

# A Framework for Freshwater Ecosystem Management

Overview and guide for  
country implementation

Volume 1



Copyright © United Nations Environment Programme, 2017

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UN Environment would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

#### Disclaimer

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.

#### Citation

UN Environment 2017. A Framework for Freshwater Ecosystem Management. Volume 1: Overview and country guide for implementation

Produced by: UN Environment

Copy editing: Strategic Agenda

Cover photo: Guntersville, US.

Credit: Nathan Anderson/Unsplash

Layout: UNON/Publishing Services Section/Nairobi, ISO 14001:2004-Certified

Job No: D1 - 17-08356



United Nations Environment Programme

P.O. Box 47074

Nairobi, 00100, Kenya

Tel: (+254) 20 7621234

E-mail: [water.unenvironment@un.org](mailto:water.unenvironment@un.org)

Web: [www.unenvironment.org/water](http://www.unenvironment.org/water)

UN Environment promotes environmentally sound practices globally and in its own activities. This report is printed on paper from sustainable forests including recycled fibre. The paper is chlorine free, and the inks vegetable-based. Our distribution policy aims to reduce UN Environment's carbon footprint

---

# **A Framework for Freshwater Ecosystem Management**

Volume 1: Overview and guide for country  
implementation

# Table of Contents

Acknowledgements .....	iii
Preface: A Framework for Freshwater Ecosystem Management .....	iv
<b>1. INTRODUCTION AND OBJECTIVES .....</b>	<b>1</b>
<b>2. SUMMARY OF THE FRAMEWORK FOR FRESHWATER ECOSYSTEM MANAGEMENT .....</b>	<b>5</b>
<b>3. PHASES AND STEPS IN THE FRAMEWORK FOR FRESHWATER ECOSYSTEMS MANAGEMENT .....</b>	<b>9</b>
3.1 Initiation Phase .....	9
3.1.1 Assessing Capacity.....	10
3.1.2 Agreeing on a Vision and Set Objectives .....	10
3.1.3 Designing Classification Frameworks .....	12
3.2 Identification Phase .....	13
3.2.1 Identifying Ecosystems and Classify by Type .....	13
3.2.2 Setting Basin Context .....	13
3.2.3 Desktop Screening and Assessment .....	13
3.3 Assessment Phase.....	14
3.3.1 Setting Ecological Status Thresholds and Targets .....	14
3.3.2 Monitoring .....	16
3.3.3 Evaluating and Reporting .....	17
3.4 Response Phase.....	18
3.4.1 Designing Response .....	18
3.4.2 Implementing Response .....	19
3.4.3 Review.....	19
<b>4. GOVERNANCE .....</b>	<b>21</b>
<b>5. SUMMARY .....</b>	<b>25</b>
Annex 1 – Process of Developing the Framework for Freshwater Ecosystem Management .....	28
Annex 2 – Acknowledgements for Developing the ‘Scientific background’ .....	29



# Acknowledgements

The Framework for Freshwater Ecosystem Management series has been developed over several years and has involved more than 60 contributors: authors, reviewers and coordinators. This work was initiated by a decision by the United Nations Environment Programme's Governing Council in 2013 and a first progress report was provided at the United Nations Environment Assembly (UNEA) in 2014.

Volume 1 of the series draws heavily on Volume 4, 'Scientific background for regional consultations on developing water quality guidelines for ecosystems', which was prepared through a collaboration between UN Environment, United Nations University – Institute for Environment and Human Security, and the Global Water System Project. It was produced for the second UNEA in 2016 to inform the first interm draft documents of this series. Based on feedback from countries received during UNEA-2 and the ensuing regional consultation period, the original framework has evolved and been refined since the creation of the 'Scientific Background'. Volume 1 was developed (in 2017) at the same time as the baseline for the 2030 Agenda for Sustainable Development. The process of updating this work takes into account feedback from countries: that the work should align with Agenda 2030 and the Sustainable Development Goals, and should be aimed towards assisting countries in setting up their own national standards, rather than prescribing a set of globally applicable water quality standards for ecosystems. For a more detailed description of the development process, see Annex 1. For a full list of contributors to the series, see Annex 2.

The Working Group for Volume 1 was led by the UN Environment–DHI Centre for Water and Environment (Paul Glennie, lead author, and Peter Koefoed Bjørnsen); under guidance from the Freshwater Unit of the Ecosystems Division at UN Environment (Joakim Harlin and Lis Mullin Bernhardt, with support from Emmanuel Ngore and Yeonju Jeong); with inputs from Neels Kleynans (formerly Department of Water Affairs, South Africa), Deborah Chapman and Stuart Warner (University of Cork, Ireland, GEMS/Water); Birguy Lamizana (Global Programme of Action for the Protection of the Marine Environment from Land Based Activities / UN Environment); and Chris Dickens of the International Water Management Institute (IWMI).

The Working Group is grateful to Bushra Nishat (International Water Association) for reviewing the work; and the following who were all involved in developing the 'Scientific background': Fabrice Renaud (United Nations University – Institute for Environment and Human Security (UNU-EHS)), Nike Sommerwerk (Leibniz-Institute of Freshwater Ecology and Inland Fisheries, formerly UNU-EHS), Janos Bogardi (University of Bonn, formerly UNU-EHS), Jan Leentvaar (formerly UNESCO-IHE and Ministry of Infrastructure and Environment, the Netherlands), and Paul Stortelder (formerly Ministry of Infrastructure and the Environment, the Netherlands).

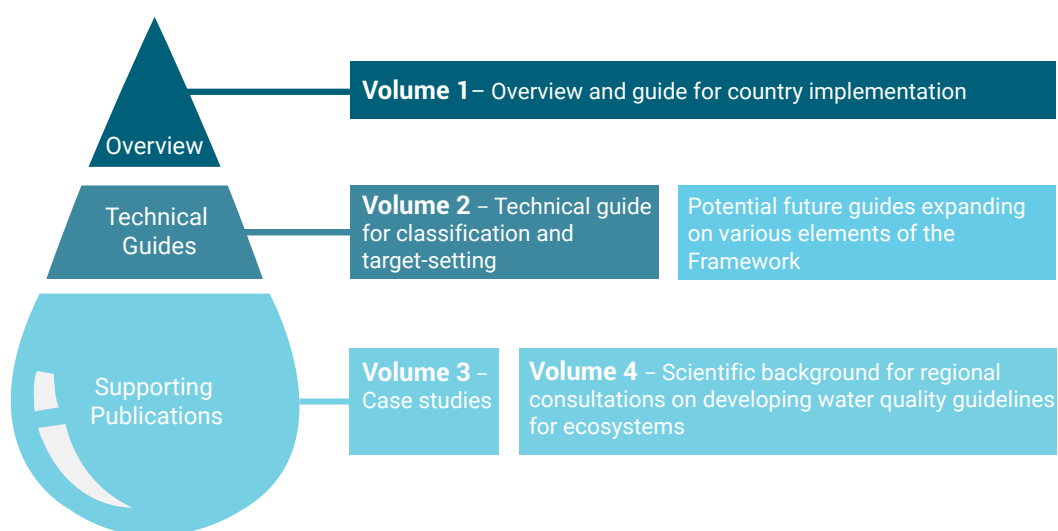
Suggested citation: UN Environment 2017. A Framework for Freshwater Ecosystem Management. Volume 1: Overview and country guide.

## Preface: A Framework for Freshwater Ecosystem Management

The UN Environment ‘Framework for Freshwater Ecosystem Management’ series presents a holistic management framework to guide country-level action to sustainably manage freshwater ecosystems. It builds on the decision by the UN Environment Programme (UNEP) Governing Council to develop water quality guidelines for ecosystems (Decision 27/3, 2013).

The Framework supports national and international goals related to freshwater ecosystems, such as relevant Aichi Biodiversity Targets and Sustainable Development Goal (SDG) targets. An overview of the series, which currently consists of four volumes, is provided below:

### The Freshwater Ecosystem Management series



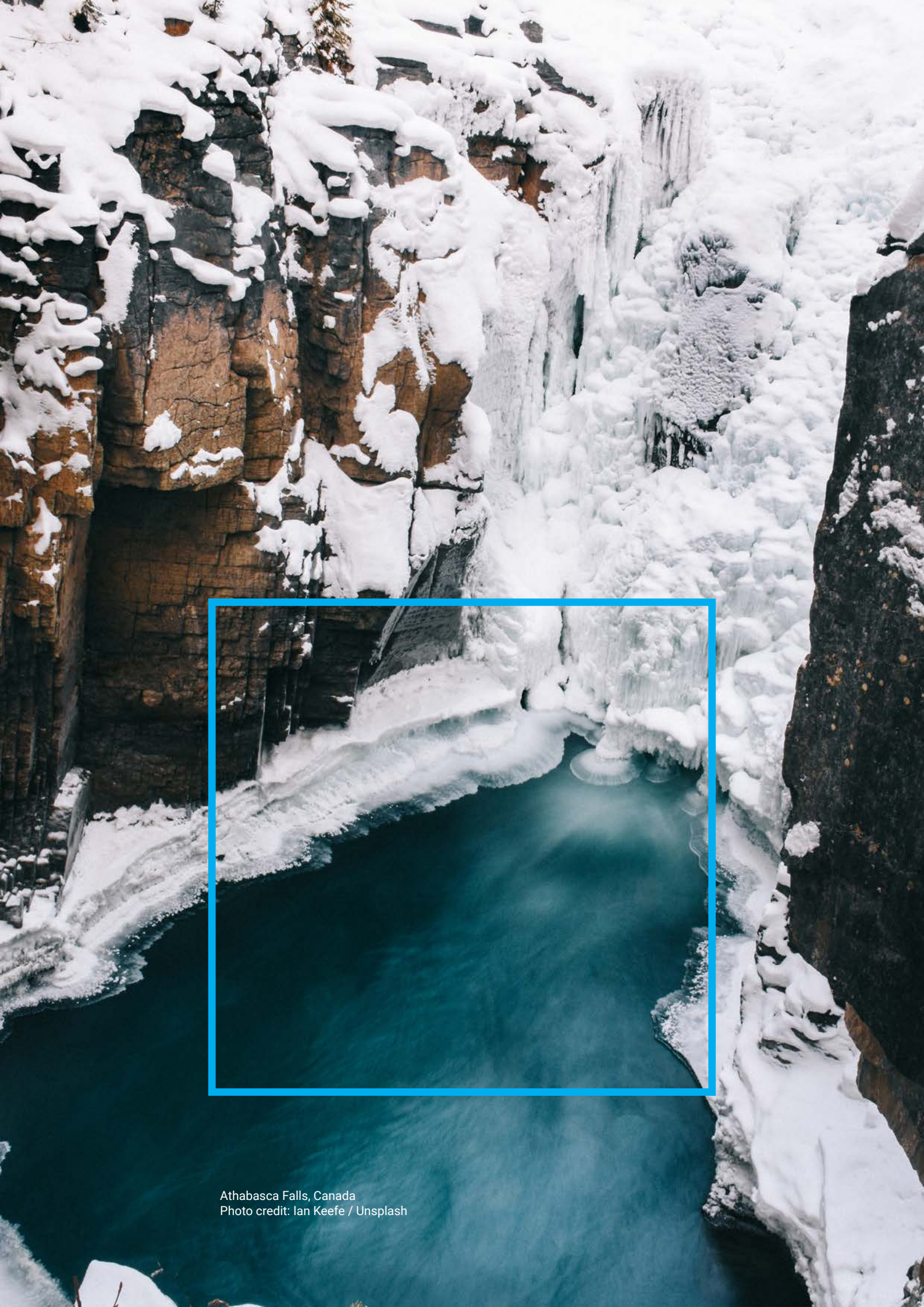
Volume 1 provides an overview of the Framework, and places it in the context of supporting Agenda 2030. It is intended for a wide audience, including decision makers, practitioners, scientists, non-governmental organizations and the general public.

Volume 2 describes aspects of the Framework in more technical detail: classification systems for freshwater ecosystem types, setting targets for ecological status, and monitoring progress against these targets. It is primarily aimed at government agency staff responsible for the sustainable management of freshwater ecosystems. These aspects have been selected for elaboration as they are likely to be the most useful for the largest number of countries in relation to Aichi Biodiversity Targets and the SDGs. Additional technical guides that expand on other parts of the Framework, such as the design and implementation of remediation actions, may be developed depending on demand from countries.

Volume 3 provides examples from around the world, illustrating different aspects of the Framework.

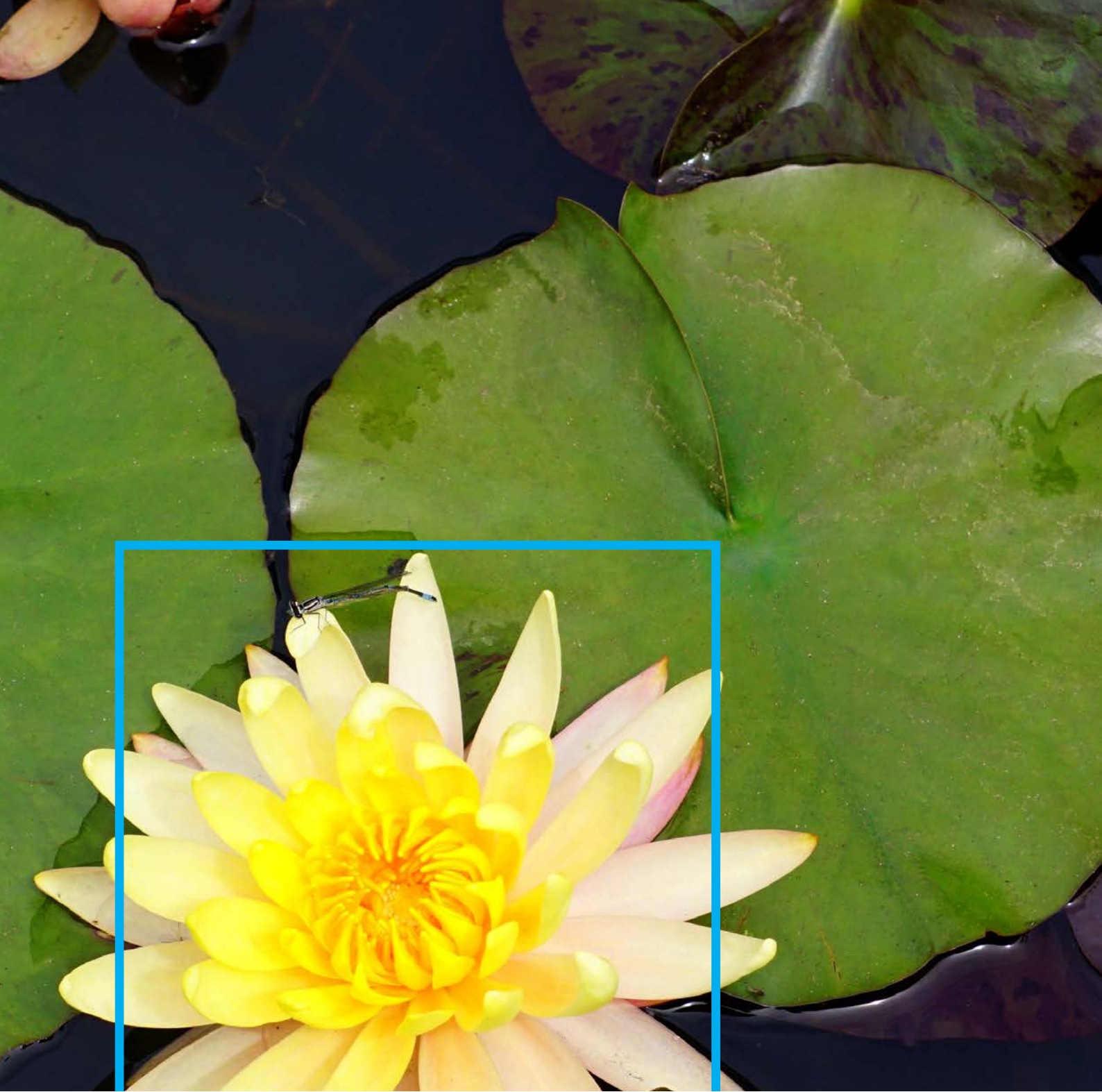
Volume 4 underpins the series and includes a review of water quality guidelines for ecosystems from around the world.





Athabasca Falls, Canada  
Photo credit: Ian Keefe / Unsplash





预览已结束，完整报告链接和二

<https://www.yunbaogao.cn/report/index/report?rep>