



OKLAHOMA

Wetland Mapping Conventions For The 1985 Food Security Act (FSA), As Amended

Revised in 2007 in response to cancellation of 1994 Memorandum of Agreement between
Departments of Agriculture, Interior, Army and the Environmental Protection Agency

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OKLAHOMA WETLAND MAPPING CONVENTIONS FOR THE 1985 FOOD SECURITY ACT (FSA), AS AMENDED

I. INTRODUCTION

This document outlines the procedures and methods which will be used to identify and delineate wetlands where offsite mapping conventions are used for implementing Wetland Provisions of the 1985 Food Security Act (FSA), as amended. These procedures and methods are designed to ensure mapping consistency within the State of Oklahoma. These conventions are compatible with the Natural Resources Conservation Service (NRCS) National Food Security Act Manual (NFSAM) and the 1987 Corps of Engineers Wetland Delineation Manual (CEWDM). These conventions may be used as the basis for completing preliminary wetland determinations and/or used as supplemental documentation when completing onsite determinations. However, no certified wetland determinations will be completed in Oklahoma without an onsite visit to confirm the presence of all three wetland criteria, including hydrophytic vegetation, hydric soils and hydrology. The 1987 CEWDM will be used as the basis for conducting onsite determinations.

II. GENERAL INFORMATION

- A. Only individuals who have been trained in the application of NFSAM and CEWDM procedures will conduct wetland inventories or complete onsite delineations. Training in remote sensing will be obtained through formal classes, workshops, or "on the job training" by working with individuals with previous mapping experience. The state office will maintain a complete list of persons qualified to make wetland determinations.
- B. The following wetland types can typically be identified through off-site, remote sensing procedures and will be identified on mylar overlays during the inventory process: Wetland (W), Farmed Wetland (FW), Farmed Wetland Pasture or Hayland (FWP), Converted Wetland (CW and CW & YEAR) and Artificial Wetland (AW) (excluding farm ponds and excavated pits). Preliminary identification may also be possible on wetlands that have been manipulated, but production not made possible (WX). However, these determinations will need to be field checked in order to confirm the extent of manipulation. Other wetland types and labels are often difficult or impractical to identify using off-site procedures and will not be delineated on wetland inventories. The decision to exclude Prior Converted Cropland (PC) in Oklahoma is based on the inability to distinguish between PC and non-wetlands on soils that are typically non-hydric, but may contain hydric soil inclusions. Prior Converted Cropland will be identified, as needed, in response to appeals, complaints, Wetland Reserve Program (WRP) needs, etc. See Appendix A for a complete list of all wetland labels and definitions.
- C. All areas that meet wetland criteria and are large enough to detect through off-site, remote sensing procedures will be identified on mylar overlays during the inventory process.

- D. The published county hydric soils list (with revision date of 1988 or later) will generally identify hydric soil map units and soils that contain hydric soil inclusions. However, some soils, not presently shown on the lists, may contain hydric inclusions and will be identified as wetland, if off-site procedures indicate that wetland criteria are present.

III. WETLAND MAPPING TOOLS AND EQUIPMENT FOR OFF-SITE PROCEDURES

A. Mapping Tools

It is imperative that the best and most complete data be used to conduct inventories and complete individual determinations. The following mapping tools will be used to complete wetland inventories using off-site procedures in Oklahoma:

1. Farm Service Agency (FSA) 35mm color slides;
2. National Agricultural Imagery Photographs (NAIP)
3. National High Altitude Photography (NHAP) in digital or hard copy format
4. NRCS county soil surveys;
5. NRCS county hydric soil lists (with descriptive footnote legends);
6. National Wetland Inventory (NWI) maps;
7. Climatic data from the National Climatological Data Center;
8. Additional aerial photography (Color infrared and NRCS black and white photos);
9. U.S.G.S. quadrangle maps;
10. Field checks and prior knowledge from onsite visits;
11. Engineering surveys of the site, which may indicate conversion, maintenance, etc;
12. FSA crop history records.

B. Equipment and Supplies

(Note: Many of the listed items will only be required when using FSA slides and the delineator wants to enlarge scale for transferring to a base map.)

1. Rear-projection screen with work table;
2. Carousel slide projector (with manual remote control);
3. Caramate slide projectors (minimum of 4 projectors);
4. Wide-angle projector lens (Buhl 2.0" or other appropriate lens) that can display FSA slides at a scale of 8 inches equals 1 mile;
5. Slide trays (120 slides/tray);
6. 9" x 12" mylar overlay sheets (pre-copied to appropriate scale);
7. Drafting pencils or hard-lead pencils;
8. Erasers;
9. Extra bulbs for projectors.

IV. WETLAND MAPPING PROCEDURES

A. Prepare To Make Wetland Inventories

1. Select FSA slide years or other appropriate photography, as described in Part III A., which most accurately reflect long-term average hydrological conditions. Spring slides, which are generally taken in March through May, are more likely to consistently depict wetland signatures and evidence of hydrology than summer slides and should be used when available. Summer slides taken during periods of normal or dry rainfall conditions, which depict wetland signatures, are good indicators of wetland. However, absence of signatures, on summer slides, should not be used to exclude areas that could meet wetland criteria under normal spring rainfall conditions.

Use climatological data, available from the National Climatological Data Center, as the basis for photography selection. Obtain the day, month, and year of photography and correlate with the daily precipitation records for the 15 day period preceding the flight and the monthly precipitation records for the 3 calendar months preceding the date of flight. The daily records, for 15 days preceding the flight, will determine if the interpretation of wetland signatures could be biased by unusual precipitation events immediately before the flight date. Daily records can also provide information on the duration of ponding or flooding, especially when inundation is observed on slides that were taken at least 7 or 15 days after the last recorded precipitation. These inundation periods are especially important in determining hydrology criteria for wetland and farmed wetland, respectively. The monthly precipitation records for the 3 months preceding the flight will determine whether the slides are representative of seasonally wet, dry, or normal precipitation ranges. See Appendix B for information on recording and analyzing climatological data for photography selection.

The appropriate precipitation category will be assigned to the slides by determining the deviation from the 30 year average for the 3 months preceding the flight. Use the following table to assign each year of slides to a precipitation range:

PRECIPITATION CATEGORY	DEVIATION FROM NORMAL PRECIPITATION
Wet	Greater than or equal to 20 % above normal
Dry	Greater than or equal to 20 % below normal
Normal	Less than 20 % above or below normal

Using this procedure, select at least 5 years of photography taken from 1985 to present. If available, select years that all fall within the normal precipitation category. If 5 normal category years are not available, use all available normal years and supplement with an equal number of wet and dry category years. Using these procedures, a minimum of 5 years and a maximum of 6 years of photography are required. When NAIP, NHAP, or other photography is available, it should be used in addition to the FSA slides, regardless of the precipitation range, and treated as the equivalent of 1 year of slide coverage. The following examples are provided as guidance in selecting slide years:

Example 1:

Available slides include 4 years of normal slides, 3 years of dry slides and 2 years of wet slides. In this case, use all 4 normal years plus 1 dry year and 1 wet year for a total of 6 years of slides.

Example 2:

Available slides include 3 years of normal slides, 2 years of dry slides and 4 years of wet slides. In this case, use all 3 normal years, 1 dry year, and 1 wet year for a total of 5 years of slides.

2. With the previously mentioned considerations in mind, it is recommended that the FSA slides taken closest to FSA implementation (1985 or 1986) and the most current photography be used for inventories in order to distinguish between prior converted cropland (PC) and farmed wetland (FW) and to identify converted wetland (CW and CW + year). If this information cannot be obtained through the slide selection process, other documentation must be used to determine pre-FSA and post -FSA wetland conditions and crop histories. Possible documentation could include black and white aerial photography, FSA crop history records, and the original NRCS wetland inventory.
 3. After selecting the flight years, place slides in trays, using the index map provided by FSA.
- B. The following procedures will only be necessary where the delineator is using FSA slides and wants to change the scale or transfer the delineated wetlands to a base map with specific scale such as 8"=1 mile.
1. Assemble all mapping tools and equipment.
 2. Locate a work area where lights can be turned off or subdued during the inventory process.
 3. Set up the rear projection table (with carousel projector) and the caramate projectors where wetland mapping team can view all flight years at the same time. Place a high quality, representative flight year on the rear projection table and use for marking wetland boundaries on the mylar overlays at the selected base map scale (typically 8"= 1 mile). Place the slides from other flight years on the caramate projectors.

4. Results from previous inventories have demonstrated that an experienced two-person mapping team is most efficient. One team member should work at the rear projection table and mark wetland boundaries on the mylar overlays. The proper scale can be maintained on the projection table screen by using a zoom lens or by moving the projector forward or backward, as needed. The second team member should be responsible for identifying soil types, determining the presence of NWI wetlands, and providing legal descriptions. All team members should interpret wetland signatures on the slides and mutually agree on the wetland determinations.
5. Any questions regarding wetland mapping procedures or deviations from approved conventions should be directed to the state biologist before initiating the inventory.

C. Review All Available Mapping Tools

1. Review soil survey and hydric soils list to determine if hydric soil map units or hydric soil inclusions occur, or are likely to occur, on lands being inventoried. Soil surveys may also indicate wetlands by showing water feature symbols, such as marsh, swamp, intermittent water, or wet spot.
2. Review the NWI maps to determine if wetlands identified by the FWS occur on lands being inventoried. Wetlands in cropland fields were generally excluded from NWI maps as the result of an agreement between the NRCS and the FWS. With few exceptions, playa wetlands, in the western counties, were the only "cropped" wetlands specifically identified on NWI maps in Oklahoma.

D. Interpret FSA Slides and Identify Wetland Signatures

When reviewing the photography, several interpretations (signatures) are considered to be positive indicators of wetland. The occurrence of one or more of these signatures and the frequency of occurrence will be used in making the wetland determination decisions described in Part E. Photographic interpretation of wetland signatures under forest and woodland canopy cover can be especially difficult to identify. Wetland determinations on these areas should be closely correlated with NWI maps, soil type, landscape position, and field checks. Positive indicators of wetland on photography may include:

1. Standing water;
2. Lush or green vegetation that contrasts with adjacent lands;
3. Drowned out crops as evidenced by bare areas or dead crop surrounded by growing crops;
4. Unplanted areas within cropland fields that are otherwise planted;
5. Unharvested areas within fields that are otherwise harvested;
6. Unplowed or farmed-around areas within fields that are otherwise plowed or farmed;
7. Moist or saturated soil as evidenced by distinctly darker soil color or mottled soil appearance
(not to be confused with hydric soil indicators observed in soil profile):
8. Other signatures that are verified through field checks.

Interpretation of photography can also be used to help identify wetland manipulations and the date(s) of manipulation. These observations are important in identifying converted wetland, prior converted wetland, farmed wetland, and artificial wetland. The following signatures are likely indicators of wetland manipulation or conversion activities and should be used with wetland signatures in classifying and labeling wetlands as described in Appendix A.

1. Drainage ditches;
2. Dikes and impoundments;
3. Dredging;
4. Filling;
5. Diversions;
6. Tree removal or land clearing;
7. Presence of agricultural commodity crops on converted wetlands;
8. Special modifiers on NWI map legends (diked, excavated, etc.)

E. Making Wetland Determination Decisions

Wetland determination will be based on information accumulated through the use and interpretation of all mapping tools and confirmed by an onsite determination. Wetland delineators should use the guidelines provided below for evaluating offsite information. These guidelines contain some categories that demonstrate strong support for a positive wetland determination (Categories 1 and 2), or a negative wetland determination (Category 5).

GUIDELINES FOR WETLAND DETERMINATIONS

	PHOTOGRAPHY			
CATEGORY	(PERCENTAGE WITH SIGNATURE)	HYDRIC SOIL. LIST	NWI	DETERMINATION
1	≥50	Y/N	Y/N	WETLAND
2	<50	Y	Y	WETLAND
3	<50	Y	N	POSSIBLE WETLAND (consider preponderance of evidence)
4	<50	N	Y	
5	<50	N	N	NON-WETLAND

F. Notify Persons of Wetland Determinations

As indicated in the introduction, all certified wetland determinations made by NRCS in Oklahoma will require an onsite wetland delineation using the 1987 CEWDM. Off-site procedures will be used only for purposes of making preliminary determinations or confirming information obtained through the onsite procedures. Furthermore, certified wetland determinations will only be made on an “as needed” basis in response to a specific request by the producer; a “yes” answer regarding wetland questions on Form AD-1026; a complaint filed by another person (whistleblower); or as the result of a status review conducted for compliance oversight purposes.

APPENDIX A

WETLAND DEFINITIONS AND LABELS

Name and Label	Criteria for Determination	Authorized Cropping	Authorized Maintenance or Drainage	Paragraph Reference
Prior Converted Cropland (PC)	Converted and cropped before 12/23/85. Note: Potholes, playas, pocosins, or wetlands that are seasonally inundated for at least 7 consecutive days during the growing season still meet farmed wetland criteria	No restrictions	No restrictions	514.31 ¹
Farmed Wetland (FW)	Manipulated and cropped before 12/23/85 Still meets wetland criteria Includes potholes, playas, and pocosins Includes other wetlands that are seasonally flooded or ponded for 15 consecutive days Not abandoned	May be farmed as it was before 12/23/85	May be maintained to the extent that it existed before 12/23/85	514.22
Wetland (W)	Meets wetland criteria Not covered after 12/23/85 Also, includes abandoned wetland	May be farmed under natural conditions without removal of woody vegetation	At level needed to maintain original system on related FW, FWP and PC. Must not convert additional W or exceed scope and effect of system prior to 1985	514.21
Wetlands that have been manipulated (WX)	Wetlands that have been manipulated after 12/23/85 but production not made possible	Would cause ineligibility if production was later made possible	No restrictions as long as production not made possible and adjacent wetland not affected	514.38 <i>Continued on next page</i>

¹ Indicates where additional information on the wetland definition and label can be found in the NFSAM (3rd Edition)

Minimal Effect (MW)	Activity determined to have a minimal effect on the wetland	As stipulated in the agreement	Only those activities stipulated in the minimal effects agreement	Part 516
Artificial and Irrigation Induced Wetland	Man-made wetlands on areas previously non wetland	No restrictions	No restrictions	514.33
Commenced Conversion (CC)	Conversion began before 12/23/85 and approved by FSA	No restrictions	As stipulated in the agreement	514.36
Converted Wetland (CW)	Converted after 12/23/85 and before 11/28/90	Production of agricultural commodities will cause ineligibility	Maintenance allowed to original scope and effect of system	514.24
Converted Wetland (CW + year)	Converted after 11/28/90	Conversion causes ineligibility Production of Agricultural Commodity is not an issue	Not relevant	514.24
Wetland site converted by state, county, drainage district or similar entity (CW)	Converted after 12/23/85 and beyond a person's direct control, but not considered third party (TP) Includes converted W, FW and FWP	May graze but cannot harvest hay by mechanical means Production of agricultural commodity will cause ineligibility	None allowed by person May not remove woody vegetation without loss of benefits	514.35 and 514.36
Farmed Wetland Pasture and hayland (FWP)	Converted before 12/23/85 Not abandoned Used as pasture or hayland Still meets wetland criteria Includes PC or FW where crops were not grown in previous 5 years, but was used for pasture or hay during that period	Used for pasture and hay production	Maintenance allowed to extent that existed before 12/23/85 but not improved	514.25 <i>Continued on next page</i>

		Used to produce agricultural commodities	Maintenance not allowed Removal of woody vegetation not allowed	
Converted wetland for non agricultural use (CWNA)	Requested prior to start of conversion Only certain purposes allowed For post approval person must document nonagricultural use	Production of agricultural commodities will cause ineligibility	No restrictions	514.32
Non wetland (NW)	Does not meet wetland criteria under natural conditions Also includes wetlands converted prior to 12/23/85, but not cropped and do not meet wetland criteria	No restrictions	No restrictions	514.37
Mitigation Wetland (MIW)	Converted between 12/23/85 and 11/28/90 without violation <u>or</u> converted after 11/28/90 with pre-approval, for which another area has been restored; Was frequently cropped before conversion	No restrictions	No restrictions	Part 517 Subpart A
Converted Wetland Technical Error (CWTE)	Converted after 12/23/85 Conversion or production of agricultural commodity was a consequence of an incorrect NRCS determination	If a substantial investment made, no restrictions on that portion of the converted wetland for which substantial investment was made	To the extent that it existed at the time CWTE was discovered, or as agreed to by person, NRCS and FWS	514.34
		If <u>small</u> investment, then no agriculture production allowed	Maintenance not allowed	
Third Party conversion (TP)	Converted after 12/23/85; Converted by a third party without the person's collusion, fraud, scheme or device; includes conversion by COE	No restrictions	Only the third party can maintain	514.35 <i>Continued on next page</i>

Restored Wetland (RSW)	Wetland converted between 12/23/85 and 11/28/90 and; Wetland has been restored according to a restoration plan.	May be farmed as it was prior to the conversion	As stipulated in the restoration agreement	Part 517 Subpart C
Good Faith Wetland (GSW + year)	Wetland converted after 12/23/85 with violation. Wetland is restored according to a restoration plan No other good faith exemption granted on farm in previous 10 year	May be farmed as it was prior to the conversion	As stipulated in the restoration agreement	Part 514.39 Part 517 Subpart E
Restored Wetland with Violation (RVW + year)	Wetland converted after 12/23/85 Violation has occurred Wetland has been restored	May be farmed as it was prior to conversion	As stipulated in the restoration agreement	Part 517 Subpart D
Replacement Wetland (RPW)	Wetland converted without violation and with agreement to restore another area Was not frequently cropped before conversion	No restrictions	No restrictions	Part 517 Subpart B
Easement Site	Area that was PC and has been restored under an agreement to allow conversion and cropping of another wetland	As specified in agreement	As specified in agreement	Part 517

APPENDIX B

**CLIMATOLOGICAL DATA WORKSHEET
FOR SELECTING FSA SLIDES**

County _____ Weather Station Used _____

Photo Date _____, _____, _____
 Month Day Year
 (If known)

Period	Month	Rainfall Inches	Normal Rainfall Inches
First _____ days (current month)	_____	_____	_____ ²
First Prior Month	_____	_____	_____
Second Prior Month	_____	_____	_____
Third Prior Month	_____	_____	_____
	Totals For Period =	_____	_____

Percent of Normal for Period = (_____ / _____) x 100 = _____ ³

Circle One: Dry, Below Normal, Normal, Above Normal, Wet
 Prior Year 20_____, Prior Year Rainfall _____ inches, normal _____ inches
 Consecutive 2-day rainfall 2.0 inches

Dates(s) _____, _____, _____
 Inches _____, _____, _____

Conclusions:⁴

² If photo day is not known, use the full month. When the photo date is known, compute the normal for the current month as follows:
 (Days of month prior to photo/total days in month) x monthly normal rainfall.

³ Suggested judgment as follows: <80 percent = dry
 80-120 percent = normal
 >120 percent = wet

⁴ Record personal judgments related to the period of record.
 Eg 1: Wet months near the photo date are more important than wet months in the second and third prior months.
 Eg 2: The influence and time of occurrence of a 2-day rainfall total exceeding the 2-year, 24-hour rainfall (3.0 to 4.5 inches) should be considered.

APPENDIX C

NRCS WETLAND DETERMINATIONS THAT MAY REQUIRE CWA PERMITS

Some NRCS wetland determinations and activities in wetlands are either exempt from FSA wetland provisions or do not result in FSA violations. However, the same determinations or activities may require a permit to avoid violations under CWA.

Persons receiving wetland determinations should be notified of the permit requirements for CWA as described below. The notification process will also inform the person that CWA permits are required for dredge and fill activities in other waterbodies, which are not identified on the maps, including streams, lakes, and rivers.

IF...

The NRCS determination made or proposed to be made is:

- * converted wetland (CW and CW + Year)
- * wetland (W)
- * wetland (WX) that has been manipulated
- * artificial wetland (AW)
- * converted wetland non-agricultural use (CWNA)
- * mitigation (MIW)
- * farmed wetland (FW)
- * farmed wetland pasture (FWP)
- * minimal effect (MW)
- * restoration (RSW, RVW)
- * replacement (RPW)
- * converted wetland technical error (CWTE).

THEN...

Notify the person in writing or document verbal notification that a CWA permit may be required for any proposed action that would involve the discharge of dredged or fill material and would not be exempted from the CWA permit requirements. Provide the person a copy of COE/EPA information brochure explaining CWA permit requirements, general permits, and exemptions, which allow the continuation of normal farming, ranching, and silvicultural practices.