

DELAWARE AND MARYLAND

WETLAND MAPPING CONVENTIONS FOR AGRICULTURAL LANDS

PURPOSE

This document outlines the procedures and methods which the Natural Resources Conservation Service (NRCS) will use to prepare wetland determinations on agricultural lands for compliance with the 1985 Food Security Act (Farm Bill), as amended. Mapping conventions are state-specific procedures developed to interpret off-site and remotely-sensed data to assist in identifying wetlands. In areas where the natural vegetation has been removed and where hydrology may have been modified at some time in the past, on-site procedures may not be adequate to reflect long-term conditions and/or the conditions as they existed on December 23, 1985.

The mapping conventions are designed to ensure consistency among NRCS field offices. These conventions will use off-site wetland mapping tools described in the NRCS National Food Security Act Manual (NFSAM), and will be verified by using on-site procedures from the NFSAM. In addition to the wetland mapping labels used on agricultural lands, wetland maps prepared by NRCS may include natural wetlands as well as other federally regulated "waters of the United States" such as tidal waters, lakes, rivers, mudflats, and intermittent and perennial streams.

Wetland mapping labels assigned by using off-site procedures will generally be considered preliminary until verified in the field. This is especially important where permanent vegetative cover may make photointerpretation difficult, such as in pasture and hayland, or on field edges of cropland. Depending on the availability and quality of off-site information as well as any personal knowledge of a site, a field visit may not be necessary on actively managed cropland where it is clearly evident that the field contains only "prior converted" wetlands and/or non-wetland areas.

GENERAL INFORMATION

Wetland determinations will be supported by off-site tools such as soil survey maps, Farm Service Agency (FSA) color slides, color infrared (CIR) photos, black and white photos, National Wetland Inventory (NWI) maps, climatic data, and personal knowledge of an area. Soil survey maps and aerial photography will be the primary off-site data sources (tools) used, and the other tools listed above will be used to: (1) confirm the soil survey and aerial photo information, (2) locate hydric inclusions in predominantly non-hydric soil mapping units, and (3) provide information on past hydrology and cropping history.

Any area identifiable as wetland, regardless of size, will be labeled in accordance with these mapping conventions.

Hydric soils can occur as unmapped inclusions in any soil mapping unit, not just in units which are predominantly hydric or which are specifically listed as containing hydric inclusions. These unmapped inclusions may be as large two to three acres in size.

The agricultural history of a field is important when making wetland determinations. Wetland conversions which brought agricultural land into production before December 23, 1985 are given specific exemptions. Conversions which occurred between December 23, 1985 and November 28, 1990 are treated differently than conversions which occurred after November 28, 1990 for Farm Bill compliance.

NRCS will make wetland determinations for USDA program participants only in response to receiving forms AD-1026 and/or NRCS-CPA-038, or when notified of a potential wetland violation via receipt of form FSA-569 or a whistleblower complaint. NRCS will document each wetland determination on form NRCS-CPA-026E and on an aerial photo. A copy of the form and photo with the wetland determination will be sent to the landowner, all persons associated with the tract, and FSA.

WETLAND MAPPING CONVENTIONS

Cropland

Cropland refers to land which is used for production of an agricultural commodity (annually planted crop) or is in a formal state or federal set-aside program. Cropland also includes pasture or hayland in a commonly used rotation with an agricultural commodity. Examples of agricultural commodities include corn, soybeans, sorghum, barley, tomatoes, melons, etc.

The following mapping conventions will apply to cropland which: (1) contains hydric soil mapping units or non-hydric units with possible hydric inclusions, (2) was planted to an agricultural commodity before December 23, 1985, and (3) as of December 23, 1985, did not support woody vegetation and meet wetland criteria.

Cropland + hydric soil mapping unit in depression or on level area along stream + wet signature indicative of extended ponding/flooding (see Note 1, end of this section) on CIR photo or other photos or slides = **FW**

Cropland + hydric soil mapping unit in depression, level area, or on a slope + wet signature indicative of saturation (see Note 1, end of this section) on CIR photo or other photos = **PC**

Cropland + hydric soil mapping unit + no wet signature of any kind on CIR photo or color slides, etc. = **PC**

Cropland + non-hydric soil mapping unit (may have hydric inclusions) + wet signature indicative of extended ponding/flooding (see Note, end of this section) on CIR photo or other photos or slides = **FW**

Cropland + non-hydric soil mapping unit (may have hydric inclusions) + wet signature indicative of saturation (see Note 1, end of this section) on CIR photo or other photos = **PC**

Cropland + non-hydric soil mapping unit (may have hydric inclusions) + no wet signature on CIR photo and no soil survey wetness symbols, drainageways, etc. = **NW**, unless drainage systems are evident, or personal knowledge of the area indicates otherwise.

NOTE 1. Wetness signatures for cropland.

When observed on aerial photos of cropland, the following signatures are indicators of extended ponding or flooding (at least 15 consecutive days during the growing season):

- Dark blue, dark gray, black color, or very pale blue due to the presence of surface water during a normal or below normal rainfall period (need to ground-truth this signature to distinguish from saturated areas) - CIR photos;

- Yellow, stunted, or drowned out crops during normal rainfall period - FSA slides or other true-color photography;
- Unusually green or lush crops during low rainfall period - FSA slides or other true-color photography;
- Absence of crops, area not planted, or planting - CIR photos, FSA slides, or other true-color photography.

When observed on aerial photos of cropland, the following signature is an indicator of saturated soil conditions:

- Dark blue, dark gray, or black color due to the presence of water saturation to the soil surface during a normal or above normal rainfall period (need to ground-truth this signature to distinguish from ponded/flooded areas) - CIR photos.

Refer to Appendix A (The Use of WETS Tables for Wetland Determinations) for instructions concerning the determination of climatic conditions for use with aerial photography. For wetland appeals concerning PC or FW determinations, NRCS will use at least 5 years of aerial photography as supporting documentation.

NOTE 2. Abandoned PC cropland.

Land which is determined to be prior converted (PC) cropland as of December 23, 1985, will retain its PC status indefinitely for purposes of Farm Bill compliance, as long as it is in agricultural use, regardless of its current use or state of "abandonment." Other agencies, such as the Corps of Engineers or state regulatory agencies, may consider such "abandoned" PC cropland to be a jurisdictional wetland if all wetland criteria are met.

NOTE 3. New cropland.

Cropland which was brought into agricultural commodity production after December 23, 1985 will be labeled according to the conventions for pasture and hayland, other agricultural lands, converted wetlands, or non-wetlands, depending on the land use up to 12/23/85.

Pasture and Hayland

Pasture and hayland are agricultural lands which are used for grazing, hay, or forage production. The terms "permanent pasture" and "permanent hayland" refer to those fields which are not in a commonly used rotation with an agricultural commodity.

The following mapping conventions will apply to pasture and hayland which: (1) contain hydric soil mapping units or non-hydric units with possible hydric inclusions, (2) were planted to an agricultural commodity, or used for pasture or hayland, before December 23, 1985, and (3) have not been abandoned from agricultural use.

Permanent pasture or permanent hayland + hydric soil mapping unit + wet signature (black, dark blue, or dark gray color) on CIR photo = **FWP**

Permanent pasture or permanent hayland + non-hydric soil mapping unit (may have hydric inclusions) + wet signature (black, dark blue, or dark gray color) on CIR photo = **FWP**

Permanent pasture or permanent hayland + hydric soil mapping unit + no wet signature on CIR photo, and no soil survey wetness symbols, drainageways, etc. = **NW**

Permanent pasture or permanent hayland + non-hydric soil mapping unit (may have hydric inclusions) + no wet signature on CIR photo, and no soil survey wetness symbols, drainageways, etc. = **NW**

Other Agricultural Lands

This category includes agricultural lands such as orchards, vineyards, nurseries, etc.

The following mapping conventions will apply to these other agricultural lands which: (1) contain hydric soil mapping units or non-hydric units with possible hydric inclusions, (2) were used for other agricultural purposes before December 23, 1985, and (3) have not been abandoned from agricultural use.

Other agricultural land + hydric soil mapping unit+ wet signature (black, dark blue, or dark gray color) on CIR photo = **W**

Other agricultural land + non-hydric soil mapping unit (may have hydric inclusions) + wet signature (black, dark blue, or dark gray color) on CIR photo = **W**

Other agricultural land + hydric soil mapping unit + no wet signature on CIR photo, and no soil survey wetness symbols, drainageways, etc. = **NW**

Other agricultural land + non-hydric soil mapping unit (may have hydric inclusions) + no wet signature on CIR photo, and no soil survey wetness symbols, drainageways, etc. = **NW**

Abandoned Cropland, Pasture, or Hayland

Abandonment does not apply to PC cropland under provisions of the 1996 Farm Bill. FW and FWP may be protected from “abandonment” provisions of the Farm Bill if hydrologic and vegetative baseline conditions are documented before the area is allowed to revert to wetland.

A FW is considered abandoned if: (1) wetland criteria are met, (2) the FW has not been managed to support cropping or forage production for 5 successive years, and (3) the FW is not in a formal set-aside or similar program of conserving use, and (4) the hydrologic and vegetative baseline conditions have not been documented.

FW which meets wetland criteria + 5 years without management to support cropping or forage production + no documentation of baseline conditions = **W**

A FWP is considered abandoned if: (1) wetland criteria are met, (2) the FWP has not been managed to support cropping or forage production for 5 successive years, (3) the FWP is not in a formal set-aside or similar program of conserving use, and (4) the hydrologic and vegetative baseline conditions have not been documented.

FWP which meets wetland criteria + 5 years without management to support cropping or forage production + no documentation of baseline conditions = **W**

Converted Wetlands

A converted wetland occurs when a wetland is manipulated to the extent that production of an agricultural commodity is possible, even if such a crop is not actually planted. Manipulation may include removal of woody vegetation and/or modification of wetland hydrology by draining, filling, etc. A wetland converted between December 23, 1985 and November 28, 1990 is not a Swampbuster violation unless the site is planted to an agricultural commodity. A wetland converted after November 28, 1990 is a Swampbuster violation regardless of whether it is planted to an agricultural commodity or not, unless an exemption applies.

Any wetland that was manipulated to the extent that production of an agricultural commodity was made possible between December 23, 1985 and November 28, 1990 = **CW**

Any wetland that was manipulated to the extent that production of an agricultural commodity was made possible after November 28, 1990 = **CW+year**

NOTE 1. CW

Any further conversion of a CW after 11/28/90 will result in a CW+year.

The following categories of activities do not violate the Swampbuster provisions of the Farm Bill, although they may be regulated and may require permits from other agencies.

Any wetland that was manipulated after November 28, 1990, but other than for the purpose of making production of an agricultural commodity possible = **CWNA**

Any wetland that was manipulated after December 23, 1985, and the manipulation did not make production of an agricultural commodity possible = **WX**

Non-Wetland

This label applies as follows:

An area which under natural conditions did not (and currently does not) meet wetland criteria = **NW**

An area which was converted from wetland conditions before December 23, 1985, does not have cropping history, and wetland conditions have not returned = **NW**

Artificial Wetland

Wetlands created by human activities on non-hydric, prior converted, or in other non-wetland situations = **AW**

However:

Impoundments constructed on undrained hydric soils or in existing wetlands = **W**

Natural Impoundment

Wetlands created by beaver activities or other natural events + any soil + present for at least 5 years = **W**

Other Waters

Other federally regulated "waters of the United States" such as tidal waters, lakes, rivers, mudflats, and intermittent and perennial streams = **OW**

KEY TO SYMBOLS

PC = Prior Converted Cropland

FW = Farmed Wetland

FWP = Farmed Wetland: Pasture and Hayland

NW = Non-wetland

W = Wetland

AW = Artificial Wetland

CW = Converted Wetland

CW+year = Converted Wetland and year of conversion
after 1990

CWNA = Converted Wetland, Non-Agricultural Production purposes

WX = Manipulated Wetland, agricultural production not made possible

OW = Other Waters

APPENDIX A

THE USE OF WETS TABLES FOR WETLAND DETERMINATIONS

About the WETS Tables

As a component of offsite wetland determinations, the mapping conventions can be used to provide more information for onsite determinations. The WETS tables are a valuable hydrology tool that can be used to determine if the aerial photograph or slide was taken in a wet, dry, or normal year based upon prior precipitation.

The tables have the station name, location, and the period of record. Table A provides the normal range for monthly and annual temperature and precipitation by month. The table shows the average monthly precipitation and the threshold for which 30% of the precipitation amounts will be less than, more than, or equal to the value shown.

Table B shows the growing season beginning and ending dates which are needed for determining the minimum 15 days of inundation during the growing season for farmed wetlands. To determine the appropriate dates, use the 50% row and the 28 degrees or higher column.

Table C shows the actual precipitation data by year and month used to calculate the statistical values shown in the first table.

Steps to Determine Precipitation Conditions

1. Determine what year and month the photo or slide was taken.
Example - April, 1989

2. Choose the closest climatic station to the area in question.
Example - Dover, DE

3. Check the table for the actual rainfall from Table C for the three months prior to the month the photo was taken, in the year the photo was taken. Record the data on the worksheet.
Photo - April, 89
Three months prior - Jan, 89 - 3.35; Feb, 89 - 4.18, March, 89 - 6.31

4. Compare the actual rainfall amounts on Table C for the three months prior (Jan, Feb, March), to the average month precipitation from Table A of the corresponding month (i.e. Jan - Jan). If the actual precipitation is greater than the number shown in the column for 30% or more, the month is considered wet. If the actual precipitation is less than the number shown for 30% or less, the month is considered dry. If the actual precipitation is between the two numbers shown, it is considered a normal month. A dry month has a condition value of 1, a normal month has a condition value of 2, and a wet month has a condition value of 3. Record the data on the worksheet.
Jan - <2.19 or $>3.86 = 2$ normal (Since 3.35 falls between the two numbers)
Feb - <1.86 or $>3.53 = 3$ wet (Since 4.18 is greater than 3.53)
March <2.79 or $>4.47 = 3$ wet (Since 6.31 is greater than 4.47)

5. The monthly conditions need to be combined, and a weighted value calculated. The amount of rain in the month furthest from the date of the photo will have the least impact on the moisture condition. The month closest will have the greatest effect. Multiply the condition value for the furthest month by 1, the middle month by 2, and the closest month by 3. Record the data on the worksheet.

Jan - $2 \times 1 = 2$ (normal year x weighting of 1)

Feb - $3 \times 2 = 6$ (wet year x weighting of 2)

March $3 \times 3 = 9$ (wet year x weighting of 3)

6. Add the three calculated values. If the sum is 6-9, the prior period is considered dry, between 10-14, the period is considered normal, and 15-18, the period is considered wet.

$2 + 6 + 9 = 17$ The period is considered wet.

If you are looking at slides, and there are not enough normal years (usually 5 years), then an equal number of wet and dry years needs to be used.

The tables can also be used for on-site determinations. The actual rainfall for the 3 months prior to the field determination needs to be obtained from any source of data, such as the State Climatologist.