North Dakota (ND) NRCS Easement Restoration Criteria and Guidelines (RCG)

The purpose of the easement Restoration Criteria and Guidelines (RCG) is to document the technical considerations and parameters used to support wetland and/or floodplain easement program decision-making. This State-specific restoration criteria and guidelines provide a transparent set of technical considerations and parameters for restoration and management of wetlands and associated habitats in ND.

Technical determinations are made by the state Easement Team and supporting documentation provided to the State Conservationist or Assistant State Conservationist – Programs where appropriate for approval. Restoration and management of both restored and existing habitats should follow Ecological Site Description (ESD) State-and-Transition Diagrams/models according to their historic or reference plant community.

The historic conditions based on known reference site data used to develop soil map unit specific ESDs serve as a reference point for restoration and represent the onsite conditions and habitat prior to conversion. Ecological Site Descriptions are available for each Major Land Resource Area (MLRA) in ND.

Ecological Site Description information is found in ND NRCS the electronic Field Office Technical Guide (FOTG), Section II, Upland and Riparian Ecological Site Descriptions, Range site descriptions and reference worksheets. Within each ESD, site characteristics are identified and discussed in relation to the historic Reference State plant community and plant communities under different disturbances and/or perturbations.

The easement RCG shall be applied to the entire easement area, including adjacent lands (e.g. associated upland habitat) as part of the habitat restoration. Easement restoration and management criteria and guidelines are summarized in Table 1.0 below.

Table 1.0 Summary of Easement Restoration Criteria and Guidelines

Habitat Type	Vegetation Restoration	Hydrology Restoration	Management
Palustrine Wetlands (temporary & seasonal)	Seed according to ESD reference plant community	Ditch plug; ditch fill; limited dugout closure; limited tile disablement; micro- and macro-topography; sediment removal.	Follows ESD State-and-Transition Model diagram
Emergent Marsh; Lacustrine and Riverine Wetlands	Natural Revegetation; limited seeding according to ESD reference plant community	Ditch plug; ditch fill; limited dugout closure; tile system disablement; micro- and macro-topography; sediment removal; levee breech.	Follows ESD State-and-Transition Model diagram
Adjacent Lands	Seed according to ESD reference plant community	Sediment removal; reconnect floodplain.	Follows ESD State-and-Transition Model diagram
Alternative Communities	Seed according to wetland and overflow or subirrigated ESD reference plant community.	Ditch plug; ditch fill; dugout closure; tile system disablement; sediment removal.	Follows ESD State-and-Transition Model diagram

I. Common Eligible Land Types

The following table provides a summary of the common eligible land types used in ND. For a complete listing of eligible land types, and for further details, please refer to the ACEP Manual Part 528.105.

Type	Note
Farmed or Converted Wetlands	Includes wetlands farmed under natural conditions, wetlands partially or fully drained/prior converted cropland. Does not include Converted Wetlands (CW/CW+Year).
Former or Degraded Wetlands	This land type is not considered Farmed or Converted Wetlands land type. Hydrology significantly degraded/modified (>75% impacted) **AND substantially restored (>90% restored) through the WRPO.**
Lands Substantially Altered by Flooding	Flooded lands that developed and retain wetland functions (and were not previously wetlands). The hydrology conditions must have or will develop hydric soils and hydrophytic vegetation over time.
Grassland or Croplands Flooded by Overflow of a Closed Basin Lake or Pothole	Pothole/basins flooding non-wetlands. Must have a high likelihood of successful restoration. Offer must be a minimum of 20 contiguous acres, must be hydric soils, and the depth of water is 6.5 feet or less.
Lands in the Conservation Reserve Program (CRP)	Excludes trees. Subject to an existing CRP contract. Likely to return to production after the land leaves CRP.
Adjacent land functionally dependent on the wetlands	Up to 6 to1 ratio (EPD waiver). Tall and mixed grass uplands adjacent to all wetland habitat types in Section VII.

II. Reserved Grazing Rights

Grazing is a natural management tool that improves and/or maintains upland/wetland ecosystems. Historically, large herds of bison grazed an area intensely for short durations before moving on. If left unmanaged, grasslands are taken over by exotic invasive grasses such as smooth brome and Kentucky bluegrass. Herbivores may create vegetative diversity in the wetlands themselves. Grazing replicates a natural process and can be prescribed to maintain a healthy mix of grassland habitats, early successional wetland plants, open water, and mud flats. Grazing effects include both what the grazer eats and trampling effects from hoof action. As a result, it can be a tool to help control invasive vegetation which is often a primary threat to wetland functions.

Unmanaged wetlands are prone to being taken over by hybrid cattails or reed canarygrass unless a management regime includes grazing following prescribed fire treatment or patch-burn grazing. Intense grazing May through September may be appropriate near wetlands to allow migrating shorebirds ready access to mud flats for feeding. Different grazing management may be needed for different wetland types and any surrounding uplands. Each habitat type (wet meadow, shallow marsh, upland prairie, etc.) has the potential to support different wildlife species, ranging from migratory birds to amphibians and pollinators, and management of these sites should strive to augment those qualities. The WRPO identifies the wildlife guild (ducks, shorebirds, etc.) and wetland habitat types for each easement restoration. Grazing will only be conducted in a manner that supports the wildlife and wetland functions identified and selected in the WRPO.

The following table provides a summary of the “Technical Criteria for Grazing in Upland/Wetland Complexes of the Tall and Mixed Grass Prairies in North Dakota.”

Criteria	Note
Maintain healthy and diverse upland/wetland complexes.	Grazing timing and intensity vary depending on dominant plant community. Follow the ESD State-and-Transition Model diagram. See WRPO and Grazing Plan for site-specific details. Intense early season grazing is needed to control cool season invasive grasses. Adequate rest and recovery of desirable plant species is required,
Manageable size	Offers must have at least 20 acres of grazable upland
Grazing Infrastructure	The NRCS may fund permanent fence, temporary interior fence, temporary above ground pipeline, pumping plant, and watering facility. No permanent pipeline, or well is allowed on the easement
Grazing frequency	Grazing is not guaranteed in every year. Follow the ESD State-and-Transition Model diagram. NRCS must review/modify the grazing management plan at least every 5 years as needed to address appropriate habitat features. Monitoring is conducted annually and may result in a change to the grazing plan.

III. Special Ranking Consideration – Prioritization of Offer Types

The state conservationist determined that all offers will be screened, using a screening worksheet, in the following order:

Step Two: Special Ranking Consideration: Prioritization of Offer Type- Circle the Correct Priority	
Offer Type	**Priority**
Easements Offers with Reserved Grazing Rights (At least 4:1 upland to wetland ratio)	Very High
Easement Offers between 2:1 and 6:1 upland to wetland ratio **OR** 30-year Contract (Tribal)	High
Easement Offers between 2:1 and 6:1 upland to wetland ratio **OR** Any Duration Offer with Existing Conservation Easements Requiring an Appraisal (TBD)	Medium
Easement offer with less than 2:1 Upland to Wetland ratio	Low

In general, offers shall be selected and funded in ranking point order by Offer Type (e.g. Very High, High, Medium, then Low). However, the state conservationist determined that offers within each "Offer Type" that include source water protection ranking points are of high importance and value. Therefore, offers with source water protection points, may be selected and funded outside a strictly applied screening or ranking point order within the ACEP-WRE-General Fund pool (ACEP Manual Part 528.113 A). **NOTE:** North Dakota Century Code limits WRE easements to a maximum of 30 years.

IV. Eligible Practices

For a listing of eligible practices please refer to the current version of the ACEP-WRE and EWP-FPPE cost lists. Practice names and codes are not included here because the names and/or codes change frequently. Grazing infrastructure practices are authorized on easements where grazing is used as a management tool and on all Reserved Grazing Rights easements. Please refer to the WRPO for additional information.

V. State Compatible Use Authorization Criteria

Compatible Use Authorizations are considered on a case-by-case in ND. This section provides criteria and guidelines for several types of CUAs. CUA approval is neither implicitly nor expressly implied based solely on the easement RCG. Approved CUA acres shall be rounded to the nearest whole number.

The maximum duration of a multi-year CUA is 10 years (Title 440, Part 528.152 A5), excluding reserved grazing rights easements (5 years). In ND, since wetland and biological systems are dynamic the following CUA durations apply:

- Food Plots, Burning, Grazing, and Haying/Mowing - Five years

Although each CUA request is considered individually, the following are not allowed:

- Any activity that will not further both the long-term protection and enhancement of the wetland and other natural values of the enrolled area.
- Any activities that will reduce the site's long-term ability to support wildlife.
- Food plots located in a wetland (as determined by easement staff).
- Biannually planted food plots.
- Greater than 2 food plots. Food plots may not be allowed if the easement upland acres are 10 % or less of the total easement acreage. Total food plot acreage will be no more than 5% of the total easement acreage not to exceed 10 acres total for the two food plots.
- Haying or mowing around food plots.
- Haying or mowing in strips (hunting lanes).
- Wintering of cattle on the easement.
- Grazing is not permitted in the same year and on the same acreage as haying and mowing.
- Season-long grazing and continuous seasonal grazing.
- Consecutive years of haying the easement.

Activities that may be allowed if the NRCS determines site-specific conditions dictate the need for management:

- Haying eligible upland acres (select only one of the two haying options below.)

Option 1	Option 2
Year 1 - all	Year 1 - 1/3
Year 2 - 0	Year 2 - 0
Year 3 - 0	Year 3 - 1/3 (different acres from the 1/3 in year 1)
Year 4 - 0	Year 4 - 0
Year 5 - all	Year 5 - 1/3 (different acres from the thirds year 1 and year 3)

NOTE: Easements under 20 acres will be hayed as one unit under Option 1. All haying plans must be easily manageable and easily enforced (e.g. the thirds must be visually obvious and distinguishable in the field for both the equipment operator and the NRCS).

- Grazing based on site-specific habitat goals and timed to ensure adequate regrowth of vegetation for winter and spring habitats.
- Easements under 20 acres will be grazed as one unit.

The easement RCG is not all inclusive and does not prevent the agency from completing due diligence analysis of restoration and/or management actions and violations on a case-by-case basis and in accordance with the Wetland Reserve Plan of Operations (WRPO), policy, and regulations.

VI. Wetland restoration definition (7 CFR § 1468.3) –

Wetland restoration means the rehabilitation of degraded or lost wetland and associated habitats pursuant to published State-specific criteria and guidelines developed in coordination with the State technical committee in a manner such that:
(1) The original, native vegetative community and hydrology are, to the extent practical, reestablished; or
(2) A hydrologic regime and native vegetative community different from what likely existed prior to degradation of the site is established that will:
(i) Substantially replace the original habitat functions and values while providing significant support or benefit for migratory waterfowl or other wetland-dependent wildlife; or
(ii) Address local resource concerns or needs for the restoration of wetland functions and values for wetland dependent wildlife as identified in an approved State wildlife action plan or NRCS national initiative.

VII. Wetland Habitats within North Dakota (ACEP-WRE Manual Part 528.131 B (2)(i))

a. *Palustrine wetlands (Palustrine Emergent)* –

These types of basins contain multiple “wetland zones”. Temporary basins typically contain low prairie and wet meadow zones. Seasonal basins typically contain low prairie, wet meadow, and shallow marsh zones. Please refer to the Ecological Site Description for the respective plant communities for each of these zones. (Note: ESD name may not be the same).

Vegetative restoration typically includes existing cover destruction and seeding the appropriate wetland seed mix based on the reference plant community identified in the ESD.

In site-specific situations, depending on the extent of existing hydrology and extent/density of cattails and reed canarygrass, the existing wetland vegetation may be allowed to (re-)colonize the area and no seeding would be required.

Hydrologic restoration typically includes installation of ditch plugs and/or ditch fill and sediment removal. In certain instances, as determined by the state Easement Team, filling in dugouts (closure) may be considered hydrologic restoration if the volume of excavation is 25% or greater than the volume of the wetland. A typical livestock water dugout is 0.7 acre-feet or 1,200 cubic yards. A typical wildlife water dugout is 0.5 acre-feet.

b. *Emergent Marsh* –

These types of basins contain multiple “wetland zones”. Semipermanent basins typically contain low prairie, wet meadow, shallow marsh, and deep marsh zones. Permanent wetlands are typically located along the fringes of larger waterbodies. Both wetland types may lack the low prairie or wet meadow zones or both. Please refer to the Ecological Site Description for the respective plant communities for each of these zones. (Note: ESD names may not be the same).

Vegetative restoration typically includes allowing nearby existing vegetation to (re-)colonize the area and no seeding would be required.

Hydrologic restoration typically includes installation of ditch plugs and/or ditch fill and/or the destruction of tiling systems and in limited situations sediment removal. In certain instances, as determined by the state Easement Team, filling in dugouts (closure) may be considered hydrologic restoration if the volume of excavation is 25% or greater than the volume of the wetland. A typical livestock water dugout is 0.7 acre-feet or 1,200 cubic yards. A typical wildlife water dugout is 0.5 acre-feet.

c. *Other wetland types* –

Most wetlands in ND are Palustrine emergent wetlands. In very limited instances lacustrine and riverine wetlands exist, and wetlands with shrub and/or tree communities exist.

In most instances vegetation restoration typically includes revegetation with the site-specific appropriate mix (seeds/seedlings) based on the reference / climax plant community identified in the ESD.

Hydrologic restoration typically includes installation of ditch plugs and/or ditch fill and/or the destruction of tiling systems, fill in dugouts (as described in Section II a. and II b. above), and/or reconnection to the floodplain via sediment removal and/or levee breaching/removal.

d. For all wetlands the following Wetland Topographic Design applies –

Undisturbed natural wetland systems typically contain a complex of vegetative habitats. These “complexes” owe their existence to varying hydroperiods, the period during which a wetland is covered by, or saturated with, water. Hydroperiods are, in turn, greatly influenced by topographic relief, soil permeability, climate, and weather. Topographic variation ranges from relatively shallow areas (microtopography) to deeper wetland habitats (macrotopography) and may include upland characteristics.

When restoring wetlands that exhibit uniform topography, returning the hydrology alone (through removing drainage tile or plugging drainage ditches) will often not result in establishing the diversity of wetland habitats that previously existed prior to disturbance. Restoring or creating micro- and macrotopography increases the diversity of hydroperiods and results in a more complex wetland vegetative community, and consequently, a more diverse assemblage of wildlife habitats.

For the purposes of this document, microtopographic features are those features with less than six inches of water depth. Microtopographic features are either depressional in nature (e.g. pit-mound topography) or relatively flat in nature (e.g., small ridges in a flat field back water into shallow pooled areas. Microtopography can often be seen in fields where shallow “sheet” water stands for short durations after a rain.

For the purposes of this document, macrotopographic features are depressional in nature and have landscape positions that occur both in floodplains and on terraces. Macrotopographic features can range from approximately 0.1 acre to 5.0 acres in size and up to 30 inches deep. Variability in shape is common in these features. Some occur as simple circles, others as complex amoeba-like shapes, and still others as meandering linear features. The "upland" components that often occur in macrotopographic features consist primarily of mounds (circular or elliptical) and ridges (linear), and typically do not exceed 30 inches in height.

Table 2.0 Micro- and Macrotopography Design Guidance

Wildlife Guild		Excavated Depth (inches)	Size (acres)	Basin Side Slopes	Density (% of area restored)	Hydrology (minimum)	Comments
General Wetland Wildlife		6 - 30	0.5 – 1.5	Between 8:1 and 20:1	10 -15%	July 15	Create variety in size & depth
Amphibians		0 - 8	0.1 – 3.0	20:1 or flatter	30 – 50%	July 15	Must remain fish-free
Aquatic Snakes & Turtles	Seasonal 50%	0 – 10	0.1 – 3.0	20:1 or flatter	30 – 50%	July 15	Sandy sites preferred for nesting turtles
	Permanent 50%	10 - 20		8:1		Permanent	
Wading Birds (bitterns, egrets, herons)		3 – 24	0.5 – 3.0	20:1 or flatter	30 – 50%	Permanent	Create areas of saturation only to promote emergent herbaceous vegetation
Shorebirds		0 - 10	0.5 – 3.0	20:1 or flatter	Up to 100%	June 15: spring migration	
Waterfowl	Feeding areas (50%)	6 – 18	0.5 – 3.0	8:1 or flatter	10 -15%	May 30: spring migration July 15: breeding	
	Loafing areas (50%)	18 – 30	1.0 – 3.0	8:1			

VIII. Alternative Wetland Communities (ACEP-WRE Manual Part 528.131 B (2)(ii))

a. ***Partial Hydrologically Restored Wetlands (Seasonal, Semipermanent, or Permanent hydrologic regime)*** –

These wetlands are unable to have their full hydrology restored, for legitimate reasons, and hence are unable to support the full range of historic wetland plant communities. A seasonal wetland may only have its drainage ditch partially filled restoring hydrology to a lesser extent and hence shrinking or eliminating the "wet meadow" zone but the inner "low prairie" zone is still restored. A portion of the wetland zones reference plant community is restored, and a portion of the wetland zones becomes drier. The drier portion is seeded to either the adjacent overflow or subirrigated reference plant communities. Wetland functions and values, including habitat and water quality benefits, are still provided.
Vegetative restoration typically includes existing cover destruction and seeding the appropriate seed mix based on the wetland and/or subbirrigated or overflow reference / climax plant community identified in the ESD.

IX. Adjacent Land Eligibility (ACEP-WRE Manual Part 528.131 B (2)(iii))

Adjacent lands may be enrolled as outlined in Part 528.105 I. The state conservationist may authorize a waiver allowing adjacent land acres to exceed eligible land acres for certain unique

situations. In ND the state conservationist approved the following unique or critical wetland complexes whose functions and values inherently depend on adjacent land and do not meet one of the eligible land types: prairie potholes, playas, fens, and ridge and swale floodplain complexes. Most of these unique systems are interdependent upland/wetland complexes in the prairie pothole region of ND (from the Missouri River east). The prairie pothole region produces over 60% of the continental waterfowl population.

All wetland habitat types in Section VII of the easement RCG are functionally dependent on vast acres of adjacent upland habitat. One of the main functions of upland/wetland complexes in the state are to provide migratory waterfowl habitat, specifically upland nesting waterfowl (Northern pintail, mallard, gadwall, teal, widgeon, and Northern shoveler) nesting habitat. In general, the larger the block of upland cover the better, with 20-acre blocks considered minimal. Typically wetland basins are 1.0 acre or less in size. These basins are dotted throughout eastern ND and are connected by the large areas of adjacent uplands. Hence the term “upland/wetland complexes” in the prairie pothole region. Therefore, it is appropriate that the easement RCG includes enrollment of adjacent land to the highest allowable ratio as possible and follows what ND has allowed historically.

The state conservationist has the authority to approve additional adjacent lands over the eligible acres not exceed five times the eligible acres (5 to1 ratio). ***However, the state conservationist determined, based on this easement RCG, the appropriate adjacent land (upland) to wetland ratio is 6 to 1. The state conservationist has submitted a waiver request to exceed the 5 to 1 ratio up to 6 to 1, on all easement offers for all habitat types in Section VII of this RCG, to the Easement Program Division director pursuant to ACEP WRE Manual Part 528.105 I (4).***

Vegetative restoration typically includes existing cover destruction and seeding the appropriate seed mix based on the reference / climax plant community identified in the ESD.

All the information in the easement RCG remains in effect until replacement by an updated version. The easement RCG is not all inclusive and does not prevent the agency from completing due diligence analysis of restoration and/or management actions on a case-by-case basis according to the Wetland Reserve Plan of Operations (WRPO). Any additional requirements to the easement RCG will be incorporated on an as-needed basis.

Reviewed and Accepted by State Technical Committee on ***September XX, 2021***
State Conservationist Approval on **September XX, 2021**

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