

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: Wood Thrush (*Hylocichla mustelina*) - Oconee NF



Photo by J. A. Spendelow
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 20-cm bird (thrush).

General Description: Length 20 cm. Sexes similar. Reddish-brown above, brightest on crown and nape; rump and tail brownish-olive. Bold white eye ring conspicuous on streaked face. Whitish below, with large dark spots on throat, breast, and sides.

VOCALIZATIONS: Loud, liquid song of three- to five-note phrases, most notes differing in pitch, each phrase usually ending with a complex trill. Calls include a rapid "pit pit pit" (NGS 1987).

NEST: firm, compact cup of grasses, bark, moss, paper, mixed with leaf mold, mud; molded by contours of female's body; lined with rootlets. Outside diameter 10.2-14 cm, height 5.1-14.6 cm; inside diameter 7 x 8.3 cm, depth 3.2-5.1 cm.

EGGS: average size 25.4 x 18.6 mm; typically oval; shell is smooth, has slight gloss; pale blue or bluish green and unmarked.

Diagnostic Characteristics: Smaller than American Robin (*TURDUS MIGRATORIUS*) and plumper than the other brown thrushes (Gray-cheeked Thrush [*CATHARUS MINIMUS*], Bicknell's Thrush [*CATHARUS BICKNELLI*], Swainson's Thrush [*CATHARUS USTULATUS*], Hermit Thrush [*CATHARUS GUTTATUS*], and Veery [*CATHARUS FUSCESCENS*]). Distinguished by the deepening redness about the head and the larger, more numerous round spots on the breast. Nest is similar to that of robin but is smaller and invariably has leaves in foundation and rootlets instead of grass in lining. Eggs are smaller and generally more pointed at one end than are robin eggs; also slightly paler than robin eggs (Harrison 1975).

Reproduction Comments: Nesting occurs in late spring and early summer. In Delaware, nesting peaks occurred in the last week of May and in the second week of July (Longcore and Jones 1969). Nest site selection and building is by the female alone; complete in about five days. No evidence birds ever use nest a second time. Clutch size is 2-5 (usually 3-4). Individual females typically produce two broods per year. Incubation, by female, lasts 12-14 days. Male usually guards nest when female absent. Young are tended by both parents, leave nest at 12-13 days. Pair remains together for second nesting (Harrison 1975). There is some evidence of occasional polygyny (Johnson et al. 1991).

In Delaware, of 142 "nesting attempts," 38% were successful and 58% of nests were destroyed by predators. The greatest nest success was associated with late season nests, spicebush and black gum vegetation, and with lower nest height (below 8.5 ft); 33% of eggs hatched, and 65% of hatched birds survived to leave the nest (Longcore and Jones 1969). In Maryland, Whitcomb et al. (1981) reported that thrushes produced two broods per year and had a reproductive success of 7.60. In Pennsylvania, nesting failure was caused by predation more than 95% of the time (Hoover 1992); 78% of nest depredation was attributed to small mammal/snake/avian nest predators and 22% to large mammal nest predators. Much work on reproductive success in wood thrushes has also been done by Hoover (1992) in relation to forest fragmentation.

Long-term population dynamics in a 15-ha woodlot were studied in Delaware by Roth and Johnson (1993). A sustained episode of reduced production per female and of an increased percentage of adults failing to produce any young coincided with a 4% annual decline in abundance between 1978 and 1987. When failure rate later dropped, return rate and abundance subsequently increased. Roth and Johnson (1993) concluded that a period of elevated, predation-caused failure prompted greater emigration by an ever-younger, less-site-faithful population.

Ecology Comments

POPULATION DENSITY: Published information on densities from breeding bird censuses in the southeastern U.S. between 1947 and 1979 were summarized by Hamel et al (1982): mean (standard error) density is listed as 14.2 (1.0) pairs per 40 ha with a density range of 1-41 pairs per 40 ha. In bottomland hardwood forests along the Roanoke River in eastern North Carolina, R. Sallabanks (unpubl. data) found thrushes to be most abundant in wide patches of levee forest where an average 1.14 singing males were detected per unlimited radius 10-min point count. Holmes and Sherry (1988) reported a mean (standard error) abundance in Hubbard Brook Experimental Forest, New Hampshire, of 4.64 (2.83) adult birds per 10 ha over the period 1969-1986 over which time the population showed a highly significant decline at Hubbard Brook (a similar pattern to that reflected for the state of New Hampshire population by BBS data). Whitcomb et al.(1981) found 125 males per sq km in an area in Maryland.

TERRITORIES: Freemark and Merriam (1986) listed the territory size as less than 2 ha. In wintering areas in southern Veracruz, some individuals were territorial and highly sedentary, often remained within 150 m of capture point for entire winter; other birds wandered (Rappole et al. 1989, Winker et al. 1990). Some birds return to same wintering areas in successive years (Rappole et al. 1989).

Long Distance Migrant: Y

Migration Comments: Arrives in wintering areas in Middle America in October (Rappole et al. 1989); males first arrive in the southern U.S. in March-April (Terres 1980). Migrates through Costa Rica late September to mid-November and March-April (Stiles and Skutch 1989).

Palustrine Habitat(s): FORESTED WETLAND, RIPARIAN

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

Habitat Comments: BREEDING: deciduous or mixed forests with a dense tree canopy and a fairly well developed deciduous under story, especially where moist (Bertin 1977, Roth 1987, Roth et al. 1996). Bottomlands and other rich hardwood forests are prime habitats. Also frequents pine forests with a deciduous under story and well-wooded residential areas (Hamel et al. 1982). Thickets and early successional woodland generally do not provide suitable habitat (Bertin 1977). Bertin (1977) found wood thrushes to require one or more trees at least 12 m tall, possibly for song perches, whereas Morse (1971) reported nesting in stands of young white pine with a canopy under 9 m in height. Nests usually are placed in a crotch or are saddled on a branch of a shrub, sapling, or large tree.

NON-BREEDING: In migration and winter, habitats include forest and woodland of various types from humid lowland to arid or humid montane forest, also scrub and thickets; primarily undisturbed to moderately disturbed wet primary forest; may wander into riparian forest and various stages of second growth (Rappole et al. 1989, Winker et al. 1990). Were recorded exclusively in forest in Atlantic lowlands of Costa Rica (Hagan and Johnston 1992). Winker et al. (1990) studied within-forest preferences of birds wintering in southern Veracruz and found that areas with gaps were preferred in this lowland rainforest; areas with heavy ground cover were also favored.

Food Habits: FRUGIVORE, INVERTIVORE

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