USDA-NRCS IOWA STATE TECHNICAL COMMITTEE MEETING Neal Smith Federal Building 210 Walnut Street, Room 693 Virtual Meeting - Teleconference

March 18, 2021 at 1:00 P.M.

MINUTES

Welcome/Opening Comments – Jon Hubbert, State Conservationist

 A quick overview of the budget was provided. We will be very low on program dollars this fiscal year and will request additional funding as we are able. 96% of our budget will be directed to staffing with the additional 4% directed to additional support dollars. We will be operating in a very lean status and hoping to have additional funding incoming.

Approval of Minutes from December 18, 2021

STC asked if there were any additions or corrections to the minutes. There were no additions or corrections, and the December 17th minutes were approved.

Farm Bill Status - Kate Timmerman (See Attachment)

Current Ranking Delay – Due to a National error found in the current ranking program we are waiting to rank our EQIP and CSP applications. Staff are able to continue conservation planning and putting the applications in for assessment, but the final step of ranking is on hold until National updates the system and corrects the errors.

EQIP – Derecho Disaster – we have 143 contracts that were obligated, \$1.8 million dedicated to addressing the disaster. Only 5 left to complete.

EQIP FY2021 – Due to the errors mention previously, staff are having to re-rank the 1000 applications that were already in the system. We are on hold until the errors are fixed but certainly continuing with activities that will have us able to hit the ground running once we get the green light. Currently we have been allocated \$28.6 million dollars and have more applications than dollars available. We will ask for more funds soon.

EQIP-Conservation Incentives Contracts (EQIP-CIC) – New program for combining EQIP and CSP that the subcommittee has some recommendations that will be presented during the subcommittee report.

CSP-Renewals – Iowa NRCS had 266 applications of which 169 were selected for funding. About 75% complete on contracting the renewals. The remaining are eligible to apply for CSP-Classic. \$9.3 Million allocated to Iowa for CSP-Renewals. This included the \$1.5 extra that was allocated Feb 1, 2021 as requested.

CSP-Classic – Received 944 applications for this year's signup. We have been allocated \$8.05 Million and will request more funds when able.

CSP-Grassland Conservation Initiative (CSP-GCI) – Obligated all 13 applications for 441 Acres and almost \$40,000. There may be another sign-up this year.

ACEP-WRE – Ranking cutoff is tomorrow 3/19. We have \$8.1 Million available for FA for new acquisition. We will be requesting more funds for new easements. This year's payment per acre has been update, as shown on the IA-FY2021-ACEPWRE-GARC FINAL MAP.pdf We received \$1.2 million in stewardship specific funds for repair, management, and enhancements to existing easements.

ACEP-ALE – Application cutoff is 3/31/21 Double the funding we received last year. \$460,000 for new enrollments.

WREP – WREP 2019 South Skunk River – We are working to process applications and to secure funding from National Office. The agreement is for \$4.8 Million and have received notification that the continuation of the South Skunk River has been selected for funding.

EWP-FPE – Currently funding 64 easements on 10,823 acres (\$70 million in Financial Assistance). This encompasses fund requesting, title searches, and preliminary paperwork for moving forward.

EWP-Recovery – Scott Cagle

The Emergency Watershed Protection Recovery program has completed 79% of the agreements that were developed due to the flooding events of 2019. Over \$9.9 Million of the \$13.7 Million allocated funds have been expended. We received 34 Damage Survey Reports from entities due to the Derecho event last year. Over \$7.5 Million has been allocated towards cleanup efforts.

Regional Conservation Partnership Program – We have four RCPP Programmatic Partnership Agreements in place with the fifth and final one being developed. We are currently finishing up the Supplemental Agreements, which will obligate funds. We expect to have all five of our FY20 RCPP projects running no later than the end of May.

IPC and State CIG – The Request For Funding was released to the public for the Iowa Partnerships for Conservation grant (3/10/2021) and the State Conservation Innovation grants (3/8/2021). <u>Budget restrictions may play a pivotal role in the offering of these grants</u>.

WFPO – We have an active WFPO Planning agreement with Polk County that is progressing. We are in the final stages of development for Dubuque and Clarke County agreements for WFPO Planning efforts. We also have a Preliminary Investigation and Feasibility Report to begin soon in Linn County. New PIFR guidance is being released soon.

Sub-Committee Reports

Environmental Quality Incentives Program (EQIP) – Steve Hopkins (Please refer to attachments) Soil Health Initiative:

<u>Summary</u>: Kevin Kuhn of NRCS gave an update on the progress in the first year of the "<u>Soil</u> <u>Health Initiative</u>". To date, there have been 11 contracts funded, for a total of nearly \$1 million under contract, and 13 applications not funded.

He said he'd like to get the word out more about this program, and would like to eventually see at least 2 producers per county participate in the program, at 100 acres per producer, at approximately \$100/acre/year (5-year contract), in order to get widespread demonstration and adoption of the practices. It would take approximately \$9 million for this program to achieve participation at a rate of 2 per county.

There was discussion among the Subcommittee about ways to better advertise the program. There was also discussion about whether the 3-day strip grazing requirement was realistic, given how labor-intensive it is. After much discussion, the subcommittee asked Jeff Matthias to come up with additional options for consideration regarding the strip grazing requirement.

Conservation Incentive Contracts (CIC)

Summary:

Jeff Matthias provided a presentation describing the new NRCS CIC program. He said NRCS was considering it a <u>steppingstone to the Conservation Stewardship Program (CSP)</u>.

To implement the program, which is being rolled out quickly, recommendations were needed whether or not to identify <u>High Priority Areas (HPA)</u> for CIC, and to identify up to 3 <u>Priority</u> <u>Resource Concerns for each High Priority Area.</u> Limiting to one HPA was suggested as a way to simplify the program, as it is coming out late in the federal fiscal year, will require promotion and staff training.

After discussion, the Subcommittee voted to offer one HPA for the CIC program statewide on the crop land use, in order to spread eligibility for the program to the entire state. The 3 Priority Resource Concerns identified from the CIC list for crop, and recommended by the Subcommittee were: Soil Quality Limitations,

Field Sediment, Nutrient, and Pathogen loss, and Wind and Water Erosion.

Recommendation: The EQIP Subcommittee voted unanimously to adopt the CIC for statewide participation for this year and voted unanimously in favor of the 3 Priority Resource Concerns listed above.

Prairie STRIPS:

NRCS is still working on a draft technical note for Prairie STRIPS, but it was not ready for review at the time of this meeting.

Sean McMahon expressed concern about the fact that "Prairie Strips" is mentioned in the Farm Bill but NRCS does not have a stand-alone Conservation Practice Standard in place for them to date. He would like it to be an eligible EQIP practice and given that a stand-alone practice standard would make it easier for producers to request and sign up for prairie STRIPS, rather than have to piece it together through several other practices. He argued that NRCS approval as a single practice standard would greatly increase the adoption of the practice. He also argued that a large grant awarded to ISU to promote prairie STRIPS would also help promote its adoption. A vote was taken by the Subcommittee on whether to make a recommendation to NRCS to adopt a prairie STRIPS practice standard. The vote was split and took place after several subcommittee members had left the meeting, so it wasn't clear if it reached a majority. However, there was agreement to discuss this as the first item of the next subcommittee meeting.

Conservation Innovative Grants (CIG) – Steve Hopkins

The subcommittee discussed the FFY2021 state Conservation Innovation Grant (CIG). The total amount allocated for the grant in FY21 is anticipated to be around \$350,000 in EQIP funds, but the final amount has not yet been approved by NRCS.

The subcommittee agreed to recommend retaining the same lowa CIG priorities in FY21 as in FY20 (last year's application), as follows: 1) Habitat; 2) Water Quality and Quantity; and 3) Soil Health.

It was agreed that the CIG application materials would be updated by NRCS for FFY21. In order to stay on schedule, which requires providing 60 days of notification from the release date of the Notice of Funding Opportunity (NFO) to the application due date, the target dates will be as follows:

<u>NFO release</u>: tentatively, early February 2021 <u>Application Due date</u>: tentatively, early April 2021

NRCS will send out an email release, along with CIG fact sheets, when the NFO is released. NRCS staff (primarily Judy Martinson) agreed to update the CIG application materials for FFY21.

Applications will be reviewed by members of the CIG subcommittee after the application due date.

Wetlands Reserve Easements (WRE) – Kelly Smith (See Attachments)

- The last WRE meeting was held on December 9th.
- Sindra Jensen shared the results of the most recent market analysis for FY21 for WRE. Please refer to attachments.
- We are aligned well with the other states.
- The subcommittee agreed to ask for the concurrence of 85% of the market analysis as the offer of the GARC rate.

RECOMMENDATION:

- Please let the STC, Kelly, Dave, and Sindra know of any feedback pertaining to the GARC rate.
- The Market Analysis will be brought to the June STAC meeting to plan for FY22 fiscal year.

CRP – Sean McMahon

- 25% staffing due to telework capacity
- Moving along well with the workload.
- Hats off to everyone working well together and all the efforts.

Conservation Stewardship Program (CSP) – Anna Johnson

- Anna has returned back from leave.

Source Water Protection (SWP) – Christina Murphy

- The committee did not meet last quarter and will wait to see what comes out of the ranking process to discuss prior to meeting.

Agency Announcements

Hydrology Indicators (see attachments)

Derrick Klimesh

- A national bulletin was posted recently regarding the final rule for the HEL and Wetland Conservation provisions of the Food Security Act of 1985. This final rule clarified how NRCS identifies hydrology criteria for Farmed Wetlands.
- The preamble to the final rule provides that NRCS will seek local input through the consultation with the NRCS State technical committee or federal register.

Recommendation: NRCS is requesting STC input on proposed local hydrology indicators for the identification of farmed wetlands that are not plays, pocosins, or potholes.

Member Rounds

<u>Adjourn</u>

Future Meeting Dates

June 17, 2021 September 16, 2021

EQIP Subcommittee Meeting Notes Virtual Meeting by Google Meet & Phone March 9, 2021 1:30 pm – 3:00 pm

<u>Members Present:</u> Dave Petty, producer; Bruce Carney, producer; Andrew Di Allesandro, USFWS; Joe McGovern, INHF; Will Myers, IDALS; Jamie Benning, ISU; Roger Wolf, Iowa Soybean Assoc; Jorgen Rose, PFI; Nick Baumgarten, Iowa DNR; John Whitaker, CDI; Susanne Hickey, TNC; Paige Frautschy, TNC; Rick Robinson, Iowa Farm Bureau; Sean McMahon, Iowa Ag Water Alliance;; Allie Rath, Pheasants Forever; Alicia Vasto, IEC; Jeff Jensen, Trees Forever; Doug Jones, EPA; Jeff Hastings, TU; Steve Hopkins, Iowa DNR, EQIP/CIG Subcommittee Chair.

<u>NRCS Staff advisors/assistance:</u> Jeff Matthias, Acting EQIP Coordinator; Kevin Kuhn, Resource Conservationist, Dave Brommel, Acting ASTC-Programs.

Meeting Notes

Soil Health Initiative:

<u>Summary</u>: Kevin Kuhn of NRCS gave an update on the progress in the first year of the "<u>Soil Health Initiative</u>". To date, there have been 11 contracts funded, for a total of nearly \$1 million under contract, and 13 applications not funded.

He said he'd like to get the word out more about this program, and would like to eventually see at least 2 producers per county participate in the program, at 100 acres per producer, at approximately \$100/acre/year (5-year contract), in order to get widespread demonstration and adoption of the practices. It would take approximately \$9 million for this program to achieve participation at a rate of 2 per county.

There was discussion among the Subcommittee about ways to better advertise the program. There was also discussion about whether the 3-day strip grazing requirement was realistic, given how labor-intensive it is. After much discussion, the subcommittee asked Jeff Matthias to come up with additional options for consideration regarding the strip grazing requirement.

Conservation Incentive Contracts (CIC)

<u>Summary</u>:

Jeff Matthias provided a presentation describing the new NRCS CIC program. He said NRCS was considering it a <u>steppingstone to the Conservation Stewardship Program</u> (<u>CSP</u>).

To implement the program, which is being rolled out quickly, recommendations were needed whether or not to identify <u>High Priority Areas (HPA)</u> for CIC, and to identify up to 3 <u>Priority Resource Concerns for each High Priority Area.</u> Limiting to one HPA was suggested as a way to simplify the program, as it is coming out late in the federal fiscal year, will require promotion and staff training.

After discussion, the Subcommittee voted to offer one HPA for the CIC program <u>statewide on the crop land use</u>, in order to spread eligibility for the program to the entire state. The 3 <u>Priority Resource Concerns</u> identified from the CIC list for <u>crop</u>, and recommended by the Subcommittee were: <u>Soil Quality Limitations</u>;

EQIP Subcommittee meeting notes, March 9, 2021, Page 1

Field Sediment, Nutrient, and Pathogen loss; and Wind and Water Erosion.

<u>Recommendation</u>: <u>The EQIP Subcommittee voted unanimously to adopt the CIC for</u> <u>statewide participation for this year, and voted unanimously in favor of the 3 Priority</u> <u>Resource Concerns listed above</u>.

Prairie STRIPS:

NRCS is still working on a draft technical note for Prairie STRIPS, but it was not ready for review at the time of this meeting.

Sean McMahon expressed concern about the fact that "Prairie Strips" is mentioned in the Farm Bill but NRCS does not have a stand-alone Conservation Practice Standard in place for them to date. He would like it to be an eligible EQIP practice and given that a stand-alone practice standard would make it easier for producers to request and sign up for prairie STRIPS, rather than have to piece it together through several other practices. He argued that NRCS approval as a single practice standard would greatly increase the adoption of the practice. He also argued that a large grant awarded to ISU to promote prairie STRIPS would also help promote its adoption.

A vote was taken by the Subcommittee on whether to make a recommendation to NRCS to adopt a prairie STRIPS practice standard. The vote was split, and took place after several subcommittee members had left the meeting, so it wasn't clear if it reached a majority. However, there was agreement to discuss this as the first item of the next subcommittee meeting.

Submitted by: Steve Hopkins, Iowa DNR, Chair EQIP/CIG Subcommittee

CIG Subcommittee Meeting for FFY2021 Virtual Meeting by Google Meets and Phone January 13, 2021 10:30 am-11:15 am Meeting Notes

<u>Members Present:</u> Emily Martin, INHF; Will Myers, IDALS; Suzan Erem, SILT; Jorgen Rose, PFI; Andrew Diallesandro, US Fish and Wildlife Service; Jamie Benning, ISU; John Whitaker, CDI; Dave Petty, producer (by phone), Bruce Barnhart, LICA (by phone), Steve Hopkins, Iowa DNR, EQIP/CIG Subcommittee Chair

<u>Staff advisors/assistance:</u> Judy Martinson, NRCS; Jeff Mathias, NRCS; Robert Mier, NRCS; Scott Cagle, NRCS

Meeting Notes

<u>Summary</u>: The subcommittee discussed the FFY2021 state Conservation Innovation Grant (CIG). The total amount allocated for the grant in FY21 is anticipated to be around \$350,000 in EQIP funds, but the final amount has not yet been approved by NRCS.

The subcommittee agreed to recommend retaining the same lowa CIG priorities in FY21 as in FY20 (last year's application), as follows: 1) Habitat; 2) Water Quality and Quantity; and 3) Soil Health.

It was agreed that the CIG application materials would be updated by NRCS for FFY21. In order to stay on schedule, which requires providing 60 days of notification from the release date of the Notice of Funding Opportunity (NFO) to the application due date, the target dates will be as follows:

<u>NFO release</u>: tentatively, early February 2021 <u>Application Due date</u>: tentatively, early April 2021

NRCS will send out an email release, along with CIG fact sheets, when the NFO is released. NRCS staff (primarily Judy Martinson) agreed to update the CIG application materials for FFY21.

Applications will be reviewed by members of the CIG subcommittee after the application due date.

Adjourn: Meeting adjourned at 10:15 am.

Submitted by: Steve Hopkins, Iowa DNR, Chair EQIP/CIG Subcommittee



NB 190-21-6 ECS - Template Hydrology Indicators for the Identification of Farmed Wetlands

National Bulletin: 190-21-6

Date: 2020 ECS - Template Hydrology Indicators for the Identification of Subject: Farmed Wetlands

December 4,

Action Required By: January 29, 2021

Purpose. To provide template hydrology indicators for the identification of farmed wetlands (FW) that are not playas, pocosins, or potholes.

Expiration Date. September 30, 2021

Background. On August 28, 2020, USDA issued a final rule for the Highly Erodible Land and Wetland Conservation provisions of the Food Security Act of 1985, as amended. This final rule clarified how NRCS identifies hydrology criteria for FWs. To decide if an area supports the required long-term inundation for a FW that is not identified as a playa, pocosin, or pothole, the final rule provides three options:

A. Observation of wetland hydrology indicators as identified in the local NRCS Field Office Technical Guide (FOTG);

B. Procedures identified in State Off-Site Methods for wetland identification set forth in the local NRCS Field Office Technical Guide: or

C. The use of analytic techniques, such as the use of drainage equations or the evaluation of monitoring data.

When Option A is used, these templates provide draft indicators of long-term inundation (ponding or flooding) which can be used by NRCS to prepare local level indicators to be published in the FOTG. The preamble to the final rule provides that "NRCS expects to issue the local level hydrology indicators for notice and comment in the Federal Register on a State basis within six months of the publishing of this final rule" and that "[u]ntil such time as the updates to the NRCS FOTGs have been published and public notice provided, NRCS will continue to use Group B (Evidence of Recent Inundation) hydrology indicators from the regional supplements to the Corps Manual, as specified in the interim rule.

Explanation. The preamble to the final rule also provides that "[t]he identification of hydrology indicators in the local NRCS FOTG will provide local input, through consultation with the NRCS State technical committee, transparency to the public, and allow the indicators to be reflective of local conditions which meet the required inundation for 15 consecutive days or more during the growing season or 10 percent of the growing season, whichever is less, in most years." Attachment A provides template hydrology indicators for the identification of FWs that are not playas, pocosins, or potholes. States are encouraged to evaluate the template indicators, consider which indicators are reflective of local conditions which meet the required long-term inundation, and make any changes to the templates to ensure that they are reflective of local conditions. States may wish to adopt only some of the template indicators and may develop additional indicators for posting to the FOTG.

States should follow the guidance in Title 340, General Manual, Part 410, "Regulatory Policy," and in Title 340, National Regulatory and Publication Handbook, Part 601 in preparing Federal Register notices. Attachment B provides a template Federal Register notice for use by States. All States must contact Jason Outlaw, National Leader for Wetland and Highly Erodible Land Conservation, by email at jason.outlaw@usda.gov by January 29, 2021, to provide their intention of publishing Federal Register notices and to provide their status of this effort. This is required so that multiple States may publish combined notices which will streamline the clearance and posting process.

Contact. Questions can be directed to Jason Outlaw, National Leader for Wetland and Highly Erodible Land Conservation, Ecological Sciences Division, at (202) 720-7838 or jason.outlaw@usda.gov.

/s/

THOMAS HEDT Acting Deputy Chief for Science and Technology

Attachment A - Template FW Hydrology Indicators for Areas Not a Playa, Pocosin, or Pothole



Attachment B - Template FW Hydrology Indicator Federal Register Notice



NRCS Wetland Compliance Updates

Derrick Klimesh

Assistant State Conservationist- Compliance









Clean Water Act

- Section 404
- All waters of the U.S. including wetlands
- Permit required for discharge of dredged or fill materials
- Jurisdiction of US Army Corps of Engineers and EPA





Food Security Act

The Food Security Act of 1985, as amended, requires NRCS to delineate, determine, and certify wetlands located on land on a farm or ranch subject to wetland conservation (WC) provisions in order to establish a producer's eligibility for certain USDA program benefits (16 U.S.C. Section 3822, 7 CFR Section 12.30).





NRCS Wetland Protection Policy

- Identify wetlands when providing assistance (technical and financial)
- Protect wetland functions by avoiding and minimizing impacts
- Prohibits NRCS assistance resulting in adverse impacts to wetlands if practicable alternatives exist

General Manual Title 190 Part 410 Section 410.26





January 23, 2020 Navigable Waters Protection Rule (NWPR)

On January 23, 2020, the U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) finalized the Navigable Waters Protection Rule (NWPR) defining "waters of the United States" (WOTUS) and the scope of federal jurisdiction under the Clean Water Act (CWA). The NWPR not only defines WOTUS, but also identifies those waters and features that are excluded from the definition of WOTUS, including prior converted cropland (PC). Further, it describes how the EPA and the Army will rely on USDA PC designations and explains under what circumstances a PC might be considered abandoned such that the land no longer meets the PC designation for CWA purposes.

The NWPR does not alter the wetland conservation provisions of the Food Security Act of 1985, as amended.





July 17, 2020

Memorandum to the Field concerning implementation of Section 404 of the Clean Water Act (CWA) and the Food Security Act of 1985, as amended (FSA)

- USDA NRCS
- ARMY CORPS OF ENGINEERS (CORPS)
- U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)





September 1, 2020 CIRCULAR 180-20-1

Updated policy and guidance for the wetland and highly erodible land conservation policy in Title 180, National Food Security Act Manual (NFSAM), Fifth Edition.

- NRCS will utilize a triangle with a dot in the center as a cautionary icon on CWD maps to identify water features potentially subject to the CWA
- Clarifies NRCS' role when providing CWA assistance to USDA clients





August 28, 2020 7 CFR 12 HEL and WC

Final rule for Highly Erodible Land and Wetland Conservation provisions of the Food Security Act of 1985, as amended

Federal Register:

https://www.federalregister.gov/documents/2020/08/28/2020-18626/highly-erodible-land-and-wetland-conservation





Final Rule HEL and WC (7 CFR 12)

This final rule confirms most of the changes made by the December 2018 interim final rule and makes these additional updates:

- Adding the requirement of the 2018 Farm Bill that USDA will make a reasonable effort to include the affected person in an on-site investigation conducted prior to making a wetland violation technical determination.
- Further clarifying how wetland hydrology is identified for farmed wetlands and farmed wetland pasture.
- Adding clarification to the consideration of best-drained condition for wetland hydrology in keeping with the definition of prior converted cropland.
- Relocating the provision that wetland determinations can be done on a tract, field, or sub-field basis in order to improve clarity.



Natural Resources Conservation Service nrcs.usda.gov



Local Hydrology Indicators for the Identification of Farmed Wetlands

The Food Security Act of 1985, as amended



Background

On August 28, 2020, USDA issued a final rule for the Highly Erodible Land and Wetland Conservation provisions of the Food Security Act of 1985, as amended. This final rule clarified how NRCS identifies hydrology criteria for Farmed wetlands (FWs). To decide if an area supports the required long-term inundation for a FW that is not identified as a playa, pocosin, or pothole, the final rule provides three options:

A. Observation of wetland hydrology indicators as identified in the local NRCS Field Office Technical Guide (FOTG);

B. Procedures identified in State Off-Site Methods for wetland identification set forth in the local NRCS Field Office Technical Guide; or

C. The use of analytic techniques, such as the use of drainage equations or the evaluation of monitoring data.





Farmed Wetland Definition

"a wetland that prior to December 23, 1985, was manipulated and used to produce an agricultural commodity at least once before December 23, 1985, and on December 23, 1985, did not support woody vegetation, and met the following hydrologic criteria: (i) If not a playa, pocosin, or pothole, **experienced inundation for 15 consecutive days or more during the growing season or 10 percent of the growing season**, whichever is less, in most years (50 percent chance or more)..."

As defined in Wetland Conservation (WC) provisions of the Food Security Act of 1985, as amended (7 CFR Part 12, "Highly Erodible Land and Wetland Conservation")





Option A – Local level indicators

The preamble to the final rule provides that NRCS will seek local input through:

- Consultation with the NRCS State technical committee
- Notice and comment in the Federal Register (on a state basis)

NRCS will issue the local level hydrology indicators in the FOTG.





NRCS is requesting **STC input on proposed Local Hydrology Indicators** for the identification of Farmed Wetlands that are not playas, pocosins, or potholes





Indicators will be reflective of local conditions which meet the required inundation for 15 consecutive days or more during the growing season or 10 percent of the growing season, whichever is less, in most years.





NRCS Recommendation to STC: Adopt all national FW hydrology indicators with no additions or edits.





NRCS in Iowa will use the following Farmed Wetland Hydrology Indicators to make or assist in making the decision if the sampling unit supports long-term inundation:

FW-N01: Surface Water

FW-N02: Water Marks

FW-N03: Sediment Deposits

FW-N04: Drift Deposits

FW-N05: Algal Mat or Crust

FW-N06: Surface Soil Cracks

FW-N07: Evidence of Long-Term Ponding Visible on Aerial Imagery

FW-N08: Sparsely Vegetated Concave Surfaces

FW-N09: Water Stained Leaves

FW-N10: Aquatic Invertebrates

FW-N11: Perennial Obligative Plant Species





National FW hydrology indicators are applicable throughout lowa

SOURCE:

Wetland Hydrology Indicators of Midwest Region

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)

U.S. Army Corps of Engineers

August 2010



Natural Resources Conservation Service nrcs.usda.gov



NRCS Proposes the following options to STC:

- Adopt all national FW hydrology indicators with no additions or edits
- Provide opportunity to review in more detail and provide written commentary
- Hold dedicated meeting for those interested in discussion and feedback





More Information...

Iowa Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Provisions Webpage

https://www.nrcs.usda.gov/wps/portal/nrcs/ia/programs/farmbill/cc/

National Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Provisions Webpage

https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbi II/?cid=nrcseprd1542016

Derrick Klimesh Assistant State Conservationist-Compliance 515-323-2243 <u>derrick.klimesh@usda.gov</u>



Hydrology Indicators for the Identification of Farmed Wetlands as Defined in 7 CFR 12.2: [State]

Farmed Wetland (FW) Hydrology Indicators When Area Is Not a Playa, Pocosin, or Pothole¹

INTRODUCTION

The controlling regulations to the Wetland Conservation (WC) provisions of the Food Security Act of 1985, as amended, are provided in 7 CFR Part 12, "Highly Erodible Land and Wetland Conservation." These regulations define a FW (in part) as

"a wetland that prior to December 23, 1985, was manipulated and used to produce an agricultural commodity at least once before December 23, 1985, and on December 23, 1985, did not support woody vegetation, and met the following hydrologic criteria: (i) If not a playa, pocosin, or pothole, experienced inundation for 15 consecutive days or more during the growing season or 10 percent of the growing season, whichever is less, in most years (50 percent chance or more), which requisite inundation is determined through:..."

To effectively make the decision if an area supports the required long-term inundation² for a FW that is not identified as a playa, pocosin, or pothole, the regulations then provide three options. They are:

- A. "Observation of wetland hydrology indicators as identified in the local NRCS Field Office Technical Guide;
- B. Procedures identified in State Off-Site Methods for wetland identification set forth in the local NRCS Field Office Technical Guide; or
- C. The use of analytic techniques, such as the use of drainage equations or the evaluation of monitoring data."

When Option A is utilized, this document provides indicators of long-term inundation (ponding or flooding) to be used by NRCS in the assignment of the FW exemption (or label).

OVERVIEW OF THE NRCS WETLAND DETERMINATION PROCESS

The regulations also explain the three-step wetland determination process used by NRCS:

- Step 1: Wetland Identification
- Step 2: Determination of Wetland Type, via the assignment of WC labels
- Step 3: Determination of Size

¹ For farmed wetlands (FW) that *are* playas, pocosins or potholes, the regulations provide that their hydrology criteria (which includes saturation as well as inundation) are met if they are found to support wetland hydrology through Step 1 of the wetland determination process. The same is true for farmed wetland pasture (FWP). ² When referring to farmed wetland hydrology indicators for areas that are not playas, pocosins, or potholes, the use of the term "long-term inundation" means inundation that lasts 15 consecutive days or more during the growing season or 10 percent of the growing season, whichever is less, in most years.

Step 1: Wetland Identification. During this step, NRCS determines if the area under consideration, or sampling unit³, supports each of the three wetland diagnostic factors; a prevalence of hydrophytic vegetation, a predominance of hydric soils, and wetland hydrology under normal circumstances (NC). The consideration of NC, as detailed in the Food Security Act Wetland Identification Procedures (FSA Procedures, National Food Security Act Manual Part 514.8) paragraphs (3-3) to (3-5), is two-pronged. The first is disturbance-based and the second is climate-based. Both are critical in the evaluation of wetland hydrology.

Regarding disturbance-based considerations, NRCS must evaluate hydrology (under NC) in the context of the drainage history of the site and the best drained condition, if applicable⁴. Best drained condition is defined in the regulation as "the hydrologic conditions with respect to depth, duration, frequency, and timing of soil saturation or inundation resulting from drainage manipulations that occurred prior to December 23, 1985, and that exist during the wet portion of the growing season during normal climatic conditions." In summary:

- If drainage⁵ occurred prior to December 23, 1985 and the area did not support woody vegetation on that date, the NC include the hydrologic conditions (depth, duration, frequency and timing of inundation or soil saturation) resulting from the pre-1985 drainage.
- If drainage occurred after December 23, 1985, the NC include the hydrologic conditions, without the effect of the post-1985 drainage action.
- If the area is not impacted by drainage, such as areas cleared of woody vegetation but not drained, then the NC include the contemporary hydrologic conditions.

Regarding climate-based considerations, NRCS must evaluate hydrology (under NC) in the context of normal environmental conditions (NEC). The FSA Procedures provide that hydrology under NEC consists of the hydrologic conditions or characteristics that would exist in a typical situation on a site during the wet portion of the growing season in a normal climatic year. To aid in determining what those conditions or characteristics are, the regulations define normal climatic conditions as "the normal range of hydrologic inputs on a site as determined by the bounds provided in the Climate Analysis for Wetlands Tables or methods posted in the Field Office Technical Guide."⁶ In summary, NRCS must make a decision on each of the three wetland diagnostic factors based on the hydrologic conditions expected to normally occur during

³ A sampling unit, as defined in the Food Security Act Wetland Identification Procedures, is the smallest portion of the area subject to the wetland determination. Sampling units are identified based on having (or would have under normal circumstances) 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.

⁴ The regulations provide that "[w]hen a wetland is affected by drainage manipulations that occurred prior to December 23, 1985, and did not support woody vegetation on December 23, 1985, such that production of an agricultural commodity on that date was possible, wetland hydrology shall be identified on the basis of the best-drained condition resulting from such drainage manipulations."

⁵ Drainage is defined in the FSA Procedures as "any human-induced, onsite or offsite, activity that results in an altered depth, duration, frequency, or timing of the hydrologic condition (inundation or saturation by surface or ground water) of the site."

⁶ The regulations also provide that "[w]hen making a decision on wetland hydrology, NRCS will utilize a fixed precipitation date range of 1971-2000 for determining normal climatic conditions."

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the wet portion of the growing season when recent weather has not created abnormally wet or dry conditions.

Preliminary data gathering and synthesis is helpful in determining the conditions that best represent NC, and NRCS is required by policy in the FSA Procedures, FSA Variance (5-9), to conduct preliminary data gathering and synthesis to determine whether a typical or atypical situation exists.

The wetland identification decision from Step 1 is documented on the wetland determination base map, delineating different areas (sampling units) as either wetland or non-wetland (meeting all three wetland diagnostic factors or not).

Step 2: Determination of Wetland Type. During this step, information discovered during preliminary data gathering and synthesis regarding past drainage actions and other land use history will also be utilized when assigning the appropriate WC label. Particularly, the findings from the hydrology portion of Step 1 may aid in the Step 2 decision if the area under NC meets the specific FW hydrology criteria⁷. It is important to note that wetlands, meeting the hydrology criteria for wetlands that are not a playa, pocosin, or pothole. These areas would normally receive the prior converted cropland (PC) exemption (or label) if all other conditions of the label are met.

NRCS must consider the possibility of false positives and false negatives⁸ when evaluating wetland hydrology in both Step 1 and Step 2. Guidance for identifying false positives and negatives is provided for in the user cautions section of each FW hydrology indicator. Also, care should be exercised to ensure that the FW hydrology indicators be applied to the inundation type (e.g. ponding of closed depressions⁹ and surface flooding by out of bank floodwater) described in the criteria section of each FW indicator.

Step 3: Determination of Size. NRCS determines the size of each area delineated as a sampling unit on the wetland determination base map. Those delineations and sizing are then used to determine the size of areas with different WC labels identified on the certified wetland determination map.

⁷ The regulations state that wetland hydrology shall be identified on the basis of the best-drained condition resulting from any pre-1985 drainage manipulations. This includes the wetland hydrology decisions made in both Step 1 and Step 2.

⁸ False positives and negatives are discussed in the Regional Supplements to the Corps of Engineers Wetland Delineation Manual. A false positive occurs when an indicator is observed, but it is not indicative of conditions under NC. A false negative occurs when an indicator is not observed, but the area supports wetland hydrology under NC.

⁹ As used here, the term closed depressions are depressional landscape features that pond water following precipitation events, snow melt, or over-bank flooding of a nearby stream or river. Closed depressions can occur in upland landforms and floodplains.

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FARMED WETLAND HYDROLOGY INDICATORS

When conducting Step 2 on areas not in a playa, pocosin, or pothole landform, and when the area meets all other FW label criteria (i.e. was manipulated prior to December 23, 1985, used to produce an agricultural commodity at least once before December 23, 1985, and on December 23, 1985, did not support woody vegetation), NRCS must determine if the sampling unit(s), identified as wetland under NC in Step 1, supports long-term inundation. NRCS in [state] will use the following Farmed Wetland Hydrology Indicators to make or assist in making this decision:

[List the FW hydrology indicators adopted by name and number. If the template indicators are modified in any way, replace "N" with your state or area name abbreviation. If an indicator is adopted for only a portion of a State or area, provide clarification in parenthesis following the indicator name).] FW-N01: Surface Water FW-N02: Water Marks FW-N03: Sediment Deposits FW-N04: Drift Deposits FW-N05: Algal Mat or Crust FW-N06: Surface Soil Cracks FW-N07: Evidence of Long-Term Ponding Visible on Aerial Imagery FW-N08: Sparsely Vegetated Concave Surfaces FW-N09: Water Stained Leaves FW-N10: Aquatic Invertebrates FW-N11: Perennial Obligative Plant Species

Adoption Date: X-X-2021

Farmed Wetland (FW) Hydrology Indicator: FW-N01 Surface Water

General Description: This indicator consists of onsite observation of inundation (flooding or ponding).

Criteria: Observation of surface water at a depth of ≥ 3 inches at the representative observation point (ROP) during normal environmental conditions (NEC), or ≥ 2 inches when the sampling unit is experiencing drier conditions than expected under NEC. This indicator will not be used when the sampling unit is experiencing wetter conditions than expected under NEC. The observed surface water indicates the area would experience long-term inundation under NEC as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

User Notes:

- 1) It would be common to find other FW Hydrology Indicators in conjunction with this indicator.
- 2) Recent precipitation data should be reviewed to support that the observed inundation would be expected to occur under NEC.
- 3) Observation of out of bank flooding is best supported by flood-gauge data or other information to assure the observed flooded conditions indicate long-term inundation would occur under NEC.

User Cautions:

- a) Observation of inundation outside of NEC can create false positives. These can be due to frozen soil acting as an aquitard, evaporation/transpiration rates being lower than what would occur under NEC, or simply from unusual weather events. When relying on observations made outside of NEC, the landform, soils, and climate should support that the observed inundation would be expected to occur under NEC for long durations.
- b) Under traditional row-crop agriculture (e.g. corn, cotton, or soybeans), building of rows (hipping) pulls soil from the borrow area between the rows and deposits that soil at the row center to create a raised bed. Ponding observed between the rows can create a false positive, and lack of ponding at the row center can create a false negative. The ROP location should consider the borrow and filling associated with hipping.
- c) Surface water may be the result of recent significant precipitation or other climatic events that cause conditions wetter than those that occur under NEC. Caution should be used so that such observations are not false positives.
- d) Under traditional row-crop agriculture, natural infiltration can be impaired by compaction, resulting in artificial ponding. Care should be taken in ROP placement and that observations of surface water is not a false positive.
- e) Particularly in arid regions, irrigation water can move down gradient for long distances increasing the water regime of down gradient depressions. Observations of surface water due to irrigation flow would be considered a false positive.



Figure 1 Observation of surface water, such as ponding in this cropped field in Indiana, is often observed in conjunction with other indicators of long-term inundation such as sparsely vegetated concave surface.

Farmed Wetland (FW) Hydrology Indicator: FW-N02 Water Marks

General Description: This indicator consists of onsite observation of water marks. Water marks are discolorations or stains on the bark of woody vegetation, rocks, bridge supports, buildings, fences, or other fixed objects, resulting from long-term ponding or flooding events. The observed water marks indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of water marks within or in areas adjacent to the sampling unit.

User Notes:

- 1) If a water mark is from flooding, and not ponding, local stream gauge data may assist in the decision that the observed water mark is reflective of long-term flooding under NEC.
- 2) Water marks indicate a water-level elevation. Observation of water marks can be extrapolated from objects adjacent to the cropped sampling unit. Observations from adjacent objects must be at an elevation that supports the sampling unit experiences longterm ponding or flooding.
- 3) Water marks should form a level plane that can be viewed from one object to another.
- 4) When several water marks are present on an object, the highest water mark reflects the maximum extent of inundation. Only one water mark (elevation) is required for this indicator to be met.
- 5) Water marks do not include lines caused by ice scour or abrasion, which are indicated by bark or tissue damage outside of the growing season.

User Cautions:

- a) Water marks can occur from extreme or infrequent long-term flooding events, or by long-term inundation outside the growing season. This would be considered a false positive.
- b) Confidence is increased when water marks result from ponding of a closed depressional landform located in upland landscapes or on floodplains.
- c) Do not confuse water marks (staining) with sediment deposition. Sediment deposition is easily removed from the object with light hand rubbing or water rinsing.



Figure 2 Water marks (dark stains) on trees in a seasonally flooded wetland. The top of one water mark is indicated by the arrow and is well below sediment deposition and staining. Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).

Farmed Wetland (FW) Hydrology Indicator: FW-N03 Sediment Deposits

General Description: This indicator consists of onsite observation of sediment deposits. Sediment deposits are sediment material (e.g., silt and clay) left on vertical structures such as woody vegetation, rocks, bridge supports, buildings, fences, or other fixed objects after ponding or flooding recedes. Unlike water marks, sediment deposits are temporary and easily removed by gentle hand rubbing or light rinsing with water. The observed sediment deposits indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of sediment deposits at an elevation at least 3 inches above the soil surface of the representative observation point (ROP), within or in areas adjacent to the sampling unit.

User Notes:

- 1) Observation of sediment deposits can be extrapolated from objects adjacent to the cropped sampling unit.
- 2) When sediment deposits are observed away from the ROP location, their extrapolated elevation must be at least 3 inches above the ROP soil surface. Sediment deposits should form a level plane that can be viewed from one object to another.
- 3) If a sediment deposit is from flooding, and not ponding, local stream gauge data may assist in the decision that the observed sediment deposit is reflective of long-term flooding under NEC.
- 4) Sediment deposits are often faint.
- 5) Sediment deposits are observed on vertical structures, not on the soil surface, duff or dead leaves at the soil surface.

User Cautions:

- a) Sediment deposits can be caused by extreme or infrequent flooding or ponding events, or by inundation that occurred outside the growing season. This would be considered a false positive.
- b) Sediment deposits indicate a water-level elevation but can establish during shorter periods of inundation than water marks. Observing sediment deposits at a 3 inch or higher elevation above the soil surface increases confidence that they are a product of long-term inundation.

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Figure 3 Sediment deposit left after a recent high-water event forms a tan coating on these tree trunks (upper edge indicated by the arrow). Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).

Farmed Wetland (FW) Hydrology Indicator: FW-N04 Drift Deposits

General Description: This indicator consists of onsite observation of drift deposits. Drift deposits, as used in this indicator, consist of rafting of loose debris such as crop residue or other vegetation, deposited on the edge of a ponded area. The observed drift deposits indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of drift deposits due to ponding, occurring along the leeward edge or at the drainage outlet of a closed depression¹.

User Notes:

- 1) This indicator is limited to closed depressions that pond water and the drift deposits should be observed along the edge of the depression.
- 2) The most common drift deposit indicative of long-term ponding for depressions in cropped fields is crop residue deposited on the leeward (downwind) side of the depression.
- 3) For closed depressions that are partially drained by a surface ditch or natural outlet, residue is often deposited at the drainage outlet on the edge of the ponded depression (Figure 1).

User Cautions:

- a) Drift deposits from overbank flooding are often caused by extreme or infrequent flooding events, or by flooding that occurred outside the growing season. This FW indicator does not include drift deposits due to flooding as these may not be indicative of long-term inundation or conditions expected to occur under NEC.
- b) Crop residue deposited along an open (free flowing) depressional drainageway (e.g. swale) are common in a cropped field. Such drift deposits do not meet this indicator, as they are not indicative of long-term ponding.
- c) Drift deposits can be caused by extreme or infrequent flooding or ponding events, or by inundation that occurred outside the growing season. This would be considered a false positive.

¹ As used in this FW hydrology indicator, the term closed depression is a depressional landscape feature that ponds water following precipitation events, snow melt, or over-bank flooding of a nearby stream or river. Closed depressions can occur in upland landforms and floodplains and can have a natural or man-made outlet.

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Figure 4 Corn stalks deposited in the drainage outlet (road-ditch) at the edge of a closed depression.

Farmed Wetland (FW) Hydrology Indicator: FW-N05 Algal Mat or Crust

General Description: This indicator consists of onsite observation of an algal mat or crust. For this indicator, an algal mat consists of an accumulation of most commonly, but not exclusively, filamentous algae growing in an inundated wetland. When the inundated water evaporates, the algal mat creates a dried algal crust on the soil surface or suspended from vegetation. The observed algal mat or crust indicates the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of an algal mat growing in water, or an algal crust on the soil surface or on vegetation.

User Notes:

- 1) Observation of an algal mat or crust is a strong indicator the sampling unit is inundated for long duration.
- 2) The algal mat or crust should be located at the representative observation point (ROP), or landscape positions similar to the ROP location and within the sampling unit.

User Cautions:

- a) Algal mats and crust can occur in micro-lows¹ and might not represent the hydrology (ponding duration) that is typical at the ROP.
- b) Particularly in arid regions, irrigation water can move down gradient for long distances increasing the water regime of down gradient depressions. Observations of algal mats or crust due to irrigation water would be considered a false positive.

¹ *Micro-low* is a common term used by wetland scientists and practitioners to describe small depressional (micro depressional) features commonly formed from wind-throw (uprooted trees), gilgai soil feature formation, frost heaving, and mammal activity.

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Figure 5 Algal crust observed on the soil surface. The rolled edges of the crust are a common feature. Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).

Farmed Wetland (FW) Hydrology Indicator: FW-N06 Surface Soil Cracks

General Description: This indicator consists of onsite observation of surface soil cracks. Surface soil cracks are formed when fine-grained, primarily unconsolidated, soil surface material dries and shrinks, leaving a network of thinly (typically less than 1 cm) formed, easily fractured dried soil layers. The observed surface soil cracks indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of a network of surface soil cracks.

User Notes:

- 1) The surface soil cracking should be located at the representative observation point (ROP), or landscape positions similar to the ROP location and within the sampling unit.
- 2) The surface cracking must be from drying of the soil surface following prolonged ponding and is not from shrinking of the soil profile common to Vertisols and other clayey soils.
- 3) In a cropland field, the sampling unit with surface soil cracks commonly experiences crop stress such as yellowing or drown-out.
- 4) This indicator shall not be used in flood irrigated fields, as such observations are commonly false positives.

User Cautions:

- a) Surface cracking can occur in non-wetlands following the drying of recent sediment deposition.
- b) Deep cracks are indicative of smectite clays, not ponding.



Figure 6 Surface soil cracks in a seasonally ponded depression. Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0).

Farmed Wetland (FW) Hydrology Indicator: FW-07 Evidence of Long-Term Ponding Visible on Aerial Imagery

General Description: This indicator consists of ponding observed on aerial imagery taken during the growing season. The imagery indicates the area would experience long-term inundation (ponding) under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of ponding on two or more years of aerial imagery taken during the growing season, where conditions are determined to be reflective of normal or drier than normal climatic conditions.

User Notes:

- 1) Procedures found in Title 210, Part 650, Engineering Field Handbook, Chapter 19, can be used to evaluate normal climatic conditions prior to the photo date.
- 2) This indicator will not be applied to flood irrigated fields, as such observations are likely to be false positives.
- 3) This indicator will not be applied with the use of aerial photography taken during the dormant season, as such observations are likely to be false positives.

User Cautions:

- a) Care must be used in applying this indicator because short-term ponding may be present on a wetland immediately after a heavy rain or during periods of unusually high precipitation, runoff, or river stages.
- b) Long-term ponding normally present under NEC may be absent from a wetland during the normal dry season or during extended periods of drought.
- c) Shallow ponding, particularly in semi-arid and arid regions can be short-lived during the growing season. Consideration of hydrologic inputs (watershed size, groundwater influence, frequency and amount of normal precipitation events), evaporation-transpiration rates, and depth of ponding observed in the field can assist with the application of this indicator.

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Figure 7 An aerial image showing ponded areas during the growing season on a field that was manipulated and converted to cropland prior to 1985.

Farmed Wetland (FW) Hydrology Indicator: FW-N08 Sparsely Vegetated Concave Surface

General Description: This indicator consists of onsite observation of a sparsely vegetated concave surface. The observed sparsely vegetated concave surface indicates the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of a sparsely vegetated (less than 25 percent ground cover) concave surface. Crop failure constitutes a condition that is considered sparsely vegetated.

User Notes:

- 1) This indicator will not be used in areas planted to winter wheat or other crops growing during the dormant season.
- 2) This indicator will not be used in flood irrigated fields as the observation of a sparsely vegetated area due to excess irrigation water would be a false positive.

User Cautions:

- a) Shallow ponding creating drown-out of crops and annual weeds common to cropland fields, particularly in semi-arid and arid regions, can be short-lived during the growing season. Consideration of hydrologic inputs (watershed size, groundwater influence, frequency and amount of normal precipitation events), evaporation-transpiration rates, and predicted depth of ponding can assist with the application of this indicator.
- b) In arid regions, concentration of salts leading to salinity and/or sodicity can result in sparsely vegetated areas in crop fields and provide a false positive for this indicator.
- c) Recent abnormal rainfall can create sparsely vegetated conditions in areas that would not normally (50 percent or greater probability) experience crop failure due to long-term ponding.



Figure 8 A closed depression with a sparsely vegetated surface due to long-term ponding early in the growing season.

Farmed Wetland (FW) Hydrology Indicator: FW-N09 Water Stained Leaves

General Description: This indicator consists of onsite observation of water stained leaves. Water-stained leaves are fallen or recumbent dead leaves that have turned grayish or blackish in color due to inundation for long periods. The observed water stained leaves indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of water stained leaves.

User Notes:

- 1) The water stained leaves should be located at the representative observation point (ROP), or landscape positions similar to the ROP location and within the sampling unit.
- 2) This indicator is more commonly found in shrub-dominated or forested settings but can be found in herbaceous plant communities common to some farmed wetlands.
- 3) In irrigated regions, the influence of irrigation shall be considered.

User Cautions:

- a) Water stained leaves are flattened and have a blackish or grayish color. Their color and appearance should sharply contrast with leaves occurring on nearby non-wetland areas.
- b) Water-stained leaves maintain their blackish or grayish colors when dry.
- c) Water stained leaves commonly occur in micro-lows¹, which may not represent hydrology at the ROP.



Figure 9 Water-stained leaves in a seasonally ponded depression, with an unstained leaf (right center) for comparison. Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0).

¹ *Micro-low* is a common term used by wetland scientists and practitioners to describe small depressional (micro depressional) features commonly formed from wind-throw (uprooted trees), gilgai soil feature formation, frost heave, and mammal activity.

Farmed Wetland (FW) Hydrology Indicator: FW-N10 Aquatic Invertebrates

General Description: This indicator consists of onsite observation of living aquatic invertebrates such as diapausing insect eggs, crustacean cysts, clams, snails, insects, ostracods, shrimp, and other crustaceans, or their remains. The observed aquatic invertebrates indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of numerous live individuals or their remains in closed depressions¹, either on the soil surface or clinging to plants or other emergent objects.

User Notes:

- 1) The aquatic invertebrates should be located at the representative observation point (ROP), or landscape positions similar to the ROP location and within the sampling unit.
- 2) Application of this indicator shall be limited to closed depressions in upland landscapes or floodplains that would pond water.
- 3) The presence of mature living aquatic invertebrates in ponded water adds confidence that the ponding is of long duration.
- 4) In irrigated regions, the influence of irrigation shall be considered.
- 5) Observance of aquatic invertebrates or their remains should be commonly occurring near the ROP, or landscape positions similar to the ROP location and within the sampling unit.

User Cautions:

- a) Shells or exoskeletons can be moved by flowing water, wildlife, and farm equipment or may be indicators of relic hydrologic conditions. To address the high potential for false positives due to observation of aquatic invertebrates that may have been moved by flowing water, this indicator is limited to closed depressions.
- b) Terrestrial invertebrates can also leave exoskeletons, including shells. Including their observation in meeting this indicator would be a false positive. Local knowledge and expertise should be used to identify whether individuals or their remains are from aquatic or terrestrial species.

¹ As used in this FW hydrology indicator, the term closed depression is a depressional landscape feature that ponds water following precipitation events, snow melt, or over-bank flooding of a nearby stream or river. Closed depressions can occur in upland landforms and floodplains and can have a natural or man-made outlet.

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Figure 10 Bivalve shell in a seasonally inundated area. Photo credit: Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0).

Farmed Wetland (FW) Hydrology Indicator: FW-11 Perennial Obligative Plant Species

General Description: This indicator consists of onsite observation of perennial emergent obligative plant species from the U.S. Army Corps of Engineers National Wetland Plant List (NWPL) for the applicable region. The observed perennial emergent obligative plant species indicate the area would experience long-term inundation under normal environmental conditions (NEC) as defined in the Food Security Act Wetland Identification Procedures (National Food Security Act Manual Part 514.8).

Criteria: Observation of a plant community dominated by herbaceous perennial emergent obligate (OBL) plant species. Greater than fifty percent of the dominant perennial species in the herbaceous stratum must be emergent OBL plant species. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of herbaceous plants, plus any other species that, by itself, accounts for at least 20 percent of the total coverage.

User Notes:

- 1) Only perennial species are used to determine if the criteria is met, including the determination of dominance.
- 2) Only perennial species known to grow in water (emergent) are allowable for this indicator as they are more indicative of long-term inundation.
- 3) Observation of multiple perennial emergent OBL species increases confidence that the area supports long-term inundation.
- 4) Surface water need not be present at the time of observation.
- 5) This indicator shall not be used for irrigated fields, as such observations are commonly false positives.

User Cautions:

- a) The vast majority of species identified on the NWPL as OBL are emergent species (grow in ponded or flooded conditions). However, a few OBL species are not emergent, rather are common in wetlands that are saturated to the surface (e.g. seeps). Local knowledge of plant species behavior must be used to ensure that observed OBL species are emergent and that inclusion of non-emergent species does not constitute a false positive.
- b) Particularly in arid regions, irrigation water can move down gradient for long distances increasing the water regime of down gradient depressions. Observations of OBL species due to irrigation water would be considered a false positive.

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Figure 11 A plant community dominated by herbaceous perennial emergent OBL plant species.