

Springer Earth System Sciences

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The Aral Sea

The Devastation and Partial
Rehabilitation of a Great Lake

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Acknowledgements

Philip Micklin, Chief Editor

My contribution to this book is based on three decades involvement with the Aral Sea issue and numerous trips to the Aral Sea region. Over these years I have received help from many individuals, and funding from organizations, in the United States, Soviet Union, Russia, Western Europe, Japan and Central Asia, particularly in Uzbekistan and Kazakhstan. I want to express my deepest thanks to these individuals and organizations too numerous to name. Special thanks, however, are in order to the Department of Geography, Western Michigan University, Kalamazoo, Michigan; the NATO Science for Peace Program; the U.S. National Academy of Sciences; the Committee for Research and Exploration of the National Geographic Society; the National Council for Soviet and East European Research; the United Nations Environment Program; the Institutes of Geography and Water Problems of the Russian Academy of Sciences in Moscow; Karakalpakstan State University in Nukus, Karakalpakstan (Uzbekistan), and, last but not least, the Zoological Institute of the Russian Academy of Sciences in St. Petersburg. I would also like to express my gratitude to my wife, left to handle family matters during my visits overseas, sometimes for extended periods, in connection with my research on the Aral Sea.

Nikolay Aladin and Igor Plotnikov, Associate Editors

We would like to thank all members of our Brackish Water Laboratory of the Zoological Institute of RAS and all members of the Fisheries Laboratory in Aralsk, Kazakhstan and all members of the International Fund for Saving the Aral Sea, all members of our expeditions to the Aral Sea from Russia, Kazakhstan, Uzbekistan, USA, Germany, UK, France, Spain, Japan, Australia, Sweden, Slovenia and some other countries. A special thanks is in order to our colleagues at St-Petersburg Pedagogic University headed by the famous botanist Lev Aleksandrovich Kusnetsov with whom we did our studies on the Barsakelmes Island in the Aral Sea. We also would like to thank all members of our families who remained without us when we were in our long lasting, numerous expeditions to the Aral Sea during the period from 1979 until 2013. Finally, we would like to remember those

colleagues and friends who passed away and who helped us a lot in our Aral Sea studies: Dr. Evdokiya Markova (Kazakhstan), Dr. Nikolay Vorontzov (Russia), Dr. William Williams (Australia), Dr. William Potts (UK), Dr. Gilbert White (USA), Dr. Tatu Kira (Japan), and especially Dr. David Davidovich Piriulin of our Laboratory.

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Chapter 3

Biological Dynamics of the Aral Sea Before Its Modern Decline (1900–1960)

Igor S. Plotnikov, Nikolay V. Aladin, Zaualkhan K. Ermakhanov,
and Lyubov V. Zhakova

Abstract Fauna of the Aral Sea has very poor species composition. Its poverty is connected to the geological history of the sea. Originally in the Aral Sea there were at least 180 species (without Protozoa) of free-living invertebrates. Their fauna had heterogeneous origins. Prior to the modern recession/salinization, species originating from freshwater, brackish-water and saline continental water bodies predominated. The remaining were representatives of Ponto-Caspian and marine Mediterranean-Atlantic faunas. Parasitic fauna had poor species composition: 201 species were indigenous and 21 were introduced together with fishes. It had a freshwater character. Ichthyofauna consisted of 20 aboriginal and 14 introduced species. The aboriginal fish fauna consisted of species whose reproduction typically occurs in fresh water. There was no fishery on the Aral Sea and local people caught a few of fish only from the rivers until in the mid 1870s Russians came here. After 1905, a newly built railway stimulated further development of commercial fishing, and the Aral Sea became an important fishing water body. The majority of fishes were commercial. Bream, carp and roach provided approximately two-thirds of commercial catch tonnage. In the twentieth century, there was an increase in species diversity. It was a result of intentional and accidental introductions of initially absent species. Though biodiversity grew by 14 species of fishes and 4 species of free-living invertebrates, only a few of them became commercially viable or valuable as food for fishes. A large number of vertebrate species inhabited the Aral Sea, its shore and islands, the Syr Darya and Amu Darya, and the deltas and lakes of these rivers in their lower reaches. The Aral Sea and its shores provided nesting sites for a large number of various floating and near shore birds. Tugay forests along the banks of the rivers constituted a type of oasis where many animal

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