

Biology, Management, and Conservation of Lampreys in North America

Larry Brown, Shawn Chase, Matthew Mesa, Richard Beamish, and Peter Moyle, editors

321 pages

Published by the American Fisheries Society

Publication date: December 2009

ISBN: 978-1-934874-13-4

\$79.00 list price, \$55.30 AFS members

To order: www.afsbooks.org/54072P

Lampreys represent an ancient lineage extending back to the ostracoderms and are one of the most successful groups of living fishes. Perhaps best known for feeding on and killing bony fishes valued by humans, such as salmonids, lampreys exhibit a variety of fascinating life histories. Most lamprey species have lost the adult predatory stage of the life cycle and metamorphose, spawn, and die in the same stream in which they were spawned. Unfortunately, the bad reputation of predatory lampreys and the inconspicuous nature of small non-predaceous lampreys have resulted in their importance and special requirements in aquatic ecosystems being ignored. The impetus for this book was a petition to list four species of lamprey under the U.S. Endangered Species Act, which was denied in 2004 because of insufficient information. This decision energized many biologists to gather the scattered existing information on lampreys and to begin new research.

This book presents new scientific as well as traditional (indigenous) knowledge of lampreys, while demonstrating their fascinating nature. Readers interested in learning about lampreys will find not only a wealth of new information but also extensive citations of existing information in each chapter.

CONTENTS

Yurok and Karuk Traditional Ecological Knowledge: Insights into Pacific Lamprey

Populations of the Lower Klamath Basin (Robin S. Petersen Lewis)

Novel Relationships among Lampreys (Petromyzontiformes) Revealed by a

Taxonomically Comprehensive Molecular Data Set (Nicholas J. Lang, Kevin J. Roe, Claude B. Renaud, Howard S. Gill, Ian C. Potter, Jörg Freyhof, Alexander M. Naseka, Philip

Cochran, Hector Espinosa Pérez, Evelyn M. Habit, Bernard R. Kuhajda, David A. Neely, Yuri S. Reshetnikov, Vladimir B. Salnikov, Maria Th. Stoumboudi, and Richard L. Mayden)

Insight from Lamprey Genomics: Brain and Pituitary Reproductive Hormones of Lampreys (Stacia A. Sower, Mihael Freamat, and Scott I. Kavanaugh)

A Review of the Evolution of Nonparasitism in Lampreys and an Update of the Paired Species Concept (Margaret F. Docker)

Passage Considerations for Anadromous Lampreys (Mary L. Moser and Matthew G. Mesa)

Ability of Adult Sea Lamprey to Climb Inclined Surfaces (Ulrich G. Reinhardt, Thomas Binder, and D. Gordon McDonald)

Predation on Lampreys (Philip A. Cochran)

Diel Feeding by Larval Northern Brook Lampreys in Two Northern Michigan Streams (Trent M. Sutton and Stephen H. Bowen)

A Comparison of Native and Exotic Hosts for the Silver Lamprey (Philip A. Cochran)

Spawning Distribution and Habitat Use of Adult Pacific and Western Brook Lampreys in Smith River, Oregon (Stephanie L. Gunckel, Kim K. Jones, and Steven E. Jacobs)

A Field Study to Investigate Repeat Homing in Pacific Lampreys (Douglas R. Hatch and John M. Whiteaker)

Approaches for Monitoring Pacific Lamprey Spawning Populations in a Coastal

Oregon Stream (Abel F. Brumo, Leo Grandmontagne, Steven N. Namitz, and Douglas F. Markle)

Morphological Diagnosis of *Entosphenus* and *Lampetra ammocoetes* (Petromyzontidae) in Washington, Oregon, and California (Damon Goodman, Andrew P. Kinziger, Stewart B. Reid, and Margaret F. Docker)

Lessons from the Reintroduction of a Noncharismatic, Migratory Fish: Pacific

Lamprey in the Upper Umatilla River, Oregon (David A. Close, Kenneth P. Currens, Aaron Jackson, Andrew J. Wildbill, Josh Hansen, Preston Bronson, and Kimmo Aronsuu)

Considering Pacific Lampreys When Implementing Instream Activities (Bianca Streif)

Current Status and Distribution of the Pacific Lamprey South of Point Conception,

Southern Coastal California, USA (Camm C. Swift and Steve R. Howard)

Status and Conservation of Lampreys in California (Peter B. Moyle, Larry R. Brown,
Shawn D. Chase, and Rebecca M. Quiñones)

Taxonomy, Distribution, and Conservation of Lampreys in Canada (Claude B. Renaud,
Margaret F. Docker, and Nicholas E. Mandrak)

Critical Uncertainties and Research Needs for the Restoration and Conservation of

Native Lampreys in North America (Matthew G. Mesa and Elizabeth S. Copeland)