BEFORE THE STATE WATER RESOURCES CONTROL BOARD

In the Matter of the State Water Resources Control Board (State Water Board) Hearing to Determine whether to Adopt a Draft Cease & Desist Order against California American Water Regarding its Diversion of Water from the Carmel River in Monterey County under Order WR 95-10	Hearing Date: July 23 - 25, 2008 Carmel River in Monterey County

EXHIBIT MPWMD-TC21

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

AVIAN DIVERSITY AND RIPARIAN FOCAL SPECIES ABUNDANCE ON THE LOWER CARMEL RIVER, MONTEREY COUNTY, CA. 1992-2007

2007 Annual Avian Monitoring Report

Prepared for the Monterey Peninsula Water Management District

Prepared By: Karen Shihadeh[1] and Nellie Thorngate[2]

18 March 2008

Ventana Wildlife Society
Conserving Native Wildlife and Their Habitats

19045 Portola Dr., Ste. F-1
Salinas, CA 93908

[1] karenshihadeh@ventanaws.org; 831-455-9514
[2] nelliethorngate@ventanaws.org; 831-624-1202

ABSTRACT

Riparian ecosystems are considered the most valuable habitat for the conservation of California's resident and migrant landbirds, supporting more avian species than all other habitats combined. In 1992 9 transects containing 4 fixed point counts each spaced at least 200 meters apart were established on the lower Carmel River to monitor how avian diversity and abundance respond to projects undertaken by the Monterey Peninsula Water Management District. Transects were visited twice in the spring (late May) and twice in the summer (middle August). Shannon Diversity Indices and Riparian Focal Species abundance were compared between years using linear regression and between transects using non-parametric analysis of variance to assess annual trends and impact of differing restoration regimes and hydrological conditions. During 15 years of avian surveys in the lower Carmel River, SDI has not changed in either spring ($P= 0.399$) or summer ($P= 0.370$). A marginally significant difference was detected between restored and reference sites in both the spring ($P= 0.088$) and summer ($P= 0.056$), with reference sites having higher SDI than restored. Abundance of Riparian Focal Species has increased significantly over the past 15 years in the spring ($P= 0.010$) and in the summer ($P= 0.006$). Of the 8 Riparian Focal Species detected in spring 2007, 5 were significantly low when compared to maximum breeding abundances for the Central Coast: Common Yellowthroat ($P= 0.000$), Swainson's Thrush ($P= 0.047$), Wilson's Warbler ($P= 0.012$), Yellow Warbler ($P= 0.000$) and Yellow-breasted Chat ($P= 0.000$). Although the study design likely biased true abundance values for these species, this study suggests that the lower Carmel River lacks certain habitat variables, such as tall emergent vegetation, large habitat patches, and canopy closure, favorable for nesting for these species. The presence of Song Sparrows, Black-headed Grosbeaks, and Warbling Vireos in numbers consistent with maximum breeding levels reported for the Central Coast demonstrates that the lower Carmel River has adequate shrub cover close to the river, edge habitat, and large overstory trees. Since 1992, the Carmel River has continued to support the same diversity of birds despite drastic changes, including flooding and increased drawdowns from development. Findings here can be used to guide land managers in adaptive restoration measures and also act as a baseline for establishing Riparian Focal Species population targets for the Carmel River and the Central Coast.