

Contents

Part I Climate Change and Water Quality Modeling

Environmental and Climatic Implications of Lake Manzala, Egypt: Modeling and Assessment	3
Mohamed Elshemy	
Modeling of Water Quality Parameters in Manzala Lake Using Adaptive Neuro-Fuzzy Inference System and Stochastic Models	47
Mosaad Khadr	
Investigating the Impacts of Dredging on Improving the Water Quality and Circulation of Lake Mariout via Hydrodynamics	71
Noha Donia	

Part II Biodiversity, Zooplankton, Fish and Fisheries

Environmental Impacts on Egyptian Delta Lakes' Biodiversity: A Case Study on Lake Burullus	107
Alaa M. Younis	
Coastal Lakes as Hot Spots for Plant Diversity in Egypt	129
Kamal Shaltout, Magdy El-Bana, and Tarek Galal	
Responses of Zooplankton to Long-Term Environmental Changes in the Egyptian Coastal Lakes	147
G. M. El-Shabrawy and M. A. Bek	
Fisheries of Egyptian Delta Coastal Wetlands; Burullus Wetland Case Study	179
Magdy T. Khalil	

Part III Remote Sensing Applications and Potential Restoration of Lakes

Earth Observations for Egyptian Coastal Lakes Monitoring and Management 201
Islam Abou El-Magd and Elham Ali

Are the Egyptian Coastal Lakes Sustainable? A Comprehensive Review Based on Remote Sensing Approach 221
Mohamed Elsayhaby, Abdelazim Negm, and M. A. Bek

Changes in a Coastal Lake Dynamic System and Potential Restoration 241
Hala Abayazid

Part IV Conclusions

Summary, Conclusions, and Recommendations for Egyptian Coastal Lakes and Wetlands: Climate Change and Biodiversity 261
Sommer Abdel-Fattah, Abdelazim M. Negm, and Mohamed Ali Bek

Erratum to: Earth Observations for Egyptian Coastal Lakes Monitoring and Management 271
Islam Abou El-Magd and Elham Ali

Index 273