

Common Moorhen

Gallinula chloropus

DESCRIPTION

The common moorhen is a secretive, duck-like bird inhabiting shallow, freshwater marshes. Its head and neck are black, the back is brownish, and the underparts are a slate gray. During the breeding season, the common moorhen can be identified by its yellow tipped red bill and a red frontal shield (National Geographic 1999). Outside of the breeding season the bill and facial shield are brownish in color. White streaking on its flank distinguishes the moorhen from the similar American coot (*Fulica americana*).

BODY SIZE

The average body length for the common moorhen ranges from 12 – 14 inches with males larger than females (Forbush 1925, National Geographic 1999, Massachusetts Division of Fisheries and Wildlife 2000, Connecticut Department of Environmental Protection 2000). Body weight is approximately 14 oz (Forbush 1925).

In The Primary Study Area: No common moorhens were captured or collected in the Housatonic study area, and no site-specific or regional body size data were found.

DISTRIBUTION

The common moorhen breeds from New England south along the Atlantic seaboard and Gulf of Mexico north to the Great Lakes (Figure 1). During the winter, moorhens occur along the Atlantic coast from South Carolina west along the Gulf Coast and south into Mexico (DeGraaf and Yamasaki 2001). Common moorhens that breed in the northeast typically winter along the Gulf Coast (American Ornithologists' Union 1983, as cited in Kibbe 1985).



Figure 1. Range of common moorhen in North America

MIGRATION

Southern migration of the common moorhen from New England occurs during September and October, and northern breeding migration occurs during April and May (Forbush 1925, Bent 1926, Kibbe 1985, Connecticut Department of Environmental Protection 2000).

HABITAT

The common moorhen inhabits shallow, freshwater and brackish marshes that support dense emergent vegetation interspersed with areas of open water. Breeding success in this

species is closely tied to emergent cover, with the greatest success occurring in marshes with at least 50 percent cover of emergent vegetation (Post and Seals 2000). Habitats utilized by the moorhen include the margins of lakes, ponds, slow-flowing rivers and streams, and sewage treatment lagoons (DeGraaf and Yamasaki 2001). In New England, the common moorhen preferentially uses shallow, freshwater marshes, but it will also use deep marshes, ponds, lakes, and estuary/salt marshes (DeGraaf and Yamasaki 2001).

Habitats utilized by the common moorhen typically support emergent vegetation such as cattails (*Typha* spp.), bulrushes, sedges (Cyperaceae), reeds (*Phragmites* sp.), and bur-reeds (*Sparganium* spp.) growing in water at least 12 inches deep and interspersed with areas of open water (Strohmeier 1977, as cited in DeGraaf and Yamasaki 2001). In New England where the common moorhen is at the northern extreme of its breeding range and populations are relatively small, suitable habitat may not be occupied. For example, in Vermont the common moorhen is found almost exclusively within wetlands bordering Lake Champlain, even though nesting habitat is available in other locations (Kibbe 1985).

Nests are typically built close to (i.e., within 1.5 ft) or over water that is 1 – 3 ft deep (Bent 1926, Connecticut Department of Environmental Protection 2000, DeGraaf and Yamasaki 2001). The nest is a cup constructed of dead plants and placed on a hummock or dead emergent vegetation such as cattails or pickerelweed (*Pontederia cordata*), with a ramp leading to the water (Bent 1926, Forbush 1925, Kibbe 1985, Ehrlich *et al.* 1988, Post and Seals 2000). Occasionally, moorhens will construct their nests in shrubs such as willow (*Salix* spp.) or alders (*Alnus* spp.) growing adjacent to the water (Bent 1926, DeGraaf and Yamasaki 2001). They also will construct several other nests within their territory where the adults brood the young following hatching (Forbush 1925).

In The Primary Study Area: Table 1 contains a summary of the literature review and observational data on the use by common moorhens of the natural community types found within the primary study area. Common Moorhens were repeatedly observed in the primary study area in 1998 and 1999. Some individuals responded to playback surveys in June and July 1998 while others

Table 1. Habitat use by common moorhens in the primary study area

Habitat Codes and Natural Community Classifications																					
Wetland Habitats								Terrestrial Habitats													
ROW	ROW & PAB	SHO		PFO			PSS	PEM	WM	VP	SW	MW	HW		OF	AGR	RES				
Medium-gradient stream	Low-gradient stream	Riverine pointbar and beach	Mud flat	Red maple swamp	Black ash-red maple-tamarack calcareous seepage swamp	Transitional floodplain forest	High-terrace floodplain forest	Shrub swamp	Deep emergent marsh	Shallow emergent marsh	Wet meadow	Woodland vernal pool	Spruce-fir-northern hardwood forest	Northern hardwoods-hemlock-white pine forest	Successional northern hardwood forest	Red oak-sugar maple transitional forest	Rich mesic forest	Cultural grassland	Agricultural cropland	Residential development	
B	B							B	B	B											

ROW = Riverine Open Water
 SHO = Shorelines
 PFO = Palustrine Forested
 PSS = Palustrine Scrub-Shrub
 PEM = Palustrine Emergent
 WM = Wet Meadow
 PAB = Palustrine Aquatic Bed
 VP = Vernal Pool
 SW = Softwood Forests
 MW = Mixed Forests
 HW = Hardwood Forests
 OF = Open Fields
 AGR = Agricultural Croplands
 RES = Residential
 Season of Use
 B = Breeding
 M = Migration
 W = Wintering
 Y = Year-round
 Shading = observed in study area

were observed during the course of concurrent investigations. The responses elicited by moorhens during the playback survey indicate that moorhens were territorial and likely nesting within the study area. However, no moorhen broods were observed in either year.

HOME RANGE AND TERRITORIALITY

Very little information is available on the home range and territoriality of this species. The literature indicates that both the male and female, and later the young, participate in territorial defense, but specific reference to territory size was not reported (Kibbe 1985, Ehrlich *et al.* 1988). Other sources also indicate that common moorhen will sometimes nest in small colonies (Connecticut Department of Environmental Protection 2000).

BREEDING

The common moorhen returns to New England to breed during April and May. Pairing and courtship in this species begin during migration prior to arrival on the breeding grounds (Kibbe 1985). Once a breeding territory is established, both the male and female participate in territorial defense and nest construction (Kibbe 1985, Connecticut Department of Environmental Protection 2000). Nesting begins in May and continues through June in both Massachusetts and Vermont (Kibbe 1985, Massachusetts Division of Fisheries and Wildlife 2000). Egg dates in Massachusetts range from 22 May to 17 July and in New York from 9 May to 5 July (Bent 1926, Viet and Petersen 1993). Females lay between 6 – 17 eggs per clutch, with younger birds nesting later and laying smaller clutches (Forbush 1925, Bent 1926, Ehrlich *et al.* 1988, Massachusetts Division of Fisheries and Wildlife 2000). Reported average clutch size is highly variable and ranges from 7 – 12 (Bent 1926, Ehrlich *et al.* 1988, Post and Seals 2000, DeGraaf and Yamasaki 2001). Large clutches may be the result of intra-specific brood parasitism, which occurred in approximately 18 percent of the nests in one

study in South Carolina (Post and Seals 2000).

Eggs are laid over several days with one or two days between the laying of each egg (Bent 1926). Both the male and female incubate the eggs, and incubation begins about the time the fifth egg is laid (Bent 1926, Kibbe 1985, Ehrlich *et al.* 1988, Massachusetts Division of Fisheries and Wildlife 2000). The incubation period lasts from 18 – 22 days with an average length of 21 days (Bent 1926, Kibbe 1985, Massachusetts Division of Fisheries and Wildlife 2000, DeGraaf and Yamasaki 2001). The eggs hatch asynchronously and the female continues to incubate the remaining eggs, while the male cares for the chicks until incubation is completed (Massachusetts Division of Fisheries and Wildlife 2000). Common moorhens, particularly in the southern part of their breeding range, may raise two or more broods per breeding seasons, with young of the first brood helping to care for subsequent broods (Ehrlich *et al.* 1988, Bannor 1998 as cited in Post and Seals 2000, DeGraaf and Yamasaki 2001).

GROWTH AND DEVELOPMENT

Young common moorhen are precocial and are able to leave the nest almost immediately after hatching. Both adults continue to brood the young after the chicks leave the nest (Forbush 1925, Kibbe 1985). The young are able to feed independently by three weeks of age and are able to fly at 6 – 7 weeks, but remain dependent upon the parents for several more weeks (Massachusetts Division of Fisheries and Wildlife 2000). Full growth is reached at about 10 weeks of age (Strohmeier 1977 as cited in Kibbe 1985).

MOLTING

Young birds maintain their juvenile plumage through the fall and undergo gradual changes toward adult plumage. By December, the juveniles closely resemble the adults, but the first postnuptial molt does not occur until the summer following hatching when birds are at least a year old (Bent 1926). As adults,

common moorhens undergo a complete postnuptial molt in the late summer and a very limited prenuptial molt in the spring (Bent 1926).

FOOD HABITS AND DIET

The common moorhen eats a variety of plant material and animal prey including the leaves, roots, and stems of underwater plants, duckweed (*Lemna* spp.), the leaves of terrestrial grasses and forbs, seeds, berries, fruit, mollusks (e.g., snails), insects (e.g., grasshoppers, locusts), and worms (Bent 1926, Forbush 1925, Ehrlich *et al.* 1988, DeGraaf and Yamasaki 2001). In a study conducted in Porto Rico, over 90% of the moorhen's diet consisted of grass and rootlets, 6% seeds of terrestrial grasses and weeds, and about 3% insects and mollusks (Wetmore 1916, as cited in Bent 1926).

ENERGETICS AND METABOLISM

No information on energetics or metabolism was found during a search of the literature.

POPULATIONS AND DEMOGRAPHY

Survivorship: Common moorhens have been reported to have high nesting, hatching, and fledging success (Byrd and Zeillemaker 1981, as cited in Kibbe 1985). In one study conducted in an impounded freshwater marsh in South Carolina, an average of 68% of the common moorhen nests fledged at least one chick (range = 28 – 91%) (Post and Seals 2000). However, it is suspected that nesting success is lower in Vermont (Kibbe 1985). No information on recruitment to the breeding population was located during a search of the literature.

Age at Maturity and Life Span: Information on the age of this species at sexual maturity was not found in the existing literature, but is assumed to be 1 – 2 given that adult plumage is attained the summer after hatching. Based on banding data, the life span of the common moorhen is approximately 5 – 6 years of age

(Connecticut Department of Environmental Protection 2000).

Mortality: In some parts of its range, the common moorhen is legally hunted, but in other areas, including much of New England, hunting seasons have been closed because local populations of this species are considered too small to withstand hunting pressures (Kibbe 1985, Connecticut Department of Environmental Protection 2000). In Massachusetts, the hunting season on the common moorhen was closed in 1985, even though historical hunting pressure was light (Massachusetts Division of Fisheries and Wildlife 2000).

Enemies: Common moorhens are most likely susceptible to a variety of predators including mammals, particularly mink (*Mustela vison*), raccoons (*Procyon lotor*), raptors, and reptiles, particularly during the nesting season. The available literature, however, documented only losses to snakes (e.g., yellow rat snake (*Elaphe obsoleta*) (Post and Seals 2000).

STATUS

General: The common moorhen is an uncommon to local breeder and migrant in New England and is rare during the winter (DeGraaf and Yamasaki 2001). Scattered, localized breeding has been confirmed throughout Massachusetts, with the current breeding population estimated between 11 – 20 pairs (Veit and Petersen 1993, Massachusetts Division of Fisheries and Wildlife 2000, Gulo 2001).

In Maine and Massachusetts, the moorhen is listed as a Species of Special Concern, and in Connecticut, it is listed as Endangered (Connecticut Department of Environmental Protection 2000, Massachusetts Division of Fisheries and Wildlife 2000, DeGraaf and Yamasaki 2001). In the remainder of New England, the moorhen is not formally listed, but its populations are tracked by state agencies and heritage programs (DeGraaf and Yamasaki 2001).

In New England, the common moorhen is at the northern limit of its breeding range and the limit of its climatic tolerance (Kibbe 1985). In Vermont, this species has been considered rare and local since the 1800s, whereas in Connecticut it was considered a common summer resident during the late 1800s and early 1900s, but is now only a rare summer visitor (Allen 1909, as cited in Kibbe 1985, Connecticut Department of Environmental Protection 2000). Declines in Massachusetts, Connecticut, and other parts of its range have been attributed to loss or degradation of emergent wetland habitats (Connecticut Department of Environmental Protection 2000, Massachusetts Division of Fisheries and Wildlife 2000, DeGraaf and Yamasaki 2001).

In The Primary Study Area: Breeding pairs of common moorhens have been confirmed in the Pittsfield area (Gulo 2001). Moorhen sightings during the field surveys of 1998 – 2000 were generally limited to the lower mile of the study area, typically at the north end of Woods Pond and the adjacent upstream backwaters (Figure 2).

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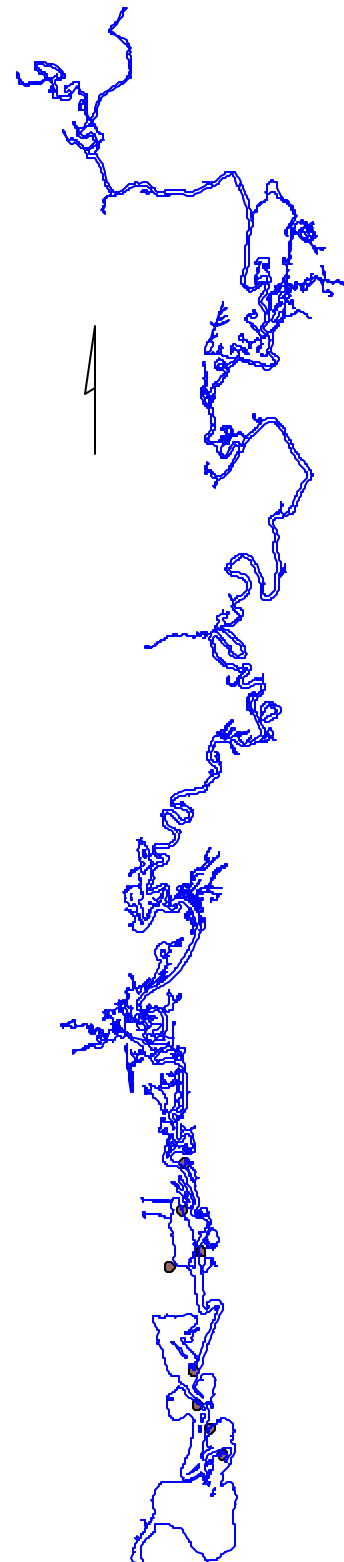


Figure 2. Common moorhen sightings in the primary study area

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