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Genetic characterization of California's Central Valley chinook salmon

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MARIAH H. MEEK,¹ MOLLY R. STEPHENS, ANTONIA K. WONG, KATHARINE M. TOMALTY, BERNIE MAY,
AND MELINDA R. BAERWALD

Department of Animal Science, University of California, One Shields Avenue, Davis, California 95616 USA

Abstract. This data set includes genotypes for 5000 chinook salmon individuals collected from throughout California's Central Valley between 1998 and 2013. We genotyped these samples using a panel of 96 single nucleotide polymorphism (SNP) markers. This is the most comprehensive genetic characterization published to date, covering all of the California Central Valley Evolutionary Significant Units (ESUs) and including all major river drainages within each ESU (total of 17 rivers and 5 hatchery populations). These populations are the foci of considerable basic and applied scientific research given the ecological, economic, and cultural importance of salmonid species. Moreover, all Central Valley ESUs are listed as federally threatened, endangered, or species of concern. This data set improves our ability to study basic ecological questions about salmonid biology, including testing hypotheses about population structure, genetic diversity, introgression between ESUs, and levels of gene flow among populations. Additionally, it provides a baseline to test for changes in genetic diversity due to anthropogenic and natural environmental change. For conducting individual genetic assignment testing, the data set will serve as a baseline to allow identification of future unknown samples, such as juveniles (which are not easily identified and often mix on rearing grounds), allowing us to better study migration patterns and understand fitness and survivorship. Given that many of these loci are employed by chinook researchers across the species' range, this data set will be useful to researchers studying chinook salmon at both broad and local (Central Valley) scales. We hope that publication of this data set will encourage others to build upon it and share similar salmonid data sets from other regions, increasing our understanding of salmonid ecology and improving our ability to sustainably manage and restore these important species.

Key words: *California; Central Valley; chinook salmon; genetic diversity; single nucleotide polymorphisms.*

The complete data sets corresponding to abstracts published in the Data Papers section of the journal are published electronically in *Ecological Archives* at <http://esapubs.org/archive> (the accession number for each Data Paper is given directly beneath the title).

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¹ E-mail: mhmeek@ucdavis.edu