



Globally Important Bird Areas



Fort Hood Military Installation, Texas

Ornithological Highlight: Fort Hood has the largest known populations of two endangered species, Black-capped Vireo and Golden-cheeked Warbler, under a single management authority.

Location: Near Killeen in central Texas

- *Edwards Plateau, Oaks and Prairies* (NABCI Bird Conservation Regions #20, 21)
- *Edwards Plateau, Oaks and Prairies* (PIF Physiographic Area #53, 08)

Ownership: Department of Defense: U.S. Army

Size: 218,000 acres

Habitats: 65% perennial grassland and 31% oak-juniper woodland.

Land use: military exercises and training

Site description: Fort Hood, an army installation in the Hill Country of Texas, is the largest armor training center in the U.S., housing more than 46,000 active-duty military, 5,000 civilians, and more than 70,000 dependents. The installation is situated in the Lampasas Cut-Plains at the edge of the Edwards' Plateau physiographic region of Texas. This region is typified by shallow soils, limestone substrates, and isolated, flat-topped mesas covered with dense, mixed oak-juniper woodlands. Streams are clear and rocky, and river bottoms characteristically are grasslands with scattered narrow riparian zones of hardwoods. Some portions of the installation have representative soils and vegetation of the Cross-Timbers and Prairies physiographic region, with flint outcroppings and Post Oak-dominated woodlands. Prescribed burning and wildfires caused by military training generate early-successional hardwood scrubland suitable for the Black-capped Vireo. Old-growth oak-juniper woodlands along canyon slopes and remote sections of the post provide habitat for Golden-cheeked Warbler.

Birds: In addition to its military function, Fort Hood plays an important role in bird conservation; it supports the largest breeding populations of the endangered Golden-cheeked Warbler and the endangered Black-capped Vireo under a single management authority. The warbler breeds only in Texas, in and near the Edwards Plateau, while the vireo has a limited and very local breeding range in Oklahoma, Texas and northern Mexico, though it formerly also bred in southwestern Kansas.

Oak-juniper woodland is a disappearing habitat in Texas, except on public lands. Though the wood is good for fenceposts, the woodland itself is regarded by landowners as an invader of pastureland; the result is that it gets cleared, except in less accessible areas such as ravines. On Fort Hood, however, the woodland is allowed to persist. Both endangered species use oak-juniper woodland, but at different stages of succession. Warblers use the climax stage, but the vireos like the early successional stages; they move in 2 or 3 years after a fire and the habitat is

right for them for perhaps an additional 15 years. Since they are disturbance-dependent, the habitat for them is patchy. In 1996 there was a large fire on the installation, brought about by droughts, and several thousand acres were burned. This resulted in the destruction of warbler habitat and the creation of vireo habitat. At present there are some 53,000 acres of warbler habitat and 13,000 of vireo habitat on the post. Though there is no complete census done for the two species, biologists there conduct counts on intensive study areas and then extrapolate. This leads to estimates that conservatively there are 2,000 to 2,500 pairs of warblers on the installation (and possibly many more) and in excess of 500 pairs of vireos. These are the largest known populations under a single management entity anywhere within the species' ranges.

Fort Hood is also important to other neotropical migrants. A number of watch-list species, including Painted Bunting, Dickcissel, and Bell's Vireo, are common breeders on the installation, probably due to the effective control of cowbird parasitism.

Conservation issues: Though cowbird parasitism is a threat to both the warbler and the vireo, the threat to the vireo seems to be particularly critical; if it is to survive, cowbird control is a permanent requirement. At Fort Hood, there is an ongoing program to reduce cowbird numbers; nearly 17,000 cowbirds were trapped and killed in 1998. This has had positive results for the vireo; in 1988 close to 90% of the nests were parasitized but by 1998 it was only 6.2%, and as a consequence, vireo population size has grown considerably. The number of vireos observed in 1998 was nearly double that of 1997, though this may be partly the result of increased experience and/or efficiency in recording observations.

Fire ants are a serious problem for the birds as well. Monitoring of vireo nests by cameras to record predation revealed that, of 54 nests filmed, 9 failed due to predation, of which 6 were caused by fire ants. It appears that fire ant control would benefit both vireo and warbler production, since nestlings of the latter also are known to fall victim to the ants.

The warbler and the vireo are the subjects of continued research on the base. In fact, much of the basic research on the biology of these two endangered species has been conducted by the scientists on this base; their program is, according to the U.S. Fish and Wildlife Service, one of the most outstanding in the entire country. A cooperative agreement between Fort Hood and The Nature Conservancy involves inventory and monitoring of vireo and warbler populations and characterization of habitat, a study to evaluate the relationship between cattle grazing and the behavior and movement of cowbirds combined with a cowbird control program, and assessment of the effects of wildfire on the habitats and populations of these endangered species. Biologists on the post are also working to generate interest in looking at and conserving the warblers on their wintering grounds in the mountains of Chiapas, Guatemala and Honduras, where indications are that shade coffee plantations can support the birds.

Visitor information: Fort Hood is an open installation and the public can use the paved roads. Those wishing to hike or birdwatch should contact the Area Access Office at 254-287-8398. The Nature Conservancy maintains a Fort Hood Field Office with a year-round full-time staff of biologists, a botanist, and GIS specialist. Organized tours for groups may be arranged by calling them at 254-287-2885.