

A few personal words at the outset

From the outside, West Asia is not a hostile place for freshwater biodiversity. It is largely an arid region facing increasing water stress caused by unsustainable water use and climate change. Water stress is evident to anyone who looks at the landscapes of West Asia with open eyes. Not every visit to a water body is a pleasant one. Dams, pollution, and water extraction are major challenges in the region. Water means prosperity, and there is no water to lose for biodiversity. Economies in West Asia are developing rapidly. This development comes at a cost borne mainly by nature and has a massive impact on freshwater ecosystems. Not surprisingly, freshwater biodiversity is declining at twice the rate of marine and terrestrial biodiversity. Travelling through West Asian countries and observing the many changes in rivers and streams is often an emotional challenge. While working on this book, marshes and lakes were drying up, springs were filled with non-native fish, streams were dying from heavy pollution, and in many cases, new dams were being built, desiccating the rivers and streams below.

Demand for fresh water in the region will increase sharply due to growth in human population and economic development. At the same time, climate change will lead to more frequent massive floods, severe droughts, and extreme heat, reducing the region's water resources. More and more landscapes will lose their ability to support agriculture because there will not be enough water or it will be simply too hot. West Asia's leaders have often built their economies on fossil fuels. While they are not significant producers of climate gases, they provide fossil fuels to others to drive climate change. At the same time, the

region has witnessed and continues to witness significant wars and political crises such as the Syrian and Yemeni civil wars, the Russian–Georgian war, the Israeli–Palestinian wars, the Iranian crisis and their wars against the West, the wars against the Kurds and other minorities, the Iran–Iraq war, various wars in Iraq, the Nagorno–Karabakh conflict, the war against the Islamic State (ISIS), and several other smaller and larger never-ending conflicts that punish the people of the region and threaten their culture. All this makes West Asia a region of “endless sociopolitical crisis”. In addition, the water and climate crises will fuel instability, emigration, nationalism, and terror in the region. All this takes money and energy away from poverty reduction, sustainability, climate change mitigation, and biodiversity conservation.

West Asia is a beautiful part of the world. The friendly people, diverse cultures, and fantastic landscapes we encounter during fieldwork make every visit an unforgettable experience. West Asia is the first cradle of civilization, and more than 10,000 years of human history can be seen in many places. Standing at one of the crystal clear springs with its endemic fishes, full of aquatic plants, or having tea in a small rest house on the banks of a free mountain river will open any nature lover's heart. To descend from the steppe into a green river valley is to find that the water's edge becomes a paradise. Despite all the doom and gloom, freshwater fish are very resilient, and despite many threats, aquatic biodiversity is still surviving surprisingly well. Many, many beautiful and intact places remain. Not to forget, only some West Asian rivers have been as destroyed as those in much of Central Europe.



Majestic Zagros Mountains in Iran. We can show only a few of the many impressive landscapes of West Asia in this book.

In West Asia, only 12 (2.0 %) freshwater fish species are thought to have become extinct worldwide, while most of the 597 native species have survived. This is not what we would refer to as an “extinction crisis.” Still, we know the situation will change dramatically as climate change significantly increases drought, temperature, and water demand. Indeed, there is no room for fatalism. Economic development is freeing most people from their daily struggle to survive, young people are much better educated than ever, and awareness of nature is increasing, as is generosity and the desire to live in harmony with nature. In addition, the widespread availability of knowledge through the development of the internet has democratised access to information and enabled individuals to learn and grow as never before. The citizens of West Asia are discovering their biodiversity treasures and are ready to protect, restore, and provide

spaces for biodiversity. This open-access book is aimed to be a part of this development. An increasing number of protected areas are being designated, and the global biodiversity crisis has raised awareness among the people of West Asia. We are optimistic that our book will not be seen as a book of memories, the last documentation of species before they become extinct. Are we at a tipping point where biodiversity continues to survive human impact today but is likely to erode at an increasing rate in the near future? Or are we at a tipping point where we will be conserving and restoring biodiversity at a growing rate in the near future? Fish have received more attention than any other element of freshwater biodiversity. This book documents the biodiversity heritage of the wonderful West Asian region, a document of our time for those who create the future.



We acknowledge the many local fishers, such as those on this Hirmand Canal in Jarikeh, Iran. They fish that we could not find and provided valuable information.