

# Intermittent Rivers and Ephemeral Streams

## Ecology and Management

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**Synthesizes recent advances in the ecology of intermittent rivers and ephemeral streams, integrating this knowledge into current management and conservation paradigms**

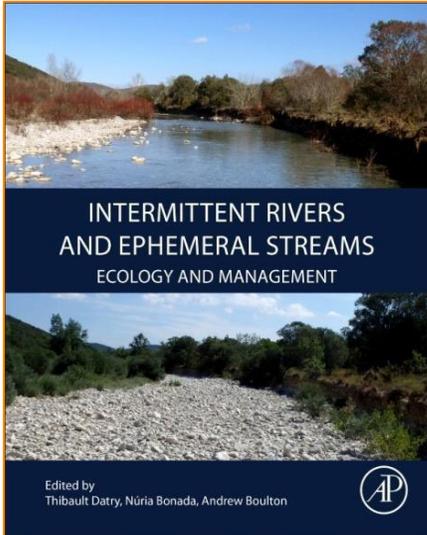
### KEY FEATURES

- Provides up-to-date reviews of research findings and management strategies using international examples
- Explores themes across diverse sub-disciplines in ecology and water resource management
- Describes how intermittent flow affects biota and ecological processes
- Discusses applications of recent research findings to management of intermittent rivers and ephemeral streams

### DESCRIPTION

*Intermittent Rivers and Ephemeral Streams: Ecology and Management* takes an internationally broad approach, seeking to compare and contrast findings across multiple continents, climates, flow regimes, and land uses to provide a complete and integrated perspective on the ecology of these ecosystems. Recent research, relevant case studies and management approaches in different regions are presented in a logical sequence of readable and richly illustrated chapters authored by disciplinary experts.

Researchers, consultants, water resource managers and policy makers will find this book a crucial reference about the ecology and management of a widespread ecosystem whose values and services have only recently been recognized.



**ISBN:** 9780128038352

**PUB DATE:** July 2017

**LIST PRICE:** \$120.00

**FORMAT:** Paperback

**PAGES:** c. 470

#### AUDIENCE

Aquatic ecologists and researchers; water resource managers and policy makers

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## Chapter 1: GENERAL INTRODUCTION

### FIRST SECTION: PHYSICAL FEATURES AND PROCESSES



**Chapter 2.1:** Geomorphology and sediment regimes

**Chapter 2.2:** Flow regimes

**Chapter 2.3:** Hydrological connectivity

### SECOND SECTION: CHEMICAL FEATURES AND PROCESSES



**Chapter 3.1:** Water physicochemistry

**Chapter 3.2:** Nutrient and organic matter dynamics

### THIRD SECTION: ECOLOGICAL FEATURES AND PROCESSES

#### THE BIOTA OF INTERMITTENT RIVERS



**Chapter 4.1:** Prokaryotes, fungi and protozoans

**Chapter 4.2:** Algae and vascular plants

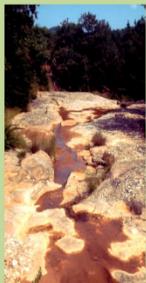
**Chapter 4.3:** Aquatic invertebrates

**Chapter 4.4:** Terrestrial and semi-aquatic invertebrates

**Chapter 4.5:** Fishes

**Chapter 4.6:** Amphibians, reptiles, birds and mammals

#### ECOLOGICAL AND EVOLUTIONARY PROCESSES



**Chapter 4.7:** Food webs and trophic interactions

**Chapter 4.8:** Resistance, resilience and community recovery

**Chapter 4.9:** Habitat fragmentation, metapopulation and metacommunity dynamics

**Chapter 4.10:** Genetic, evolutionary and biogeographical processes

### FOURTH SECTION: THREATS AND MANAGEMENT



**Chapter 5.1:** Anthropogenic threats

**Chapter 5.2:** Ecosystem services, values and societal perceptions

**Chapter 5.3:** Governance, legislation and protection

**Chapter 5.4:** Restoration

**Chapter 5.5:** Strategic adaptive management

## Chapter 6: CONCLUSIONS



**Dr. Thibault Datry** works at the National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA) in Lyon, France. His research focuses on the ecology of rivers and hyporheic zones, with particular emphasis on intermittent rivers.



**Dr. Núria Bonada** is an Associate Professor at the University of Barcelona (Catalonia, Spain). Her research focuses on the biodiversity, ecology and conservation of river ecosystems, especially of those in Mediterranean climates, where intermittent rivers are part of the daily landscape.



**Dr. Andrew Boulton** is an Adjunct Professor in Ecosystem Management at the University of New England, New South Wales, Australia. His research interests include river and groundwater ecology, especially of intermittent rivers in dryland areas of Australia and the United States.