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
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United States Department of Agriculture
Natural Resources Conservation Service

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Additional guidance for shallow water habitat:

Where impoundments are developed, shorelines with irregular shapes and varying side slopes from 9:1 to 20:1 along water surface margins may increase habitat diversity. Consideration should be given to the potential affect on downstream flows or aquifers that would impact other water uses or users, and also to the potential for an increase in disease vectors such as mosquitoes. Planning the shallow water habitat with vegetated buffers on surrounding uplands may improve water quality in the shallow water area.

Waterfowl Habitat. Areas planned to provide waterfowl feeding and resting habitat should be designed to facilitate gradual flooding of areas containing food plants to an average depth of 6 to 10 inches. Areas containing food plants should be flooded during seasonal periods of waterfowl use.

Shorebird Habitat. Areas planned to provide shorebird habitat should have exposed mudflats and areas with 1 to 4 inches of water during seasonal periods of shorebird use.

Amphibian Habitat. Inundation should be planned to last throughout the local breeding period of at least one endemic amphibian species. Surrounding upland habitat should be of sufficient quality and quantity to support the complete life-cycle requirements of at least one endemic amphibian species. Structures should be designed to prevent fish access to areas planned for amphibian breeding habitat.

Off-stream Stream Fish Habitat. Water control structures should be designed to prevent native fish from being trapped as water recedes.

This activity may NOT be used with the following enhancements: AIR08, ANM31, ENR01, ENR12, PLT06, PLT15, SOE05, SQL01, SQL04, SQL05, SQL09, SQL10, SQL12, WQL05, WQL09, WQL10, WQL27, CCR99

Potential Duplicate Practices:
658 – Wetland Creation, 644 – Wetland Wildlife Habitat Management, 646 – Shallow Water Development and Management, 638 – Water and Sediment Control Structure , 356 – Dike; 587 – Structure for Water Control