

As water levels recede during summer, mud flats occur on wetlands associated with river systems. Moist-soil plants that germinate on these exposed soils provide the primary source of natural food for waterfowl migrating through Illinois. Water levels must remain low for at least 70 days if moist-soil plants are to mature and produce seeds and tubers. The amount of moist-soil habitat varies yearly due to annual changes in water levels. Bellrose et al. (1979) determined that as much as 30,800 acres of moist-soil plants potentially could develop in the Illinois River valley, but fluctuating water levels usually limit development to 2,100 to 14,000 acres.

Moist-soil impoundments provide a more dependable source of waterfowl food plants than the plants that grow naturally on exposed mud flats because summer flooding can be prevented in areas within dikes or low levees. The primary objective of moist-soil management is to lower water levels during late spring and summer and expose mud flats on which moist-soil plants germinate and produce seeds, tubers, and foliage. After plants become established, the impoundments are reflooded to make food and cover available to waterfowl and other wetland wildlife. By manipulating the frequency, timing, length, and depth of water levels, the necessary habitat resources for waterfowl can be produced at times that coincide with migration and other critical events in their annual cycle.

Greentree reservoirs are shallow impoundments where living hardwoods are flooded to provide feeding and resting areas for waterfowl, primarily Mallards and Wood Ducks (Fredrickson 1991). Areas of floodplain forest with mast-bearing oaks are appropriate sites for greentree reservoir development. Few greentree reservoirs have been developed (in Illinois) because the existing floodplain forest is composed primarily of an elm-ash-silver maple association. Consequently the potential for acorn production is limited in most bottomland areas. One exception occurs on a portion of the Shawnee National Forest in southern Illinois where pin oaks, cherry-bark oaks and swamp white oaks make up most of the bottomland hardwoods. The United States Forest Service began developing a greentree reservoir, Oakwood Bottoms, on this site in the 1960s. By 1976, twenty-two separate compartments within Oakwood Bottoms totaling over 3,100 acres has been completed (Fredrickson and Laubhan 1990). Although this area is managed primarily as habitat for migrating and wintering waterfowl, other important objectives include providing public hunting opportunities, habitat for wildlife other than

waterfowl, and high-quality oaks for commercial use.

The management of waterfowl and their habitats has evolved throughout the past century. The acquisition of strategically located public refuges has complemented those established by private clubs. We have increased our knowledge about the nutritional needs of various species of waterfowl. We may never know as much as we wish about some facets of waterfowl biology or management, and there may be aspects of waterfowl behavior that we may not fully understand in our lifetimes. But there are certain qualities of human behavior and temperament that will encourage us to continue to do whatever we can to enhance and nurture our waterfowl and wetland resources; those attributes are appreciation, concern, and desire. As long as we demonstrate and employ these characteristics, waterfowl populations and their habitats will benefit.

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