



The Wilson's Phalarope, is a shorebird whose numbers are dramatically declining. Drawing by Karen Becker.

Habitat Requirements

Three dimensions exist regarding wetland birds' habitat requirements. They need different kinds of habitat for different functions at different times of the year, they often have different habitat requirements within a given season, and different species have differing habitat requirements. In the prairie pothole region, birds can be grouped by the size of wetland that they require for reproductive success. Table 2 depicts the strikingly different habitat requirements of the various species.

Habitat diversity is critical to birds breeding in wetlands. First, birds may need different types of wetlands in the same general area. Researchers studying Mallards in the St. Lawrence River Valley from 1990 through 1992, found that female Mallards (*Anas platyrhynchos*) spent most of their time breeding in forested-live wetlands (40 percent) but spent most of their postbreeding time in forested-dead wetlands (35 percent)

in the general vicinity of their breeding grounds (Losito and Baldassarre 1995). Evidence from several studies shows that individual Mallards use several wetlands during the breeding season. The average number of wetlands used by Mallards in the St. Lawrence River Valley was 4.1; in a forested wetlands study in Minnesota it was 8.6 (Gilmer et al. 1975) and among prairie nesters in North Dakota the average number of wetlands used was 15 (Dwyer et al. 1979). These results imply that conservation requires protection of wetland complexes rather than a single wetlands type.

Foraging requirements has a lot to do with the need for different kinds of wetlands. For example, breeding ducks eat mainly animal food, but on their wintering grounds they mostly consume vegetable matter (Fredrickson 1985). Thus, while ducks can be flexible in habitat choice, from a conservation perspective, it appears that different elements of wetland complexes may be consequential during different parts of the year.

Wetland Size and Isolation

Wetland size and size diversity are interlinked variables for birds. Mallards use different size wetlands during the reproductive cycle, small basins during the breeding season and larger ones during the postbreeding period (Losito and Baldassarre 1995). The size of marshes is perhaps the single most important determinant of species richness, or the number of species in an area. It requires somewhere between 236 ha (Brown and Dinsmore 1986) and 379 ha (McCoy 1983) to support 24 species. The smallest number of species in Iowa was found in marshes smaller than 5 ha (Brown and Dinsmore 1986). It is believed that more species are found on larger areas because of the wider diversity of habitats (Lack 1969).

In a study of 30 Iowa prairie marshes, after marsh size, isolation, or the distance of one marsh from another, was the second most important determinant of species richness