

6.10 Least Bell's Vireo (*Vireo bellii pusillus*) – Category SO

Management Units with Known Occurrences

The least Bell's vireo is a federally and state-endangered species originally thought to be 1 of 4 subspecies recognized by the American Ornithologists' Union (1957). However, recent research suggests the Bell's vireo is not 1 species with 4 subspecies, but 2 species, each with 2 subspecies, with results supporting the distinctiveness of the least Bell's vireo as a taxon (Klicka et al. 2016). This migratory songbird is dependent upon riparian habitat during the breeding season, with a large preference for willow-dominated woodland or scrub typically existing along streams or rivers (Wells and Kus 2001) in southern California and northwestern Baja California, Mexico. However, these vireos will also use marginal upland scrub adjacent to riparian woodland regularly whenever riparian woodland floods (Kus and Miner 1989; Unitt 2004).

USFWS (2006) reports that southern California supports 99% of the total population, with 54% in San Diego County and 30% in Riverside County. Surveys conducted by USGS from 2003 to 2015 in San Diego County indicate this species occurs in MUs 2,4,6,7, and 8 (see online map: <http://arcg.is/2i8ygbb>). Populations tend to concentrate in the coastal lowlands, especially along the Santa Margarita River, creeks within MCB Camp Pendleton, along the San Luis Rey River and its tributaries, San Dieguito River, Sweetwater River, Jamul and Dulzura Creeks, Otay River, and the Tijuana River valley; though there are occurrences in the foothills as well, such as at the San Diego River and Marron Valley (Unitt 2004).

Management Categorization Rationale

The least Bell's vireo should be managed as a Species Management Focus Category SO because persistence of 1 or more significant occurrences in the MSPA is at high risk of loss without immediate management action above and beyond that of daily maintenance activities (SDMMP 2013) and because management of riparian habitat alone will not ensure its persistence.

Least Bell's vireos face a multitude of threats in southern California where a primary threat is the overall loss of riparian habitat, which can be attributed to urban development, and agricultural practices (USFWS 1998, 2006). Additional threats include altered hydrological conditions (e.g., flood control and

channelization), nest parasitism by the brown-headed cowbird (*Molothrus* sp.), and introduced species (e.g., tamarisk and giant reed). At both the regional and preserve levels, an indirect threat to these vireos appears to be the effects from SHB and *Fusarium* fungal invasion attacking multiple species of trees (see Vol. 2D, Sec. 6.0, Invasive Animals), which pose a threat to a number of different environments, in particular to native riparian habitats. Nest predation by Argentine ants may pose a potential threat to vireos in association with ongoing urbanization surrounding this species' preferred habitat, although it is unknown whether this threat will be serious in magnitude without further study (USFWS 2006).

Management and Monitoring Approach

The overarching goal for least Bell's vireo is to protect, enhance, and restore occupied and historically occupied habitat to create resilient, self-sustaining populations that provide for persistence over the long term (>100 years).

For the 2017–2021 planning cycle, the management and monitoring approach for the least Bell's vireo is to (1) perform surveys through 2019 to document pre- and post- SHB and *Fusarium* outbreak effects on populations, with a focus on recovery in SHB-infested habitat over time at the Tijuana River site and conduct sampling at the MCBCP and San Luis Rey River sites; (2) develop a management plan dependent from results of surveys if indicative of necessary management of SHB and *Fusarium* impacts and incorporate prioritized monitoring and BMPs into management plan; (3) implement the highest priority management actions for least Bell's vireo, and (4) monitor the success of the recommended management actions.

For details and the most up-to-date goals, objectives, and actions, go to the MSP Portal Least Bell's Vireo summary page: http://portal.sdmmp.com/view_species.php?taxaid=179007.

Least Bell's Vireo References

Klicka, L. B., B. E. Kus., and K. J. Burns. 2016. Conservation Genomics Reveals Multiple Evolutionary Units within Bell's Vireo (*Vireo bellii*). *Conservation Genetics* 17(2):455–471.

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Unitt, P. 2004. *San Diego County Bird Atlas*. Proceedings of the San Diego Society of Natural History #39.

USFWS (U.S. Fish and Wildlife Service). 1998. *Draft Recovery Plan for Least Bell's Vireo*. U.S. Fish and Wildlife Service. Portland, Oregon. Prepared by the Portland Fish and Wildlife Office, Portland, Oregon.

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