



Least Bell's Vireo in the Prado Basin Endangered Species Management Success Story

Least Bell's vireo



- Federally Endangered
- Migratory songbird
- Breeding season April 1 to July 31
- Once common in riparian areas of southern and central CA
- Declined to an estimated 300 pairs in 1986. Only 19 pairs in Prado Basin

The least Bell's vireo was listed as endangered in 1986 because of loss and degradation of its riparian habitat and the alarming reduction in the state population. By the time this once-common migratory songbird was listed only 300 pairs were left breeding in the entire state of California including all of its former range other than a small part of northern Baja California, Mexico. There were 19 pairs at that time in the Prado Basin.

The plight of the vireo and many other nesting songbirds became a focus for management efforts in the basin. Multiple partnerships were formed, agreements were signed, and management and restoration efforts were launched to restore and protect the riparian forests and their avian inhabitants. The US Army Corps of Engineers sponsored the work by a Fish and Wildlife Service staff person that led to the discovery of the vireos in the basin and instituted their monitoring and management. The California Department of Transportation and the Nature Conservancy were two additional early partners and then the Orange County Water District stepped in and started funding the program that is now in its 20th year of operation. Management of the vireo in the Prado Basin includes restoring its riparian habitat; monitoring the vireo population and interceding on the vireo's behalf when warranted; trapping and removing brown-headed cowbirds from the habitat; and since 1997, duplicating these efforts throughout the entire Santa Ana River Watershed.

Habitat Restoration

Habitat restoration is very different today than it once was. In the 1980s and 1990s, we planted thousands of trees and riparian shrubs. Today most of those planting sites are weed-fields, scour channels, or sediment dumps. However, the Orange County Water District is still required to plant 10,000 mulefat in the Prado Basin annually as partial mitigation for conserving water behind the dam. Mulefat is a focus for planting because it is a large woody shrub with intricate branching that affords the vireo multiple sturdy nest placement opportunities. The nest is a small open affair that is interwoven on its rim in a fork or horizontally parallel branches and suspended below. Most of the rest of today's restoration efforts attempt to re-establish river functions that allow natural re-vegetation. Where invasive weeds are removed and kept off the floodplain, natural succession occurs quickly and native riparian elements re-plant and flourish. The major problem invasive species on the Santa Ana River over the past three decades has been giant reed *Arundo donax*. The Santa Ana River was recently estimated to contain about 10,000 acres of *Arundo* but the Santa Ana River Watershed Program has removed 3,000 acres of that total and continues from the upper river down.



Mulefat and Drip Irrigation Once The Weeds Are Gone



The Riparian Forest Will Replant Itself If the Weeds are Removed and Kept Out



Arundo Resembles Skinny Bamboo

Managing Parasitic Birds

Controlling Brown-headed Cowbirds *Molothrus ater* has helped the vireo's breeding success because the cowbird is a nest parasite; the female cowbird lays her eggs in the nests of other songbirds to the demise of the rightful occupants. The cowbird is non-native to southern California but became common here in the 1950s. Our native birds do not know how to deal with the larger, more aggressive, quickly developing cowbirds in their nest, nor do they recognize them as a threat; it has happened too fast for them to adjust. A parasitized nest almost never fledges anything but cowbirds.



Cowbirds Congregate at the Prado Dairies

Cowbirds congregate in dairy operations, cattle feedlots, and horse stables to feed and socialize. A few strategically placed traps in the dairies around Prado attract large numbers of cowbirds. Four dairy traps during the 2004 breeding season captured 1,040 cowbirds compared to 313 cowbirds taken directly out of riparian habitat with 16 additional traps. During the non-breeding season 6 dairy traps captured 6,527 cowbirds. The reduction of the local cowbird population has reduced nest parasitism and increased vireo fledgling production dramatically. In the early 1980s the parasitism rate was as high as 100% whereas in 2004 it was a record low of only 5%.

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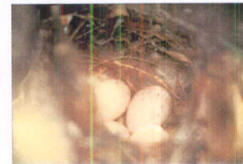
Cowbirds Are Aptly Named

Wildlife Management Cowbird Management



The cowbird trap is a modified Australian Crow trap; the male cowbird has the more contrasting brown head

Reasons For Decline



- Habitat Loss
- Habitat Restoration
- *Arundo donax* removal
- Brood Parasitism by the brown-headed cowbird
- Nest Monitoring
- Cowbird Management



A female vireo, slightly drabber than the male

Vireo Recovery

With nearly 20 years of management in the Prado Basin the vireo population has rebounded from 19 male territories in 1986 to 590 territories in 2004. With only 5 years of management on the Santa Ana River outside the basin, there were 247 additional territorial vireos in the watershed for a watershed grand total of 837 vireo territories. With so many vireos in 2004, the Santa Ana River population of the least Bell's vireo became the largest in existence. For 2 decades that honor belonged to the population on Camp Pendleton, principally the Santa Margarita River. No one believed that the Pendleton population could be surpassed. Pendleton is huge and true wilderness by coastal southern California standards and yet with hard work and sound management focused upon the vireo the Santa Ana River is now number one.