**AWIPS II Warngen Localization for combining Marine Zones**

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This document provides instructions for Marine sites to combine their zones in AWIPS II. This document can also be found at:

<https://collaborate.nws.noaa.gov/trac/siteconfig/wiki/CombiningMarineZones>

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**1. Introduction**

In AWIPS 1 Marine Sites were able to combine continuous Marine Zones in their Warngen generated marine products such as the Special Marine Warning (SMW) and Marine Weather Statement (MWS) by using a search and replace file outside of the Warngen template that searches for Marine Zone names in these aforementioned products. In AWIPS 2 we are able to use the actual FIPS code to search for marine zone combinations. This method ends up being a cleaner method for combining marine zones as the search and replace is based on the FIPS code, which never changes, versus the marine zone names themselves, which can change with an updated shapefile.

**2. Coding**

In order to combine and rename the Marine Zones in the AWIPS 2 templates look for the following code which spits out the names of the individual zones in the template:

#foreach (${area} in ${areas})

${area.name}...

#end

Instead of using $area.name which gives you the zone name we want to comment this line out and use the fips code for these zones called $area.fips We will string the fips coding into a string separated by a dash "-" for a cleaner looking string in case we need to do troubleshooting. We will also want to set this variable to a null value before it is accumulated in the string. In the below example I place this coding into a variable called $fipsstring and accumulate the fips coding for each zone in the polygon. Make sure to comment out the ${area.name} variable if you want to combine the marine zones. Below is an example of coding you can use to accomplish this in the templates:

**2.1 Developing the Fips String**

#######################################################################

## Set the fipsstring variable to null for marine zone combinations

#######################################################################

#set ($fipsstring = "")

#foreach (${area} in ${areas})

#######################################################################

## Commented out $area.name variable for marine zone combinations

## ${area.name}...

#######################################################################

#######################################################################

## The following code will create a string of marine zone fips codes

## which will be important in combining marine zones

#######################################################################

#set ($fipsstring = $fipsstring + $area.fips + "-")

#end

Now that we have the fips coding in a neat string we can search for specific marine zones and replace the long names with shorter names based on continuous marine zones that are selected. In this example we will assume you are trying to combine marine zones AMZ152, AMZ154 and AMZ156 for Newport, NC (KMHX). In this example your $fipsstring variable for all 3 zones would look like this:

AMZ152-AMZ154-AMZ156-

**2.2 Combining Continuous Marine Zones**

You can use if statements to determine if all 3 of these zones are selected, if 2 of these 3 zones are selected, and if only one of these zones are selected. The following coding is an example of how this can be accomplished:

###################################################################################################

## The following code is an example of how to combine marine zones for 3 continuous marine zones

## Note you start out with the largest combination first then whittle it down until you only have

## one zone left. You can do this as many times as you wish for as many combinations as you have.

## Make sure you comment out the ${area.name}... line above to use the marine zone combination

## If you have any questions contact: Phil Kurimski - WFO DTX

###################################################################################################

#set ($zonecombo = "")

#if(($fipsstring.contains("AMZ154")) && ($fipsstring.contains("AMZ156")) && ($fipsstring.contains("AMZ152")))

#set ($zonecombo = "COASTAL WATERS FROM OREGON INLET TO CAPE LOOKOUT NC OUT 20 NM...")

#elseif(($fipsstring.contains("AMZ154")) && ($fipsstring.contains("AMZ156")))

#set ($zonecombo = "COASTAL WATERS FROM CAPE HATTERAS TO CAPE LOOKOUT NC OUT 20 NM...")

#elseif(($fipsstring.contains("AMZ152")) && ($fipsstring.contains("AMZ154")))[[BR]]

#set ($zonecombo = "COASTAL WATERS FROM OREGON INLET TO OCRACOKE INLET NC OUT 20 NM...")

#elseif($fipsstring.contains("AMZ154"))

#set ($zonecombo = "COASTAL WATERS FROM CAPE HATTERAS TO OCRACOKE INLET NC OUT 20 NM...")

#elseif($fipsstring.contains("AMZ156"))

#set ($zonecombo = "COASTAL WATERS FROM OCRACOKE INLET TO CAPE LOOKOUT NC OUT 20 NM...")

#elseif($fipsstring.contains("AMZ152"))

#set ($zonecombo = "COASTAL WATERS FROM OREGON INLET TO CAPE HATTERAS NC OUT 20 NM...")

#end[[BR]]

$zonecombo

This coding can be included in the template itself, which could make the template very long if you have a lot of combinations, or be included in a separate vm file which can be called from the template. The latter method is preferred as this vm file can be called from all 3 of your Warngen marine templates. This would require the #parse command which is covered in the AWIPSII Warngen Localization documentation on the [WarnGen](https://collaborate.nws.noaa.gov/trac/siteconfig/wiki/WarnGen) page. The coding for the parse command would look like this:

#parse("marinecombo.vm")

This coding should go after the fipsstring variable has been set but before the Basis Section of the template.

**2.3 Example Output**

In this example if all 3 marine zones are selected the areas included would read like this without using the Marine Zone Combination coding:

COASTAL WATERS FROM CAPE HATTERAS TO OCRACOKE INLET NC OUT 20 NM...  
COASTAL WATERS FROM OCRACOKE INLET TO CAPE LOOKOUT NC OUT 20 NM...  
COASTAL WATERS FROM OREGON INLET TO CAPE HATTERAS NC OUT 20 NM...

However with the Marine Zone Combination script above the marine zone would read:

COASTAL WATERS FROM OREGON INLET TO CAPE LOOKOUT NC OUT 20 NM...

**3. Conclusions**

This coding can be used over and over again for as many combinations of Marine Zones that your CWA utilizes. For each combination you would need a different variable at the end of the script, in this case you could use $zonecombo1 $zonecombo2 $zonecombo3 etc. It is also important to start out with your largest Marine Zone Combination and whittle the script down to the smallest combination as the script will end once it finds a match. An example on how to accomplish this task is shown in the [marinecombo.vm](https://collaborate.nws.noaa.gov/trac/siteconfig/attachment/wiki/CombiningMarineZones/marinecombo.vm) file. This file shows how the author combined the Marine Zones for WFO DTX which contains continuous, non-continuous and super combinations of marine zones where the nearshore and open water zones line up.

An example of this coding is in the standalone Marine Weather Statement [MarineStatementInfo](https://collaborate.nws.noaa.gov/trac/siteconfig/wiki/MarineStatementInfo) vm template.