



Shallow Water Management for Wildlife

PURPOSE:

Managing for shallow water on moist soil areas and agricultural fields can provide habitat for migratory waterfowl and shorebird resting and feeding. Proper management can increase and maintain desirable foods and cover for migratory birds and other species of wildlife. Shallow water areas are typically flooded during the fall and winter and then drained or dried during the spring or summer to promote the growth of desirable native food plants or to plant agricultural crops. After the seed-producing plants have matured or after crop harvest, the area is flooded with an average depth of 6 inches of water. The flooded food plants provide excellent resting and feeding areas for "puddle ducks" that "tip" to feed, like mallards, shovelers, pintails, and teal. The benefits of shallow water during the fall migration are obvious. However, such habitat may be even more valuable during the spring migration when birds are headed north for nesting and are in need of vast quantities of insects that provide protein for the proper development of eggs.



VEGETATION MANAGEMENT:

There are three basic ways to provide quality wildlife foods in shallow water areas. These include 1) natural moist-soil plants, 2) planting a crop for wildlife and 3) managing crop residue. Shallow water areas may be managed using different methods in different years. In some cases, altering the type of management can facilitate maintenance and increase productivity and diversity of the site.

NATURAL MOIST SOIL PLANT MANAGEMENT:

- Drawdown (dewatering) of the area is necessary for moist-soil plant production to provide nutritious food for waterfowl. Slow drawdowns (2 to 3 weeks averaging an inch or less of water depth removed per day) usually are more desirable for plant establishment and wildlife use.
- Early drawdowns are defined as occurring within the first 45 days of the growing season, and generally favor smartweeds and sedges. For southern Kansas early drawdowns take place April 1—May 15, and northern Kansas April 15—May 30.
- Midseason drawdowns take place during the next 45 days of the season, and typically favor millets (barnyard grass), crabgrass and some beggar ticks. In southern Kansas, the standard timing for these drawdowns is May 15—July 1, and May 30—July 15 for northern Kansas.
- Drawdowns completed after the first 90 days of the growing season (July 1) are considered late. Vegetation response is usually dominated by beggar ticks, sprangletop, cocklebur and crabgrass. *In general, early drawdowns and midseason drawdowns result in the greatest quantity of desirable seeds produced.*
- The timing and extent of the drawdown should be varied from year to year to maintain productivity and a diverse plant community. Consider the reliability of fall water for re-flooding and the importance of having at least some surface water during early migration when determining the extent of the drawdown.
- Managed shallow water areas can be a very important source of food for shorebirds during their spring (and fall) migration. Shorebirds, like plovers and sandpipers, feed on mud flats and in very shallow water.
- Control methods for undesirable species vary. If cocklebur volunteers, it can be controlled by a brief period of re-flooding. Many other undesirable species, including tree seedlings can be controlled by combinations of mowing, burning or disking during the growing season, then flooding until the following spring. Herbicides may be an effective tool. Spot applications or treating small areas will limit the negative impacts on desirable annual plants.

- It is best to dewater and disk the site every three to four years, or whenever perennial vegetation begins to dominate the wetland. Annual species have the highest seed production. Disking will maintain the site in early successional species (mostly annuals), and aid in the control of unwanted species.
- Flood wetlands slowly in the fall. Ideally, this is done to coincide with the arrival of fall migrant waterfowl. Flooding the site slowly (two-three weeks) allows new areas of food to become available each day at the preferred water depth as the water is rising. Food resources covered by more than six inches of water are generally unavailable to dabbling ducks.

PLANTING CROPS FOR WILDLIFE:

Consider planting annual food plants in areas where plant succession has been set back by disking, or in areas with insufficient natural food production. Draw water off these areas in late spring and plant species such as brown top millet, buckwheat, Japanese millet, grain sorghum, or corn. Fertilize for good production. Use of herbicides is generally not required since annual weeds produce useable wildlife food. After the crop has matured in late summer or fall, flood the site slowly to coincide with the arrival of fall migrant waterfowl.

MANAGING CROP RESIDUE:

To optimize waterfowl use of row crops, flood the field slowly after harvest to coincide with the arrival of fall migrants. Waterfowl will utilize crop residue and waste grain after crops are harvested. Tillage following harvest is strongly discouraged. This practice may be enhanced by the use of low level dikes around the field along with a water control structure to allow flooding the field to a depth of 6-12" after harvest. The water control structure also aids in allowing water to leave the field after rain events before crop harvest.

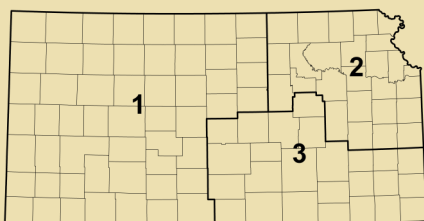
MAINTENANCE:

- Dikes on non-cropped areas should be mowed annually to maintain permanent grass cover. Inspect for burrowing activity from muskrats or beaver and repair as necessary.
- Water control structures, flap gates and pipes should be inspected after each major storm or flooding event, or at least annually, to ensure they are functioning properly. Remove debris from around inlet and repair any damage.
- Ensure that the emergency spillway is functioning as planned. Remove debris buildup from the spillway, maintain permanent herbaceous cover, and repair any damage immediately.
- If excessive erosion occurs (by flooding/scouring or wildlife damage), repair levee/dikes/ditch plugs to original planned elevations and slopes.
- Exclude livestock from wetlands, especially levees and around water control structures.
- Use herbicides to suppress invasive vegetation and to control noxious weeds.

Some key points to keep in mind when managing shallow water habitats include:

- Dabbling ducks prefer feeding in water that is 10" deep and shallower
- Most shorebirds feed in water that is less than 4" deep
- Moist soil plant management provides the most nutritious and cost effective habitat
- Early to mid season drawdowns usually produce the highest density of desirable seeds
- Disturbance of the wetland by disking is usually needed every 3-4 years
- Planted crops may be useful in controlling undesirable plants and used to set back perennial plants
- Slow drawdowns and slow flooding of the site produces the best results
- Use a variety of management methods on a site over a period of years

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