

Management Indicator Species for the New Plan

Success in maintaining and restoring composition, structure, and function of forest ecosystems within desired ranges of variability is reflected by both changes in forest condition and by levels of management and other effects that are shaping these communities. Monitoring will include tracking the abundance of major forest cover/community types and levels of management activities conducted to maintain and restore desired conditions. Population trends and habitats of Management Indicator Species will be monitored to help indicate effects of national forest management within selected communities.

Indicator: Ovenbird (*Seiurus aurocapillus*) - Chattahoochee NF



Photo by Peter S. Weber

From USGS Patuxent Bird ID InfoCenter

Reasons for Selection: Trends in presence and abundance of this species in mature deciduous forests will be used to help indicate the effectiveness of management in maintaining desired condition relative to forest interior habitats.

Ecology & Life History

Basic Description: A small bird (wood warbler).

General Description: A plump-looking, 15-cm-long bird with a thin pointed bill, pinkish legs, russet crown bordered by dark stripes, bold white eye ring, olive dorsum, and white venter with bold dark streaks of spots (NGS 1983).

Reproduction Comments: PHENOLOGY: Nests from May-July (Terres 1991). First breeds in the spring after hatching (Van Horn and Donovan 1994).

OVIPOSITION/INCUBATION: Typically produces one clutch per year, although sometimes two or three (Hahn, 1937, Zach and Falls 1975). Average clutch size for 27 nests in Michigan was 4.7 eggs (range = 3-6). First clutches typically had five eggs, subsequent clutches 3-5 (Hahn 1937; statistically significant difference between first and later clutches; Zach and Falls 1975). Mean clutch size of 78

clutches was 4.4 eggs (Van Horn and Donovan 1994). A female that nested three times in one season in Michigan laid a total of 10 eggs (Hahn 1937), another in Ontario laid 13 eggs (Zach and Falls 1975). Eggs are laid every other day and incubation begins after the penultimate egg is laid (Hahn 1937). Females alone incubate the eggs and brood the young. Incubation period ranges from 11.5-14 days (mean = 12.25).

FLEDGING: Young leave the nest when 6.5-8.5 days old (mean = 8), and are capable of flight at 11 days old (Hahn 1937). Both parents feed the young. The brood is typically divided between the parents after the young leave the nest.

NEST SUCCESS: In Michigan, 63.4% of eggs hatched and 43.5% of young fledged (Hahn 1937); in Minnesota, nest success (fledged at least one young) ranged from 75-100% (Hanski, et al. 1996) and in Arkansas, it was 71.4% (Martin 1993).

Ecology Comments

TERRITORY SIZE/DENSITY: Territory size and male density varies with prey abundance and size of inhabited forest. Territory size of 13 males studied in Ontario ranged from 0.6-1.6 hectares (mean = 0.8) and inversely correlated with the biomass of invertebrate prey, with territory size decreasing as prey biomass increased (Stenger 1958). A negative correlation between territory size and prey abundance was also observed in Tennessee (Smith and Shugart 1987). In Ontario, territory size was significantly smaller during a spruce budworm (*CHORISTONEURA FUMIFERANA*) outbreak than during non-budworm years (Zach and Falls 1975). Also territorial on the wintering grounds (Rappole and Warner 1980).

In Ontario, densities of males ranged from 0.33-8.3/10 hectares, and increased significantly with increasing woodlot core area (core area is forest 3100 meters from the forest edge; Burke and Nol 1998). In central Missouri, male population density ranged from 0.66-1.73/10 hectares, and increased with increasing forest size (Wenny et al. 1993). Density of males was positively related to size of forest tract and core area in eastern Pennsylvania, ranging from 1.3-7.2 males/10 hectares (Porneluzi et al. 1993). In a managed-forest landscape in New Brunswick, density of males in forest fragments (1.1/10 ha) did not differ statistically from a large contiguous forested tract (1.9/10 ha; Sabine et al. 1996). In northern hardwood forest in New Hampshire, average population density was 13.5 birds/10 hectares (Sabo and Holmes 1983).

SITE FIDELITY: Exhibits breeding site fidelity. In Illinois, 3 of 8 (37.5%) of those banded one year were recaptured the subsequent year (Robinson 1992). Of 22 adults and 40 young banded one year in Michigan, 10 adults (45%) and one yearling (2.5%) returned to the study area the following year. The three returning males occupied their former territory, whereas females either returned to their former territory or occupied an adjacent territory. The following year, the three

males again returned and occupied their former territories (Hahn (1937). In New Jersey, 36% of adults and 10% of young banded in one year returned the following year (Leck et al. 1988). In Missouri, an average of 41% of males banded one year returned the next; 64% had second-year territories with >50% overlap with first-year territories, and 26% were adjacent to or overlapped <50% with the territory of the previous year (Porneluzi and Faaborg 1999). Also exhibits site fidelity to wintering grounds (Faaborg and Arendt 1984, Kricher and Davis 1986, Martin and Carr 1986).

POPULATION PARAMETERS: Annual survivorship of birds in Pennsylvania and Michigan was estimated to be 54% (Hahn 1937, Savidge and Davis 1974 cited in Van Horn and Donovan 1994). Over winter survival rates did not differ between mature and early-successional forests in Belize (Conway et al. 1995). Oldest known individual was 9 years old (Dowell and Robbins 1998).

PARASITES: Adults are host to six species of external parasites, including two lice (MENACANTHUS CHRYSOPHAEUM, MYRSIDEA INCERTA), three ticks (HAEMAPHYSALIS LEPORISPALUSTRIS, IXODES BRUNNEUS, IXODES DAMMINI), and one mite (LIPONYSSUS SYLVIARIUM; Peters 1936 cited in Van Horn and Donovan 1994). Mites have also been found on nestlings (Hahn 1937).

Long Distance Migrant: Y

Migration Comments: Principally follows the Atlantic and Mississippi flyways during migration, although some individuals use the Pacific flyway. Migration is apparently nocturnal (Van Horn and Donovan 1994). Spring migrants leave Costa Rica beginning in March and Puerto Rico in April (Raffaele 1989, Stiles and Skutch 1989), and arrive in Florida from late March through mid-May, with a peak in mid-April (Bent 1953, Taylor and Kershner 1986). In Kentucky, males typically return during the third week of April (Palmer-Ball 1996). Arrives in Michigan from late April through mid-May (Hahn 1937) and in Canada in late May and early June (Bent 1953). Based on kills at towers, fall migration peaks during the latter half of September in Ohio, Illinois, and Iowa, mid-September in New Jersey and late September through early October in Florida (Van Horn and Donovan 1994). Fall migrants arrive in the Neotropics from early September through late October (Raffaele 1989, Stiles and Skutch 1989). Sexes may migrate separately; males in Michigan arrive 9-14 days ahead of females (Hahn 1937).

Estuarine Habitat(s): SCRUB-SHRUB WETLAND

Palustrine Habitat(s): RIPARIAN

Terrestrial Habitat(s): FOREST - HARDWOOD, FOREST - MIXED, SHRUBLAND/CHAPARRAL, WOODLAND - HARDWOOD, WOODLAND - MIXED.

Habitat Comments: BREEDING: Typically nests in mid-late successional, closed-canopied deciduous or deciduous-coniferous forests that have deep leaf litter and limited under story (Van Horn and Donovan 1994). Also nests in coniferous forest if deciduous forest is unavailable (Noon et al. 1980). Inhabited forest types include oak (QUERCUS)-hickory (CARYA), oak-pine (PINUS), maple (ACER)-basswood (TILIA), maple-birch (BETULA), maple-birch-beech (FAGUS GRANDIFOLIA), hemlock (TSUGA CANADENSIS)-oak, Trembling Aspen (POPULUS TREMULOIDES), and spruce (PICEA)-fir (ABIES) (Askins and Philbrick 1987, Freedman et al. 1981, Titterington et al. 1979, Van Horn and Donovan 1994, Westworth and Telfer 1993). Nests on the ground (Hahn 1937). In studies of regenerating forests following clearcutting, found to be absent from, or in low densities in, young, shrubby, open-canopied stands; whereas they occurred in relative abundance in older, closed-canopied stands (Freedman et al. 1981, Thompson et al. 1992, Titterington et al. 1979, Webb et al. 1977, Westworth and Telfer 1993).

NON-BREEDING: In the Caribbean region, utilizes a variety of habitats including coastal dry forest, elfin woodland, forest edge, pine forests, riparian forests, wet forests, wetlands, and urban areas (Arendt 1992). In Costa Rica, inhabits primary and secondary forest (Blake and Loiselle 1992); prefers shady under story of forest with well-developed shrub layer (Stiles and Skutch 1989). In Puerto Rico and surrounding islands, occurs in interior forests as well as mangroves and dry thickets (Raffaele 1989). Considered a forest generalist on the Yucatan Peninsula (Lynch 1989), and captured with equal frequency in primary and secondary forest in Veracruz (Rappole et al. 1992). In the Virgin Islands, inhabits both moist and dry evergreen forest, as well as transition zones between these forest types (Askins et al. 1992). Low numbers inhabit coffee, citrus, cacao, and pine plantations in Puerto Rico, Jamaica, Belize and Costa Rica (Robbins et al. 1992). Captured most frequently in pine savanna in Belize (Petit et al. 1992).

Food Habits: INVERTIVORE

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