



Constructed Wetland

Michigan CONSERVATION RESERVE PROGRAM CCRP – CP39

Natural Resources Conservation Service (NRCS)

March 2011



Photo courtesy of USDA NRCS

What is A Constructed Wetland?

A constructed wetland is a practice that is used to develop an artificial wetland to treat effluent from row crop agricultural drainage systems. The constructed wetland system is designed to reduce nutrient and sediment loading and provide other water quality benefits while providing wildlife habitat.

ELIGIBILITY

To be eligible for this practice with the Continuous Conservation Reserve Program, the land must have a cropping history (4 out of 6 years from 2002-2007).

This practice will be included in the approved conservation plan and be maintained for the life of the contract.

The constructed wetland will reduce the loading of nutrients, sediment and other pollutants from incoming waters; improve surface and ground water quality; prevent excessive erosion from recurring; provide waterfowl and other wildlife habitat; and reduce flood flows.

This practice will be applied on land in which a minimum of 25 percent of the upstream watershed is comprised of row crop agricultural drained land. The site shall be suitable for construction of the cropped wetland. Site suitability will be dependant on soils, geology of the site, topography, legal requirements including the drainage districts, ownership of the land

where the wetland and associated buffer is located, potential risk to public safety or property due to structure failure, and due diligence investigation of the site performed by FSA.

CRP POLICY

The wetlands will be established according to the Wetland Restoration (657), Wetland Creation (658) or Wetland Enhancement (659) standards in the local Field Office Technical Guide (FOTG). All construction and seeding must be completed within 24 months of the effective date of contract to remain in compliance. If circumstances beyond the landowner's control prohibit the planting within the first 24 months, the local FSA County Committee may approve an extension to the next planting season.

The maximum size of the wetland and associated buffers is 40 acres per tract. A buffer (CP28) is required for the constructed wetland.

The amount of the adjacent upland buffer acreage to be enrolled will be determined by NRCS and shall:

- Not be less than 2:1 ratio
- Not exceed the 4:1 ratio

Eligible seeding on soils that are developed under a grassland ecosystem that will not be covered by water anytime during the normal growing season and are substantiated as needed by COC include:

- Establishment of permanent native grass species
- Establishment of permanent introduced grasses and legumes and native shrub species, where determined necessary to improve wildlife habitat
- Planting annuals as a nurse crop to prevent erosion while permanent cover is becoming established

Eligible seeding on soils that are developed under a woodland ecosystem, except in areas that will be covered by water during no less than 60 calendar days of the normal growing season include:

- Establishment of hard mast-producing hardwoods adopted for living in wet conditions that will provide multipurpose forest and wildlife benefits
- Establishment of permanent introduced grasses and legumes and native shrub species, where determined necessary to improve wildlife habitat

- Planting annual grasses, legumes, perennial native grass species, and softwoods, not to exceed 50 percent of the total number of trees planted, to serve as a nurse crop to prevent erosion while permanent cover is becoming established

CONSTRUCTED HYDROLOGY

The constructed hydrology of the site should be completed prior to establishing the vegetation in the buffer.

Practices authorized to be used to develop the constructed wetland include dams, levees, dugouts, dikes, breaking tile, concrete weirs or channels, and structures, like pipes, chutes and outlets to regulate flow.

CONSTRUCTION

Construction will be authorized only after a design is approved by NRCS.

Permits: Federal, State, or Local regulations may apply to private landowners conducting construction in wetland areas. All necessary permits shall be acquired by the landowner before construction begins.

PLANTING

It is very important to plant the vegetation into a weed-free, firm seedbed. Weed control efforts should begin prior to planting. Use herbicides or tillage to eliminate competing vegetation. If necessary for erosion control, seed a temporary cover. Eliminate the temporary vegetation at planting time with tillage or herbicides.

Contact your local Michigan State University Extension (MSUE) Agent for specific herbicides to use. **Apply all herbicides according to the label.**

Plant the vegetation according to the attached plan/design sheet. Apply lime and fertilizer according to needs determined by a soil test and MSU recommendations. See website: <http://www.naptprogram.org/about/participants/>

Use a drill designed for the seed to be planted, or the seed may be broadcast or aerial seeded. For aerial or broadcast seeding, the seedbed must be worked up and firmed with a cultipacker or similar equipment. A carrier such as potash may also be needed to spread the seed evenly. **After seeding, the site must be rolled or cultipacked to ensure proper seed to soil contact.** Regardless of the method, plant the seeds **no deeper than** 1/8 – 1/4 inch.

For Trees and Native Shrubs: plantings using bare-rooted stock and non-rooted cuttings should be

completed in the spring after the ground thaws, but no later than June 1; or planted in the fall after October 1 until the ground freezes when soil moisture is adequate. Containerized, balled and burlapped stock may be planted between October 1 and June 1 as local soil moisture and weather conditions permit. Direct seeding will be completed from October 1 through April 30 as local soil moisture and weather conditions permit.

Until a **Final** Status Review is issued, a 3-foot radius around each tree should remain weed-free to maximize tree growth. Fabric weed barriers are very effective at minimizing weed competition, but are not eligible for CRP cost-share. **Mowing is not recommended for weed control for trees.**

For Grasses: mow, burn, or apply herbicides as needed to control unwanted vegetation until a **Final** Status Review is issued. Mow when competing weeds are taller than the planted vegetation, and at a height above the planted vegetation. **Native grasses will not be mowed lower than 12 inches, and non-native grasses lower than 4 inches.**

For additional information on establishment and maintenance of grasses and trees, see the following NRCS – Michigan Conservation Sheets (available at <http://www.nrcs.usda.gov/technical/efotg/> in Section IV): “Tree/Shrub Planting for: Reforestation, Windbreaks, and Wildlife”, “Weed Control for Tree and Shrub Establishment”, “Establishing Cool Season Grasses and Legumes for Conservation Cover”, “Establishing Prairie Grass Buffer Strips”, “Prescribed Burning”, &/or others.

OPERATION AND MAINTENANCE

The land under contract shall not be harvested or grazed by domestic livestock for the life of the contract.

Undesirable plants, insects, and pests shall be controlled, including such maintenance as necessary to avoid detrimental effects to the surrounding land. Some of the most common pests that need controlled on CRP acreage include Autumn Olive, Multiflora Rose, Spotted Knapweed, Quackgrass, etc.

After the Final Status Review, maintain the planting according to your CRP conservation plan. Maintenance activities are allowed only on a spot basis and only if necessary to maintain stand health, maintain stand diversity, or control pests that will damage the CRP cover or adjacent lands. **MOWING** is only authorized between Aug 1st and Aug 20th to protect ground-nesting wildlife and to allow re-growth for winter cover. Other maintenance activities (herbicides, burning, etc.) are only allowed between August 1 – May 1st (i.e. - outside of the Primary Nesting and Brood-Rearing season). If maintenance activities are needed at times

other than these, the FSA County Committee **must** approve the maintenance activity **prior to** the activity occurring.

Mowing for generic weed control or for cosmetic purposes is prohibited.

MID-CONTRACT MANAGEMENT

All new CRP contracts must have mid-term contract management activities scheduled that are site specific and will ensure plant diversity, wildlife habitat, and protection of soil and water resources. Management activities that will ensure these benefits in Introduced grass and legume plantings include prescribed burning (according to an approved burn plan), disking, grass-specific herbicide applications, and interseeding of legumes. All management activities must be

performed according to NRCS Standards and Specifications as found in the FOTG and CRP policy.

OTHER MANAGEMENT CONSIDERATIONS

Consideration for water quality, wildlife, and other environmental concerns are to be evaluated in the planning and establishment of this practice. FSA shall conduct a site investigation prior to approving a contract on a constructed wetland. This investigation is to determine if potential hazardous materials may be associated with the site. Potential impacts to historic/cultural resources and threatened and endangered species should be evaluated. Appropriate regulatory agencies should be consulted with in this process.

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CONSTRUCTED WETLAND DESIGN WORKSHEET CRP CP39

Landowner: _____

County: _____

Farm: _____

Tract: _____

Field(s): _____

Wetland Acres: _____

Date: _____

Buffer Acres: _____

WETLAND CONTRUCTION in Year:

CONSTRUCT OR RESTORE HYDROLOGY BY:

AND WILL BE CREATED BY:

(see the attached map and engineering construction drawings for details)

Tile Break

Plugging _____ Feet of Subsurface Drain Tile
 And Installing a Berm to retain surface water

Ditch Plug

Plugging _____ Feet of Berm
 And Installing a Berm to retain surface water

Structure for Water Control

Pipe Chute Weir Other: _____

Dams/Levees/Dikes/Dugouts

Placing _____ **Cubic Yards** of Fill

Grading/Leveling/Dugouts/Fill Removal

Grading Leveling _____ Acres
 Removing _____ **Cubic Yards** of Fill

WETLAND BUFFER PLANTING (PLS #/ACRE = PURE LIVE SEED POUNDS PER ACRE)

NATIVE SHRUBS (see map for location)	TOTAL needed	Spacing (ft.) <small>between rows x within rows</small>	TREE PLANTING (see map for location)	TOTAL needed	Spacing (ft.) <small>between rows x within rows</small>
<input type="checkbox"/>		Shrub spacing X ----- Tree spacing X	<input type="checkbox"/>		Shrub spacing X ----- Tree spacing X

WETLAND BUFFER & BERM SEEDING

NATIVE GRASS BUFFER (see map for location)	RATE PLS#/ac	TOTAL = (RATE X Acres)	NON-NATIVE GRASS BUFFER (see map for location)	RATE PLS#/ac	TOTAL = (RATE X Acres)
<input type="checkbox"/>		0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb.	<input type="checkbox"/>		0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb. 0.0 Lb.

Recommended Wildflowers include: _____

Reset Form

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