

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: Pileated woodpecker (*Dryocopus pileatus*)



Photo by J.A. Spendlow
From USGS Patuxent Bird ID InfoCenter

Reasons for Selection: Trends in presence and abundance of this species across the forest will be used to help indicate the effectiveness of management in maintaining desired condition relative to abundance of snags.

Ecology & Life History

Basic Description: A very large (42 cm long) crested woodpecker.

General Description: A crested, black woodpecker with wingspan of about 70 cm. More or less uniformly black body with a white line extending down the neck from the bill to under wing area; white throat and line above the eye; black through the eye. Male with a vivid red crest extending from the bill to the nape and a red moustache mark extending from the bill. Female slightly smaller than male and with gray to brown forehead, red crest, and no red moustache mark. In all sex and age groups, a few gray-white bars can be found on the flanks. In flight, wings show black leading and trailing edges and white near the center of

the wing close to the body. Juveniles have duller, more loosely textured feathers; primary 10 is longer, broader, and less pointed. Details and colored photo in Bull and Jackson (1995). Nestlings naked at hatching.

EGGS: glossy white. See illustration and chick description in Harrison 1978.

VOCALIZATIONS: a loud, characteristic kuk-kuk-kuk-kuk; drumming a deep resonant roll that carries a kilometer or more.

Diagnostic Characteristics: Except for the probably extinct ivory-billed woodpecker (*CAMPEPHILUS PRINCIPALIS*) of the southeastern United States and imperial woodpecker (*C. IMPERIALIS*) of montane western Mexico, the pileated is the largest woodpecker in North America.

Reproduction Comments: Pairs share a territory year round (Bull and Jackson 1995). On warm days of February and early March in the southeastern U.S. and March through early April in northern areas there is an increase in vocalizations and drumming associated with pair formation and increased territoriality. Vocalizations and drumming take place with greatest frequency in early morning and late afternoon (Hoyt 1941). Courtship behavior is described in detail by Kilham (1979, 1983), with additional details and circumstances by Arthur (1934), Hoyt (1944), and Oberman (1989). Nest construction, egg laying, hatching, and fledging are also progressively later from south to north (Bull and Jackson 1995) and likely from lower to higher altitudes (at least in California, Harris 1982).

Early egg dates in the southern U.S. are in early March; late egg dates, from northern areas, are in mid-June. Similarly, nestlings have been found from mid-May in the southeast to mid-July in the north (Bull and Jackson 1995, Peterjohn 1989). Young remain with adults at least through late summer or early fall. Clutch size is usually 3-4 throughout the range (Bent 1939, Christy 1939); a clutch of 6 was reported by Audubon and Chevalier (1842). Incubation takes 15-19 days (Bendire 1895, Hoyt 1944, Kilham 1979), by both sexes. Young are tended by both parents, leave nest at 22-26 days (Hoyt 1944, Bull and Jackson 1995).

Longevity records thus far include several birds surviving for 9 years (Bull and Jackson 1995, Bull and Meslow 1988, Hoyt and Hoyt 1951, Hoyt 1952). However, through 1981, there had only been 15 recoveries from a total of 670 banded (Clapp et al. 1983), thus it is quite possible that this species could live much longer.

Ecology Comments

In Missouri, population density varied from 0.5 to 4.1 territories per 100 ha, with the highest densities of birds positively correlated with increasing area of old growth bottomland forest, increasing canopy closure, and increasing density of

snags greater than 0.54 cm dbh (Renken and Wiggers 1993). In western Oregon, mature forests support higher populations than do younger forests (Mannan et al. 1980).

In Missouri, territory sizes ranged from 53-160 ha, and territory size decreased with increasing percent forest over story canopy cover, increasing saw timber cover, and log and stump volume (Renken and Wiggers 1989). In conifer forests of northeastern Oregon, home range was 128-240 ha (Bull and Meslow 1977). Home range in New York varied in radius from 4.8 to 6.4 km in a mixed conifer-hardwood forest (Hoyt 1957).

Parasites have rarely been reported, but include the following. Humpbacked flies (Phoridae), were found on nestlings in New York (Hoyt 1957). TOUCANECTES DRYOCOPI, a subcutaneous mite, was found in the head and neck region of Louisiana birds (Pence 1971). In Oregon nests, Wilson and Bull (1977) found DERMANYSSUS GALLINOIDES, a mite (Mesostigmata: Laelaptoidea) and CARNUS HEMAPTERUS, and a fly (Diptera: Milichiidae). Collins et al. (1966) identified two blood parasites, PLASMIDIUM sp. and HAEMOPROTEUS sp. from a South Carolina bird. Nickol (1969) examined three Louisiana pileateds for Acanthocephala, but found none.

Non-Migrant: Y

Migration Comments: Although generally considered to be a resident species, there is evidence of some migratory movement in the northern part of its range. Hall (1983) reported a small southward movement of pileated woodpeckers in fall along the Allegheny Front of West Virginia. Sutton (1930) also noted gradual southward movement in fall through New York State. In British Columbia, the paucity of winter records in the northern half of the province indicates that many breeding individuals there move considerable distances to the south (Campbell et al. 1990).

Palustrine Habitat(s): RIPARIAN

Terrestrial Habitat(s): FOREST - CONIFER, FOREST - HARDWOOD, FOREST - MIXED, WOODLAND - CONIFER, WOODLAND - HARDWOOD, WOODLAND - MIXED.

Special Habitat Factors: STANDING SNAG/HOLLOW TREE

Habitat Comments: Dense deciduous (favored in southeast), coniferous (favored in north, northwest and west), or mixed forest, open woodland, second growth, and (locally) parks and wooded residential areas of towns. Prefers woods with a tall closed canopy and a high basal area. Most often in areas of extensive forest or minimal isolation from extensive forest. Uses a minimum of 4 cavities per year (only one for raising brood).

In Missouri, abundance increased with area covered with bottomland forest, density of trees at least 30 cm dbh, and density of snags at least 54 cm dbh (Renken and Wiggers 1993). In West Virginia found in all forest types, at all elevations, but less common in spruce-northern hardwoods forest and most common in mixed hardwood forest (Hall 1983).

Nests are in cavities excavated by both sexes usually in dead stubs in shaded places; cavity entrance averages about 14 m above ground (see photos and descriptions in Harrison 1975, 1979). Usually digs a new hole for each year's brood, but the same cavity may be used for several years. Nest tree species and size varies among regions and even within regions depending on site and availability. In southern British Columbia, preferred nest sites were in live aspen with heartwood decay, in trees larger than 40 cm dbh (Harestad and Keisker 1989). In northwest Montana, most of 54 nest trees were large western larch (*LARIX OCCIDENTALIS*) and nest trees averaged 74.9 cm dbh (McClelland 1979). In northeast Oregon, 75% of nest trees were ponderosa pine (*PINUS PONDEROSA*) and mean dbh of nest trees was 84 cm (Bull 1987). In western Oregon, 73% of nest trees were Douglas fir (*PSEUDOTSUGA MENZIESII*) and nest trees averaged 69 cm dbh (Mellen 1987). In Virginia, 28% of nest trees were hickory (*CARYA* spp.), 22% red oak (*QUERCUS RUBRA*), 17% chestnut oak (*Q. PRINUS*) and nest trees averaged 54.6 cm dbh (Conner et al. 1975). Most studies report nests 5-17 m above ground in wood softened by fungal rot, in trees usually 100-180 years old, over 51 cm DBH, 12-21 m tall, and often near permanent water (Bushman and Therres 1988).

Food Habits: INVERTIVORE

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