

Module 2: Food Security Act Wetland Identification Procedures: from the appendix to the NFSAM

2011

The concepts presented in this module are critical to sound and defensible decision making. Accordingly, this information requires thorough consideration.

In this Module the methods used by NRCS to identify wetlands for FSA purposes are introduced. In particular, the indicator-based approach to the identification of wetlands and the legal mandate that FSA wetland identification decisions must be based on “normal circumstances” are discussed in detail.

Developers:

lee.davis@ftw.usda.gov

david.heffington@ar.usda.gov

cari.ostberg@mt.usda.gov

dean.kwasny@ca.usda.gov

karen.dudley@nh.usda.gov

Module 2- Food Security Act Wetland Identification Procedures: from the appendix to the NFSAM

This module is designed to take 4-6 hours and includes required exercises (office). Links are provided as optional learning opportunities. There are six learning concepts within this module, in increasing order of complexity.

Objectives

Upon completion of this module, the student will:

- ❖ Understand what is meant by FSA wetland identification, FSA wetland determination and FSA wetland delineation.
- ❖ Have a strong understanding of the concepts of the Indicator Based-Approach to wetland identification, and understand the concept of Normal Circumstances (NC) as used in the identification of FSA wetlands.
- ❖ Have an awareness of the structure of the Part IV – Methods contained within the Corps of Engineers Wetland Delineation Manual and the 5 chapters included in each Corps Regional Supplement. In particular, the student will learn how these methods are used by NRCS agency experts in the identification of FSA wetlands.
- ❖ Understand that for FSA purposes, the Corps wetland “Indicators” are circumstantial evidence. As such they are suggestive that a wetland diagnostic factor is met; however, experience and best professional judgment are also utilized in conjunction with the presence or absence of indicators to assist in a decision at the wetland diagnostic factor level.
- ❖ Understand, in complete clarity, what is being asked of the NRCS agency expert. This is to render a decision if under normal circumstances the FSA definition for the factor in question has been met.

Key Concepts

1. The indicator-based approach to wetland identification is used in the identification of wetlands subject to both Section 404 of the Clean Water Act and the WC provisions of the FSA. The hydrophytic vegetation and wetland hydrology indicators in the Regional Supplements were developed by the Corps and the hydric soils indicators were developed under the guidance of the National Technical Committee for Hydric Soils (NTCHS). Although developed for the identification of hydrophytic vegetation, hydric soils and wetland hydrology, as defined by the Corps (not FSA) and NTCHS; these field Indicators are valuable tools that can assist with the identification of hydrophytic vegetation, hydric soils, and wetland hydrology as defined in the FSA Wetland Identification Procedures too.
2. As introduced, in the law (FSA), Congress provided definitions to USDA for use in the identification of FSA wetlands. The definitions differ from those developed by the Corps and NTCHS. Because, the indicators in the Supplements were developed based on the Corps and NTCHS definitions, they (indicators) are considered circumstantial evidence for FSA purposes. The FSA Procedures require that the Agency Expert must consider all of the evidence (including Corps indicators) and then (prior to decision making) the agency expert must balance the evidence against the unique FSA definition for the diagnostic factor under consideration.
3. Normal circumstances (NC), as it is used in the FSA wetland definition (and within the regulatory concept of NC for FSA in 7CFR 12.31(b)) is an inclusive concept that assures that decisions are **not based on anomalies resulting from (1) disturbance or (2) changing climatic conditions or seasons**. NC are the site conditions that would normally occur on the site under
 1. *Typical Conditions* - It were not recently disturbed/alterd (post-1985)
 2. *Normal Environmental Conditions (NEC)* - During the wet portion of the growing season following/during normal climatic conditions (normal hydrologic inputs and outputs to the site). Normal in semi-humid regions is commonly thought of as 5 years out of 10. In semi-arid and arid regions the concept of 51 years of 100 might be a better concept. There is no mathematical standard (criterion); rather best professional judgment is used to determine a site is experiencing NEC.
4. The disturbance consideration within NC is referred to in the application of the wetland ID methods as *Typical/Atypical Situations or Conditions*. Although this phrase came directly from the Corps Manual, for FSA purposes, the key date of such disturbance is the date of the enactment of the FSA (December 23, 1985), not the date of enactment of the Clean Water Act (1972).
5. The considerations of wetland ID problems associated with climate are addressed under the concept of *Normal Environmental Conditions* (NEC). The NEC concept is used in the decision making process by the Corps (phrase comes from Part IV of the Corps Manual) and NRCS. NEC addresses wetland ID problems associated with changes in site conditions from normal and abnormal climate cycles and seasons. NRCS provides a definition of NEC in the FSA Procedures.
6. For FSA purposes, decisions if a sampling unit supports any of the three wetland diagnostic factors are based on either (1) direct evidence/observation that the FSA definition of the factor in question is met or (2) onsite and/or offsite indicators are observed and are suggestive of the

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conditions that would occur under NC. Direct observations (proof-positive) are made under ideal site conditions – those representing *normal circumstances* (conditions that occur during the wet portion of the growing season of a normal climatic year under the least disturbed conditions). In contrast, indicators are predictive tools and are considered circumstantial evidence when used for FSA determinations. They predict what the site conditions are under normal circumstances. Unlike direct observations, indicators are used by NRCS to **assist** in the decision making process, but are not necessarily absolute proof that the site supports (or does not support) a prevalence of hydrophytic vegetation, a predominance of hydric soils or wetland hydrology.

Learning Concept 2-1: How are the commonly used phrases of “wetland identification”, “wetland determination”, and “wetland delineation” applied to the administration of the WC provision?

This Learning Concept is designed to take 10-15 minutes and includes required office exercises. Links are provided as optional learning opportunities. Level of difficulty is low.

Historically, the terms “wetland identification”, “wetland determination”, and “wetland delineation” have often been used interchangeably. For FSA purposes the terms will be used within the definitions presented in 7CFR12.2, which follows their current uses by most segments (factions) of the wetland science community.

Wetland Identification: The phrase “Wetland Identification” is typically used as it relates to the process or procedures used to decide if a site is a wetland. The answer to the question is quite simply “yes” or “no”. This phrase (wetland identification) is very commonly used when discussing wetlands identified by the use of USFWS inventory methods (Martin et al. 1953 as used in Circular 39; and Cowardin et al. 1979). However, the Corps Section 404 methods and the NRCS FSA Wetland ID Procedures are also *wetland identification* methods. Accordingly, the portion of the NFSAM appendix that contains the NRCS procedures used to determine if a site is a FSA wetlands is appropriately titled Food Security Act 1985 Wetland Identification Procedures (FSA Procedures).

Wetland Identification is not defined by statute (FSA) or by regulation (7CFR12 is the HELC and WC rule). Rather, the definition is provided in internal NRCS policy (the FSA Procedures) as

“the process and/or decision related to whether or not an area is a wetland (first step in the FSA wetland determination process).”

The use of the term “identification” is limited to the process used to decide if the site has the physical characteristics of a wetland based on the specific wetland definition used in the program, statute, or regulation under consideration. Wetland identification has nothing to do with the jurisdictional scope of the program/statute/or regulation or assignment of wetland types. For example, with the use of the Corps methods, a playa lake in the Southern High Plains might be *“identified”* as a wetland (meets the CWA wetland definition), but it might not be “determined” to be a CWA jurisdictional wetland if it is isolated from navigable waters and fails to have a nexus to interstate commerce. Similarly, an artificial wetland might meet be identified as a wetland according to FSA Procedures, but it would be exempt from the WC provisions and does not fall under the regulatory jurisdiction of the Act.

Wetland Determination: In 7CFR12.2 the Secretary defined the term *Wetland Determination* (as it shall be applied by USDA for the administration of the WC provisions) as: *“A decision regarding whether or not an area is a wetland, including identification of wetland type and size.”* Thus, the term wetland determination includes more than just the identification of a wetland. It includes the determination of the wetland type (FSA wetland type) and the size.

The phrase is most appropriately used when an official “decision” is rendered; thus the term *“determination”* can be interchanged with *“decision”* and includes many decisions.

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- ✓ What is the **decision/determination** whether the site is wetland based on the definition/methods used (Circular 39, Cowardin et al., Corps Manual, and FSA Procedures).
- ✓ What was the **decision/determination** regarding exemptions/labels (Circular 39 wetland types, Cowardin wetland types, FSA wetland types (labels))?
- ✓ What was the decision/determination regarding size (must be “delineated” to be measured)?

The term wetland determination is more holistic than wetland identification or wetland delineation as it covers a process of multiple decisions, including the other two phrases (identification and delineation). For FSA purposes, the *wetland determination* process includes three independent steps:

- (1) Wetland identification: Is the area in question a wetland?
- (2) Assignment of WC labels: Does the site qualify for an exemption in 7CFR12.5 (b)?
- (3) Delineation and Determination of Size: How large is each area with a different WC label?

For FSA purposes the term wetland determination is similar to the USFWS wetland classification methods (Circular 39 and Cowardin’s classification); as the process includes not only wetland identification (is the site a wetland?) but also assignment of a wetland type. In the administration of the CWA, the Corps has no need to classify/determine different wetland types. Thus, in some ways, the FSA wetland determination process is more similar to the USF&WS classification methods than the Corps methods. However, the wetland identification process (step 1) is much more similar to the Corps wetland identification process than either of the USF&WS methods, as the Corps wetland identification methods are the foundation to the FSA Procedures.

This training course (Phases 1 and 2) is limited steps 1 (wetland identification) and 3 (wetland delineation and determination of size) of the FSA wetland determination. Step 2 (assignment of WC labels) will be covered in yet to be developed course (Phase 3).

Wetland Delineation: As introduced in Module 1, the use of the term wetland *delineation* is most commonly applied to the act of drawing or marking boundaries. For FSA purposes it is defined by regulation (7CFR12.2) as: “*Outlining the boundaries of a wetland determination on aerial photography, digital imagery, or other graphic representation; or on the land.*”

Thus, when using *wetland delineation* for FSA purposes, this term is LIMITED to outlining the boundaries between different WC wetland types (WC labels) and should not be used interchangeably with wetland identification or wetland determination. The outlining can be on the land or on a map. As discussed in Module 1, a graphic representation of a certified wetland determination (the decision has withstood the agency appeals process) is referred to as a “*Certified Wetland Delineation Map*”.

In review, wetland identification is the first step in the FSA wetland determination process and includes the process used to decide if a sampling unit meets the FSA wetland definition. The second step in the FSA wetland determination process is assignment of the appropriate WC label (based on exemptions provided in 7CFR12.5). A wetland delineation is the last step in the wetland determination process and includes the identification (on the land or on a map) boundaries between areas with different WC labels and determining their size. The Corps Manual (“Wetland Delineation Manual”) provides guidance on not only deciding if an area is a CWA wetland but also the methods used to locate the boundaries (delineate). In the FSA Procedures, the NRCS adopted the Corps delineation methods for determinations made using on-site methods.

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Note: In 1987 when the Corps named their manual ([Corps of Engineers Wetlands Delineation Manual](#)) they used the phrase “wetland delineation” outside of the currently accepted use. The Corps (and SCS, USFWS and EPA) corrected this oversight in 1989 with the release of the [Federal Manual for the Identification and Delineation of Jurisdictional Wetlands](#). In the early 1990’s the 1989 “Federal Manual” was disapproved for use by Congress. Accordingly, there is no single “federal method” to identify wetlands. Rather there are methods used by the USF&WS and NRCS for wetland inventories (Cowardin et al.), methods used for CWA Section 404 permitting (Corps Methods), and methods used by NRCS for WC purposes (FSA Procedures). Each gleaned portions from other methods. For example, you will learn that The FSA Wetland Identification Procedures are in fact the Corps Methods (Corps Manual and Corps Regional Supplements) with a few FSA variances from the Corps methods.

Without revisiting the discussion above, can you answer the following questions?

- What is meant by the phrase wetland identification?
- How does a wetland determination differ between a CWA “determination” and a FSA “determination”?
- What is the difference between a “Certified Wetland Determination” and a “Certified Wetland Delineation”?

Notes:

Learning Concept 2-2: Introduction to the methods used to identify wetlands for FSA purposes.

This Learning Concept is designed to take 30-45 minutes and does not include an exercise. Links are provided as optional learning opportunities. Level of difficulty is low.

FSA Wetland Identification Procedures: In 7CFR12.30 (a) (4) the Secretary of Agriculture directed SCS/NRCS to “*develop and utilize off-site and on-site wetland identification procedures*” to fulfill their responsibility to identify wetlands subject to the WC compliance provisions. In 2009, NRCS leadership directed their Programs Division to meet this regulatory mandate to develop procedures for the identification of FSA wetlands. In a Decision Memorandum, the Chief of NRCS supported the concept that the wetland identification procedures would follow those used by the Corps and others for Section 404 permit purposes, while maintaining the unique statutory and regulatory authorities provided to NRCS via the Secretary in the 1996 HELC and WC Interim Final Rule (7CFR12). Case law was to be reviewed in detail and court decision would be considered by the authors to this policy document. The title of this product would be the Food Security Act Wetland Identification Procedures. These “FSA Procedures” would be placed in the appendix to the National Food Security Act Manual (NFSAM) as the official agency policy on the FSA identification methods.

In response to this mandate, an exhaustive review of the statute, regulations, and case law was conducted. Significant past decisions rendered by USDA National Appeals Division (NAD) were also reviewed. Conflicts between the Corps Methods and the FSA statute, regulation, case law, and decisions by the NAD director were identified. When a conflict was identified, NRCS developed variances to how the FSA wetland identification process would differ from what is provided by the Corps in their methods. These variances are referred to as “FSA Variances” and provide the statutory and regulatory integrity required of any federal program that renders adverse decisions.

The name “FSA Procedures” is somewhat a misnomer, as they are not independent (stand alone) procedures. Rather they are a citation and review of:

- Each Section provided in Part IV-Methods of the Corps Manual
- Each chapter contained within a Corps Regional Supplement.

Then (if needed), a FSA Variances to that section/chapter is provided. As an example, commonly used off-site procedures used to identify wetlands by NRCS on croplands are State Mapping Conventions (SMC) or State Off-Site Methods (SOSM). These (SMC and/or SOSM) are provided as a FSA Variance in the FSA Procedures.

Let’s take a moment to access (<http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>) and review the overall structure of Part IV of the Corps of Engineers Wetland Delineation Manual (Corps Manual).

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There are 7 sections of Part IV of the Corps Manual. Each are discussed in the FSA Procedures in Part V as referenced in red.

- A. Section A. Introduction ([FSA Procedures; paragraph 5-5; FSA Variances 5-6: No](#)).
- B. Section B. Preliminary Data Gathering and Synthesis ([FSA Procedures; par. 5-7 & 5-8; FSA Variance 5-9: Yes](#)).
- C. Section C. Selection of Method ([FSA Procedures; par. 5-10; FSA Variance 5-11: Yes](#)).
- D. Section D. Routine Determinations ([FSA Procedures; par. 5-12 through 5-230; FSA Variances: No](#)).
- E. Section E. Comprehensive Determinations ([FSA Procedures; par. 5-24; FSA Variance 5-25: Yes](#)).
- F. Section F. Atypical Situations ([FSA Procedures; par. 5-26 & 5-27; FSA Variance 5-28 through 5-32: Yes](#)).
- G. Section G. Problem Areas ([FSA Procedures; par. 5-34 & 5-35; FSA Variance 5-36: No](#)).

As the name implies, Section D (Routine Determinations) is the most commonly used methods in the identification of wetlands for Section 404 purposes. This is true for FSA wetland identification purposes as well. Section D is subdivided into 3 different “subsections”. The difference of these subsections is a critical concept to understand.

Routine; Subsection 1 – Onsite Inspection Unnecessary (LEVEL 1). As the name implies, in this subsection, the Corps provided for a determination/decision to be made for each of the three wetland diagnostic factors without the collection of field data (sampling vegetation, digging a soils pit, or looking for wetland hydrology field indicators). For FSA purposes, a Level 1 determination would be an offsite wetland identification determination. The Corps Manual provides limited information on the tools/process used to make an off-site determination. Many States have developed State Wetland Mapping Conventions and/or State Offsite Methods to provide more information to the user when identifying wetlands from only offsite tools/resources. The Corps Manual and the FSA Procedures (and rule) support that if a decision can be rendered from remote tools, then collection of field data is not necessary (7CFR12.6 (6) “An on-site determination as to whether an area meets the applicable criteria shall be made by an NRCS representative ... if adequate information is not otherwise available to an NRCS representative on which to make an off-site determination.” In 7CFR12.30 (a)(4) mandate that NRCS shall “Develop and utilize off-site and on-site wetland identification procedures”. It is important to understand the difference between an onsite visit and the use of onsite wetland identification methods. A site visit might be made for various reasons (e.g. hear the concerns of the client, determine if production has been made possible, and visible verification of remote resource). The application of onsite wetland identification methods involves some type of data collection that cannot be obtained from offsite resources. When onsite data is collected, it mandates a Level 2 or Level 3 Determination. Level 1 Determinations are most commonly made for

- Obvious non-wetland (NW) and wetland determinations.
- Wetland (PC and FW) determinations for cropland fields.

Routine; Subsection 2 – Onsite Inspection Necessary (LEVEL 2). Level 2 Determinations require that site data be collected for **each of the three** wetland diagnostic factors. Level 2 Determinations are most common for minimally disturbed wetlands. Corps indicators provided in Chapters 2-4 (Hydrophytic Vegetation Indicators, Hydric Soil Indicators, and Wetland Hydrology Indicators) are typically used when making a Level 2 Determination; however, direct evidence from the FSA Procedures can be used for

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Level 2 determination for any of the three wetland diagnostic factors. Chapter 5 (Difficult Wetland Situations) are not used when making a Level 2 determination.

Routine; Subsection 3 – Combination of Levels 1 and 2 (LEVEL 3). A Level 3 determination is used in one of two different ways. It can be a combination of onsite and offsite methods at the

- Project Scale - Level 1 for one part of the project area and a Level 2 for another portion of the project area.
- Sampling Unit Scale - Where a decision is made for one or two of the wetland diagnostic factors using offsite resources only and using site data for the other factor(s). For example, remote sensed data is used to decide if the site supports wetland hydrology, while onsite data is used to determine if the site supports a prevalence of hydrophytic vegetation and predominance of hydric soils.

For FSA Purposes, Level 3 determinations are very common made for agricultural lands (cropland, pasture, and hayland).

When faced with a wetland identification challenge related to disturbance or climate (for any of the three wetland diagnostic factors) user is directed away from the routine methods to either Section F: Atypical Situations (disturbance-based challenges) or Section G: Problem Areas (climate-based challenges). Chapter 5 in the regional supplements is used in these situations.

Once again access the Corps Manual and review the structure of Part IV – Methods. It might help to look at the Table of Contents for the entire Manual on page ii to gain a better feel of the structure of Part IV. Access the Corps Regional Supplement for your work area. Note how Chapter 2 (vegetation), Chapter 3 (soils) and Chapter 4 (hydrology) are used for routine level 2 or 3 determinations for those factors. Now access Chapter 5 and note how this chapter supplements what is provided for Atypical Situations and Problem Area sections from the Corps Manual, Part IV – Methods. The objective to this effort is not to understand the details, but rather to understand how each product (Corps Manual Part IV and Corps regional supplements) are interrelated and interdependent on each other.

In review, the FSA Procedures are based on

- (1) **Part IV of the 1987 Manual (45%)**
- (2) **Regional Supplements to the 1987 manual (45%),**
- (3) **FSA Variances (10%)**

When the wetland identification project is for FSA purposes (receipt of AD-1026 - HELC and WC Certification or FSA-56 – NRCS Report for HELC and WC Compliance), the question answered from the application of the FSA Procedures is not “**Is the site a wetland?**”, but rather “**Is the site in question a FSA wetland?**”.

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The first step in the wetland identification process is to divide or split the project into different units called “sampling units” defined in the FSA Procedures as –

“The smallest portion of the area subject to the wetland determination and/or delineation for which consideration is made regarding a wetland determination decision. In Part IV of the Corps Manual this unit is referred to as a unique “plant community.” In the supplements the concept is referred to interchangeably as “plant community”, “vegetative unit”, and “landscape unit.” Sampling Units are selected based on having (or would have) similar plant communities resulting from similar soil properties, hydrologic regimes and landscape positions. Each sampling unit differs (landscape position, hydrology, soils, and vegetation) from other sampling units within the subject area. In the second step of the FSA wetland determination process (determination of FSA wetland type or assignment of the wetland conservation label), sampling units may be further divided or combined.”

Thus, the agency expert divides the project area (subject area) into areas that have similar soils, hydrology, and vegetation. This subdivision of the project area into unique areas is not unique to the FSA manual as it comes from the Routine (less than 5-acres) method from the Section 4: Methods of the Corps Manual. The Corps Routine (greater than 5-acres in size also divides the project into different (unique) areas. The Corps refers to sampling units as “*vegetative types*” but explains that they are based on different characteristics (soils, hydrology, and landscape position) that results in different vegetative types. It should be understood that *sampling units* are typically based on changes in landscape position. Landscape position dictates hydrologic inputs and outputs as well as soil formative properties. Plants then respond to these changes in soils and hydrology.

Once the sampling units are identified and delineated, a wetland identification decision is made for each sampling unit, independent of other units within the project area. After a wetland identification decision is made for each sampling unit (yes or no), the agency expert moves to the second step in the FSA wetland determination process – assignment of WC labels. Finally, like sampling units that are adjacent to one another are combined and delineated on the land or on a map and measurements are made to determine the size. Remember that the three steps to a wetland determination are (1) Wetland Identification, (2) Assignment of WC labels, and (3) Determine size (which requires delineation). With the preliminary agency decision report (wetland determination/delineation report with delineation map) which might be just a CPA-026 with map), the agency expert then provides the agency (NRCS) appeal rights. During the “agency” appeal process, preliminary decisions might change based on another site visit from the agency expert (reconsideration) or new information provided by the participant. By regulation (“NRCS Appeals Procedure”), the program participant is provided yet another level of agency appeal with a visit from **a different** individual (this is the agency appeals process). Following this process, a final agency determination is provided to the USDA program participant. Then if they remain concerned, they can appeal to the National Appeals Division (NAD), via the USDA appeals procedure. It is important to understand that there are two distinct appeals process:

- NRCS appeals process (two levels: field and state conservationist)
- USDA appeals process (NAD)

The client is provided a *certified wetland determination and delineation* where a decision (determination and delineation) is made final by NRCS or USDA. And in this decision, NRCS/USDA promises not to change the decision or the line (delineation), regardless of the fact that we know that wetland conditions might move higher or lower up the slope or “hydrology gradient”. By regulation, once

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certified, the delineation remains valid unless the person requests a review of the determination or delineation based on site changes resulting from “a natural event” that “alters the topography or hydrology of the subject land to the extent the final certification is no longer a reliable indication of site conditions, or if NRCS concurs with an affected person that an error exists in the current wetland determination (7 CFR Sec. 12.30(c)(6) and 16 U.S.C. Sec.3822 (a))”. This is also provided in the National Food Security Act Manual, Fourth Edition Part 514.1(C)(2) Effective Period of Certifications.

Summary and Review of the FSA Procedures: As discussed, the name “FSA Procedures” is somewhat of a misnomer as the FSA Procedures is not a stand-alone document, but rather relies on what is provided in Part IV (Methods) of the Corps Manual and Regional Supplements (each of the 5 chapters), with FSA Variances. The FSA Procedures also provide statutory and regulatory links related to a particular step in the wetland identification process. The structure of the FSA Procedures is as follows:

Part I: Introduction

Part II: Definitions

Part III: FSA 1985 Wetland Definition

Part IV: The Indicator-Based Approach, as used in FSA Wetland Identification Procedures.

Part V: FSA 1985 Wetland Identification Methods

- Subpart A: General FSA 1985 Variances to the Corps Methods (1987 Manual and Supplements)
- Subpart B: Discussion and FSA 1985 Variances to the Corps Manual (1987)
- Subpart C: Discussion and FSA Variances to the Regional Supplements

Take 5-10 minutes and access the FSA Procedures (Circular 6 dated December 1, 2010) and review the structure again. Read some of the FSA Variances. The objective at this point in the learning process is just to get a feel of what is in the FSA Procedures and how they are tied to the Corps Methods. The objective (at this point) is not to understand all of the finer points. You may want to print the FSA Procedures for future reference.

FSA WETLAND IDENTIFICATION, important concepts used by the agency expert: On December 23, 1985, the statute (FSA) was signed into federal law. This was the first and only time that the term “wetland” has been defined in any federal statute. This statute (Food Security Act of 1985) also provided a definition for *hydric soils* and *hydrophytic vegetation*, as these terms would be used in the administration of the WC provisions. Once again, this is the only place in federal law where these terms are defined.

As with most statutes, the definitions are limited to the specific statute in which they are included. But, this is not always the case. For example in the Urgent Supplemental Appropriation Act of 1986, Congress revised the FSA wetland definition by adding what is referred to as the Alaska exception (not exemption but *exception*) – “*For purposes of this Act and any other Act, this term (wetland) shall not include lands in Alaska identified as having high potential for agricultural development which have a predominance of permafrost soils*”. Note that the comment “*and any other Act,*” expands the scope of the Alaska exception provided in 1986 to not only the FSA but any other Act which would include the CWA. Areas meeting the Alaska exemption are not exempted, but rather **are not wetlands**.

The fact that Congress defined wetlands, hydric soil and hydrophytic vegetation in the FSA is very important. Unlike USFWS, EPA, and the Corps, NRCS did/does not have the option to develop or revise a wetland definition, a definition of hydrophytic vegetation, or a definition of hydric soils. Rather, they were provided to USDA in the law. Thus, unlike other federal agencies, NRCS **cannot** revise these definitions in policy or even by regulation. Each of these three definitions can only be changed by law. This makes NRCS’s role in the development of wetland identification procedures and the administration of those procedures very unique (when compared to the Corps and EPA for Section 404 of the Clean Water Act or USF&WS for wetland inventories).

Important: This is why the decision making process for **each factor** in the FSA Procedures is considered critically important. NRCS is using methods (Corps methods) designed for the identification of hydrophytic vegetation, hydric soils, and wetland hydrology, based on definitions of these terms (developed by the Corps and/or NTCHS) that differ from the definitions provided to USDA by law. Yes, they are similar, but different none-the-less and by law, NRCS had to decide how to deal with these differences.

How do the FSA Procedures work?

The agency expert applies the FSA Wetland Identification Procedures to each unique portion of the project site (sampling unit). The objective is to determine if the sampling unit meets the FSA wetland definition. This process involves confirmation of the three physical characteristics common to all wetlands (“diagnostic factors”):

- Hydrophytic vegetation
- Hydric soils
- Wetland hydrology

In the Corp Manual these are referred to as the three “diagnostic environmental characteristics” or “parameters”. In the regional supplements they are referred to as “factors”. These site characteristics are not independent of each other, but are each interrelated and are in fact dependent on each other. However, they are assessed separately and independently in the Corps Manual and separately (but interrelated) in the FSA Procedures. This brings us to our first difference between the FSA Procedures and the Corps Manual (FSA Variance).

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Congress defined a hydric soil (again only for FSA purpose) as

“soils that, in an undrained condition, are saturated, flooded, or ponded long enough during the growing season to develop an anaerobic condition **that supports the growth and regeneration of hydrophytic vegetation.**”

Thus, for FSA purposes (by definition) you could not have an **undrained** hydric soil without also having hydrophytic vegetation as a criterion for an undrained FSA hydric soils is the presence of hydrophytic vegetation. This is not true when using the Corps methods based on the NTCHS definition. The NTCHS definition (used by the Corps in the administration of Section 404) does not include the requirement (criterion) of “support the growth and regeneration of hydrophytic vegetation”.

The term “drainage”, as used and defined by NRCS in the identification of FSA wetlands is an important concept to understand. In the FSA Procedures, NRCS defines *drainage* as:

Any human induced onsite or offsite activity that results in a reduction in the depth, duration, timing, or intensity of the hydrology (ponding, flooding, or saturation) of the site is considered drainage for FSA purposes.

Quite simply, drainage is any activity that reduces the rate/amount of water entering a site, or increases the rate/amount of water leaving a site.

Undrained Sampling Unit: So for FSA purposes, when assessing an **undrained** site, the presence of a NTCHS hydric soil indicator is suggestive (indicates) that the soils are hydric. The presence of hydric soil indicators are but one piece of the puzzle. In addition, the agency expert must verification that the sampling unit also supports FSA hydrophytic vegetation before making a decision that the site supports FSA hydric soil. This is an example of a FSA Variance incorporated into the FSA Procedures to assure statutory integrity (remember the FSA hydric soil definition that requires the “growth and regeneration of hydrophytic vegetation” is in the law).

Drained Sampling Units: Please closely review the FSA definition of a hydric soil and consider drained sites. In this review, it becomes apparent that for **drained sites** this is not the cases. A drained site might have hydric soils without having hydrophytic vegetation as the impact of drainage can result in a change in the decision if a sampling unit supports hydrophytic vegetation, but drainage will not result in a change in the decision if the sampling unit supports hydric soils (once hydric always hydric).

What we have learned is that for drained sites, the hydric soil can occur in sampling units that do not support hydrophytic vegetation (as defined by the FSA) and the presence of a NTCHS indicator (by itself) can be used to determine that hydric soils are present.

In an effort to link the FSA Procedures to the FSA definitions (again the importance of retaining statutory integrity) and to allow for sound and rapid decisions, the FSA Procedures introduce (unique to FSA wetland identification) the concept (distinction) between **direct evidence** and **indicators**.

Let’s look at indicators first as indicators are the foundation to the *indicator-based approach* to the identification of wetlands used by the Corps and NRCS.

Learning Concept 2-3: The ecological foundations to the Indicator-based Approach to Wetland Identification.

This module is designed to take 2-3 hours and includes required exercises. Links are provided as optional learning opportunities. Level of difficulty is Moderate.

Starting Time: _____

The “**Indicator-Based Approach**” to wetland identification is the foundation to the Corps Methods and the FSA Procedures. Indicators should be thought of as evidence. As a comparison, let’s look investigations of a crime. In most investigations, there are two types of evidence: direct (eye-witness, video, and DNA) and indirect or circumstantial (motive, finger--prints in the room but not on the weapon, and the lack of an alibi, right or left handedness). In a criminal investigation, direct evidence is much more damning, but a decision to convict can be made based on either.

The same concept of the evidence is applied to rendering a decision if a sampling unit meets any one of the three wetland diagnostic factors. The decision can be made with more confidence and with less effort if direct evidence is present, but a decision (presence or absence) can be made when only circumstantial evidence is present.

Because the Corp methods and indicators were designed specifically for Corps definitions (of a wetland, hydric soil, hydrophytic vegetation, and wetland hydrology), then they are very strong evidence (in fact considered direct evidence) that the Corps definition (hydrophytic vegetation, hydric soils, and wetland hydrology) in question has been met. Accordingly, the Corps methods provide for a direct link (where a Corps’ indicator demonstrates that the Corps definition or a criterion (CWA) for that factor has been met). The Corps’ indicators are designed specifically for the Corps’ definitions (not FSA definitions; however, the NRCS cannot assume a direct-link from finding (or not finding) a Corps’ indicator. Rather, NRCS considers Corps indicators as indirect or circumstantial evidence (suggestive of).

Note: Remember the 1994 Wetlands MOA ended in 2005 (Module 1), but that was not really an end to coordination and cooperation between NRCS and the Corps. The 1996 rule (7CFR12) to the WC provisions was revised in 1996 based on the 1994 MOA. The 1996 rule (current rule) includes many requirements related to the Corps Methods. A new rule has yet to be published based on the 2005 withdrawal from the MOA. Due to regulatory language (carryover from the 1994 MOA), NRCS made a decision in 2010 that the Corps Methods would continue to be the “center-piece” to the [Food Security Act Wetland ID Procedures](#) (hereafter referred to as the FSA Procedures). NRCS uses the Corp methods but also considered the unique aspects of the FSA with the use of FSA Variances provided in the FSA Procedures. As this training effort progresses, each course participant will gain a better idea of the structure of the FSA Procedures, which are the Corps methods with FSA variances.

So, what exactly is an “indicator”? As shown, the Corps and NRCS view the concept of an indicator slightly different, but basically an indicator is any single piece of evidence that is suggestive that any one of the three diagnostic wetland factors does occur (hydrophytic vegetation, hydric soils, or wetland hydrology). **Indicators are used at the diagnostic factor level, not at the wetland decision-making level** (bolded for emphasis). At any sampling unit, there may be no indicators for the factor being considered, or there might be one or multiple indicators of the factor. The presence or absence of an indicator provides evidence that is used (along with other evidence and best professional judgment) in rendering a decision.

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The indicator-based approach is not used by the USFWS and others (remember NRCS still uses Cowardin for NWI and other programs) in the application of either Circular 39 (1956) or Cowardin et al. (1979). Basically, the indicator-based approach to the identification of wetlands allows for **timely** decision to be made as a benefit to the client (Section 404 permit applicant or USDA program participant). With the indicator-based approach the mandate is not to demonstrate or prove scientifically that the sampling unit would meet the wetland definition under normal circumstances. Rather, the indicator-based approach allows for a timely decision based on indicators (circumstantial evidence) without the need for long-term monitoring under scientific rigor and statistical analysis or rescheduling of the site visit to a time when ideal conditions exist (normal circumstances).

It is critical that NRCS staff understand that **“Indicators are used at the diagnostic factor level, not at the wetland decision-making level.** There is no such thing as a “wetland indicator” - only indicators for hydrophytic vegetation, indicators for hydric soils, and indicators for wetland hydrology. Indicators assist in decision-making for each factor. Decisions made at the factor level are then used to make a decision at the wetland determination level. When using the FSA Procedures, time, effort, and scrutiny is placed at the factor level, not the wetland decision-making level. As such, a proper appeal request would contest the decision(s) at the factor(s) level, rather than appealing that a sampling unit is not a wetland.

Remember that in the FSA, Congress provided specific definitions to be used by USDA for FSA purposes. These Statutory definitions are: *FSA wetlands*, *FSA hydrophytic vegetation*, and *FSA hydric soils*. In the FSA Procedures, NRCS includes a FSA wetland hydrology definition from Part 514 of the NFSAM. Each are provided in the FSA Procedures and each differs somewhat from that used by the Corps for CWA purposes.

Note: There are different hydrology criteria for different FSA wetland types (WC labels) which were developed in the rule-writing process (federal register). For example, 7 consecutive days of ponding or 14-days of saturation during the growing season is used to separate fully exempted areas (Prior Converted Cropland) from partially exempted areas (Farmed Wetlands) in potholes, playas and pocosins. The criteria of 15 consecutive days of inundation during the growing season is used to separate decision making between FW and PC in non- pothole, playa, or pocosins. For farmed wetland pasture (FWP) WC types, the decision is based on 7 or 14 day criteria. The purpose of this training effort is not to teach WC labels, but it is important to stress that: **For WC wetland types (exemptions) specific criteria are provided, but no such specific criteria are provided for a “FSA wetland”, or for a CWA wetland.** This is an important distinction between WC labels (step 2 of the wetland determination process) and making a decision if a site meets the FSA wetland definition (step 1 of the wetland determination process). The rule is that the first step in the FSA wetland determination process is to IDENTIFY if a wetland exist. The WC label hydrology criteria (7-days, 14-days, 15-days) have no place in the identification of a wetland. Rather, their use is restricted to step 2 (assignment of WC labels). Even some experienced staff struggle with this concept.

To be a FSA wetland (ignoring the Alaska exception), the site must meet all 3 factors, as defined in the FSA (this is also true for CWA wetland). Because NC is considered for each factor, it need not be considered at the wetland decision-making level. This is worthy of repeating. Because NC is considered at each of the three wetland diagnostic factor decisions, it (NC) is not considered at the wetland decision-making level. Once again, intense consideration, effort, and scrutiny are placed at the factor level, not the wetland decision-making level.

Indicators are used to assist the agency expert in decision making at the factor-level. The agency expert considers: the factor(s) found (or not found); normal circumstances; other evidence/indicators such as remote tools; and **most importantly** the **definition of the factor(s) in question**. The mandate is that the definition must be met, not that indicators are found or are not found. Yes, the presence or absence of

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indicators assist with the decision, but the FSA definition carries much more weight. This process of using indicators to assist in the decision is repeated for each of the three factors.

Note: Remember the FSA Procedures require that the decision (at the factor level) be based on the FSA definitions for hydrophytic vegetation and hydric soils and the criteria for FSA wetland hydrology. Indicators are used to assist in the decision, but unlike the Corps there is not necessarily a direct link between an indicator and the factor being met.

Because the FSA Procedures require that decisions be based on the statutory definition of hydrophytic vegetation and hydric soils and the NFSAM definition of wetland hydrology, it becomes important to understand some of the differences between how indicators are used for CWA purposes how they are used in the FSA.

As discussed, the Corps developed definitions as they would be applied to their responsibilities to identify wetlands for CWA purposes. The definitions/criteria developed and used by the Corps are similar to what is found in the FSA, but they do differ. These differences will be discussed in detail in Modules 3 (Vegetation), Module 4 (Soils) and Module 5 (Hydrology). In this module, we will introduce concepts.

What is critical to understand at this point in the learning process is that logic would suggest that an **indicator** developed specifically for one definition, might not always work for a different definition. How then, did the authors of the FSA Procedures (who were given the task to use the Corps Methods within the FSA context), address the fact that there will be, on occasion, situations where a Corps indicator might provide a **false positive** (indicator found but the FSA definition/criteria for that factor is not met) or a **false negative** (indicator not found, but definition/criteria for the factor in question is met)?

Read the bolded phrases again (false positive and false negative) again in the above paragraph. It is critical that each participant in this training understand that indicators are developed for the Corps and/or NTCHS definitions for hydrophytic vegetation, hydric soil, and wetland hydrology – not the FSA definitions. Thus, there is a possibility that a Corps/NTCHS indicator might be found while the site might not meet the FSA definition for that factor (false positive). There are also situations where indicators do not occur at the time of the site visit but would occur if the site was visited during normal circumstances (false negatives). Lastly, there are situations where an indicator might never occur on a wetland site but the definition is met (false negative). Each student is asked to pause at this time and put more thought into these two terms (false positive and false negative).

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Part V of the FSA Procedures makes it clear that there is a suggested link between a Corps indicator and a site supporting a FSA diagnostic factor (FSA hydrophytic vegetation, FSA hydric soils, or FSA wetland hydrology). As discussed, unlike the application of the Corps Manual for CWA decisions, this direct link approach cannot be assumed for FSA decisions. The FSA Procedures (the official NRCS policy document on the identification of FSA wetlands) require that “*in fairness to the USDA program participant*”, further consideration is required. This further consideration is the assurances that the findings (presence or absence of indicators) are in-fact, reflective of the FSA **definition** for the factor under consideration and that the definition would be met under **normal circumstances**. To assist with this important concept, let’s look at some examples of situations where the evidence found at a single point in time might be erroneous to what would occur during normal circumstances.

True False

Examples of false-positives

- ✓ A Corps indicator for CWA hydrophytic vegetation is met, but the agency expert determines that the preponderance of evidence (including best professional judgment) suggests that the site would not *under normal circumstances* support a prevalence of FSA hydrophytic vegetation (as defined in the law). Basically the determination was made that the vegetation on the site would not under normal circumstances be growing in water or a reduced substrate.
- ✓ A drift line is found, but the preponderance of evidence (including best professional judgment) suggests that the drift line did not result from a normal flooding or ponding event.

Examples of false-negatives

- ✓ NTCHS (hydric soil) indicator is not present (e.g. red soils and alkaline black vertisols) but the preponderance of evidence suggests that under normal circumstance the definition would be met (based on other evidence and/or best professional judgment).
- ✓ Absence of a hydrology indicator, but the site visit is made during the dry season. Other evidence and best professional judgment (preponderance of evidence) suggests that the site would meet the wetland hydrology definition under NC.

Although not the norm, false positives and false negatives do occur. For hydric soils on drained sites, false positives are particularly rare due to the fact that the definition includes “in its undrained condition”. For hydric soils on undrained sites false positives are more common as the FSA hydric soil definition requires that hydrophytic vegetation is present. When looking for indicators for hydrophytic vegetation and wetland hydrology, false positives and false negatives are not at all uncommon.

The discussion about wetland hydrology indicators introduces another important difference between the Corps’ concept of an indicator and how the concept is applied by NRCS in the FSA Procedures. The Corps considers direct observation/evidence as “indicators”. For example, an “indicator” for CWA wetland hydrology is verification that the site is ponded. These are referred to by the Corps as Group A (“*Observation of Surface Water or Saturated Soils*”) wetland hydrology indicators. In the application of

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FSA Procedures, the agency expert may consider ponding (if the ponding condition is normal for that site during the growing season) as “direct evidence” and not an “indicator”. This is an example of a FSA Variance. For FSA purposes, wetland hydrology indicators would more commonly be those shown in the regional supplements as Groups B, C and D.

Why is this important to me? Rather than the direct-link approach used by the Corps (indicator = factor being met), the FSA Procedures require that prior to decision making at the wetland diagnostic factor level (vegetation, soils, and hydrology), the agency expert must confirm that the unique FSA statutory definitions and criteria do occur during NC. The Corps approach is that it would be unlikely to obtain 3 false positives, so it is not as important for an indicator to necessarily reflect that the definition for that factor be met. So for CWA purposes you might show that a site has hydrophytic vegetation but the site does not support hydric soils and/or wetland hydrology. The Corps supplements also recognize that false-negatives are not uncommon. In Chapter 5 of the regional supplement, the Corps allows for the assumption that a false-negative is occurring when indicators for the other two factors have been confirmed – if other conditions occur. This is a two diagnostic factor approach, but before using the 2-factor approach other conditions must occur. So basically, for false-negative the Corps uses the preponderance of evidence approach used by NRCS in the FSA Procedures. The Corps does not consider false-positives.

Your good fortune is that it is not crucial that the student have a full grasp of specific indicators at this time, as those will be presented in subsequent training modules. The objective here is for the student to just begin to understand concepts.

Again, much more will be presented in later modules, but it is important that each course participant begin to understand the difference between (1) direct observation and (2) an indicator (circumstantial evidence) for FSA purposes.

Learning Concept 2-4: The ecological foundations to the Direct Observation Approach to Wetland Identification.

A direct observation is when the FSA definition of a factor is actually observed occurring on the site in question. Because NC is a requirement in the consideration of each factor, this observation of direct evidence must be when the sampling unit is experiencing normal circumstances (the site has not had a post-1985 drainage action, the visit is made during the wet portion of the growing season, and the hydrologic conditions are normal). During these ideal conditions, direct observation can be made from remote sensed tools such as viewing plants grow in water during the growing season of a normal climate year, but more typically, direct observation is utilized during site visits.

The use of direct observations provides opportunities to make sound decisions without extensive data collection. Direct observations have an advantage of being rapid and sound (direct proof that the definition is met). Unfortunately, the timing of the site visit or climate conditions only occasionally allow for the use of direct observation.

Direct observations carry more weight than do indicators (circumstantial evidence). Accordingly, in the FSA Procedures, the use and value of the indicators are reserved to situations where direct observation (evidence) is not available. Again, the use of indicators is more common than direct observation, because rarely is the site visit made during ideal conditions (NC). Corps indicators are found in the regional supplements. In some States, NRCS provides additional indicators in State Mapping Conventions (SMC) or State OffSite Methods (SOSM).

Access a Corps regional supplement at http://www.usace.army.mil/CECW/Pages/reg_supp.aspx. In Chapter 4, find the table titled "List of Wetland Hydrology Indicators" for that region. Look at the Groups A-D to understand that Group A indicators for hydrology would be considered direct observation under FSA (if observed during the wet portion of the growing season of a normal climatic year and without recent (post-1985) alteration to the hydrology). If observed outside of the NC, observation of water (flooding, ponding, or saturation) would be an indicator as the water observed does not directly demonstrate that the FSA wetland hydrology definition would be met during NC.

Access the FSA Procedures and find Subpart C: Chapter 2. Read about decision making for a prevalence of hydrophytic vegetation specifically regarding direct observation versus indicators.

- Read the FSA definition of hydrophytic vegetation.
- Are you starting to see the difference?
- If you were the landowner, which would you think should have more weight for FSA purposes: Direct Observations or Indicators?

- If you are the agency expert, which would you have more confidence in using to confirm the FSA hydrophytic vegetation definition?

Thus far, a great deal of information requiring deep consideration has been presented in this learning concept. Take time to understand the following important concepts:

- (1) What is an indicator for FSA purposes and what is direct observation for FSA purposes?
- (2) What is a false-positive and false-negative and why might it be more likely for NRCS to find a false positive than Corps?
- (3) Why does NRCS require that the agency expert decide that the definition is met for the factor under consideration, before making a decision; while the Corps methods do not require such consideration?

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More Details and Discussions on this Essential Concept: The Indicator-Based Approach to wetland identification is based on the concept that regardless of the timing of the site visit, physical indicators are likely to remain that are indicative of previous conditions that occurred on the site /during “*normal circumstances*” (as is required/used in the FSA and CWA wetland definitions). Don’t forget, remote resources are indicators too! With the use of indicators, seldom must a determination be postponed until “direct observations” under *normal circumstances* are available.

This concept of *normal circumstances* will be discussed in depth in the next section. With the indicator-based approach, sufficient circumstantial evidence is typically available to make a timely decision (for the program participant or Section 404 permittee) without having to wait until normal circumstances occur (as that might require 1- 5 years depending on the level of disturbance and having to wait for a normal climatic year). NC is “**statutorily**” viewed as those conditions that would occur during the normal wet portion of a normal climatic year under minimally disturbed conditions.

Why is this important to me? An important distinction needs to be made before we get in depth in this concept. We need to remember that the FSA Procedures separate decision making into two very distinct options to the agency expert: (1) direct evidence and (2) indicators. Both will be discussed under the modules on each of the three factors (modules 3-5). When possible, direct evidence (can be from remote sensed data or on-site visit) is preferred as it confirms (proves) that the site in question meets the specific definition for the factor under consideration.

Learning Concept 2-5: More Discussion on the use of Indicators.

As discussed, in the absence of direct evidence/observation (from remote sensing tools or a site visit), indicators from remote tools or field visits can be used to render a decision in most cases. The presence or absence of “indicators” (circumstantial evidence) is used to assist in the determination if the sampling-unit under normal circumstances meets the definitions of the three diagnostic factors of a wetland. Quite obviously, the most valuable indicators are those that are:

1. Resistant to change, but not so resistant that they remain for decades [field indicators of hydric soil are different in this regard as hydric soils are not reflective of current conditions but rather past conditions (“formed under” (Corps), “prior to drainage” (NRCS)). This will be discussed in detail in Module 4.
2. Reflective of normal site conditions (*normal circumstances*) during the wet portion of the growing season. This is particularly important when using offsite resources as an indicator.

Remote Sensed Indicators and Other Offsite Indicators: Remote sensed data/information can be obtained from a wide array of resources. LiDAR (Light Detection and Ranging) data has great potential as a wetland identification and wetland delineation tool. InSAR or IfSAR (Interferometric Syntheticaperture Radar) data is normally of lesser quality but still has value in wetland identification. Satellite imagery and photo imagery available at NRCS field offices can be quite extensive and can serve as direct evidence or as an indicator depending on when (season of year) the imagery was taken, and the climatic conditions that occurred prior to the imagery. NWI maps (although they use Cowardin’s concept of a wetland) can be of value in some regions of the U.S. Soil map unit /plant community associations can also provide valuable information as can ecological site data.

There are two types of remote indicators (1) those listed in the Corps Manual or supplements, (2) those listed specifically as an indicator in State Mapping Conventions or in State Offsite Methods; or (3) other circumstantial evidence used to assist in the decision making process. The 1987 Manual does not mandate remote tools, but rather allows for the judgment of the user to decide if sufficient evidence from remote data is available without having to use onsite indicators (Level 2 determination).

For many projects there are ample offsite resources to make a decision that meets the legal standard of a government agency's decision making requirements by administrative law (decisions are not “arbitrary and capricious”). The phrase *arbitrary and capricious* is important as it provided a guide to the agency expert on how much information/data is needed. The phrase “*arbitrary and capricious*” is commonly applied to agency decisions, and is suggestive that the decision was not based on reason or judgment and without regard to rules or standards. Such a decision is one made without regard for the facts, is in conflict with the evidence, and is made inconsistently from the norm or what is applied to other situations or projects.

Why is this important to me? Your legal mandate, when rendering any potentially adverse technical decision, is to apply similar standards to each project and to collect enough information to make an informed decision. It is that simple. Your mandate is not to turn every wetland identification request into a study or research project. The questions that must be asked are: Is my decision reflective of the information gained? Did I use the standards (indicators/methods) similarly to how I made other decisions for other participants? If this

perks your interest, you might want to use a search engine on [“arbitrary and capricious administrative law”](#).

Conduct an internet search on the phrase “arbitrary and capricious” to gain further insight into the legal madate of federal agency decisions.

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Each of the three wetland factors has an array of “approved” field indicators. An approved indicator is one that is in the Corps Manual, as supplemented in Table 1 of a regional supplement, or an indicator provided in approved State Offsite Methods or State Mapping Conventions. For FSA purposes, there are other indicators such as remote tools used for an offsite determination or a piece of circumstantial evidence that might be used to decide if the conditions observed at the site or from a remote sensing resource are reflective of normal circumstances. Remember, no indicator is 100% accurate, hence the use of the term “indicator” rather than “proof”. Indicators don’t prove anything – they suggest something and/or are “indicative” of past conditions or normal conditions. There are always situations when –

- i. An indicator is confirmed for one of the three wetland factors, but the FSA definition for that factor is not met under NC (false positive).
- ii. An indicator is absent for one of the three wetland factor, but the FSA definition for that factor is would be met under NC (false negative).

For this reason, decisions made at the factor-level are always based on the preponderance of evidence from approved indicators and any other piece of evidence (non-approved indicators) and are eventually decided upon the FSA definition of the diagnostic factor in question as that definition is derived from the statute.

Some indicators are ephemeral, while others are very stable. Some work very well for most sites, while others have a very narrow range of applicability. The confidence level for each indicator can vary from very strong to very weak and is often variable across regions, soil types, and seasons of the year. Again, this is why NRCS has a policy that only experienced staffs (“demonstrating a proficiency in making certified wetland determinations”) will be listed as an agency expert on the State Roster. Completing training is can provide foundations, but only with experience can proficiency be obtained.

NOTE: If unfamiliar with the NFSAM, it might be a good time to access it on the NRCS webpage under the “eDirectives” system, the “manuals” tab, Title 180, NFSAM, Part 514, Subpart A, 514.1 B (1) and (2). This is particularly important for those who might make staffing recommendations for job approval authority as listed on the [State Roster of Agency Experts](#).

Examples of Approved Indicators: Much detailed discussion will be made on indicators for each of the three wetland factors in Modules 3, 4, and 5. Examples provided below are approved wetland hydrology indicators from Chapter 4 of the Corps Regional Supplements, and are only provided to introduce the concept of the indicator-based approach.

Example Wetland Hydrology Indicators:

Surface Soil Cracks: Surface soil cracks are shallow cracks that form when fine-textured sediments dry and shrink (or consolidate). The limitation of this hydrology indicator is that they are very ephemeral, as they are only apparent during dry soil moisture conditions.



Drift Lines: Plant residue/debris left from ponding and flooding events are fairly resistant to change, but not too resistant, as a result, drift lines serve as a strong indicator that the event was current. However, the debris observed cannot always be linked to the growing season and may not be reflective of normal hydrological conditions of the site (might be indicative of a 100-year flood).



Sparsely Vegetative Concave Surface: Particularly in forests, areas that pond water for long periods during the growing season are often sparsely vegetated, but in herbaceous wetlands that pond for long periods of time, this can occur too. This wetland hydrology indicator can be used with very high confidence as it is resistant to change and tends to be indicative of normal conditions during the wet portion of the growing season.



Other evidence used to assist in the wetland id process: In addition to the Corps approved indicators, other evidence may be used to assist in the FSA wetland identification process. The most common would be evidence obtained from remote resources, but there might be situations where on-site evidence that is not an approved indicator may prove to be as important as an approved indicator.

Ponded water is viewed on a compliance slide yet the photo was taken in the winter (outside of the normal wet portion of the growing season). If the ponding was during NC, then it would most likely be considered direct observation, rather than an indicator.

An old clay tile drainage is found on the site. This evidence suggests that the soil features might be reflective of pre-drainage conditions, or that some of the woody species present could be reflective of past hydrologic conditions.

As stated in Part III of the FSA Procedures,

*“the ultimate decision if a site meets the FSA 1985 definition or criteria for any of the **three factors** is made from (1) a preponderance of evidence, (2) best professional judgment, and (3) the FSA 1985 definitions and/or criteria of hydrophytic vegetation, hydric soils and wetland hydrology”.*

As presented, the benefit of using the indicator-based approach is that the wetland identification “season” is spread over a much longer period than it would be if the site had to be observed during the wet portion of the growing season of a normal climatic year (the ideal period/conditions for the identification of wetlands). Indicators (again circumstantial evidence) are used to substantiate or predict conditions that would occur under ideal site conditions (not disturbed and during the wet portion of the growing season of a normal climatic year). But, if a situation occurs where indicators for any one of the three factors are absent (due to disturbance, abnormal weather patterns, or season of the year) then the WC regulations require that the decision must be postponed until site conditions

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improve [7 CFR Part 12; Section 12.6 (c) (7)] – *“An on-site determination, where applicable, will be made by the NRCS representative as soon as possible ..., **but only when site conditions are favorable for the evaluation of soils, hydrology, or vegetation**”* (bolded for emphasis to the participant of this training course.)

Therefore, if the wetland determination cannot be rendered with confidence, then the agency expert has a **regulatory mandate** to postpone the decision until the site conditions improve. This mandate is granted from the Secretary of Agriculture to NRCS, from the Chief to each State Conservationist, from the STC to the agency expert (via job approval authority).

The mandate in the FSA Procedures is not to confirm the absence or presence of an indicator – but rather to confirm the absence or presence that the statutory definition (or criteria) for the factor in question has been met.

By far, this (verification that the definition is met, rather than the presence or absence of a Corps indicator) is the most important concept of this entire training effort.

The FSA Procedures emphasize that decisions for each of the three diagnostic factors are made: (1) as an independent process of the other two factors; and (2) are based on direct evidence, indicators, and best professional judgment and (3) the decision is that the FSA definition for the factor in question occurs under normal circumstances. Regardless of the presence or absence of an indicator, the ultimate decision (determination) that any of the three requirements for a FSA wetland (wetland hydrology, a prevalence of hydrophytic vegetation and a predominance of hydric soils) are met - is made based on the **FSA definitions** of hydrophytic vegetation and hydric soils, and the **FSA criteria** of wetland hydrology. This FSA decision-making concept will be discussed in more detail in the decision making sections of Modules 3, 4, and 5.

Review: The use of the indicator-based approach to wetland determination allows the agency expert to provide USDA program participants with timely decisions - within the NRCS staffing limits. The alternative would be multi-year monitoring of each sampling unit to assure that the data is reflective on normal circumstances (a statutory requirement of a FSA wetland). Even if you were able to schedule a site-visit during the wet portion of the growing season in any given year, there is a chance that those conditions would be outside normal circumstances due to abnormal climate patterns prior to the visit.

Lastly, the burden to the agency expert (at the factor-level of the decision making process) is “a preponderance of evidence” not “proof positive”. No indicator (by itself) proves that the definition or criteria for that factor has been met. The only way to prove that a definition is met is to establish a statistically sound scientific multi-year study. The Corps manual and the FSA Procedure were not designed to meet the scientific rigors of a study. Rather, they were designed for rapid and pragmatic decisions.

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Indicators (off-site and on-site) tempered with best professional judgment (only comes with experience), provides the “preponderance of evidence” necessary for federal decision-making. At the wetland determination level, all three factors must be met (must meet their definition/criteria) before rendering a decision that the site in question is a FSA wetland.

Access the FSA Procedures and read (Part IV) Indicator-based Approach: the Foundations of Federal Wetland Identification Methods. For common wetlands in your work area, can you think of an offsite indicator that might assist in a Level 1 determination (offsite for each factor) of conditions during NC and NEC for each of the three wetland factors?

The decision if the sampling-unit meets the **wetland** definition is based on the confirmation that each of the three factors occur (not necessarily if an indicator for each factor was found).

Why is this important to me? Are you are beginning to appreciate the fact that NRCS's role with the identification of wetlands for FSA purposes differs somewhat from the Corps methods? In an attempt to introduce the FSA Procedures, this module has by necessity introduced the differences. Don't let this concern you. For the vast majority of the time, Part IV of the Corps Manual and the indicators provided in the regional supplement will be applied and those results will be used to render a decision for FSA purposes.

Notes:

Learning Concept 2-6: Normal Circumstances (NC) - As the term is applied to the FSA Wetland Identification Procedures.

This Learning Concept is designed to take 1-2 hours and does include a required exercise. Links are provided as optional learning opportunities. The level of difficulty is moderate-high.

Starting Time: _____



As previously discussed, due to the use of the phrase *normal circumstances* in the FSA wetland definition (NC is in the wetland definitions used by the Corps too), the consideration that the decision be based on *normal circumstances* becomes a statutory mandate to decision making. Congress did not provide any suggestion into the meaning of the phrase used in the FSA definition. However, it was included to insure that decisions were made based on the conditions that would normally occur on the site. In 7CFR12.31 (b) (2) (i), the Secretary of Agriculture provided more insight to the concept of *normal circumstances* with the statement that NC are:

“The soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed”.

Oddly, this definition is provided under a specific section related to vegetation and is not in (section?) 12.2 – Definitions with all of the other definitions. Some might find this to be suggestive that the definition found in 7CFR12.31(b)(2)(i) is not the inclusive “concept” but rather as the concept would be applied only in making decisions on the prevalence of hydrophytic vegetation.

FSA Wetland Identification Procedures (Foundations to Sound Decision Making)

How do agencies legally address with situations where the Statute and the Regulations are somewhat unclear on a critical concept needed for fair and consistent application of the law?

In such situations (where neither the Statute, nor the Regulations provide full clarity), the administrative/governing federal agency is given the responsibility to provide clarity in an agency rule (Federal Register) or in their policy or procedural document related to the law. Only with such clarity can consistent decisions be made across the U.S. (not “*arbitrary or capricious*”). Remember, the legal mandate of an adverse federal technical decision is not that the best and newest science always be used, but rather that the process is applied equally to the regulated public and with due consideration (not arbitrary or capricious).

Before moving on, you will want to read the clarity statement provided in the rule of NC again and again. *“The soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed”*.

What did the Secretary mean by this statement? Quite obviously, the absence of vegetation in this statement is apparent, but that can be explained by the second part of the definition (“without regard to whether the vegetation has been removed”). If this were the definition in its entirety, what do you envision?

Let’s concentrate on the fact that normal circumstances, as defined in 12.31(b) are related to what the soil and hydrologic “CONDITIONS” would be “normally”. Pause and consider the following questions before moving on:

- What are normal soil conditions?
- What are normal hydrologic conditions?
- What would abnormal soil conditions be?
- What about abnormal hydrologic condition?

Now consider (1) disturbance and then (2) climate and re-answer the questions. You must do each independent of the other and for each of the 4 questions. For example: What are the normal soil conditions without disturbance? What are the soil conditions within normal climate variability? Then move to the next question about normal hydrologic conditions.

FSA Wetland Identification Procedures (Foundations to Sound Decision Making)

As you will be asked repetitively in this training, let's take the definition (as provided in 12.31 (b)) of NC and dissect it into the essential pieces/concepts.

First the concept linked to:

“The soil and hydrologic conditions that are normally present...”

What do we know, thus far, about how the Secretary interpreted the statutory concept of *normal circumstances*? We know that *normal circumstances* include:

- (1) Soil conditions, which are “normally present”, and
- (2) Hydrologic conditions, which are “normally present”.

The troubling part is the use of “normally present”. What is meant by this statement? Does “normally” mean in the absence of disturbance? If so, why did the definition not say this? Does “normally” mean in the absence of a major shift in climate (dry season or drought) or storms (abnormally wet)? If so, why did the definition not say this?

To provide such assurances, NRCS has a responsibility to provide clarity regarding “normal circumstances”. NRCS met this important responsibility when it provided in its policy and procedural manual (NFSAM) and more specifically in the FSA Procedures (in the appendix to the NFSAM) that:

*“Normal circumstances” as used in the FSA 1985 wetland definition “under normal circumstances does support a prevalence of hydrophytic vegetation...” provides that the wetland/non-wetland decision be based not on anomalies, but rather on *normal circumstances*. In Section 7CFR12.31 (b) (2) (i), the Secretary explains that normal circumstances “refers to the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed”.*

“In support of the rule and in further clarity, NRCS addresses normal circumstances (NC) as a two-prong concept. The first addresses the “*soil and hydrologic conditions that are normally present*” portion of NC, and the second addresses the “*without regard to whether the vegetation has been removed*” (or significantly altered) portion of the NC.

“The soil and hydrologic conditions that are normally present”- This concept includes (1) disturbance-based wetland identification problems, and (2) normal and abnormal climatic-based wetland identification problems.

“Without regard to whether the vegetation has been removed” – this concept includes disturbance-based wetland identification problems related to vegetation only.

What is the point to all of this? In the FSA Procedures, NRCS met the statutory and regulatory mandate to base decisions on NC by splitting the concept into potential wetland identification problems related to:

FSA Wetland Identification Procedures (Foundations to Sound Decision Making)

1. Disturbance, which are addressed by following the Typical/Atypical Situations consideration, and
2. Climate, which are addressed by following the Normal Environmental Conditions (NEC) consideration.

Thus, as is provided in Part 2 of the FSA Procedures, Normal Circumstances (NC) are defined as:

“The vegetative, soil and hydrologic conditions that would be normally present during (1) the wet portion of the growing season of a normal climatic year in (2) in a minimally disturbed condition (i.e. removal or alteration of vegetation, filling, drainage)”. NC is addressed through the consideration of Normal Environmental Conditions (NEC) and Typical/Atypical Situations”.

What did this “clarity” in the FSA Procedures achieve? It assures the consistent application of the concept to insure that decisions are not based on anomalies, normal conditions during the dry season, or the non-growing season. Rather, each decision (at the factor level) must be based on what conditions are expected during the wet portion of the growing season in a normal climatic year.

The proper consideration of NC, allows for sound decisions even if the vegetation has been removed or highly altered. This is accomplished by requiring that the decision reflect, not necessarily what is growing (or not growing) at the time of a single site visit, but rather what **would be growing** on the site during the wet portion of the growing season during a normal climatic year AND in the absence of these annual cultural practices so common on agricultural lands.

So, what do we know?

- ✓ We know that the first portion of the definition of *normal circumstances* addresses SOIL CONDITIONS (hydrology, features, chemical, and biological) and the HYDROLOGY CONDITIONS (timing, duration, depth, intensity of flooding, ponding, and saturation events) that are normally present during the wet portion of the growing season of a normal climatic year (50 years in 100), and in the absence of post-1985 alterations of soil or hydrology.
- ✓ The second part of the NC definition addresses that the absence of normal vegetation is not normal circumstances. Rather, what would be growing during the normal wet season is normal circumstances related to VEGETATION.

So we find that *Normal Circumstances* is a required consideration for **each of the three factors**.

Why is this important to me? In the FSA wetland definition, Congress requires that for an area to be FSA wetland, it must “*under normal circumstances support such vegetation*”. In addition, Congress required in its hydric soil definition that all hydric soils (in the absence of drainage) would support **hydrophytic vegetation**. Remember the statute defined hydrophytic vegetation (from Cowardin) as (1) plants growing in water, or (2) plants growing in a substrate that is periodically deficient in oxygen due to excessive water content. The FSA wetland hydrology is not defined but is suggestive that a FSA wetland must be “wet enough” to support (under normal circumstances) such **vegetation**. So, this concept of “under normal circumstances does

support such vegetation” is an integral part of a FSA wetland/non-wetland decision. And not only if the site supports a prevalence of hydrophytic vegetation, but also if a site supports FSA hydric soils or FSA wetland hydrology.

In review, the term *normal circumstances* must be applied to **each of the three diagnostic factors** (emphasis added). The decision for each factor should be reflective of conditions that would occur under normal circumstances. (Site conditions that would normally occur during (1) **the wet portion of the growing season under normal climatic conditions and (2) in the absence of recent disturbance or drainage**. *Normal*, as it applies to hydrologic and soil wetness conditions is described as the range of conditions that would be expected to occur 50 years in 100.)

Before moving on with this discussion, you will want to pause and envision a wetland in your work area - without disturbance of vegetation or drainage as defined in the FSA procedures:

- What would it look like?
- What comes to mind?
- Do you “see” the wetland during the dry season?
- How about during a very dry or very wet spring?

As did Congress, you envisioned the wetland during *normal circumstances*.

Questions to Consider:

- Access the FSA Procedures, Part II – Definitions, and find the definition of “drainage” as the term will be applied to the WC provisions. You will need to be reminded of this **inclusive** concept of “drainage” throughout this training. In your work area, what are common land management practices that might be considered “drainage”?
- In regard to *normal circumstances*- what would you consider normal soil and hydrologic conditions for a common wetland type in your work area?
- What would be the range of normal (how wet and how dry) conditions during the wet portion of the growing season?
- Did you use “qualitative measures” or “quantitative thresholds” such as days of saturation or depth of inundation?

Example of the climate-based portion of NC: In southern Texas along the Rio Grande River, there are old river scars (oxbows), many of which are dry most of the time (20-inch rainfall, 100 degree days, very long growing season, with wind, more wind, then as the sun sets - just a little more dry wind). Following a tropical storm in late summer (August-November), these old river scars pond water and resemble oxbow lakes of the Southeastern U.S. In the deeper and undrained “resacas” (the local name of such relic channels), the water may remain for 1-2 years. When wet they function as a wetland providing significant societal value in an otherwise dry, heavily used (agriculture, industry, and residential use), and highly altered ecosystem. These resacas are often the only native/unaltered habitat in the region.

- Are these important ecosystems, under *normal circumstances*, FSA wetlands?

Review: NRCS considers *Normal Circumstances* (as the term is used in the FSA wetland definition) to include consideration of the normal dynamic nature of all wetlands (site changes due to both disturbance and climate). Every decision should reflect what the site conditions (soils, plant community, and hydrology) would be if the site had not been recently disturbed (since the enactment of the FSA), and during the wet portion of the growing season of a normal climatic year (50 years of 100).

For ease of application, NC is divided into:

- a. Disturbance-based wetland identification issues. In the FSA Procedures, these are addressed under the concept referred to as “**Typical/Atypical Situations**”.
- b. Climate-based wetland identification issues. In the FSA Procedures, these are addressed under what is called **Normal Environmental Circumstances**, abbreviated as NEC.

Example: In south Texas, the normal wet portion of the growing season is from August – February dependent on when (and if) a tropical storm impacts the area. Normal “soil and hydrologic conditions” is a range based on 50% probability, but IS NOT and CANNOT be determined quantitatively. It must be based on best professional judgment as there are too many associated and interrelated variables to attempt to model. There are, however, data-based tools that can help.

- ✓ **Palmer Drought Index:** Provides evidence, if at the time of the site visit the area in question is experiencing a surplus or deficiency of water
(<http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html>)
- ✓ In humid and semi-humid regions of the U.S., the **graphic option** in the University of Delaware’s **WebWIMP** (<http://climate.geog.udel.edu/~wimp/>) can provide a very good graphic representation of the when a site would be expected to be experiencing wet conditions. (WebWIMP has less value in hot, arid regions of the U.S.)
- ✓ **WETS** data will provide a good average of rainfall and growing season.
(<http://www.wcc.nrcs.usda.gov/climate/wetlands.html>)

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Many think that wetland identification is all about looking at the plants and soils. Not true. Before any plant is identified or soil color book is opened, the agency expert must consider the concept of normal circumstances by making a decision if the conditions at the site are typical and/or are reflective of normal environmental conditions.

Access the Palmer Drought Index website for your work area.

- Are you currently experiencing dry, normal, or wet conditions?
- How severely are these conditions affecting your area of work?
- If you visited a minimally disturbed potential wetland site today, would the conditions be reflective of normal circumstances based on the Palmer Drought Index and your experience?
- Now access the WETS Tables for the same area. Look at the data, particularly the growing season information. Can this data help with your decision?
- Lastly access WebWIMP to look at the graph (bottom of the page) for the normal wet season for this area. Why does the shading turn from blue to yellow in your area?

Take 30 minutes and play with these data sources. Look at other regions of the US for which you might be familiar. How do they differ?

Note. Of importance is the fact that in the Corps Manual, NC appears to be linked to only disturbance, and climate considerations are maintained separately. In Part 4 (the only part adopted by NRCS), the phrase normal circumstances is never used. Rather they take the FSA Procedures approach of considering problems associated with disturbance separately (Atypical Situations) from problems associated with changing site conditions related to climate (NEC). In fact, the use of “NEC” by NRCS comes from the 1987 Manual, as does “atypical situations”. Neither phrase is used by the Corps in their regional supplements; rather the issues are combined in Chapter 5 as “Difficult Wetland Situations”. For FSA purposes, NC includes disturbance-based considerations and climate-based considerations.

Notes:

Learning Concept 2-7: The Disturbance-based Portion of Normal Circumstances (NC) – referred to as “Typical or Atypical Situations/Conditions”.

This Learning Concept is designed to take 45 minutes – 1 hour and includes office exercises. Links are provided as optional learning opportunities. The level of difficulty is moderate.

Starting Time: _____



In this Learning Concept, the disturbance-based portion of NC will be discussed in detail.

Disturbance-based wetland identification issues are grouped into the *Typical/Atypical Situations* concept introduced in Part V, Subpart B of the FSA Procedures. The Procedures state that - “In this section, the concept (of normal circumstances) is further explained as the **vegetative, soil and hydrologic conditions that are normally present, without regard to whether the site has been recently disturbed (removal or alteration of vegetation or drainage)**”. Thus, a “*typical situation*” or “*typical conditions*” are those in the absence of and recent (post-1985) disturbance that might potentially remove or alter wetland identification evidence (direct observations, indicators, or other evidence). For FSA purposes, the post-1985 action may or may not have non-compliance connotations.

Regarding disturbance-based wetland identification problems, typical/atypical decisions are linked to the statutory date of the law in question. So for FSA purposes the date is December 23, 1985. As it relates to alterations to a site’s hydrology (see “drainage” definition), the term “recently disturbed” includes any post-1985 drainage projects.

Note. For CWA, this issue (date) is much more complex as it is related to the question – Did the action occur after the site was subject to Section 404? As to – “What is a regulated action?” and “Where is a jurisdictional wetland” has changed multiple times since 1972 based on various court decisions.

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In Part IV of the 1987 manual, potential disturbance-based wetland identification problems are covered under Section F – Atypical Situations. In the supplements they are addressed in Chapter 5 – D. Difficult Wetland Situations.

For FSA purposes, the FSA Procedures make it clear that NRCS will use the 1985 date with what is provided in the Corps methods to base a decision if the site supports typical conditions or atypical conditions. Thus, prior to decision making (or data collection) NRCS is required to verify that:

1. The soil conditions and/or hydrology conditions are similar to what would have existed in 1985, **AND**
2. The vegetation used in the hydrophytic vegetation decision has not been recently altered to the level or intensity that a decision on the prevalence of hydrophytic vegetation cannot be made from the current vegetation on the site (e.g. plowed, treated with herbicide,) or that the species are reflective of a recent (post-1985) drainage action and therefore not reflective of normal circumstances.

When the conditions are not reflective of NC due to recent disturbance then “atypical conditions” exist and Part IV –Atypical Situations, as supplemented with Chapter 5 in the regional supplement will be used to determine if the site prior to such alterations was a wetland.

The 1985 Date: The only reason that we worry about recent disturbance or drainage is to decide if we should use the conditions and/or indicators currently on the site, or do we need to determine what the conditions were prior to such actions but after 1985. For FSA purposes, if the site is not experiencing typical circumstances due to a post-1985 drainage action, then a compliance deficiency (converted wetland) might be occurring and an AD-569 might be required (this training is not a policy/procedural training for WC compliance.)

Two separate issues can result in a decision that the site under consideration is or is not supporting typical conditions at the time of the site visit or remote sensed resource.

Vegetation – Has the vegetation been so altered or removed that a decision cannot be rendered, or that the decision might not be the same as what would be decided if the site was left unaltered for a sufficient period of time to allow a somewhat stable plant community to reestablish.

If the decision is made that post-1985 drainage actions, or alterations to the plant community have altered the site to such an extent that decisions for any of the three factors might be changed or removed, or that the vegetation has been so altered (or removed) a decision is made that the site is not reflective of NC.

When this occurs, the agency expert should use Section F: Atypical Situations as supplemented by guidance in Chapter 5 – Difficult Wetland Situation to decide what the conditions for the factor(s) in question would have been prior to and post-1985 hydrologic alterations. If there were no drainage activities altering the hydrology, and the only reason NC is not met is the absence or alteration of the plant community, then methods in Section F and Chapter 5 are used to decide what the plant community would be if left undisturbed.

It is important that we review the term “drainage” as defined in the FSA Procedures at this point in the training course. “Drainage” is defined by the FSA Procedures as:

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Disturbance (drainage) - Any human induced onsite or offsite activity that results in a reduction in the depth, duration, timing, or intensity of the hydrology (ponding, flooding, or saturation) of the site is considered drainage for FSA purposes.

We base this decision on: if the *soil and hydrologic conditions* (from the regulatory definition of *normal circumstances*) occurring on the site currently (or at the time of the remote sensed product being used in a Level 1 or 3 determination for decision making) are reflective of the conditions on the date of the Law in question (December 23, 1985). The use of the term “Law”, rather than “Statute”, is by design as it includes changes from the rule-writing process and judicial decisions.

The idea being: if a drainage action (drainage as defined in the FSA Procedures) reduces the hydrology on the site - and that drainage action was not grandfathered [occurred prior to that site (or action) falling under federal jurisdiction], then the wetland identification decision needs to reflect the pre-action conditions. If a drainage action occurred prior to federal jurisdiction, then that action is grandfathered by the statute in question and the resulting *soil and hydrologic conditions* are considered normal. On December 23, 1985 the FSA was signed into law – thus, for FSA wetland ID purposes any reduction in hydrology on a site that occurred prior to that date is now considered NC. Thus, a review of remote information source(s) must be made. The remote information source that is best reflective of the soil and hydrologic conditions that existed in 1985 is determined by the agency expert.

As applied to the WC provisions and these Wetland ID Procedures, the term drainage relates to any action that has resulted in reduced hydrology (depth, duration, timing, or intensity) on the site (or sampling unit) under consideration. This “action” is typically of an anthropogenic origin. It can be very difficult to decide impacts related to a “natural” event without human induced changes to the site and its watershed. In most situations, changes to the hydrology of the site (or hydrology of the soil on the site) resulting from natural events are considered in this definition.

There could never be an exhaustive list of actions that could result in reduced hydroperiods or hydroperiods, but what is important is that the agency expert considers any post-1985 changes within the watershed or on the site prior to making a decision if the site supports hydric soils, or wetland hydrology.

Before moving to discussions of climate-based wetland identification issues, think again about the NC as it is used in the FSA wetland identification process and how “disturbance-based” issues come into play. Quite simply there are two questions related to disturbance that must be asked for each sampling unit:

- (1) Has there been an on-site or off-site action(s) since 1985 that might have reduced the site’s hydroperiods and, if so, have these actions been substantial (individually or cumulatively) enough to remove evidence (indicators) of FSA wetland hydrology, or to alter the decision?

(2) Has the vegetation been removed or so altered that a decision on the prevalence of hydrophytic vegetation cannot be made using routine methods?

If the answers to either of these questions is yes (or maybe), then alternative methods must be used and the decisions (for the three factor(s) in question) must be based on the conditions prior to the post-1985 actions/alterations or disturbance to the vegetation.

Consider common disturbance based situations in your work area impacting wetlands on lands operated by USDA clients. List three disturbance-based situations that might occur that would make the wetland ID process more difficult (NC do not exist).

Notes:

Learning Concept 2-8: The Climate-based Portion of Normal Circumstances (NC) – referred to as “Normal Environmental Conditions” (NEC).

This Learning Concept is designed to take 0.5- 1.5 hours and includes office exercises. Links are provided as optional learning opportunities. The level of difficulty is high.

Starting Time: _____



Where is the Water?

Normal Environmental Conditions: Wetland identification problems or challenges associated with the ever-changing site conditions due to climate fall under the normal circumstances’ sub-concept of Normal Environmental Conditions (NEC). The NEC term comes from the 1987 Manual and is referred to by some Corps staffs as “Normal Conditions” (in contrast to their use of normal circumstances for disturbance only).

As previously introduced, the FSA statutory or regulatory concept of *normal circumstances* has been interpreted by NRCS to include both disturbance and climate considerations. Each decision at the factor level should be based on site conditions that would occur if the site was (1) **not recently disturbed (post-1985)** and (2) the conditions at the time of the site visit (or remote tool) was reflective of the **wet portion of the growing season of a normal climatic year**. We discussed disturbance-based issues in the previous Learning Concept. This Learning Concept (NEC) will concentrate on the challenges that climate can present to the agency expert.

FSA Wetland Identification Procedures (Foundations to Sound Decision Making)

Note. For CWA purposes, the Corps currently limits NC to only disturbance. They deal with climatic issues under NEC, but as a separate wetland delineation issue, not a part of NC. Remember Module 1 discussed that NRCS has a *rule* and the Corps has their *manual*. NRCS cannot vary from the FSA or from 7CFR12 (regulations related to the WC provisions). The Corps makes their own policy decisions based on their statutory authority - the CWA. Regardless of the name, both issues (disturbance - NC and climate - NEC) are covered in each method/procedure similarly.

Variations in site conditions resulting from climate (normal and abnormal) can be very perplexing to the agency expert and equally so to the program participant. As introduced in Module 1, these climatic influences can result in very dynamic changes in site conditions, presenting significant challenges to decision making. As you move away from the two most significant climatic buffers (large water bodies, and shorter growing seasons), these site changes in association with climate can become very problematic in making a sound wetland identification decision. Of interest is that the largest wetland identification workload regions in the U.S. (the Mid-Western region not bordering the Great Lakes, and the Great Plains) are also the regions that are faced with the most difficult decisions to make. Some of the lowest FSA wetland ID workload regions (Mid-Atlantic Region, NE and the coastal portions of the Pacific Northwest) seldom experience significant climate-based wetland identification issues.

Note. Why were you introduced to the history of wetland identification and the discussions about bias? Was it just because the course developers found it of interest? No. It is critical that you understand why some wetland “scientists” think the way they do. The “science” behind the foundations to wetland identification began along the Atlantic seaboard, particularly along the Mid-Atlantic Region. Most of the authors of wetland identification technical documents and research papers are from that region of the U.S. Their concepts met the paradigms of the Mid-Atlantic Seaboard. This region of the U.S. is climatically highly buffered by cool climate and the Atlantic Ocean. The northern portions are even more buffered by the Great Lakes to the west. The identification of wetlands in this region is fairly simplistic, particularly as it relates to NEC. Indicators are available at almost any time of the year, and these indicators are very reliable.

Climatic-based issues begin to rise in frequency and intensity as soon as you move west of the Mississippi River. Then as you move west of the magical semi-humid/semi-arid line (western ND to Houston TX) these climate-based wetland identification issues become significantly more complex and common. Remember the example of the depressional wetlands in South Texas? You might wonder: why the Gulf of Mexico does not buffer what occurs only 50-miles inland? The reason is that the predominant winds in South Texas are from the southwest or northwest. Seldom are the winds from the southeast.

Where do you work? Are you blessed to be able to make wetland determinations in the Mid-Atlantic Region, Great Lakes Region, or coastal portions of the Pacific NW where everything is easy in regards to climate? Or, do you work in semi-arid regions, arid regions, or even worse, in the Southwestern US where wetland

conditions can change from 2 feet of ponded water after a storm, to within 90 days being so dry that you can't drive a railroad spike into the soil with a 5 pound sledge hammer? Even in buffered regions, there are seasonal and annual differences in the conditions that could be expected to occur on a site. For example, in Maryland or Pennsylvania, the identification of wetlands is very seldom problematic as it relates to NEC, as wetland conditions are very similar from year to year, but even in this highly buffered region, they do experience significant differences between spring and late summer conditions and plant communities (in herbaceous wetlands).

As stated, it is the responsibility of the governing agency to provide clarity when the Statute or Regulations fail to do so. NRCS met this requirement when it addressed the climatic aspects of *normal circumstances* by introducing the term (from the Corps Manual) of Normal Environmental Conditions (NEC). For FSA purposes, NEC is defined as:

The normal physical conditions and/or characteristics (vegetative conditions, soil conditions, and hydrologic conditions) that would exist on a site during the wet portion of the growing season in a normal climatic year (50 years in 100). This climate-based concept is taken from the Corps Manual, Chapter 5 of the Supplements, and within the concept of NC presented in 7CFR12.31.

As previously discussed, all wetland identification **decisions** (determinations) should be reflective of what would occur on the site in question in the absence of recent (post-1985) disturbance and during the wet portion of the growing season of a normal climatic year, regardless of the presence or absence of indicators. Idealistically, indicators should consistently reflect those wet growing-season conditions, but the reality of the situation is that a consistent indicator relationship due to large climatic swings within and among seasons and years can be problematic (particularly in areas not buffered by cool and humid summer climates or large bodies of water). For this reason, the site conditions at the time of the field visit (or review of remote data sources) must always be tempered with how those on-site and off-site data relate to the site's NEC.

This module has introduced some important, but complex ecological and legal considerations essential to the identification of wetlands for FSA purposes. Let's review what we have learned.

Summary: Because the Corps Methods and Corps Indicators were designed to meet definitions and concepts unique to the CWA and because these definitions and concepts differ (slightly) from those in the FSA, NRCS provided FSA Variances in the FSA Procedures. In addition the FSA Procedures require an extra step in the decision-making process. The FSA Procedures require that prior to a decision, further consideration must be made to **assure that the indicator (or absence) is reflective of the FSA definition each diagnostic factor**. In this decision, the FSA normal circumstances (disturbance and climate) are also considered.

In making these decisions, the FSA Procedures provide for the use of (1) direct observation, or (2) indicators (circumstantial evidence) – to assist in the decision-making process.

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“Direct observations” are made when the site is experiencing NC (typical conditions and NEC). Corps indicators, or other circumstantial evidence, are used in lieu of the opportunity to use direct observation.

Direct observation decisions can be made:

- (1) Within the normal NEC periods (the period of the growing season when wetlands within the wetland class being considered normally support wetland hydrology), or
- (2) Outside of the period of NEC, but the conditions are similar to what would occur during NEC. For example, direct observations are most commonly used when the site visit coincides with the period of NEC (spring in most regions of the US). If, however, the visit is made in early summer of a wet year, then these conditions might be reflective of what would occur during the spring of a normal year. Again, the question is not when the data is collected but the soil conditions and hydrologic conditions at the time of the site visit (or remote sensed data review).

No single data source or climate predictive model will provide an answer if the site conditions are reflective of NEC. Best professional judgment gained from years of experience working in the area is also used. How much value is total winter precipitation data in the northern regions of the US when snow melt rates and timing of the melting events is of more importance to the conditions in the receiving wetlands? In the SW, intensity of late summer storms and local watershed/landuse is of much more importance than total amount of rain. It is the intensity of a storm event that fills a playa lake, not so much rainfall amount. Although NEC is **not designed to be verified quantitatively**, there are excellent tools that can be used to gain insight and to provide support for the decision (WebWIMP, Palmer Drought Index, WETS Tables are examples of such tools).

Review the Objectives and Key Concepts to gain assurances that you have an awareness or understanding of each. The objective of this training is not that you have mastered the skills or concepts, but only that you understand the concepts presented. Again, “mastering” of a skill requires experience. This is why NRCS policy requires that only experienced individuals be provided the job approval authority to independently make adverse technical determinations and delineations.