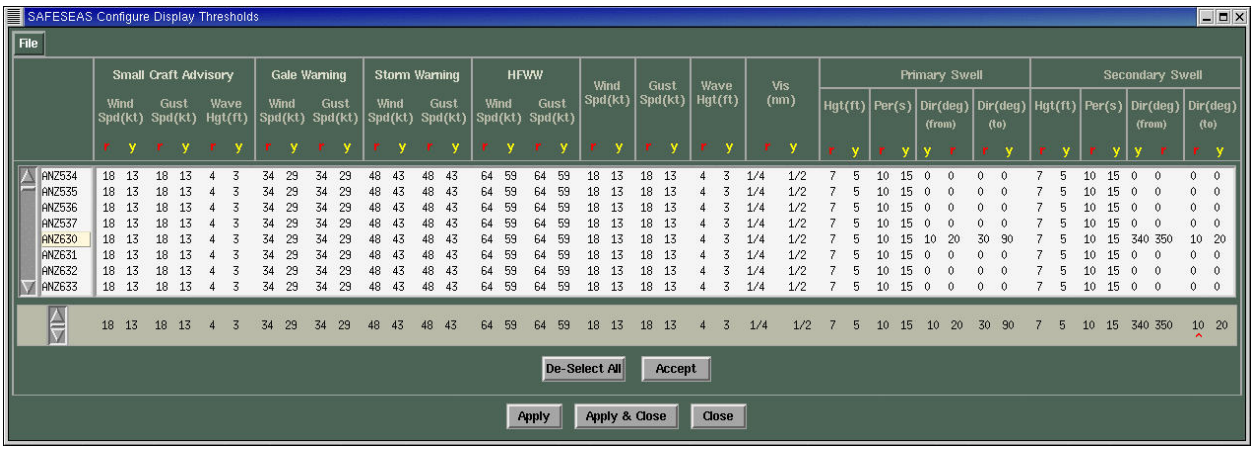


Figure 4.6-1: Threshold editor for the SAFESEAS zone/station table displays. Editor is shown with the drop-down “File” menu activated.

Once the desired zone(s) are selected, set their thresholds. In the row of threshold values below the zone thresholds scrolling list, click on the threshold value you wish to change. Then click the up or down arrows (on left edge of the thresholds) to change the threshold’s value. Repeat this procedure for each threshold value you wish to change for the selected zones. The GUI will not allow you to set a red level threshold to a value less hazardous than the yellow level threshold’s value. You also cannot set a yellow level threshold to a value more severe than the red level threshold’s value.

Setting thresholds for primary and secondary swell directions must be handled in a special fashion. Those parameters each have “From” and “To” columns for red and yellow levels. The "From/To" selections are used to define an arc of azimuth values which will be colored in red or yellow on the trend hodograph. The swell direction cells in the station table will take on the red/yellow colors if the values lay inside those arcs. As was discussed in section 4.2.2, there are two rules to follow when choosing these azimuthal limits:

- The “From” and “To” bearings will be assumed by SAFESEAS to be in a clockwise order. For Example: A “From” value of 359 and a “To” value of 1 will produce an arc of 2 degrees, while a “From” value of 1 and a “To” value of 359 will produce a near-circle of 358 degrees.
- The red alerting area must always be contained within the yellow alerting area. The settings will otherwise not be accepted by SAFESEAS.

When all the thresholds for the variables’ threat levels are as desired, click the “Accept” button to change the values for the selected zones in the scrolling zone thresholds list.

Previewing Threshold Changes:

To get a preview of how the new thresholds will affect the zone table, click the “Apply” button. The zone table will be redrawn with threat levels based on the new threshold values, but the editor will remain open for further editing. Clicking the “Apply & Close” button will cause the zone table to be redrawn with threat levels based on the new threshold values, and close the editor. Note that changes made to threshold values in this manner are not saved permanently. Pressing “Close” will close the editor without applying any changes that have not yet been applied.

Permanently Saving Display Threshold Changes:

Multiple sets of customized display thresholds may be saved, recalled, and deleted. For these capabilities, use the File menu options accessed on the menu bar of the editor. The “File” menu offers the following actions:

Open	Open a file holding an existing set of thresholds and load the set into the editor.
Save As	A list of display threshold file names is presented. Select an existing file name from the list, or enter a new file name manually. The threshold values displayed in the editor are saved in the user-specified file.
Select As Default	A list of display threshold file names is presented. Select a file name from the list, or enter a file name manually. The threshold values stored in the selected file will be the threshold values subsequently used each time the zone table is launched. The threshold values in the selected file are not loaded into editor.
Load Default	The threshold values in the display thresholds file currently specified to be the default are loaded into editor.
Delete	Permanently delete a display thresholds file. Select a file name from the list, or enter the file name manually.
Exit	Closes the editor without saving or applying any additional editing changes.

Caesar Cioppi says:

None of the “File” menu actions affect a currently-displayed zone table until either the “Accept” button or “Accept & Close” button is clicked.

When new Zones/Counties have been added to the Monitoring Area:

As noted in Section 4.2.1.4, default display thresholds for each product and variable are assigned to any new zone or county added to the monitoring area via the monitor area editor. If different display thresholds are desired, they must be manually changed by opening the file containing the display thresholds data set, editing the display thresholds for each newly-added zone and county, and then saving the file under the desired name. This process must be repeated separately for each display thresholds file where the default display thresholds are to be modified.

5 Getting Help

To report problems or ask questions about the operation of SAFESEAS in general, please use the SAFESEAS list server. To join the SAFESEAS list server:

1. Go to “http://infolist.nws.noaa.gov/read/login/”

2. Select "all forums".

3. Scroll down to the SAFESEAS list, and click "subscribe" on the right column.

4. Enter your email address, name, and password.

Your membership will be approved by the list administrator, and then once approved, you can send, view, and receive messages.

Please visit the SAFESEAS homepage at:

“http://www.nws.noaa.gov/mdl/safeseas”

for more information, including the latest SAFESEAS news, troubleshooting tips, and version release information.