

1.0 Executive Summary

NewFields and Cramer Fish Sciences, in collaboration with the California Department of Water Resources FloodSAFE Environmental Stewardship and Statewide Resources Office Conservation Strategy team, applied best available tools and data to estimate the area of suitable juvenile salmonid rearing habitat required in each of the Conservation Planning Areas (CPAs) to achieve the Anadromous Fish Restoration Program (AFRP) “doubling goal” for Chinook salmon populations. The AFRP goal was used to align the Conservation Strategy objectives with existing, long-standing efforts by partner resource management agencies. Historical and existing suitable rearing habitat area for juvenile salmonids was estimated with the Estimated Annual Habitat approach that uses measured hydrology and modeled hydraulic relationships between river flow and inundation area to calculate areas of inundation with timing, duration, and frequency suitable for juvenile California Chinook salmon rearing. The rearing habitat required to support the doubling goal populations was estimated using the Emigrating Salmonid Habitat Estimation model. The details of the approach and the full range of calculated results are presented in the following sections and appendices.

Figure 1-1 is a comparison of average estimates of historical, existing, and required suitable rearing habitat for juvenile salmonids (to achieve the AFRP doubling goal) in each CPA. “Historical Rearing Habitat” is the area of physically suitable habitat historically (i.e., before construction of Central Valley dams and levees) inundated with timing, duration, and frequency suitable for juvenile Chinook salmon rearing. “Existing Rearing Habitat” is the area of physically suitable habitat currently inundated (i.e. after construction of Central Valley dams and levees) with timing, duration, and frequency suitable for juvenile Chinook salmon rearing. “Required Rearing Habitat” is the area of suitable habitat needed to support the AFRP doubling goal for Chinook salmon in the Central Valley. The area of suitable rearing habitat creation that would support the doubling goal is the difference between Required Rearing Habitat and Existing Rearing Habitat. Historical Rearing Habitat provides an unimpaired frame of reference for each CPA. It is important to note that creating sufficient suitable rearing habitat to bridge the gap between Required Rearing Habitat and Existing Rearing Habitat calculated for each CPA is not necessarily the charge of the Central Valley Flood Protection Plan. However, the Conservation Strategy will be able to use the information from this analysis as a measure to evaluate incremental progress toward satisfying suitable rearing habitat required to support the doubling goal in each CPA.