

Land Retirement Demonstration Project

Five-Year Report



U.S. Department of the Interior
Interagency Land Retirement Team
1243 N Street
Fresno, California

September 2005

Cover photos: The imprinter used to plant native seed, restored native perennial shrub habitat, and an alkali scrub annual flower called *Monolopia stricta* or Crum's monolopia.

Land Retirement Demonstration Project

Five-Year Report

Prepared by

U.S. Department of the Interior
Bureau of Reclamation
Interagency Land Retirement Team
1243 N Street
Fresno, CA 93721-1813
Siran Erysian
Stephen L. Lee
Robert May

Bureau of Reclamation
Technical Service Center
PO Box 25007
Denver, CO 80225-0007
Joseph Brummer
Jim Yahnke

U.S. Fish & Wildlife Service
Interagency Land Retirement Team
1243 N Street
Fresno, CA 93721-1813
Beatrice A. Olsen

Bureau of Land Management
Fresno, CA 93721-1813
Stephen Laymon
Tracy Rowland

Prepared for



U.S. Department of the Interior
Interagency Land Retirement Team
1243 N Street
Fresno, California

California State University, Stanislaus
Endangered Species Recovery Program
1900 N Gateway Boulevard, Suite 101
Fresno, CA 93727
Georgia Basso
Krista R. Garcia
Adrian J. Howard
Patrick A. Kelly
Amy J. Kokx
Darren P. Newman
Scott E. Phillips
Nur P. Ritter
Curtis E. Uptain
Daniel F. Williams

San Diego State University
San Diego, CA 92182
Stuart H. Hurlbert

September 2005

Acknowledgments

The Land Retirement Demonstration Project has been implemented with considerable team effort. Bob May (Bureau of Reclamation), Stephen Lee (Reclamation), Bea Olsen (U.S. Fish and Wildlife Service [FWS]), Tracy Rowland (Bureau of Land Management [BLM]), and Stephen Laymon (BLM) have had the daunting role of administration, land acquisition, agency coordination, and management of the Atwell Island land retirement site. Siran Eryasian (Reclamation) provided Geographic Information System (GIS) support and maps for the physical impacts chapter and Scott Phillips (California State University [CSU], Stanislaus, Endangered Species Recovery Program [ESRP]) provided GIS support and maps for the remainder of the chapters.

ESRP field staff (in addition to the authors) that contributed immense effort to this project include Howard Clark, Ellen Cypher, Scott Deal, Patrick Morrison, Richard Gebhardt, Emily Magill, Steve Messer, Laurie Williams, Kimberly Kreitinger, Jenn Haas, Michelle Selmon, Karen Dulik, Gene “Woody” Moise, Paul Brandy, Tamra Sandoval, Rachel Zwerdling-Morales, Geoff Gray, Rhianna Lee, Roberta Fargo, and FOUNG Vang. They, along with many of the authors, have spent many late nights, early mornings, and hot afternoons in the field. They have spent much time and effort organizing equipment, implementing research trials, maintaining an on-site nursery, sampling, entering and analyzing data, and writing progress reports and annual reports. Administrative support was provided by Cecilia Lopez, Cristina Lopez, Alicia Villegas, Jacqueline Furr, Daniela Giovannetti, and Heather Williams.

Dr. Fred Schreiber (CSU Fresno) and Rain Healer (CSU Fresno) assisted with invertebrate identifications, and Dr. Norman Smith (Fresno County Agricultural Commission) assisted in invertebrate ecological classifications. Mr. Robert Jones and Billy Costello, our neighboring farmers, assisted in site maintenance, planted barley in the buffer areas surrounding the study plots, assisted with nursery maintenance and installing a variety of experimental trials. Staff from Richard F and F Contracting Inc., including Jeronimo Diaz, Valentina Diaz, Maria Diaz, Reyna Diaz, Francisco Rodriguez, and others spent a great deal of time and effort helping to plant, weed, and harvest the nursery. Richard Lopez at Westlands Water District (WWD) has been a tremendous help in guiding us through the convoluted web of water allocations, orders, and transfers. Without his help, we may well have needlessly spent a great deal of money on unused water. Battalion Chief Gary Karle, Captain Doug Johnson, and Fire Captain Specialist Josh Chrisman collaborated with us in writing a pre-fire management plan and provided methods to reduce fire hazard.

We would like to thank Ray Laclergue and Bonnie Bladen of Intermountain Nursery for providing native plant materials and for giving invaluable advice for

Land Retirement Demonstration Project
Five Year Report

growing native plants in our nursery. We purchased seed from Jody Miller at S and S seeds, David Gilpin at Pacific Coast Seeds, and Scott Stewart at ConservaSeed. They provided invaluable advice for our various restoration trials, as did John Anderson at Hedgerow Farms. David Dyer, at the Natural Resource Conservation Service's Plant Materials Center in Lockeford, California, donated some plant materials and provided advice during the installation of our own seed processing facility.

Willard Schaff and William House provided native seed collecting services. Andy Pon, at Westside Transplants, allowed us to use his seed cleaning equipment and advised us on nursery practices. John Stebbins at California State University, Fresno, provided space in a lathe house for growing seedlings. The California Department of Fish and Game, Fresno West Golf and Country Club, Westlands Water District, and Paul Lanfranco granted us permission to collect native seed from various locations in Fresno County. Richard Kochevar at New Mexico Department of Agriculture, State Seed Laboratory, performed seed testing on our native seed collections. Robert J. Huddleston and Richard Knoernschild of the Mendota Wildlife Area provided storage space for our tractor and implements, seed, and other materials. Dr. Ted St. John provided information that enabled us to build a seed imprinter. Sherrill Campbell at HCL Machineworks assisted in developing and constructing modifications to the imprinter to improve seed imprinting.