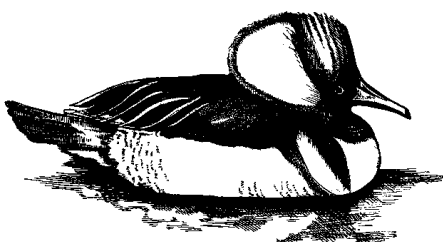


## WATERFOWL



With its vast water resources, Michigan is a key state for protecting and managing North American waterfowl populations. Many species of ducks, geese, and swans pause to rest and feed here as they migrate further north in spring and south in fall. Mallards, wood ducks, blue-winged teal, and Canada geese are the most common summer residents and nest in all 83 counties. Hooded mergansers and black ducks are also widespread but less common. Ring-necked ducks, common golden-eye, and common and red-breasted mergansers generally nest only in the northern two-thirds of the state. Michigan nesting waterfowl that are the least common include green-winged teal, northern pintails, northern shovelers, gadwalls, American wigeon, canvasbacks, redheads, and ruddy ducks. Through reintroduction efforts, the native trumpeter swan, our largest waterfowl, is once again nesting in Michigan.

The long-term loss and degradation of wetlands and associated uplands has resulted in a national decline in several duck species, and other wildlife also dependent on these habitats. In Michigan an estimated 35 percent of



hooded merganser

the original 11 million acres of wetlands have been drained or filled, mostly for farming or building purposes. Wetland losses continue with an ever-spreading urban population. With much of the state's land base in private ownership, especially in southern Michigan, opportunities to protect and restore waterfowl habitat rest with private landowners. Landowners who protect or restore both wetlands and associated upland cover are likely to attract waterfowl, as well as small mammals, songbirds, reptiles, and amphibians.

Wetlands and associated uplands that are present on your property will determine what species of waterfowl will be attracted. Each species has certain needs that are linked to different kinds of wetlands and uplands. For example, mallards and blue-winged teals, nest in upland, grass-dominated habitats surrounding wetlands. They prefer uplands consisting of a diverse mixture of grasses and wetlands that have a variety of water depths at all times of the year. On the other hand, wood ducks, black ducks, and hooded mergansers select wetlands associated with wooded uplands.

### Annual Cycles and Seasonal Needs

Waterfowl experience an annual cycle that includes several stages, generally dependent on the season. In the winter they bond with a mate, and in the spring they migrate, breed, nest, and rear their brood. In the summer molting occurs, and in the fall they migrate again.



black duck

As a result of this cycle, waterfowl depend on a mix of wetlands and associated uplands throughout the year as their cover and food needs differ. Cover needs vary as waterfowl breed, nest, and rear broods. Food needs also vary with season. At times, waterfowl may feed extensively on aquatic insects, but at other times their diet may shift to seeds and other plant materials. Egg production, molting, and migration all require high-energy foods, while brood rearing requires an area with an abundance of insects. Because waterfowl have such varying needs, a diversity of wetlands with a mix of adjacent upland nesting cover is most beneficial.

Available food attracts migrating waterfowl to stop and feed in Michigan each spring. Marshes, shallow lakes, ponds, river bays, beaver floodings, and seasonal wetlands such as flooded pastures and seasonal pools are all important because they usually contain food. The seeds of smartweed, wild millet, curly dock, and beggars tick can be found at these locations. These plants and their decaying material from the previous year attract snails, beetles, midges, caddisflies, fairy shrimp, water fleas, and scuds which are high-energy

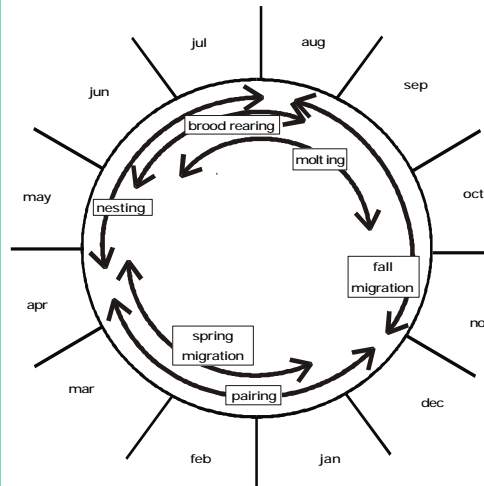
foods for migration.

Spring migrating waterfowl eat these invertebrates in large quantities because they are rich in protein and calcium. Waterfowl need a lot of protein and lipids to replenish fat reserves, especially in spring when they are flying long distances, and to help produce eggs. Seasonally flooded wetlands are important because they warm faster than deeper, permanent wetlands and thus produce preferred food earlier.

After waterfowl feed in the spring, some stay for the summer as residents. These birds use the wetland area to rest, loaf, preen themselves, pair bond, and breed. Pairs that stay in the wetland complex often nest in surrounding uplands, then lead their offspring to water where the young also feed primarily on protein-rich invertebrates.

Throughout the summer and fall waterfowl acquire as much protein as possible. Molting, the three to five week long summer period when the adult birds shed their wing feathers and grow new ones, requires a large amount of protein intake. Likewise, in the fall resident birds put on as much fat as possible to prepare for migration, and those waterfowl that nested farther north also rely once more on local wetlands as a crucial stopover.

Waterfowl foods do not only vary seasonally, but they also vary substantially among species. For example, wood duck females eat mostly acorns and other plant food in fall and winter, then rely more and more on invertebrates during the nesting season, with plant life furnishing about 20% percent of their needs during the egg-laying period. By contrast, gadwalls use half plant food and half animal food in both spring and summer. Canada geese are grazers and will feed mainly on vegetation.



Note: Males tend to be earlier than females in all stages as they do not have to recover from breeding or brood rearing.

### annual cycle

As you can see, a variety of wetlands and uplands are needed to meet the seasonal needs of waterfowl. A wetland complex with different types of habitat is most desirable because it will provide different food and cover at different times of the year. Wetlands that feature secure cover and food production for brood rearing are critical for the welfare of waterfowl. However, each species has different specific needs.

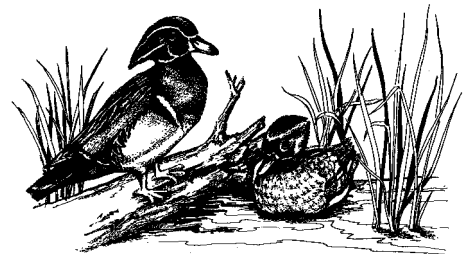
## Life Cycles of Three Common Waterfowl

The following brief explanations illustrate the special needs that different species of waterfowl require:

**Wood ducks** arrive in Michigan from southern wintering areas typically in March. Because females lack the fat and protein reserves needed for egg production, they disperse into forested and stream bottom areas where they feed heavily on acorns and aquatic seeds. Water depths averaging 8 inches are ideal for foraging wood ducks, and loafing and roosting sites can be maintained where water is deeper. During this time, nesting pairs also begin searching for suitable nesting

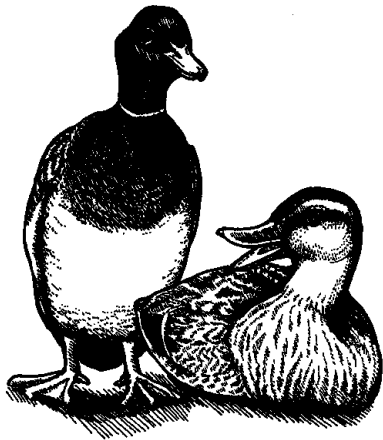
cavities mostly along forested waterways, although they may select trees a mile or more from water. Trees with diameters at least 14 inches at chest height produce most of the suitable nesting cavities. Average clutch size is 12 eggs, and incubation takes about 28 days. Hens and their broods are highly mobile from nesting sites to wetlands, occasionally moving up to 2-1/2 miles. Shallow, flooded habitat with good overstory cover are important brood rearing areas. Button bush, willow, and emergent vegetation such as cattails can provide this cover.

Breeding pairs of **blue-winged teal** prefer seasonally or temporarily flooded, shallow wetlands. They usually feed in those portions with less than 8 inches of water. In dry years, gently sloping basins that provide shallow water all summer are important. The hen typically nests in upland grasses or wet meadow sedges near such water, although nests may be located as far away as one mile. Areas with short grasses have the highest nesting success. Clutch size averages 10 eggs, which the hen incubates for 23 days. Semi-permanent wetlands located near nesting areas are important for brood rearing. Livestock ponds with well-developed emergent vegetation provide locally important brood habitat. Seasonal wetlands also provide excellent brood habitat, but because blue-winged teal are relatively late nesters, seasonal wetlands are often unavailable when ducklings leave nests.



wood duck

The breeding range of **mallards** is the most extensive of any duck species in North America. Like other ducks, female mallards are influenced by their homing instinct when returning to the breeding grounds. Because hens and drakes form bond pairs during fall and on the wintering grounds, the drakes follow their mates back to the hen's breeding site. In the spring, females



mallard

seek midges, crustaceans, mollusks, and other aquatic invertebrates rich in nutrients needed for egg production. Hens normally like grassy areas, including hayfields, in which to lay their eggs. Nest sites may be up to a mile away from wetlands, but are typically within 500 ft. The hen lays one egg each day for 9 or 10 days until the clutch is complete. After the last egg is laid, the hen will incubate her clutch for about 25 days. After hatching, the hen leads her ducklings to water. Mosquitoes, dragonflies and other insect larvae are among the types of protein-rich foods that the ducklings eat. The young are able to fly in 50 to 60 days. Fall and winter foods of mallards consist mostly of high-energy seeds from aquatic or emergent wetland plants and farm crops. Native foods include seeds, leaves and roots from sedges, millet, smartweed, coon-tail, duck potato, duckweed, and mast from nut-producing trees. Cultivated grains include corn, sorghum, wheat, barley, and oats.

## Management Considerations

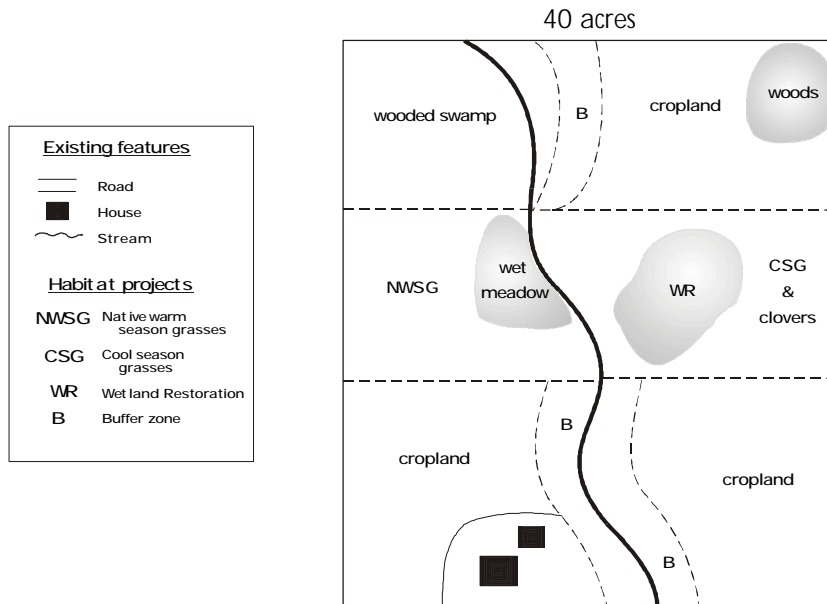
Landowners can adopt many practices to increase the number and kinds of waterfowl on their lands. Perhaps the most important consideration is to protect all wetlands on the property by maintaining them in their natural state. Temporary shallow pools and seasonally flooded woodlands or fields are just as important as permanent wetlands such as swamps, marshes, ponds, and streams.

The following are options to consider when managing for waterfowl:

- Restore any drained or degraded wetland basins you have identified. Potential sites may be located in former farmland or marginal farmland still in production. See the **Wetland Restoration** chapter for details.
- Protect, maintain, or restore upland habitats around the wetland. If a buffer at least 100 feet wide does not exist, create one by planting grass, which many duck species will use for nesting. A grassland that is three to six times larger than the wetland itself dramatically improves reproduction success by reducing the impact of predators.
- Plant upland nesting areas and buffer zones with a diverse mixture of native warm season grasses and forbs, such as big blue stem, little bluestem, Indiangrass, bush clover, leadplant, and wildflowers. Cool season mixes of orchard grass, timothy, and various clovers (ladino, white, and red), and alfalfa can also be used. Fields of native warm season grasses and forbs next to fields of cool season grasses make a good nesting complex. For more infor-

mation refer to the **Grassland Management** section.

- Mow grasses between July 15 and August 30 to minimize nest disturbance, and to allow time for grasses to grow before the next nesting season.
- Manage for large, overly mature trees along waterways and within one mile of good brood wetlands. Trees such as silver maple, sugar maple, basswood, and aspen as provide potential cavity sites for nesting wood ducks, hooded mergansers, and common goldeneyes. Also, leave mast-producing trees such as oak, maple, and elm to provide food for wood ducks, mallards, and black ducks.
- If you wish to encourage geese, who are grazers, provide mowed grass areas next to wetlands. In a similar manner, to discourage geese, do not mow next to wetlands, and promote tall grasses and possibly shrubs.
- Provide supplemental nesting structures if nesting cover (tree cavities, for example) is limited within one-half mile of brood wetlands. Information on wood duck boxes and mallard nest baskets is provided in the chapter on **Homes for Wildlife** in the Backyard management section.
- If you are managing a marsh, establish a 50:50 mix of open water and wetland vegetation, as this is preferred by many species. If cattails are invading, cut them just above the ice line during the winter. Allow them to lie on the ice until spring thaw as it can help boost the growth of invertebrates, providing more food for waterfowl. Burn a portion of the marsh every three years, or a portion of the marsh



This map is an example that demonstrates the many management options discussed throughout this chapter. The option(s) you choose should depend not only on your goals, but the location, condition, and present use of your land.

each year, in late winter/early spring to help native vegetation regenerate. See the chapter on **Prescribed Burning** for details. Remember, that these types of habitat changes can reduce winter escape cover for other wildlife such as pheasants and other grassland birds.

- Monitor your wetlands for invasive, aggressive plants such as purple loosestrife, glossy buckthorn, autumn olive, and phragmites, and try to control these exotics before they become an overwhelming problem. Purple loosestrife can be cut in winter and the resulting new growth sprayed with Rodeo herbicide in June before flowering time. Be sure to follow label directions.

- If your wetland has a water-con

trol device, you can reduce undesirable plants through flooding, or allow development of smartweed and other valuable plants through drawdowns. Each wetland, however, is unique. A wildlife biologist or wetlands specialist can explain the advantages and disadvantages to manipulating water levels as well as certain other practices on your land.

- Because invertebrates are critical food items, avoid using insecticides in and around the wetland, including the upland buffer area. But when necessary, use insecticides that have little or no impact on both aquatic invertebrates and vertebrates. Landowners should also prevent lawn and farm chemicals from reaching the wetland.

- Minimize disturbance to your wet

lands. Disturbance by humans, free-roaming pets, and natural predators can cause waterfowl to expend critical energy reserves, prompting them to forego breeding or to abandon nests. In addition to mortality, other impacts may include reduced hatching success or reduced duckling survival. Enjoy waterfowl from a distance by using binoculars or spotting scopes, or build viewing blinds before nesting begins.

In summary, much can be done to manage your wetland for waterfowl. Providing a diversity of wetland types, with adequate adjacent cover is the best way to attract waterfowl. Wetlands differ according to location, topography, water level, water quality, and the kinds and numbers of plants and animals that use them seasonally. Those wetland complexes that are most diverse, in terms of water levels, cover types, and surrounding uplands, are the most beneficial to waterfowl. They should be protected at all times and restored whenever possible.

**FOR ADDITIONAL CHAPTERS CONTACT:**

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**Private Land Partnerships:** This partnership was formed between both private and public organizations in order to address private lands wildlife issues. Individuals share resources, information and expertise. This landowner's guide has been a combined effort between these groups working towards one goal: Natural Resources Education. We hope this guide provides you with the knowledge and the motivation to make positive changes for our environment.

FOR ADDITIONAL ASSISTANCE: CONTACT YOUR LOCAL CONSERVATION DISTRICT