

PREFACE

Opening Statement and Brief History

I was so pleased to host my fifth vernal pool conference, and the fourth quadrennial conference with a wonderful team in Chico. The 2018 conference, *Vernal Pool Landscapes: Past, Present and Future*, was held once again at the Sierra Nevada Brewing Company. We were fortunate to have eminent scientists, conservationists, and fine beer all in the same place! In introducing the first day of the conference I felt it was important to explain a bit about the area surrounding where we were meeting. And so I provided a quick overview of the region. The local area is home to the endemic Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) (BCM), the last remaining wild spring run salmon, the Feather River (the source of water for the State Water Project), and it is the convergence of the Cascade and Sierra mountain ranges. All of this is a part of the great Sacramento River watershed.

It also seemed important for me to explain to the participants how I became involved in vernal pool advocacy. That started locally with the federal Endangered Species Act (ESA) listing of BCM in 1992 followed by the listing of four species of shrimp in 1994¹. I became an intervenor in a federal lawsuit defending the shrimp listing – a case that went all the way to the U.S. Supreme Court where the listing was upheld. Having participated in the legal arena where the district court criticized the absence of critical habitat² for the species, it was natural to turn around and file a lawsuit in 2001 to require critical habitat for the shrimp. That lawsuit succeeded in the designation of almost 900,000 acres of critical habitat in California and southern Oregon for the shrimp and 11 plant species. “Do not jeopardize” was noticeably absent from the 2007 vernal pool critical habitat rule from the U.S. Fish and Wildlife Service (USFWS), while it certainly was there for the Delta smelt in its 1994 critical habitat rule. The point being that the movement of the USFWS away from tough enforcement language and action was something to seriously ponder.

The 2006 Recovery Plan for the shrimp and 29 other vernal pool landscape species was another positive result from the litigation.³ The Recovery Plan led to the formation of the Vernal Pool

¹ The four species of shrimp listed in September 1994 are the Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardi*), and vernal pool fairy shrimp (*Branchinecta lynchi*).

² Under the Endangered Species Act, critical habitat refers to specific geographic areas that are essential for the conservation of a threatened or endangered species and may require special management considerations.

³ USFWS 2006. Vernal Pool Recovery Plan for California and Southern Oregon. “This recovery plan features 33 species of plants and animals that occur exclusively or primarily within a vernal pool ecosystem in California and southern Oregon. The 20 federally listed species include 10 endangered plants, 5 threatened plants, 3 endangered animals, and 2 threatened animals. The federally endangered plants are *Eryngium constancei* (Loch Lomond button-celery), *Lasthenia conjugens* (Contra Costa goldfields), *Limnanthes floccosa* ssp. *californica* (Butte County meadowfoam), *Navarretia leucocephala* ssp. *pauciflora* (few-flowered navarretia), *Navarretia leucocephala* ssp. *plieantha* (many-flowered navarretia), *Orcuttia pilosa* (hairy Orcutt grass), *Orcuttia viscida* (Sacramento Orcutt grass), *Parvisedum leiocarpum* (Lake County stonecrop), *Tuctoria greenei* (Greene's tuctoria), and *Tuctoria mucronata* (Solano grass). The federally threatened plants are *Castilleja campestris* ssp. *succulenta* (fleshy owl's clover), *Chamaesyce hooveri* (Hoover's spurge), *Neostapfia colusana* (Colusa grass), *Orcuttia inaequalis* (San Joaquin Valley Orcutt grass), and *Orcuttia tennis* (slender Orcutt grass). The three federally endangered animal species are the Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), and vernal pool tadpole shrimp (*Lepidurus packardi*). The two federally threatened animal species are the vernal pool fairy shrimp (*Branchinecta lynchi*) and delta green ground beetle (*Elaphrus viridis*).” (Executive Summary p. vii)

Recovery Plan Implementation Regional Working Group for Butte, Glenn, Tehama and Shasta counties.

An earlier version of our local Chico group was created informally around 2004. I asked Doug Alexander, Barb Castro, Jenny Marr, Joe Silveira, Rob Schlising, and Betty Warne to gather once a month to try to move vernal pool education and protection forward with a regional focus. In the early days we were looking for landowners interested in placing an easement on their vernal pool grasslands and hosted the group's first vernal pool conference in 2006 – at the same time the final vernal pool recovery plan was completed. Since then our group has hosted three additional conferences, all well attended!

A Remembrance

Since the conference in April 2018, the focus of this volume, we lost a valuable colleague and marvelous human being. Doug Alexander died June 10, 2019. He came to what was then Chico State College in 1965 as an assistant professor of biology. Local vernal pool ecosystems became the focus of his research, particularly at the Vina Plains Preserve. He taught Conservation Ecology and I took that class in the fall of 1989. I still have a file with handouts, tests, and reports! I found one test with Doug's red pen and my green pen dueling over a multiple-choice question. How funny! And how wonderful that we became friends and colleagues as I matured and was later hired by a local non-profit organization to "protect vernal pools."

Doug believed it was important to provide a voice for the people, farms, and the environment of the North State in complex and politically charged water and wetland struggles. Doug was both a founding member of AquAlliance and a member of its core group for the past nine years. He generously supported our work in many ways, such as his guest commentaries to spread the word about our activities in local newspapers and in his enthusiastic participation in our vernal pool conferences. He is greatly missed.

Thank You

I wish to especially thank some people and organizations without whom this conference would not have been possible:

- Sierra Nevada Brewery, The Rose Foundation, New Urban Builders, The Nature Conservancy, Northern California Botanists, Mt. Lassen Chapter of CNPS, and the Chico State Herbarium.
- The Conference Committee: Barbara Castro, Matt Guilliams, Kristin Hubbard, Rich Lis, Jenny Marr, Rob Schlising, and Betty Warne.
- Special thanks to Deana Adams, Francine Gair, Jake Jacobson, and Kathy Faith.

Barbara Vlamis
Chico, California

INTRODUCTION

This book is the fourth in a series based on conferences about vernal pool landscapes that have been held in Chico, California, starting in 2006. The book titles are the same as the titles of the conferences, the present one being *Vernal Pool Landscapes: Past, Present and Future* – which was held 11-13 April 2018. The three conferences preceding this one were documented with similar volumes in the Studies from the Herbarium series based on their proceedings; these are:

- *Vernal Pool Landscapes* (2007). Robert A. Schlising and Douglas G. Alexander, editors.
- *Research and Recovery in Vernal Pool Landscapes* (2010). Douglas G. Alexander and Robert A. Schlising, editors.
- *Vernal Pools in Changing Landscapes* (2016). Robert A. Schlising, Erin E. Gottschalk Fisher, and C. Matt Guilliams, editors.

Most of the articles in each of the four books are expansions of the talks that the conference speakers presented.

All four conferences were held in the Big Room of the Sierra Nevada Brewing Company in Chico. All were convened by Barbara Vlamis, who since 2009 has been the Executive Director of AquAlliance, a non-profit organization based in Chico. AquAlliance exists to defend northern California waters and to challenge threats to the hydrologic health of the northern Sacramento River watershed. Barbara and the team helping to prepare and carry out the conferences are members of the Vernal Pool Recovery Plan Implementation Regional Working Group of Butte, Glenn, Tehama, and Shasta Counties.

The co-editors of this book solicited two peer-reviews for each of the draft manuscripts submitted by conference speakers. Subsequent revisions of draft manuscripts by their authors were based on these reviews and also on comments from the editors. We thank the following persons for providing reviews of articles in this book: Robin Carter, Barb Castro, Andrea Craig, Molly Ferrell, Matt Gause, Erin Gottschalk Fisher, David Gowen, Tom Griggs, Matt Guilliams, Scott Hardage, Colleen Hatfield, Brent Helm, Bob Holland, Kristin Hubbard, Russ Huddleston, Todd Keeler-Wolf, Rich Lis, Evan MacKinnon, Jenny Marr, Kate Mawdsley, Melissa Nelson, Rob Schlising, Jay Sexton, Daria Snider, John Vollmar, Dieter Wilken, and especially Carol Witham, who provided reviews for several articles. Several of the conference speakers were not able to submit manuscripts for this book. To provide some useful information about their work on vernal pools, near the back of the book we have provided their names, addresses, and the abstracts of the talks they gave at the 2018 conference.

The co-editors are particularly grateful to Lawrence Janeway for his detailed examination of, and very careful assembling of, our edited chapters into the book as a whole. We are also grateful to Joe Hilsee, of the Chico State University Printing Services, for designing the cover of the book, and to the University Printing Services for printing the book in late 2019.

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