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Animal Enhancement Activity – ANM03 - Incorporate native grasses and/or legumes to 15% or more of herbage dry matter productivity

Enhancement Description
Improve pasture by increasing native grasses and/or legumes to 15% of herbage dry matter (productivity by weight) using adapted species and varieties, appropriate seeding rates, and timing of seeding. Pastures containing about 15% native grasses and/or legumes by weight dry matter are approximately equal to 30% foliar cover.

Land Use Applicability
Pastureland

Benefits
Enhancing existing pasture by incorporating native grasses and legumes can provide:
1. Improved forage quality and quantity
2. Improved soil fertility (legumes fix nitrogen in the soil), increase organic matter
3. Increased plant diversity and promote wildlife habitat
4. Additional forage during seasonal slump periods
5. Extended grazing season
6. Food source for pollinating insects

Conditions Where Enhancement Applies
This enhancement only applies to acres of pasture land use that DO NOT currently have a mixed stand of native grasses and/or legumes.

Criteria
A written grazing management plan that outlines specific goals and objectives, including:
1. Utilize adapted species, seeding rates and seeding dates according to local NRCS practice standards.
2. Determine species composition before and after seeding. Species composition must be 15% or more of native grasses and/or legumes.
3. If legumes are incorporated, a current soil test is required. Apply lime and fertilizer to facilitate establishment and persistence of legumes as required by the current soil test report.
4. Livestock stocking rates that will allow for proper forage utilization.

Note: Bloat can be a risk to grazing livestock where legumes make up greater than 50% of the total forage. Legumes with the highest likelihood to cause bloat include white clover, alfalfa, annual medics and Persian clover. Red clover, crimson clover and subterranean clover would be classified as moderately likely to cause bloat, while berseem clover and arrowleaf clover are low risks for causing bloat. Legumes that don't cause bloat are birdsfoot trefoil, sainfoin and

crownvetch. Livestock producers grazing alfalfa aftermath in the fall months should be cautioned of bloat, especially following a killing frost. The recommendation for grazing frost killed alfalfa is to wait 5 to 7 days after the killing frost (less than 28 degrees Fahrenheit) before grazing. This will allow the live tissue to fully break down, minimizing the soluble leaf proteins, and making a much safer feed base for ruminant livestock. If bloat is a concern, there are several precautions that can be taken. (A technical reference sheet will be available to address these issues).

Adoption Requirements

This enhancement is considered adopted when the subject pasture acre(s) contain 30% or more foliar coverage of native grasses and/or legumes.

Documentation Requirements

1. A written planting specifications plan identifying:
   a. Plant species' to be seeded,
   b. Seeding rates and dates,
   c. Site preparations and planting method, and
   d. Amounts of fertilizer and lime to be applied.
2. Map showing locations were seeding activity is applied.
3. Copy of the grazing management plan.

References

Ball, D.M., C.S. Hoveland and G.D. Lacefield. 2007. Southern Forages, 4th Edition. International Plant Nutrition Institute, Norcross, GA.

Bartholomew, P.W. 2005. Comparison of Conventional and Minimal Tillage for Low-input Pasture Improvement. Online-Forage and Grazinglands – Plant Management Network.

Ruffin, B.G. 1994. Controlling Bloat in Cattle. Alabama Cooperative Extension System, Pub. ANR-148.

USDA-NRCS. 2010. Conservation Practice Standard: Forage and Biomass Planting-Code 512.

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For Criteria #1 see Wisconsin NRCS Conservation Practice 512 (Forage and Biomass Planting):

http://efotg.sc.egov.usda.gov/references/public/WI/512.pdf

Written documentation shall include a record of livestock stocking rates, grazing dates, and duration.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM05 - Extending riparian forest buffers for water quality protection and wildlife habitat

Enhancement Description
Where existing riparian forest buffers (i.e., buffers) are utilized, extend them to gain more efficiency in intercepting overland flow, reducing the transport of nutrients, pesticides and agro-chemicals, and for wildlife habitat.

Land Use Applicability
Cropland, Pastureland, Rangeland

Benefits
Widening existing riparian forest buffers can provide food and cover for native and game species as well as enhancing aquatic habitat by providing shade, input of wood or carbon to the stream, and stabilizing streambank conditions. Extended buffers offer more surface area to filter out sediments and agro-chemicals. Riparian forest buffers can also mitigate pesticide drift during pesticide applications and pollen drift where the mixing of plant varieties is not desired.

Riparian habitats are important transition zones between terrestrial landscapes and aquatic zones. Wildlife species utilize these transition zones because they provide a unique combination of cover, access to water and often provide important travel corridors. Extending existing buffers not only enhances wildlife habitat but it increases the effectiveness of water quality protection they provide to the streams.

Conditions Where Enhancement Applies
This enhancement only applies to acres of **existing** riparian forest buffer(s) on crop, pasture or range land uses.

Criteria
1. Extend the existing buffer for a total of 60 feet or more to enhance habitat and water quality functions.
2. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly trees and shrubs best suited to site conditions. Include species that provide pollinator food and habitat where possible.
3. All site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice standard criteria and specifications.

4. Forest riparian buffers shall consist of a diversity of tree and shrub species of which the majority is capable of producing fruit or nuts and trees, when mature, will achieve heights of at least 60 feet and 60% canopy closure.
5. Any use of the buffer must not compromise its intended purpose.
6. To the extent possible the buffer areas and extended buffer areas will be shaped and vegetated to increase overland flow interception and increase water quality values of the stream or water body.
7. The extension of buffers can incorporate other buffer types (filter strips or riparian herbaceous cover) where applicable to meet specific operator management goals.

Operation and Maintenance

1. Once established, buffers must not be mowed, disked, grazed, or otherwise disturbed during the primary wildlife ground nesting period.
2. Buffers will be regularly maintained for the intended purpose through the life of the contract. This includes any removal of vegetation, including grazing.

a. Grazing is not permitted unless a grazing management plan is in effect.
b. The grazing management plan must protect the integrity, diversity and function of the riparian area.

3. Buffers will have a wildlife management plan to maintain established plant communities through the life of the contract. The wildlife plan will maintain the plant community and its structural diversity and provide habitat for intended species, remove duff, and control woody vegetation.
4. The grazing management plan and the wildlife management plan shall complement each other.

Adoption Requirements

This enhancement is considered adopted when the buffer has a total width of 60 feet or more for the selected land use.

Documentation Requirements

1. A map showing the location and size of existing and enhanced riparian forest buffer(s).
2. Documentation of the type and rates of vegetation planted in the new riparian forest buffers.

References

Bentrup, G. 2008. Conservation buffers: design guidelines for buffers, corridors, and greenways. Gen. Tech. Rep. SRS-109. Asheville, NC: Department of Agriculture, Forest Service, Southern Research Station. pp110. http://nac.unl.edu/bufferguidelines/index.html

Wenger, S. 1999. A review of the scientific literature on riparian buffer width, extent, and vegetation. Athens, GA: University of Georgia, Institute of Ecology, Office of Public Service and Outreach. pp 59. http://www.rivercenter.uga.edu/service/tools/buffers/buffer_lit_review.pdf

Palone, R.S., and A.H. Todd. 1997. Chesapeake Bay riparian handbook: a guide for establishing and maintaining riparian forest buffers. NA-TP-02-97. Randor, PA: U.S. Department of Agriculture, Forest Service, Northeastern State and Private Forestry. http://www.na.fs.fed.us/pubs/misc/riparian_handbook/chesapeake_bay_riparian_handbook.pdf

Wisconsin Supplement 4/22/2013 (ANM05: 2013 Ranking Period 1)

The average width of the existing buffer must be a minimum of 35 feet in order to be eligible to apply this enhancement.

The average total width of the buffer following installation of the enhancement must be a minimum of 60 feet up to a maximum of 150 feet.

Note: If the existing buffer is an average width between 60 to 140 feet, the participant must at extend the existing buffer by a minimum width of 10 feet.

Follow Wisconsin Conservation Practice Standard 391 (Riparian Forest Buffer) and Wisconsin Forestry Technical Note 1 and 3:

http://efotg.sc.egov.usda.gov/references/public/WI/391.docx
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/forestry-tn1.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/forestry-tn3.pdf

Primary ground wildlife nesting season is from May 15 through August 1st.

Written documentation shall include a summary of the moisture regime of the site, the method of establishment and the plant species established. Provide an annual summary of site management and weed control activities implemented. Wisconsin supplement

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM07- Extending existing field borders for water quality protection and wildlife habitat

Enhancement Description
Where existing field borders are utilized, extend them to gain more efficiency in intercepting overland flow and reducing the transport of nutrients, pesticides and agro-chemicals, and for wildlife habitat.

Land Use Applicability
Cropland, Pastureland

Benefits
Widening existing field borders can provide food and cover for native and game species as well as enhancing wildlife habitat. Extended field borders offer more surface area to filter out sediments and agro-chemicals. Field borders can also offer buffers to mitigate pesticide drift during pesticide applications and pollen drift where the mixing of plant varieties is not desired.

Wildlife species utilize transition zones between agricultural fields because they provide a unique combination of cover and often provide important travel corridors. Often times field borders are adjacent to riparian areas and are important for contributing clean water, and habitat areas nearby. Extending existing field borders not only enhances wildlife habitat but it increases the effectiveness of water quality protection if the border is next to a stream.

Conditions Where Enhancement Applies
This enhancement only applies to acres of **existing** field borders on crop or pasture land uses.

Criteria
1. Extend the existing field border for a total of 60 feet or more to enhance habitat and water quality functions.
2. The extended field borders must be composed of at least 5 species of non-noxious, wildlife friendly grasses, perennial forbs and /or shrubs best suited to site conditions. Include species that provide pollinator food and habitat where possible.
3. All site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice standard criteria and specifications.
4. Any use of the field border must not compromise its intended purpose. Vegetation from field borders can be harvested for bio-energy as long as the harvesting is done in accordance with a plan that does not compromise the water quality and wildlife benefits of the extended filter strip.
5. To the extent possible the field border areas and extended field border areas will be vegetated to increase overland flow interception and increase water quality values if they also border a stream or water body.

6. The extension of field borders can incorporate other buffer types (filter strips, riparian herbaceous and riparian forest) where applicable to meet specific operator management goals.

Adoption Requirements

This enhancement is considered adopted when the field border has a total width of 60 feet or more for the selected land use.

Documentation Requirements

1. A map showing the location and size of enhanced field borders.
2. Documentation of the type and rates of vegetation planted in the new field borders.

References

Clark, W.R. and K.F. Reeder. 2005. Continuous Conservation Reserve Program: Factors Influencing the Value of Agricultural Buffers to Wildlife Conservation. Pages 93-113 *in* Fish and wildlife benefits of Farm Bill conservation programs: 2000-2005 update. Haufler, J. B., editor. The Wildlife Society Technical Review 05-2. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012882.pdf

USDA-NRCS. 2010. Grassland Bird Population Responses to Upland Habitat Buffer Establishment by L. Wes Burger, Jr., Philip J. Barbour, and Mark D. Smith. Wildlife Insight No. 86. Washington, DC. http://www.fwrc.msstate.edu/pubs/NRCSWildlifeInsight86.pdf

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The average width of the existing field border must be a minimum of 20 feet and up to a maximum of 140 feet in order to be eligible to apply this enhancement.

The average total width of the field border following installation of the enhancement must be a minimum of 60 feet up to a maximum of 150 feet.

Note: If the existing field border is an average width between 20 to 50 feet, the participant must extend the field border area so that the total width of the field border following installation of the enhancement will be a minimum average of 60 feet. If the existing filter border is an average width between 50 to 140 feet, the participant must at extend the field border area by a minimum width of 10 feet.

Follow Wisconsin Conservation Practice Standard 386 (Field Border) and Wisconsin Agronomy Technical Note 5 and/or 6:

http://efotg.sc.egov.usda.gov/references/public/WI/386.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn5.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn6.pdf

Harvesting forage for bio-energy cannot occur during the primary ground wildlife nesting season (i.e. May 15 through August 1st).

Written documentation shall include a summary of the moisture regime of the site, the method of establishment and the plant species established. Provide an annual summary of site management and weed control activities implemented.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM09 – Grazing management to improve wildlife habitat

Enhancement Description
Implement a grazing management plan that will allow for rest periods to provide adequate residue for nesting and fawning cover and increase diversity of vegetation structure to benefit a variety of wildlife species.

Land Use Applicability
Pastureland, Rangeland, Forestland

Benefits
Wildlife habitat can be greatly improved through proper grazing management. Proper grazing management is essential to healthy wildlife populations because plants supply many species of birds and animals with food and cover for nesting, fawning, loafing, roosting, travel and escape from predators and adverse weather. These include song birds, quail, turkey, pheasants, deer, and rabbits to name just a few. Some species of ground nesting grassland birds are in decline and others have become uncommon. Healthy stands of forage can be managed to provide habitat for a wide array of wildlife.

Conditions Where Enhancement Applies
This enhancement applies to all pasture (including silvopasture), range or forest land use acres.

Criteria
1. Defer 33% of the grazing land on the land use from grazing during the nesting/fawning season each year.
2. Develop and implement a written grazing management plan that identifies the following:
   a. wildlife management objectives for grazing land,
   b. targeted wildlife species,
   c. nesting or fawning dates,
   d. the location and number of acres to be deferred each year,
   e. a schedule for the year of deferment, and
   f. stocking rates that will allow proper forage utilization while maintaining proper plant heights that provide food and shelter for wildlife and maintain plant health.

Additional criteria for silvopasture
1. Inventory the habitat condition of the silvopasture, the farm, and adjoining farms to determine habitat needs for the targeted wildlife.
2. Use one or more of the following methods to improve habitat for the targeted species.
   a. Establish additional understory vegetation (e.g., native grass, forbs and shrubs) that will improve habitat conditions for the targeted species.

b. Establish clusters of other tree species if needed as a food source (e.g., oaks for mast).
c. Manage tree canopy to achieve the desired understory plant community.
d. Leave some dead or dying trees as snags if cavity nesting wildlife is targeted.
e. Remove trees or invasive plants that do not provide the desired habitat.
f. Replace removed trees by planting new trees or shrubs that will provide the desired habitat.
g. Thin less desirable trees to encourage the growth of trees that will provide the desired wildlife habitat.

Adoption Requirements

This enhancement is considered adopted when a grazing management plan targeting selected wildlife species has been written and one-third of the grazing land is avoided during the nesting/fawning season each year as prescribed.

Documentation Requirements

1. A schedule of when grazing activities occurred documenting that grazing activities were deferred on a minimum of 33% of the available acreage.
2. A map showing the acreage where these activities are applied.

References

Holechek J. L., R. Valdez, S.D. Schemnitz, R.D. Pieper and C.A. Davis. 1982. Wildlife Society Bulletin Vol. 10, No. 3: 204-210.

Lyons, R.K. and B.D. Wright. 2003. Using Livestock to Manage Wildlife Habitat. Available electronically from http: / /hdl .handle .net /1969 .1 /87188

Nistler, C. M., J. Boren and D. Rollins. 2006. Proceedings – Symposia: Prescribed Livestock Grazing to Enhance Wildlife Habitat. 112 pages. Society for Range Management.

Undersander, D., S. Temple and J. Bartlet and L. Paine. 2000. Grassland Birds: Fostering Habitats using Rotational Grazing. University of Wisconsin-Extension Publication A3715.

USDA-NRCS. 2010. Conservation Practice Standard: Prescribed Grazing-Code 528.

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Nesting/fawning season is from May 15 through August 1st.

Provide an annual summary of non-grazing site management and weed control activities implemented.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Animal Enhancement Activity – ANM10 – Harvest hay in a manner that allows wildlife to flush and escape

Enhancement Description
Harvesting hay using conservation measures that allow wildlife to flush and escape. These measures include timing of haying to avoid periods when upland wildlife are nesting or fawning, idling hay land during the nesting or fawning period, and applying haying techniques that reduce mortality to wildlife.

Land Use Applicability
Cropland (hayland)

Benefits
Many species of birds and animals use pastures and hay lands as cover, to find food, nesting areas, and rearing their young. Examples include song birds, quail, turkey, pheasants, deer, and rabbits. Some species of ground nesting birds are in decline and others have become uncommon. Managing haying techniques can be beneficial to the survival of ground nesting birds and other wildlife species. Altering harvesting routes can provide escape routes for hens, hens with broods and hiding fawns. Delaying harvests or leaving portions of a field unharvested provide nesting habitat.

Conditions Where Enhancement Applies
This enhancement only applies to any annual planted or perennial hayland acres (a sub-component of the crop land use).

Criteria
Use one of the following techniques (A or B) to protect wildlife during haying activities.

A. Defer haying. The producer *will apply and maintain at least two of the following* management actions specifically for improving or protecting grassland functions for the state identified targeted wildlife species.
   1. Do not cut hay on at least 1/3 of the hay acres each year. Idle strips or blocks must be at least 30 feet wide.
   2. For at least 1/3 of the hay acreage, hay cutting must be either before and/or after the primary nesting or fawning seasons based on state established dates for the targeted species.
   3. Increase forage heights after mowing to state specified minimum heights for the targeted species on all hayed acres.

B. For all haying that will be conducted during the nesting/fawning season the producer will implement *at least two of the following* to flush wildlife from hay fields during the mowing operation:
   1. A flush bar attachment will be required on the mower

2. All mowing will be done during daylight hours
3. Haying pattern will be either:
   a. Begin on one end of the field and work back and forth across the field, or
   b. Begin in the center of the field and work outward

Adoption Requirements

This enhancement is considered adopted when either technique A or B from the criteria above has been implemented.

Documentation Requirements

1. Map showing the fields that were treated
2. Option A – A picture showing residual heights of hay after mowing
3. Option B – A picture showing the flush bar attachment on tractor

References

Greene, C. 2007. Reducing Mortality of Grassland Wildlife During Haying and Wheat-Harvesting Operations. Division of Agricultural Sciences and Natural Resources, Oklahoma State University, OSU Extension Wildlife and Forestry, NREM-5006. http://www.okrangelandswest.okstate.edu/files/wildlife%20pdfs/NREM-5006.pdf

USDA-NRCS. 2010. Management Considerations for Grassland Birds in Northeastern Haylands and Pasturelands by Noah Perlut, Allan Strong and Therese Donovan. Wildlife Insight No. 88. Washington, D.C. http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=27175.wba

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Nesting/fawning dates are May 15th through August 1st.

Minimum forage harvest height for field is 6 inches.

For Option B, as needed, provide a written summary of the haying pattern utilized during harvest and/or a statement that hay was harvested during daylight hours.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Animal Enhancement Activity – ANM11 – Patch-burning to enhance wildlife habitat

Enhancement Description
Use prescribed burning with livestock grazing to create patches of different vegetation structure and species composition for the benefit of wildlife.

Land Use Applicability
Pasture, Rangeland, Forestland

Benefits
Patch-burning is a management activity for landowners interested in improving habitat for wildlife while still maintaining forage production for livestock, primarily grasslands. This management activity helps create a mosaic of diverse vegetative structure and plant composition in the same pasture. Livestock also benefit as different plant species may be available, especially during mid-and late growing season vegetation slumps. Patches of different vegetation composition can extend and/or supplement livestock during the grazing season.

Conditions Where Enhancement Applies
This enhancement applies to all pasture, range or forest land use acres. This enhancement is not for the purpose of conducting wildfire reduction burns or forest stand improvement burns on forest land use acres.

Criteria

1. Burn at least 10% and not more than 40% of the grazing area in any year
   a. Annual application by burning a different patch each year is acceptable and desirable for many wildlife species.
   b. A minimum of two burn treatments should be applied during a 5 year period.
      - For vegetation types with a historic fire frequency greater than 10-15 years as determined by the NRCS State Office, minimum treatment should be two burns applied during a 10 year period.
2. Avoid burning during peak nesting season for targeted wildlife species.
3. Develop a written grazing management plan that identifies:
   a. Wildlife management objectives describing how patch burning will accomplish those objectives.
   b. Percentage of area planned to be burned by year
   c. Locations, total acres, planned year and season of burns
   d. The desired frequency of burning (example: burn same area once every 4 years) should be stated and based on the desired plant community's adaptation and response to fire.
   e. Stocking rates that will allow for proper forage utilization.

   f. Apply monitoring and adaptive management considerations to address potential multiple years overuse of burned areas, especially for those pastures not receiving some amount of annual burning.
   g. Identify areas where fire is to be excluded for habitat considerations, such as desirable shrub stands, stream sides, etc.
4. Develop a written prescribed burn plan for each prescribed burn that identifies:
   a. Locations to receive burn treatment and level of patchiness desired
   b. Time of burn
   c. Firebreaks locations, if needed
   d. Weather parameters for the burn (temperature, wind speed, relative humidity)
   e. Burn plans must be conducted in accordance with all state laws.

Adoption Requirements

This enhancement is considered adopted when all four of the criteria above have been implemented together in a one year period.

Documentation Requirements

1. Written prescribed burn plan identifying pasture, range or forest acres and dates of prescribed burn.
2. A map showing where the activities are applied.

References

Coppedge, B.R., S.D. Fuhlendorf, W.C. Harrell, and D.M. Engle. 2008. Avian Community Response to Vegetation and Structural Features in Grasslands Managed with Fire and Grazing. Biological Conservation 141:1196-1203.

Fuhlendorf, S.D., and D.M. Engle. 2001. Restoring Heterogeneity on Rangelands: Ecosystem Management based on Evolutionary Grazing Patterns. BioScience Vol. 51, no.8: 625-632.

Fuhlendorf, S.D., W.C. Harrell, D.M. Engle, R.G. Hamilton, C.A. Davis and D.M. Leslie, Jr. 2006. Should Heterogeneity be the Basis for Conservation? Grassland Bird Response to Fire and Grazing. Ecological Applications 16(5): 1706-1716.

USDA-NRCS. 2010. Conservation Practices Standards: Prescribe Burning-Code 338 and Prescribed Grazing-Code 528.

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Follow Wisconsin Conservation Practice 338 (Prescribed Burning):

http://efotg.sc.egov.usda.gov/references/public/WI/338.pdf

Nesting/fawning dates: May 15-Aug 1.

Written documentation shall include the name and credentials of the individual who developed the prescribed burn plan and documentation of the fuel/weather conditions at the time of burn.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

Animal Enhancement Activity – ANM12 – Shallow water habitat

Enhancement Description
Construct or renovate small, shallow sites to impound or hold water seasonally, typically from late winter through early summer (e.g., vernal pools).

Land Use Applicability
Cropland, Pastureland, Rangeland, Forestland

Benefits
Shallow water habitats are used by amphibians, reptiles, birds, mammals and other species in completing their life cycles. Most species of amphibians need shallow water areas to lay their egg masses. These seasonal pools of water do not provide year-round water habitat that would support fish that could prey on the egg masses.

Conditions Where Enhancement Applies
This enhancement applies to all crop, pasture, range or forest land use acres.

Criteria
This enhancement requires the construction or renovation of small, shallow sites to impound or hold water seasonally, typically from late winter through early summer (e.g., vernal pools).

1. Soil & Site Considerations: Shallow water habitat sites should be located where water can be impounded or regulated by diking, ditching, flooding, pumping, or excavation. Soils must have low permeability or seasonal high water tables to inhibit subsurface drainage and allow for maintenance of proper water levels. These aquatic habitats must be located adjacent to or within wildlife-friendly cover or natural habitats. This activity does not apply on existing wetlands.

2. Size/Depth/Season/Composition: There are no area limitations, although larger aquatic habitats provide greater ecological benefits.
   a. The shallow water habitats must be arranged in groups of two or three with approximately ¼ to $^{1}/_{3}$ mile between each pool. There will be 1 pool arrangement per each 20 acres of suitable land. Each pool must be between 0.1 and ½ acre in size. As a minimum there must be at least 0.2 acres of shallow water habitat per 20 acres of suitable land in a land use. If the suitable land use is less than 20 acres the amount of shallow water habitat required will be reduced according to the ratio: 0.2 acres per 20 acres.
   b. Maximum depth shall not exceed 30 inches and the average depth should be between 6 and 18 inches.

c. These aquatic habitats must be designed and managed to hold water at a minimum from late winter through early summer, however it should not hold water all year long.
d. Irregular substrate surfaces are preferred over smooth substrate surfaces to create diverse plant communities and habitat structure.
e. A combination of open water and natural vegetation, including moist soil and wetland plants, is desired within the wetted perimeter.
f. A ratio of about 50% open water to 50% vegetation is ideal (acceptable range is 30-70%). Habitat complexity can be enhanced by the addition of logs or rocks that provide resting and basking sites.

Refer to Conservation Practice Standards, Shallow Water Development and Management (646) for additional management information and Dike (356), or Water and Sediment Control Basin (638) for additional information on water impoundment structures for this enhancement. Contact your local conservationist for assistance with Conservation Practice Standards.

Operation and Maintenance
The contributing watershed and/or water supply shall provide clean water free of harmful pollutants. Apply conservation treatments to the contributing watershed to ensure minimal erosion and sediment delivery. Buffer these aquatic habitats with wildlife-friendly perennial vegetation dense enough to retard erosion and trap sediments before entering the water.

Manage water levels by artificially raising or lowering in order to produce desired habitat conditions. Manage the areas to control reed canarygrass, purple loosestrife and other undesirable invasive plants. Manage dense vegetation such as cattails and prairie cordgrass so that 50-70% open water is maintained.

Adoption Requirements
This enhancement is considered adopted when vernal pools have been established that meet or exceed the above criteria and they have been functioning and maintained as described in the operation and maintenance section.

Documentation Requirements
1. Site description including a location map, a detailed map or sketch including surrounding land uses, with dimensions, water depth and estimate of area,
2. Description of management activities and dates completed,
3. Maintenance plan, and
4. Photos of established pools.

References
Balas C. J., N.H. Euliss Jr. and D.M. Mushet. 2012. Influence of Conservation Programs on Amphibians using Seasonal Wetlands in the Prairie Pothole Region. Wetlands 32:333-345.

Blackwell, M.S.A. and E.S. Pilgrim. 2011. Ecosystem services delivered by small-scale wetlands. Hydrological Sciences Journal 56(8): 1467-1484.

Lehtinen, R.M., S.M. Galatowitsch and J.R. Tester. 1999. Consequences of habitat loss and fragmentation for wetland amphibian assemblages. Wetlands 19: 1–12.

USDA-NRCS and Wildlife Habitat Council. 2007. Temporarily flooded wetlands. Fish and Wildlife Habitat Management Leaflet No. 47. Washington, D.C.
http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18529.wba

USDA-NRCS and Wildlife Habitat Council. 2006. Amphibians and Reptiles. Fish and Wildlife Habitat Management Leaflet No. 35. Washington, D.C.
http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18528.wba

USDA-NRCS and Wildlife Habitat Council. 2006. Ecologically Isolated Wetlands. Fish and Wildlife Habitat Management Leaflet No. 38. Washington, D.C.
http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18517.wba

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Provide copies of any required permits or a written statement verifying that any required permits necessary to construct the shallow water habitat were obtained.

A 35' vegetated buffer (minimum) shall be required around the shallow water areas.

See Wisconsin Agronomy Technical Note 5 and/or 6 for buffer seed mixes:

ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn5.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn6.pdf

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM17 – Monitoring nutritional status of livestock using the NUTBAL PRO system

Enhancement Description
Use the NUTBAL PRO software to determine if the current diet is sufficient to meet livestock nutritional needs. This requires the collection and laboratory analysis of forage or fecal samples to determine the nutritional value of grazing forages.

Land Use Applicability
Pastureland, Rangeland

Benefits
NUTBAL PRO is decision support software that assimilates information regarding animal attributes, environmental conditions, forage conditions, feeding program, and metabolic modifiers. NUTBAL PRO reports provide information to:

- Balance animal nutritional needs with contributions from grazing forage,
- Select the most cost efficient feed alternative, amount to be fed, and cost per day,
- Evaluate feed stuff values with regards to the animal's nutrient deficiency or desired gain,
- Monitor the quality of grazing forages throughout the year, and
- Better understand animal nutritional needs as they change throughout the year.

Conditions Where Enhancement Applies
This enhancement applies to all pasture or range land use acres.

Criteria
1. Forages (using either fecal samples or forage tissue sample) must be analyzed by an accredited laboratory,
2. Information is entered into the NUTBAL PRO decision support software,
3. A report must be generated and management decisions documented and completed within 14 days from receiving forage analysis, and
4. A minimum of 6 forage analysis and NUTBAL PRO reports must be completed each year.

Adoption Requirements
This enhancement is considered adopted when a minimum of 6 NUTBAL PRO reports have been generated per year and the results have been used to make management decisions.

Documentation Requirements
For each forage sample collected for analysis:
1. A copy of the forage analysis report.

2. A copy of the NUTBAL PRO reports generated from the decision support software.
3. Written documentation of the management decisions made as a result of the analysis.

References

CNRIT. 2011. Grazing Animal Nutrition Lab website. Texas AgriLife Research. Texas A&M University. http://cnrit.tamu.edu/ganlab/index.php

Walker, J., D. Tolleson, S. Byrns and P. Benge. 2010. Shining Light on Manure Improves Livestock and Land Management. Texas AgriLife Research Technical Bulletin: SANG-2010-0250. Texas AgriLife Research and the Society for Range Management.

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This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Animal Enhancement Activity – ANM 21 – Prairie restoration for grazing and wildlife habitat

Enhancement Description
This activity consists of restoring/renovating prairie habitat by establishing native vegetation and managing the restored plant community.

Land Use Applicability
Cropland, Pastureland, Rangeland

Benefits
Establishing and managing native prairie vegetation will provide food, cover, and nesting habitat for adapted species, especially grassland nesting birds.

Conditions Where Enhancement Applies
This enhancement applies to sites that have soils that indicate it was once a prairie or can sustain native prairie species.

NOTE: this enhancement can only be initiated in the 1st or 2nd year of the contract to ensure the activity has time to establish before the end of the contract.

Criteria
1. The resulting plant community will consist of at least 4 species of native perennial grasses and at least 4 species of native forbs adapted to the soils. In areas where seed availability and site adaptability is an issue, the NRCS State Office can modify the seeding combinations to meet local conditions.
2. Seeding must be done in a properly prepared seed bed as determined by the NRCS State Office.
3. Species appropriate fungal and microbial inoculants will be used during establishment where appropriate. Additional planting conditions may be specified if an ecological site description has been developed for the area.
4. During the establishment phase, weeds shall be controlled on the site.
5. After establishment:
   a. The site will be protected from grazing and disturbance during the primary nesting and fawning season as defined by the NRCS State Office.
   b. The site will be deferred from use for up to 3 years.
6. A grazing management plan will be developed and implemented.

Adoption Requirements
This enhancement is considered adopted when the applicant has successfully established the minimum number of native perennial grasses and forbs to the subject area.

Documentation Requirements

Following implementation of this activity, the participant must:

1. Document the list of the species planted,
2. Maintain the receipts for the seeds purchased,
3. Document the seeding dates,
4. Document the area (acres) restored by delineating the location of the restored prairie on a map or aerial photograph, and
5. Document the grazing management plan was implemented.

References

Fuhlendorf, S.D., H. Zhang, T.R. Tunnell, D.M. Engle and A.F. Cross. 2002. Effects of Grazing on Restorations of Southern Mixed Prairie Soils. Restoration Ecology Vol. 10, Issue 2: 401-407.

Packard, S. 1997. The Tallgrass Restoration Handbook: For Prairies, Savannas, and Woodlands. Island Press.

Schramm, P. 1990. Prairie Restoration: A Twenty Five year Perspective on Establishment and Management. Proceeding of the Twelfth North American Prairie Conference.

USDA-NRCS. 2010. Conservation Practice Standard: Prescribed Grazing-Code 528.

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Primary nesting and fawning season is between May 15 - August 1.

Moderately grazed is defined as leaving a stubble height no less than 8 inches.

Follow Wisconsin Agronomy Technical Note 5 for species selection, seeding rates, and establishment & maintenance requirements. In areas where seed availability and site adaptability is an issue, refer to the "Seed Mixture Requirements for Planting a Basic Prairie" section of Technical Note 5 for the minimum quantity of grasses/forbs to be established and the minimum seeding rates required.

ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn5.pdf

Written documentation shall include a summary of the soil moisture regime of the site, plant species established and method of establishment. Provide an annual summary of site management and weed control activities.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

Animal Enhancement Activity – ANM 23 – Multi-species native perennials for biomass/wildlife habitat

Enhancement Description
This enhancement consists of establishing native perennial vegetation for biomass production and wildlife habitat.

Land Use Applicability
Cropland, Pastureland, Rangeland

Benefits
Establishing multi-species native perennial vegetation and managing for both biomass and wildlife can provide natural resource and financial benefits.

Conditions Where Enhancement Applies
This enhancement applies to all crop, pasture, or range land use acres.

Criteria
1. Native perennial species shall be selected and planted based on site adaptability, value for biomass, and for wildlife benefits as determined by the state.
2. Biomass fields shall be managed for species of conservation concern as identified by the state and the State Wildlife Action Plans.
3. Develop a management plan, covering the length of the contract at a minimum, which minimizes impacts on wildlife species, especially grassland nesting birds for this enhancement activity. Management actions and their impact on affected wildlife species shall be addressed.
4. After establishment, the field shall be protected from grazing and disturbance during the primary nesting and fawning season as defined by the state. Further, harvesting of biomass must be in accordance with the written management plan. Partial removal in late summer/early fall to allow for re-growth for winter cover where winter conditions interfere with late season harvest should be addressed in the management plan.

Adoption Requirements
This enhancement is considered adopted when acres with established multi-species native perennials are being managed in accordance with the developed management plan for the species of concern.

Documentation Requirements
1. Copy of the management plan,

2. Written description of the actions taken,
3. Receipts related to the a multi-species native perennial establishment,
4. Dates of establishment, and
5. A map or aerial photograph delineating the location of the established vegetation.

References

USDA-NRCS. 2010. National Biology Handbook. Washington, DC.
http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17723.wba

USDA-NRCS. 2006. National Biology Manual. Title 190, Washington, DC.
http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17895.wba

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Written documentation shall include a summary of the soil moisture regime of the site, plant species established and method of establishment. Provide an annual summary of site management and weed control activities implemented in the current program year.

Written documentation shall include the quantity of material harvested and the facility where the biomass was taken.

The primary nesting and fawning season is May 15th through August 1st.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

Animal Enhancement Activity – ANM25 – Stockpiling of forage to extend the grazing season

Enhancement Description
Livestock are excluded from forages on specified acres during the growth season. The "stockpiled" forages are grazed at a later time using strip grazing to allow animals to utilize the forage within a strip for a specified period of time.

Land Use Applicability
Pastureland

Benefits
Managing grazing land to "stockpile" forages for later use extends the grazing season and promotes yearlong grazing. Stockpiling also provides long-term grass sustainability and improved forage health resulting in higher quality forage for livestock. Eliminating a minimum of one hay cutting reduces fuel use and labor. Water quality is improved since manure is evenly distributed throughout the pasture as livestock graze, and nutrient loading at hay feeding sites, if needed, is reduced.

Conditions Where Enhancement Applies
This enhancement applies to all pasture land use acres.

Criteria
Grazing on stockpiled forage must follow a grazing plan that includes:
1. Exclude grazing from specified acres for a state specified time period (at least three months minimum for cool season and two months for warm season),
2. Acreage needed will be calculated using a ratio of one acre per animal unit ,
3. Stockpiled acreage will be fertilized to achieve adequate forage growth,
4. Livestock must be rotated into a new stockpiled paddock every 1-3 days; use temporary fencing to adjust strip size to match forage availability,
5. Do not allow livestock to access previously grazed stockpiled areas when spring regrowth begins until adequate forage heights exist,
6. Follow NRCS Prescribed Grazing practice standard (528) each year this enhancement is in effect, including applying a prescribed grazing plan on the entire operation, and
7. Certification that practice requirements have been met after grazing of stockpiled forages begins each year.

Adoption Requirements
This enhancement is considered adopted when a prescribed grazing plan that specifies stockpiling acres has been developed and implemented.

Documentation Requirements

1. A copy of the operation's prescribed grazing plan,
2. Specified stockpiled acres designated on a map and in the prescribed grazing plan, and
3. Photographs showing stockpiled forage for each such pasture.

References

Ball, D.M., E.N. Ballard, M.L. Kennedy, G.D. Lacefield and D.J. Undersander. 2008. Extending Grazing and Reducing Stored Feed Needs. Grazing Lands Conservation Initiative Publication 8-01, Bryan Tx.

Curtis, L.E., R.L. Kallenbach and C.A. Roberts. 2008. Allocating Forage to Fall-calving Cow-calf Pairs Strip-grazing Stockpiled Tall Fescue. Journal of Animal Science (86): 780-789.

Hitz, A.C. and J.R. Russell. 1998. Potential of Stockpiled Perennial Forages in Winter Grazing Systems for Pregnant Beef Cows. Journal of Animal Science (76):404-415.

Rayburn, E.B. (editor). 2007. Forage Utilization for Pasture Based Livestock Production. NRAES – Book 173; Chapter 6 - Deferred Grazing to Extend the Grazing Season: p. 82-96. PALS Publishing, Ithaca, New York.

USDA-NRCS. 2010. Conservation Practice Standard: Prescribed Grazing-Code 528.

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Forage must be stockpiled for a minimum of 2 contiguous months for warm season grass stands and 3 contiguous months for cool season grass stands; between April 1 - October 31.

Wisconsin Conservation Practice 528 (Prescribed Grazing):

http://efotg.sc.egov.usda.gov/references/public/WI/528.pdf

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

Animal Enhancement Activity – ANM26 – Managing calving to coincide with forage availability

Enhancement Description
This enhancement uses a controlled breeding season to match livestock nutrient requirements to available pasture forage and reduce supplemental feeding. This enhancement is applicable to all grazing livestock.

Land Use Applicability
Pastureland, Rangeland

Benefits
Managing calving to coincide with the production of palatable, high quality pasture matches forage availability to the peak nutrient needs of beef cows and allows nursing calves to use pasture for much of their growth. The result is improved animal health for lactation and reproduction, lower calf death losses and more efficient use of labor and resources. Matching livestock feed requirements to when forage is most abundant and of the highest quality reduces dependency on supplemental feed, and it saves energy associated with hay production and harvest.

Conditions Where Enhancement Applies
This enhancement applies to all pasture or range land use acres.

Criteria
Based on forage type and season of growth, use Land Grant University (LGU) and/or state developed recommendations for controlled breeding and calving seasons (single and/or split) to plan the start and end dates for calving that will match the operation's herd requirements with forage availability. This enhancement recognizes that time is needed to adjust the controlled breeding and calving season for the operation. The desired start and end dates for calving are based on:

1. Calving (within a herd) taking place within a 90-day or less time period, and
2. Calving occurring four to six weeks prior to initial availability of good quality pasture.

Additionally,

1. Cow – calf pairs are on or are moved to pasture as soon as possible after birth (e.g., they are not left in dry lots or small calving pastures for extended time periods),
2. 50% of breeding females are transitioned by the third year of the contract, and
3. 75% of breeding females are transitioned by the end of the contract period.

Adoption Requirements

This enhancement is considered adopted when a participant's cattle breeding season coincides with the LGU and/or state developed recommended controlled breeding and calving seasons.

Documentation Requirements

Document annually by herd the:

1. Percentage of breeding females with a projected calving date that falls within the established calving period,
2. Number of calf births occurring between the desired start and end dates,
3. Dominant forage type grazed, and
4. Acres of available pasture or range.

References

Clark, T.C., D.C. Adams, G.P. Lardy and T.J. Klopfenstein. 1997. Matching Calving Dates with Forage Nutrients: Production and Economic Impacts. Range Beef Cow Symposium – Paper 166, 10 pages. Rapid City, SD.

Kruse, R.E., M.W. Tess, E.E. Grings, R.E. Short, R.K. Heitschmidt,W.A. Phillips and H.S. Mayeu. 2008. Evaluation of Beef Cattle Operations Utilizing Different Seasons of Calving, Weaning Strategies, Postweaning Management, and Retained Ownership. The Professional Animal Scientist Vol. 24, no. 4: 319-327.

Sprott, L.R., G.E. Selk and D.C. Adams. 2001. Review: Factors Affecting Decisions on when to Calve Beef Females. Professional Animal Scientist Vol. 17 no. 4: 238-246.

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Calving shall take place between April 1st and July 1st.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Animal Enhancement Activity – ANM27 – Wildlife friendly fencing

Enhancement Description
This enhancement involves the use of wildlife friendly fencing techniques that allow free passage of daily wildlife movement and seasonal migration; and/or increase visibility to prevent entanglement and mortality. Selection of this enhancement requires the activity to be planned concurrently on all eligible land use acres.

Land Use Applicability:
Cropland, Pastureland, Rangeland, Forestland

Benefits
Fencing used to define property boundaries and contain livestock creates barriers and traps to wildlife movement, fragments habitats and separate herds. Improper fence design results in injury and death through entanglement and collision. Wildlife friendly fencing techniques allow for safe passage and increase fence visibility improving wildlife habitat, granting access to food, shelter and water.

Conditions Where Enhancement Applies
This enhancement applies to cropland, pastureland, rangeland or forestland that has existing fencing in need of a retrofit.

Criteria
Wildlife friendly fence should improve passage through the fence by either jumping or crawling and be highly visible to prevent collision, entanglement and fatalities. Focus the use of wildlife friendly fencing along known wildlife travel corridors. For full implementation of this enhancement, 20% of **ALL** fencing on the land use must be made wildlife friendly.

1) Improve Passage
   Retrofit Existing Fence- openings and crossing to allow wildlife access to food, water and shelter must be created in existing fence. Location and number of openings required will meet NRCS state standards. Methods used included but are not limited to:
   1. Lay-down fence
   2. Seasonal electric fence
   3. Adjustable wire fence
   4. Underpass fence with raised wire
   5. Pole top fence

2) Improve Visibility
   a) Increase visibility of ALL fencing using flagging, vinyl markers, PVC pipe or other similar materials that will meet NRCS state standards for spacing, interval and size. A good example of improving visibility for prairie grouse (e.g. prairie chickens, sage grouse, etc.) in rangeland can be found at: www.suttoncenter.org/pages/fence_marking_instructions
   b) If no state criteria exist, follow criteria in the Montana Fish, Wildlife & Parks publication "A Landowner's Guide to Wildlife Friendly Fences."

Adoption Requirements

This enhancement is considered adopted when 20% of the existing permanent fence on the operation has any combination of improved passage or improved visibility.

Documentation Requirements

1. Indentify type (s) of wildlife friendly fencing used,
2. Location on a map showing were wildlife friendly fence is located, and
3. Photograph of each wildlife friendly fencing method used.

References

Paige, C. 2008. A Landowner's Guide to Wildlife Friendly Fences. Landowner/Wildlife Resource Program, Montana Fish, Wildlife and Parks, Helena, MT. pp 44. http://fwpiis.mt.gov/content/getItem.aspx?id=34461

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Refer to Montana Fish, Wildlife & Parks publication, "A Landowner's Guide to Wildlife Friendly Fences" for meeting Criteria #1 and/or #2 as stated in this job sheet.

http://fwpiis.mt.gov/content/getItem.aspx?id=34461

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

Animal Enhancement Activity – ANM29 – On-farm forage based grazing system

Enhancement Description
A forage based grazing system that supplies all roughage (forage and supplemental hay) requirements for a livestock operation.

Land Use Applicability
Pastureland, Rangeland, Forestland

Benefits
Forage based grazing systems reduce the time that livestock are confined resulting in less manure to store and allows manure to become a fertilizer instead of a pollutant. Management of perennial grass and forbs ground cover improves nutrient and water cycling, soil structure and increases organic matter. Energy conservation is achieved by reducing annual cropping, transport of feed and less reliance on synthetic nitrogen.

Conditions Where Enhancement Applies
This enhancement applies to all pasture, range or forest land use acres.

Criteria
1. Develop a grazing management plan with a forage based grazing system that provides **ALL** livestock feed and nutrient needs for the duration the animals are on the participant's land.
2. Livestock operations include those that produce cattle, sheep, goats, etc.
3. Manage pasture grazing and rest periods to follow NRCS Prescribed Grazing practice standard (528) criteria for recommended maximum (begin) and minimum (end) grazing heights by forage species or Ecological Site Description interpretations. Begin and end grazing heights are followed to maximize forage quality and palatability, as well as to promote rapid recovery and forage regrowth.
   a. Maintain a livestock watering system that accommodates an appropriate grazing strategy through several different pastures or paddocks during the grazing season.
   b. Follow NRCS practice standard criteria for Prescribed Grazing (528), Watering Facility (614), Pipeline (516), or other related standards for appropriate supply and travel distance to water.
   c. Use fencing that is permanent, semi-permanent, and/or temporary to facilitate pasture rotation and/or livestock distribution improvement. Follow the NRCS Fence practice standard (382).

Adoption Requirements
This enhancement is considered adopted when no external forage or hay is utilized in the grazing operation.

Documentation Requirements

1. Provide a copy of the written grazing plan, and
2. Include time and timing of grazing, minimum and maximum grazing heights, season of use, grazing records and monitoring plan of pastures/paddocks in the grazing plan, as appropriate for the land use.

Note: NRCS Pasture Notes, grazers' notebooks, or other record keeping systems for pasture livestock operations can be used to facilitate record-keeping.

References

Ball, D. M., E. N. Ballard, M. L. Kennedy, G. D. Lacefield, and D. J. Undersander. 2008. Extending Grazing and Reducing Stored Feed Needs. Grazing Lands Conservation Initiative Publication 8-01, Bryan TX.

Parish, J. A., J. D. Rivera, H. T. Boland, and R. Lemus. 2010. Beef Cattle Grazing Management. Mississippi State University Extension Service. Publication 2629.

Rayburn, E. B. (editor). 2007. Forage Utilization for Pasture Based Livestock Production. NRAES – Book 173. PALS Publishing, Ithaca, New York.

USDA-NRCS. 2011. Conservation Practice Standard: Livestock Pipeline-Code 516.

USDA-NRCS. 2010. Conservation Practice Standards: Fence-Code 382, Forage Harvest Management-Code 511, Prescribed Grazing-Code 528 and Watering Facility-Code 614.

USDA-NRCS. 2006. Watering Systems for Serious Grazers. NRCS-Missouri Publication, Columbia, Mo.

USDA-NRCS. 2005. Electric Fencing for Serious Grazers. NRCS-Missouri Publication, Columbia, Mo.

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This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

Animal Enhancement Activity – ANM31 – Drainage water management

Enhancement Description
This enhancement consists of seasonal hydrology management during non-cropping periods for wildlife habitat on working lands.

Land Use Applicability
Cropland

Benefits
Maintaining flooded or saturated soil conditions during non-cropping periods can have multiple benefits. Flooded fields can provide important habitat for migratory waterfowl and other species that benefit from temporarily flooded land. Flooded areas provide food, cover and resting areas for wildlife, especially waterfowl during their migration.

Conditions Where Enhancement Applies
This enhancement applies to cropland that has been artificially drained (surface or subsurface) and which is flat enough that significant portions can be flooded or saturated by controlling outflow from the drainage system.

Criteria
Refer to the criteria in Conservation Practice Standard, Drainage Water Management (554), Shallow Water Management for Wildlife (654), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), and Structure for Water Control (587) for the requirements for drainage/water control structures, their management and vegetative management to be used with this enhancement. Contact your local conservationist for assistance with Conservation Practice Standards.

1. Develop a plan that:
   a. Identifies the targeted species or suite of species (e.g., giant gartersnake, shorebirds, waterfowl, other waterbirds)
   b. Provides for the installation, retrofitting of existing, or utilization of existing water-supply and water-control structures, including pumps and irrigation gates for precise water-level control such that seasonal shallow water is assured.
   c. Establishes the optimum flooding or saturation including timing, frequency, depth, and duration of ponding and/or soil saturation that provides at least
      i. Ponding of 1/3 of the surface area of the cropped field
      ii. Ponding for 45-days during the target season
      iii. Final drawdown is extended over at least a 2-week period
   d. Provides wildlife food through the management of crop residues, or plantings of wildlife friendly cover-crops

Adoption Requirements

This enhancement is considered adopted when drainage control structures are in place on all fields where the enhancement will be implemented and fields are flooded such that ponding or saturated conditions meet the target hydrologic conditions in the plan.

Documentation Requirements

1. Plan developed for the target species,
2. List of fields where this enhancement was implemented,
3. The surface area of each field that is ponded,
4. List of equipment installed, retrofitted, or utilized for water level control and where it is located,
5. Dates when fields were ponded and when final drawdown began and when completed, and
6. Photographs of the impounded area(s). Photos must be dated and labeled with field number.

References

Elphick, C.S., O. Taft and Pedro M. Lourenço. 2010. Management of Rice Fields for Birds during the Non-Growing Season. Waterbirds 33(sp1):181-192. http://www.bioone.org/doi/pdf/10.1675/063.033.s114

National Audubon Society, Monsanto and the Monsanto Fund. 2007. Waterbirds on Working Lands: Recommended Practices for Rice Production. http://web4.audubon.org/bird/waterbirds/pdf/recommended_practices_for_rice_production.pdf

Taft, O.W. and C.S. Elphick. 2007. Waterbirds on Working Lands: Literature Review Bibliography. National Audubon Society. 46 pp. http://web4.audubon.org/bird/waterbirds/downloads.html

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The targeted management period for the ponding of water shall be October 15 through March 15.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM32 – Extend existing filter strips or riparian herbaceous cover for water quality protection and wildlife habitat

Enhancement Description
Where existing filter strips or riparian herbaceous covers (i.e., buffers) are utilized, extend them to gain more efficiency in intercepting overland flow and reducing the transport of nutrients, pesticides and agro-chemicals, and for wildlife habitat.

Land Use Applicability
Cropland, Pastureland, Rangeland

Benefits
Widening existing buffers can provide food and cover for native and game species as well as enhancing aquatic habitat. Extended buffers offer more surface area to filter out sediments and agro-chemicals. Buffers can also mitigate pesticide drift during pesticide applications and pollen drift where the mixing of plant varieties is not desired.

Buffer habitats are important transition zones between terrestrial landscapes and aquatic zones. Wildlife species utilize these transition zones because they provide a unique combination of cover, access to water and often provide important travel corridors. Often buffers are adjacent to riparian areas or are important contributors to clean water, and habitat areas nearby. Extending existing buffers not only enhances wildlife habitat but it increases the effectiveness of water quality protection they provide to the streams.

Conditions Where Enhancement Applies
This enhancement only applies to acres of **existing** buffers on crop, pasture, or range land uses.

Criteria
1. Extend the existing buffer for a total of 60 feet or more to enhance habitat and water quality functions.
2. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.
3. All site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice standard criteria and specifications.
4. Any use of the buffer must not compromise its intended purpose. Vegetation from buffers can be harvested for bio-energy as long as the harvesting is done in accordance with a plan that does not compromise the water quality and wildlife benefits of the extended buffer.
5. To the extent possible the buffer areas and extended buffer areas will be shaped and vegetated to increase overland flow interception and increase water quality values of the stream or water body.

6. The extension of buffers can incorporate other buffer types (riparian forest) where applicable to meet specific operator management goals.

Operation and Maintenance

1. Once established, buffers must not be mowed, disked, grazed, or otherwise disturbed during the primary wildlife ground nesting period.
2. Buffers will be regularly maintained for the intended purpose through the life of the contract. This includes any removal of vegetation, including grazing.
   a. Grazing is not permitted unless a grazing management plan is in effect.
   b. The grazing management plan must protect the integrity, diversity and function of the riparian area.
3. Buffers will have a wildlife management plan to maintain established plant communities through the life of the contract. The wildlife plan will maintain the plant community and its structural diversity and provide habitat for intended species, remove duff, and control woody vegetation.
4. The grazing management plan and the wildlife management plan shall complement each other.

Adoption Requirements

This enhancement is considered adopted when the buffer has a total width of 60 feet or more for the selected land use.

Documentation Requirements

1. A map showing the location and size of the existing and enhanced buffer.
2. Documentation of the type and rates of vegetation planted in the new buffer areas.

References

Al-Kaisi, M., M. Hanna and M. Licht. 2003. Conservation buffers and water quality. Iowa State University Extension Service Ames, IA. https://store.extension.iastate.edu/ItemDetail.aspx?ProductID=5502

Clark, W.R. and K.F. Reeder. 2005. Continuous Conservation Reserve Program: Factors Influencing the Value of Agricultural Buffers to Wildlife Conservation. Pages 93-113 *in* Fish and wildlife benefits of Farm Bill conservation programs: 2000-2005 update. Haufler, J. B., editor. The Wildlife Society Technical Review 05-2. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012882.pdf

Davros, N. M. and W.L. Hohman. 2006. Breeding bird use of Minnesota Filter Strips in Relation to width, planting mixture, and surrounding land use. NRCS Technical Note. http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18521.wba

Reeder, K.F., D.M. Debinski, and B.J. Danielson. 2006. Factors affecting butterfly use of filter strips in southwestern Minnesota. NRCS Technical Note. http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18503.wba

USDA-NRCS. 2010. Grassland Bird Population Responses to Upland Habitat Buffer Establishment by L. Wes Burger, Jr., Philip J. Barbour, and Mark D. Smith. Wildlife Insight No. 86. Washington, DC. http://www.fwrc.msstate.edu/pubs/NRCSWildlifeInsight86.pdf

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The average width of the existing buffer must be a minimum of 20 feet in order to be eligible to apply this enhancement.

The average total width of the filter strip following installation of the enhancement must be a minimum of 60 feet up to a maximum of 150 feet.

Note: If the existing filter strip is an average width between 20 to 50 feet, the participant must extend the filter strip area so that the total width of the filter strip following installation of the enhancement will be a minimum average of 60 feet. If the existing filter strip is an average width between 50 to 140 feet, the participant must at extend the filter area by a minimum width of 10 feet.

Follow Wisconsin Conservation Practice Standard 393 (Filter Strip) and Wisconsin Agronomy Technical Note 5 and/or 6:

http://efotg.sc.egov.usda.gov/references/public/WI/393.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn5.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/agronomy-tn6.pdf

Primary ground wildlife nesting season is from May 15 through August 1st.

Written documentation shall include a summary of the moisture regime of the site, the method of establishment and the plant species established. Provide an annual summary of site management and weed control activities implemented.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

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Animal Enhancement Activity – ANM33- Riparian buffer, terrestrial and aquatic wildlife habitat

Enhancement Description
This activity consists of managing riparian zones by utilizing select conservation measures (such as re-locating equipment operations, trails, or livestock; establishing diverse native vegetation and controlling invasive species; fencing; and extending the width of the riparian zone to enhance wildlife habitat adjacent to riparian zones of steams, ponds, lakes, or wetlands) to achieve stream side cover and vegetative diversity and structure to improve terrestrial and aquatic wildlife habitat.

Land Use Applicability
Cropland, Pastureland, Rangeland, Forestland

Benefits
Intact riparian zones with a natural and diverse mix of herbaceous and/or woody vegetation of different ages are important landscape features for sustaining fish and wildlife populations. Maintaining vigorous native or natural riparian vegetation of diverse age classes and species will benefit riparian and aquatic fauna by providing: (a) thermal, nesting/fawning, and hiding cover in riparian zones, stream banks, and shorelines; (b) diverse food sources; (c) a steady source of leaves, brush, small woody material for aquatic food webs at and downstream of the site; (d) root systems to enhance bank stability, and (e) vegetative filters for surface water run-off.

Conditions Where Enhancement Applies
This enhancement only applies to **existing** acres of forested riparian zones on crop, pasture, range or forest land uses, *OR* **existing** acres of non-forested riparian zones on crop, pasture, or range land uses.

Criteria
For forested riparian zones:
1. The width of forested riparian zones must be wider than the NRCS State standard width for Riparian Forest Buffers to a maximum width of 150 feet.
2. Manage the riparian area to maintain a diversity of non-invasive tree, shrub, and herbaceous species by techniques such as selective thinning, controlled grazing, prescribed burning, selective use of herbicides, and/or the planting of native species.
3. Retain existing snags or create new snags by girdling live trees of at least one/acre.
4. Manage the riparian vegetation to provide tree canopy shade of the stream and good stream side cover.
5. Do not use heavy equipment such as bull dozers and tractors within the forested riparian zone to implement enhancement activities.

For non-forested riparian zones:

1. On streams, rivers, or floodplains adjacent to pastures, cropland, hayland, or rangeland:
   a. Enhance and maintain a well-vegetated riparian zone that is 2.5 times the width of the stream channel or 35 feet, whichever is greater to a maximum width of 150 feet.
   b. Improve the diversity of native or natural shrub and/or herbaceous plant species suitable for the site and appropriate for the riparian and aquatic species that inhabit the area by planting appropriate species.
   c. Implement at least one of the management actions from #3 below.
2. On ponds, floodplain wetlands, or lakes adjacent to pastures, cropland, hayland or rangeland:
   a. Enhance and maintain a well-vegetated riparian zone that is 35 feet wide or greater.
   b. Improve the diversity of native or natural woody and/or herbaceous plant species suitable for the site and appropriate for the riparian and aquatic species that inhabit the area by planting appropriate species.
   c. Implement at least one of the management actions from #3 below.
3. Additional management actions for enhancing non-wooded riparian zones:
   a. Control invasive species through a grazing management plan or suitable pest management techniques.
   b. Limit livestock use of riparian zone through a prescribed grazing management plan
   c. Control access of people, machinery, and livestock to the riparian zone with fencing.
   d. Provide off-site watering source(s) for livestock.

Adoption Requirements

This enhancement is considered adopted when the riparian zone(s) is within the range of a 150 foot maximum and either the NRCS State standard width for Riparian Forest Buffers, or for non-forested riparian zones, 2.5 times the width of the stream channel or 35 feet, whichever is greater.

Documentation Requirements

1. Delineations on a map or aerial photo indicating the stream channel length where the riparian zone has improved habitat.
2. Provide written documentation, on the delineation map, of all riparian zone activities implemented to meet the requirements of this enhancement.
3. List of maintenance activities carried out on riparian acres as prescribed under the practice used, and its specific fish and wildlife considerations.

References

Clark, W.R. and K.F. Reeder. 2005. Continuous Conservation Reserve Program: Factors Influencing the Value of Agricultural Buffers to Wildlife Conservation. Pages 93-113 *in* Fish and wildlife benefits of Farm Bill conservation programs: 2000-2005 update. Haufler, J. B., editor. The Wildlife Society Technical Review 05-2. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012882.pdf

Duehr, J., M. Siepker, C. Pierce and T.M. Isenhart. 2007. Relation of riparian buffer strips to in-stream habitat, macroinvertebrates and fish in a small Iowa stream. Journal of the Iowa Academy of Science 113:49-55. http://www.cfwru.iastate.edu/unit_scientists/pierce/pierce2007_4.pdf

Fischer, J.R., Quist, M.C., Wigen, S.L., Schaefer, A.J., Stewart, T.W. and Isenhart, T.M. 2009. Assemblage and population-level responses of stream fish to riparian buffers at multiple spatial scales. Transactions of the American Fisheries Society 139:185-200. http://www.tandfonline.com/doi/pdf/10.1577/T09-050.1

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For existing Forested Riparian zones the average width of the existing buffer must be a minimum of 35 feet (Criteria #1).

For non-forested riparian zones, follow Wisconsin Conservation Practice Standard 391 (Riparian Forest Buffer) and Wisconsin Forestry Technical Note 1 and 3 for establishment recommendations:

http://efotg.sc.egov.usda.gov/references/public/WI/391.docx
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/forestry-tn1.pdf
ftp://ftp-fc.sc.egov.usda.gov/WI/technotes/forestry-tn3.pdf

Written documentation shall include a summary of the moisture regime of the site, the method of establishment and the plant species established. Provide an annual summary of site management and weed control activities implemented.

This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.

United States Department of Agriculture
Natural Resources Conservation Service

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Animal Enhancement Activity – ANM34 - Leave standing grain crops un-harvested to benefit wildlife

Enhancement Description
Implement a crop management plan that will allow a portion of grain crops to be left in fields un-harvested to provide food and cover for wildlife during winter months.

Land Use Applicability
Cropland

Benefits
Row crops such as corn and soybeans can be a very important food source for wildlife. Waste grain left after harvest is used throughout the winter by many species, although under ice or snow cover, this grain may be unavailable to wildlife. One remedy is to leave a portion of the crop field un-harvested. Rows of these crops located on the edges of fields are often less productive from a crop production standpoint, but they can be very productive for wildlife. Corn is especially good for this purpose since it is held above winter snow and remains available all winter. Grain crops such as sorghums, sunflower, wheat, and oats also provide a food source for wildlife.

Not using herbicides on the crops that will be left un-harvested will provide additional food and cover benefits. This has the added benefit of reducing the amount of herbicides that are applied to fields. Allowing annual weeds such as foxtail, lamb's quarter, smartweed, and common ragweed to grow among the rows of un-harvested crops will provide an additional food source as well as cover. Weeds in soybeans are particularly important as food and cover for wildlife. Since, compared to corn or small grains, soybeans provide relatively little cover.

Conditions Where Enhancement Applies
This enhancement applies only to cropland where grain crops such as corn, soybean, sorghum, or small grains are grown.

Criteria
1. Leave a minimum of ½ acre of un-harvested, standing grain crops for each 40 acres of cropland. The ½ acre plots shall be located in a single location on the 40 acre unit and additional ½ acre plots shall be located on different 40 acre units, respectively.
2. Locate the un-harvested crops adjacent to permanent cover such as brushy fencerows, field borders, forest land, or wetlands (this does not include newly established trees, windbreaks, or shelterbelts).
3. Leave un-harvested crops standing over winter until it is time to prepare the soil for planting the new crop.

Adoption Requirements

This enhancement is considered adopted when the ratio of un-harvested grain crop to standing crop in the criteria above is left in the selected area.

Documentation Requirements

1. A map showing the location(s) where crops are left un-harvested,
2. The type(s) of crops grown and left un-harvested each year, and
3. The acreage of un-harvested crops.

References

Pitts, D.E. and W.D. McGuire. 2000. Wildlife Management for Missouri Landowners. Missouri Department of Conservation. 3rd ed.

Krapu, G.L., D.A.Brant and R.R.Cox Jr. 2004. Less waste corn, more land in soybeans, and the switch to genetically modified crops: trends with important implications for wildlife management. Wildlife Society Bulletin, 32(1):127-136.

Ohio Division of Wildlife. 2012. Crop Field Management for Wildlife. Publication 391 (R402)

Zoller, C. and D. McMillen. 2004. Establishing Wildlife Food Plots. Ohio State University Extension Fact Sheet. W-19-2004. http://ohioline.osu.edu/w-fact/pdf/0019.pdf

Ohio Division of Wildlife. 2012. Food Plots for Wildlife. http://www.ohiodnr.com/Portals/9/pdf/pub392.pdf

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Harvesting of the standing grain crop (enhancement) is allowable immediately prior to spring tillage or planting operations.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Animal Enhancement Activity – ANM35 – Enhance wildlife habitat on expired grass/legume covered CRP acres or acres with similar perennial vegetated cover managed as hayland

Enhancement Description
Implement a focused habitat management plan for the benefit of selected wildlife species on expired CRP grass/legume covered acres that has CRP conservation cover or acres with similar perennial vegetated cover managed as hayland.

Land Use Applicability
Cropland (hayland)

Benefits
Acres of preexisting conservation cover from expired CRP contracts or acres of similarly vegetated perennial conservation cover implemented as a component of an operation's conservation plan have utilitarian value when managed for both wildlife and forage production. Targeted management of wildlife species on working lands will maintain valuable cover on sensitive lands for continued reductions in soil erosion while providing habitat for recreational and economically important wildlife as well as species of broader conservation interest.

Conditions Where Enhancement Applies
This enhancement only applies to hayland acres in the crop land use where a predominance of perennial grass/legume conservation cover vegetation exists and a hayland management system can be demonstrated or documented.

Criteria
1. Identify the targeted species or suite of species (e.g., Lesser prairie chicken, Greater sage grouse, Bobwhite quail, etc.) described in need of action within the State Wildlife Action Plan or other reputable wildlife conservation plan(s).
2. Defer 66% of the enrolled land use acres from haying during the nesting/fawning season each year. The deferred acres shall rotate annually to ensure the same acreage is not deferred each year or deferred in back to back years.
3. Develop and implement a focused wildlife habitat management plan that identifies the following:
   a) Targeted wildlife species and wildlife management objectives for the hay land,
   b) Critical nesting and fawning period for targeted species,
   c) The location and number of acres to be deferred each year,
   d) A schedule for the year of deferment, and
   e) Any unique management scenarios to promote diverse vegetation composition and structure for targeted wildlife while maintaining plant health.

4. Utilize both of the following techniques (A or B) to protect wildlife during haying activities.
   a) Defer haying. The producer *will apply the following* management actions specifically for improving or protecting grassland functions for the state identified targeted wildlife species.
      i. Do not cut hay on at least 2/3 of the hay acres each year. Uncut blocks must be at least 30 feet wide.
      ii. Hay cutting must be either before and/or after the primary nesting or fawning seasons based on state established dates for the targeted species.
      iii. Increase forage heights after mowing to state specified minimum heights for the targeted species on all hayed acres.
   b) For all haying, the producer will implement *the following* mowing procedures:
      i. A flush bar attachment will be required on the mower
      ii. All mowing will be done during daylight hours
      iii. Haying pattern will be either:
         a. Begin on one end of the field and work back and forth across the field, or
         b. Begin in the center of the field and work outward

Adoption Requirements

The enhancement is considered adopted when each of the criteria above has been fully implemented on the enrolled land use acre.

Documentation Requirements

1. A schedule of when haying activities occurred documenting that haying activities were deferred on a minimum of 60% of the available acreage.
2. A map showing the acreage where these activities are applied and the location of the deferred hay acreage.
3. Option A – A picture showing residual heights of hay after mowing
4. Option B – A picture showing the flush bar attachment on tractor

References

Greene, C. 2007. Reducing Mortality of Grassland Wildlife during Haying and Wheat-Harvesting Operations. Division of Agricultural Sciences and Natural Resources, Oklahoma State University, OSU Extension Wildlife and Forestry, NREM-5006. http://www.okrangelandswest.okstate.edu/files/wildlife%20pdfs/NREM-5006.pdf .

Herkert, J. R., D. W. Sample, and R. E. Warner. 1996. Management of midwestern grassland landscapes for the conservation of migratory birds. Pages 89-116 in F. R. Thompson, III, ed. Management of midwestern landscapes for the conservation of neotropical migratory birds. U.S. For. Serv., Gen. Tech. Rep. NC-187. North Central For. Exp. Sta., St. Paul, MN. http://nrs.fs.fed.us/pubs/gtr/other/gtr-nc187/index.html

Sample, David W., and Michael J. Mossman. 1997. Managing habitat for grassland birds - a guide for Wisconsin. Wisconsin Department of Natural Resources, Madison, WI, PUBL-SS-925-97. 154 pp. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/birds/wiscbird/index.htm (Version 03JUN2002)

USDA-NRCS. 2010. Management Considerations for Grassland Birds in Northeastern Haylands and Pasturelands by Noah Perlut, Allan Strong and Therese Donovan. Wildlife Insight No. 88. Washington, D.C. http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=27175.wba

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Note: It is not a requirement for the land to have previously been enrolled in CRP.

The nesting/fawning season is from May 15th thru August 1st.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Natural Resources Conservation Service 2013 Ranking Period 1

Animal Enhancement Activity – ANM36 – Enhance wildlife habitat on expired tree covered CRP acres or acres with similar woody cover managed as forestland

Enhancement Description
Implement a focused habitat management plan for the benefit of selected wildlife species on expired CRP tree covered acres that has CRP conservation cover or acres with similar woody cover managed as forestland.

Land Use Applicability
Forestland

Benefits
Acres of preexisting conservation cover from expired CRP contracts or acres of similarly vegetated woody conservation cover implemented as a component of an operation's conservation plan have utilitarian value when managed for both wildlife and forest products (e.g., wood, food, fiber). Targeted management of wildlife species on working lands will maintain valuable cover on sensitive lands for continued reductions in soil erosion while providing habitat for recreationally and economically important wildlife as well as species of broader conservation interest.

Conditions Where Enhancement Applies
This enhancement only applies to forest land use acres where a predominance of tree conservation cover from expired CRP contract(s) exists or where woody cover implemented as a component of an operation's conservation plan exists, and a management system can be demonstrated or documented.

Criteria
1. Identify species or suite of species (e.g., Bobwhite quail, New England cottontail, Golden-winged warbler, Gopher tortoise, wild turkey) described in need of action within State Wildlife Action Plans or other reputable wildlife conservation plans.
2. Fire tolerant sites
   a) Develop and implement a focused wildlife habitat management plan that identifies the following:
      i. As applicable, the critical nesting and fawning periods for targeted wildlife,
      ii. The number of snags expected per acre (max 4) where the snags are in wood decay classes 2-5 (see Figure 1 below) and are 10 inches dbh (diameter at breast height) or greater, and

iii. Method to increase tree species diversity and greater structural (vertical and horizontal) diversity.

b) Develop and implement a prescribed burning plan written and carried out by a certified prescribed burner.

c) Develop and implement a tree release plan with the following components:

i. The number of trees to be retained based upon site productivity and spacing guide developed within each state for the existing tree species as suited for the targeted wildlife species or suite of species,
Note: If more than one tree species are present, base spacing upon the most abundant tree species.

ii. The landowner's objectives for the forest,

iii. Where possible, retain and promote a mixture of tree species to diversify the vertical and horizontal structure of the stand and reduce the potential of an epidemic event (e.g. insect outbreak) that may kill some/all trees,

iv. Impact of crowns touching the crop tree's crown on three or four sides,

v. Method for handling the marked trees (i.e., cut for harvest or killed using approved methods within in the state), and

vi. Where pockets of dead trees occur, ensure the Criteria # 2(a)(ii) is met.

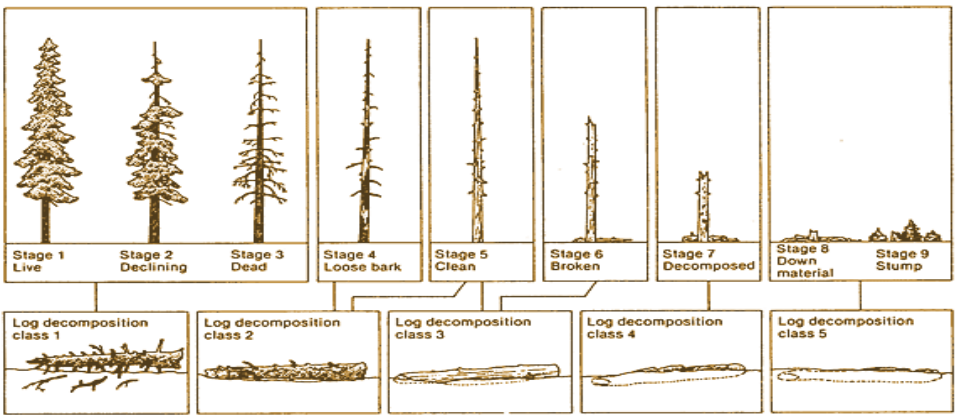

Figure 1. Snag and down wood decay classification system (Maser et al. 1979)

3. Non-Fire tolerant sites

a) Develop and implement a focused wildlife habitat management plan that identifies the following:

i. As applicable, the critical nesting and fawning periods for targeted wildlife,

ii. The number of snags expected per acre (max 4) where the snags are in wood decay classes 2-5 (see Figure 1 above) and are 10 inches dbh (diameter at breast height) or greater, and

iii. Method to increase tree species diversity and greater structural (vertical and horizontal) diversity.

b) Develop and implement a tree release plan with the following components:

i. Identifies the number of trees to be retained (e.g., between 25-35 trees per acre) for the targeted wildlife species or suite of species,
ii. Identifies targeted tree species as determined by NRCS state office (e.g. white and red oak or other species that have a high market value and provide wildlife benefits),
iii. The landowner's objectives for the forest,
iv. The impact of crowns touching the crop tree's crown on three or four sides,
v. Method for handling the marked trees (i.e., cut for harvest or killed using approved methods within in the state), and

Adoption Requirements
The enhancement is considered adopted when Criteria #1 plus either 2 or 3 above has been fully implemented.

Documentation Requirements
1. The average number of snags per acre,
2. Delineations on a map or aerial photo of the treated (released and/or burned) areas,
3. Copy of the tree release plan,
4. Representative digital images/photos of the area showing before and after treatment conditions,
5. A copy of the written burn plan (if applicable), and
6. Description of post-burn conditions with representative digital images of the treated area

References
Maser, C., R.G. Anderson, K. Cromack, Jr., J.T. Williams, and R.E. Martin. 1979. Dead and down woody material. In: Wildlife habitats in managed forests of the Blue Mountains of Oregon and Washington, USDA Handbook No. 553. pp 78-95.

Twedt, D.J. 2012. Wildlife Forestry, Global Perspectives on Sustainable Forest Management, Clement A. Okia (Ed.), ISBN: 978-953-51-0569-5, InTech, Available from: http://www.intechopen.com/books/global-perspectives-on-sustainable-forest-management/wildlife-forestry

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Note: It is not a requirement for the land to have previously been enrolled in CRP; however the woody cover would have to have been implemented (i.e. planted/established) as a component of an operation's conservation plan, and a management system can be demonstrated or documented.

Hardwood species best suited for high market value and provide wildlife benefits include: American Basswood, American Beech, Black Ash, Black Cherry, Black Oak, Black Walnut, Bur Oak, Butternut, Green Ash, Hackberry, Northern Red Oak, Red Maple, Shagbark Hickory, Silver Maple, Sugar Maple, Swamp White Oak, White Oak, White Ash.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

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Natural Resources Conservation Service 2013 Ranking Period 1

Animal Enhancement Activity – ANM37 – Prescriptive grazing management system for grazed lands (includes expired CRP grass/legume or tree covered acres converted to grazed lands)

Enhancement Description
Implement a prescriptive grazing management system for all grazed lands and for all eligible land uses in the operation. This includes expired CRP grass/legume or tree covered acres that are now converted to a grazing system. Selection of this enhancement requires the activity to be planned concurrently on all eligible land use acres.

Land Use Applicability
Cropland, Pastureland, Rangeland, Forestland

Benefits
Utilizing a prescriptive grazing management system on all grazed acres regardless of the land use (including expired CRP grass/legume or tree conservation covered acres) will maintain sensitive lands in a valuable soil cover and provide needed wildlife habitat. With perpetual ground cover comes a continued reduction in soil erosion. Managing the forages on the entire operation will provide landscape level enhanced livestock production and critical wildlife habitat for species of interest.

Conditions Where Enhancement Applies
This enhancement applies to all grazed acres designed as crop, pasture, range or forest land use acres (including expired CRP grass/legume or tree covered acres that are now converted to a grazing system) on the entire operation.

Criteria
1. Develop and implement a grazing management plan for the acres where this enhancement applies that defers grazing on 20% of the eligible acres each year. The deferral period for introduced forage species is 90 days of the growing season while the deferral period for native forages is the full grazing season. In riparian buffer settings, flash grazing is allowed; however, the livestock must be excluded for the remainder of the time.
2. Incorporate into the written grazing management plan components that identify the following:
   a. Wildlife management objectives for grazing land,
   b. Identified targeted species or suite of species (e.g., Lesser prairie chicken, Greater sage grouse, Bobwhite quail, etc.) described in need of action within the State Wildlife Action Plan or other reputable wildlife conservation plan(s).

c. Critical nesting and fawning period for targeted species,
d. Stocking rates that will allow proper forage utilization and plant health while maintaining proper plant heights for targeted wildlife species' food and shelter,
e. The recommended minimum grazing stop and start heights,
f. The location and number of acres to be deferred each year (Note: the location of the required amount of deferred acres shall be different each year), and
g. A schedule for the year of deferment.

3. Complete both sub-criteria list below on **ALL** open trough watering facilities on the acres where this enhancement applies. The escape structures must met the following requirements:
   a. Wildlife escape structures for watering facilities must meet the following requirements:
      i. Extend into the water and meet the inside wall of the watering facility,
      ii. Reach to the bottom of the watering facility or to the depth of the lowest possible water level,
      iii. Be firmly secured to the rim of the watering facility so as not to be displaced by livestock
      iv. Be built of graspable, long-lasting materials, such as painted or coated metal grating, roughened fiberglass, concrete, rock and mortar, or high-strength plastic composites,
      v. Have a slope no steeper than 45 degrees,
      vi. Be located to cause minimal interference with livestock drinking, and
      vii. One structure for every 30 linear feet of watering facility edge.
   b. Obstruction removal above the watering facility's water surface.
      i. Fencing material such as wire strands and boards shall not be within a 36" zone above the highest planned water surface (e.g., if a trough is bisected by fencing to provide water between two pastures, remove the lower strands of wires; or if wood bracing is present across the top of the trough, re-brace the tank to create an unobstructed space above the water's surface), or
      ii. Rearrange the fence line to create an adjustable pivot point thereby removing any obstructions above the water surface while allowing full access to a single trough from two different grazing areas.
4. Modify 50% of **ALL** fencing on the acres where this enhancement applies to be wildlife friendly. The fence modification implemented shall be for the protection and/or benefit of the local species in the area and shall be focused along known wildlife travel corridors. The modified fence should improve passage by either jumping or crawling and be highly visible to prevent collision, entanglement and fatalities.
   a. Improve Passage
      Retrofit Existing Fence- openings and crossing to allow wildlife access to food, water and shelter must be created in existing fence. Location and number of openings required will meet NRCS state standards. Methods used included but are not limited to:
      1) Lay-down fence
      2) Seasonal electric fence
      3) Adjustable wire fence
      4) Underpass fence with raised wire
      5) Pole top fence

b. Improve Visibility
   1) Increase visibility of ALL fencing using flagging, vinyl markers, PVC pipe or other similar materials that will meet NRCS state standards for spacing, interval and size. A good example of improving visibility for prairie grouse (e.g. prairie chickens, sage grouse, etc.) in rangeland can be found at: www.suttoncenter.org/pages/fence_marking_instructions
   2) If no state criteria exist, follow criteria in the Montana Fish, Wildlife & Parks publication "A Landowner's Guide to Wildlife Friendly Fences." If a locally applicable publication exists, the local publication should be used.

Note: If no state criteria or local publications exist, the NRCS State Resource Conservation must agree to the proposed fence modification specifications offered.

Additional criteria for silvopasture

1. Inventory the habitat condition of the silvopasture, the operation, and adjoining farms to determine habitat needs for the identified targeted wildlife.
2. Use one or more of the following methods to improve habitat for the identified targeted species.
   a. Establish additional understory vegetation (e.g., native grass, forbs and shrubs) that will improve habitat conditions for the identified targeted species. Note: introduced species such as Bahiagrass, hybrid Bermudagrass, fescue, etc. shall not be seeded for this purpose.
   b. Establish clusters of other tree species if needed as a food source (e.g., oaks for mast).
   c. Manage tree canopy to achieve the desired understory plant community.
   d. Leave dead or dying trees as snags if cavity nesting wildlife is targeted. Trees left for this purpose must be 10 inch or greater dbh (diameter at breast height). In determining which snags to leave, consider fence maintenance and animal safety.
   e. Remove trees or invasive plants that do not provide the desired habitat.
   f. Thin less desirable trees to: 1) encourage the growth of trees, 2) establish additional understory vegetation, and 3) provide the desired wildlife habitat for the target species.

Adoption Requirements

The enhancement is considered adopted when the focused management plan has been fully implemented.

Documentation Requirements

1. A copy of the written grazing management plan.
2. The schedule of when grazing activities occurred documenting that grazing activities were deferred to meet the 20% requirement.
3. A map showing the acreage where these grazing activities were applied.
4. A photograph of each watering facility with a properly installed escape/access device.
5. A map showing were wildlife friendly fence is located with the type (s) of wildlife friendly fencing identified.
6. Photograph of each wildlife friendly fencing method used.

References

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Nistler, C. M., J. Boren, and D. Rollins. 2006. Proceedings – Symposia: Prescribed Livestock Grazing to Enhance Wildlife Habitat. 112 pages. Society for Range Management.

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Note: It is not a requirement for the land to have previously been enrolled in CRP.

This is a 'System' type enhancement. This enhancement shall be performed on the areas (i.e. fields) identified in the Conservation Stewardship Plan each year when appropriate to do so.

United States Department of Agriculture
Natural Resources Conservation Service

2013 Ranking Period 1

Animal Enhancement Activity – ANM38 – Retrofit watering facility for wildlife escape and to enhance access for bats and bird species

Enhancement Description
Retrofit all existing watering facilities (troughs, tanks, etc.) to allow for the escape of wildlife that become trapped while trying to drink and to remove obstructions above the watering facility such as boards and wires. Selection of this enhancement requires the activity to be planned concurrently on all eligible land use acres.

Land Use Applicability
Cropland, Pastureland, Rangeland, Forestland

Benefits
This activity provides wildlife with a definitive means of escape while utilizing a livestock water facility as a water source. Concurrently, livestock performance is improved by supplying a cleaner water supply. Dead wildlife in water facilities impair the water quality which results in decreased water consumption by livestock and reduced rates of weight gain. In addition, obstructions (e.g., boards and wires) located above the watering facility reduces the availability of water to wildlife that need open sources of water in order for them to swoop and drink while in flight. Removal of these obstructions will make many previously unavailable water sources available while reducing the injury or death potential to bats and birds as they fly in to scoop water from the watering facility. This enhancement will eliminate this threat.

Conditions Where Enhancement Applies
This enhancement applies to **all** open watering facilities in the crop, pasture, range, or forest land use area. This enhancement does not apply to earth stock ponds, ball type, energy-free waters or similar.

Criteria
This enhancement applies to ALL watering facilities located in the land use acres. Both criteria, A and B below must be met.
A. Wildlife escape structures for watering facilities must meet the following requirements:

1. Extend into the water and meet the inside wall of the watering facility,
2. Reach to the bottom of the watering facility or to the depth of the lowest possible water level,
3. Be firmly secured to the rim of the watering facility so as not to be displaced by livestock
4. Be built of graspable, long-lasting materials, such as painted or coated metal grating, roughened fiberglass, concrete, rock and mortar, or high-strength plastic composites,
5. Have a slope no steeper than 45 degrees,
6. Be located to cause minimal interference with livestock drinking, and
7. One structure for every 30 linear feet of watering facility edge.

B. Obstruction removal above the watering facility's water surface.
   1. Fencing material such as wire strands and boards shall not be within a 36" zone above the highest planned water surface (e.g., if a trough is bisected by fencing to provide water between two pastures, remove the lower strands of wires; or if wood bracing is present across the top of the trough, re-brace the tank to create an unobstructed space above the water's surface), or
   2. Rearrange the fence line to create an adjustable pivot point thereby removing any obstructions above the water surface while allowing full access to a single trough from two different grazing areas.

Adoption Requirements

This enhancement is considered adopted when the watering facility has the wildlife escape structure installed and obstructions above the water surface, if present, meet either Criteria B(1) or B(2).

Documentation Requirements

Photograph showing a properly installed escape device for each watering facility. The photograph must also show that there are no obstructions suspended within 36" above the watering facility's water surface.

References

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This is an 'Actual' type enhancement. Actual type enhancements must be installed in the year(s) scheduled in the contract and maintained for the duration of the contract.