



# ARID LANDS

## Handbook



Developed by the  
Partnership for Arid Lands Stewardship (PALS)  
Richland, Washington





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## **DEDICATION**

*This handbook is dedicated to the scientists who have committed their lives to understanding and sharing with others the complex processes and pleasures of arid lands.*



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## **PREFACE**

The Partnership for Arid Lands Stewardship (PALS) developed this handbook as part of its goal to encourage long-term stewardship of arid lands of the Columbia Basin through environmental science education and research.

PALS believes that studying the ecology of the Columbia Basin can help students gain important science knowledge, acquire the skills of science, and develop important scientific habits of mind. Through these ecological learning experiences, students learn to read with comprehension, write with skill, communicate effectively, and apply mathematics knowledge and skills.

The purpose of the handbook is to provide an overview of the ecology of the region and link this information with guidelines and activities that align with state and national standards for science and environmental education. The handbook is written for a general, non-technical, audience. It is not meant to be a comprehensive guide; rather, its purpose is to present the “essence” of what is known.

For ease of use, the handbook is divided into two parts: Part One describes terrestrial vegetation, rivers and streams, wildlife, and geology of the Columbia Basin Ecoregion, specifically a portion of the ecoregion in and around the Tri-Cities that we call the lower Columbia Basin. Much of the ecological and geological descriptions have been excerpted from publicly funded research reports and articles written by scientists at Pacific Northwest National Laboratory, and others, as part of studies conducted on the U.S. Department of Energy’s Hanford Site since 1967. Specific reports and other sources used are acknowledged at the end of each section.

Part Two describes how the study of arid lands can help students achieve Washington’s Essential Academic Learning Standards and provides teachers with information on an instructional model, classroom assessment, and guidelines for approaching arid lands ecology in the classroom. Sample classroom activities based on the teaching/learning model also are included. Appendices A-F provide a bibliography, ecological resource cards, and other informational materials—including a brief ornithological history of the region.

Many individuals have been involved in developing materials for this project. Support for handbook development was provided by Battelle, Pacific Northwest National Laboratory, the U.S. Department of Energy, and The Nature Conservancy of Washington. Specific individuals and organizations are listed in Appendix G.

PALS hopes this handbook will facilitate understanding of arid lands—the lives hewn from potholes and lava flows, dry south-facing slopes, and lush greens of intermittent springs and streams—and that understanding will lead to care and conservation of the region for current and future generations.

—Georganne O’Connor

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