

Conservation-reliant species depend on active management for sustained protection from persistent threats. For species that are listed as threatened or endangered under the U.S. Endangered Species Act, being conservation-reliant means that they require continued management even after abundances have surpassed recovery goals. Required management may include control of another species, habitat maintenance, or artificial recruitment. In some cases, it may be difficult to determine if persistence requires sustained management. Here, we use a spatially explicit population modeling platform, HexSim, to simulate the management of a brood parasite, the Brown-headed Cowbird (*Molothrus ater*), on a population of the endangered Black capped Vireo (*Vireo atricapilla*). The two-species simulation model includes common life history events (e.g. immigration/emigration, dispersal, reproduction, and survival) as well as impacts of cowbird population management and brood parasitism. Our model is constructed from data on vireos and cowbirds collected on the Fort Hood Military Reservation, Texas, U.S.A. It includes observed responses to cowbird trapping and shooting over the past 15 years as well as responses to a broad-scale experimental cessation of cowbird trapping on Fort Hood from 2006-2010. Our simulations under potential future conditions show that in the absence of cowbird control, vireo populations will likely fall below the minimum population recovery target. In general, lowering the frequency of cowbird control activities results in a declining vireo population, but limiting cowbird control to a portion of Fort Hood, or limiting base-wide actions to alternating years both resulted in smaller (11-48% declines) but stable vireo populations. Our simulations suggest that vireos are a conservation-reliant species that will depend on cowbird control actions as long as cowbird densities remain high.