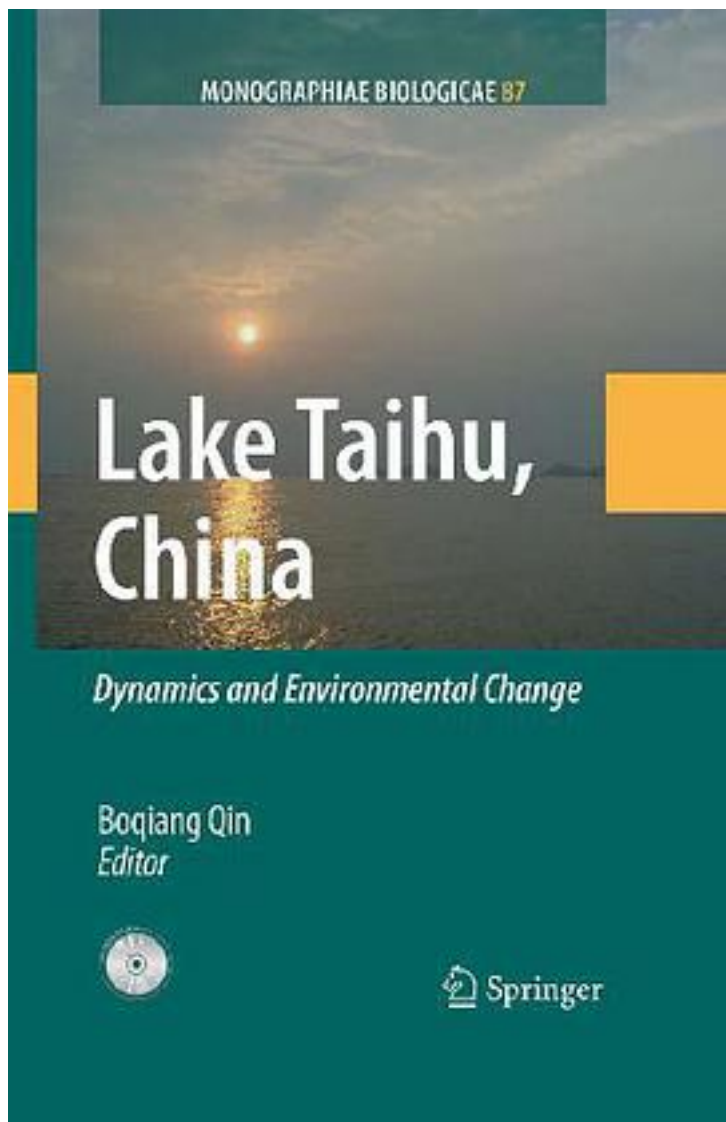


Lake Taihu, China



[Lake Taihu, China_下载链接1_](#)

著者:Qin, Boqiang (EDT)

出版者:Springer

出版时间:

装帧:

isbn:9781402085543

There are many shallow lakes in the world. Many of them play an important socio-economic role as contributors to the drinking water supply, in flood attenuation, fisheries and recreation activities. Because of the current anthropogenic changes in the environment, such lakes rapidly respond to eutrophication and swamping. It is often hard to address these issues because many changes in the ecosystems of shallow lakes are associated with little studied physical processes. This interaction between the aquatic biota and the physical and chemical environment increases the complexity of shallow lake ecosystems. Lake Taihu, located in the delta of Yangtze River, is a typical large, shallow eutrophic lake with area of 2338 km² and maximum depth of less than 3m .

This book provides basic data on various aspects of this lake and summarizes research work on the interaction between its ecology and physical limnology. It will be a reference for teachers and students of freshwater ecology and biology, the aquatic environment in general, and, most strikingly, for all those interested in physical limnology.

作者介绍:

目录: Contents.....	Page 8
1.1.1 Lake Morphology and Drainage Basin.....	Page 15
1.1.2 Formation and Development.....	Page 20
1.1.3 Influence of Lake Formation on the Aquatic Environment.....	Page 21
1.2.1 Hydrography.....	Page 25
1.2.2 Water Resources and Water Balance.....	Page 29
1.3.1 Development of the Water Quality in Lake Taihu and Its Rivers.....	Page 37
1.3.2 Pollutant Emissions and Amounts Flowing into the Lake.....	Page 39
1.3.3 Causes of Worsening Water Quality.....	Page 50
1.4 Swamping of Eastern Taihu Bay.....	Page 57
1.4.1 Current Status of Swamping.....	Page 58
1.4.2 The Development of Swamping in Eastern Taihu Bay and Its Driving Forces.....	Page 69
References.....	Page 80
2.1 Optical Properties and Their Ecological Significance.....	Page 82
2.1.1 Inherent Optical Properties of Lake Taihu.....	Page 84
2.1.2 Apparent Optical Properties of Lake Taihu.....	Page 98
2.1.3 Modelling of Transparency.....	Page 103
2.1.4 Ecological Effect of Underwater Radiation.....	Page 105
2.2.1 The Radiative Transfer Spectrum Model in the Atmosphere.....	Page 110
2.2.2 Model of Light Transmission in Water.....	Page 116
References.....	Page 122
3. Hydrodynamics and Its Effects on the Aquatic Ecosystem.....	Page 127
3.1.3 Wave Characteristics.....	Page 128
3.1.4 Wave Spectrum.....	Page 132
3.2 Field Investigations and Analysis of Currents.....	Page 134
3.3.1 Review of Modelling in Lake Taihu.....	Page 140
3.3.2 Model Description.....	Page 142
3.3.3 Model Verification.....	Page 147
3.3.4 Current Field and Dominant Wind.....	Page 149
3.4.1 Mechanism of Sediment Resuspension in Lake Taihu.....	Page 153

3.4.2 Critical Stress for Sediment Resuspension.....	Page 155
References.....	Page 159
4.1 Sedimentation Rate and Distribution of Sediment.....	Page 162
4.1.1 Sedimentation Rate.....	Page 163
4.1.2 Soft Sediment Distribution.....	Page 167
4.2.1 Particle Size Distribution of Surface Sediments.....	Page 170
4.2.2 Water Content and Porosity of Sediments.....	Page 172
4.2.3 The pH and Eh of Sediments.....	Page 175
4.2.4 The Spatial and Temporal Distribution of Nutrients in Sediments and Pore Water.....	Page 177
4.2.5 Forms of Phosphorus in Sediments.....	Page 179
4.3.1 Phosphorus Release and Sorption Under Dynamic Disturbance Conditions.....	Page 184
4.3.2 Phosphorus Adsorption Saturation of Sediment from Eastern Taihu Bay.....	Page 189
4.4.1 Effects of Wind-Wave Disturbance on Nutrient Concentrations in the Water.....	Page 193
4.4.2 Internal Loading of Nutrients.....	Page 198
4.4.3 Conceptual Model of Internal Loading of Nutrients in Large Shallow Lakes Such as Lake Taihu.....	Page 204
References.....	Page 205
5.1.1 Alkaline Phosphatase in Lake Water.....	Page 208
5.1.2 Alkaline Phosphatase and the Phosphorus Cycle.....	Page 211
5.1.3 Relationship Between Alkaline Phosphatase and Algal Blooms.....	Page 213
5.2.1 Microbial Food Webs, Organic Particles, and Algal Blooms.....	Page 217
5.2.2 Growth Characteristics of Bacteria Attached to Algae.....	Page 224
References.....	Page 235
6.1 Characteristics of Chlorophyll a and Primary Production.....	Page 239
6.1.1 Chlorophyll a (Chl a).....	Page 240
6.1.2 Phytoplankton Primary Production in Meiliang Bay.....	Page 241
6.1.3 The Relationship Between Chl a and Primary Production.....	Page 243
6.1.4 Ecological Factors Affecting Primary Production.....	Page 244
6.1.5 Simulated Water Current Experiment and Primary Production.....	Page 247
6.2.1 Phytoplankton Community Structure.....	Page 250
6.2.2 Changes in the Phytoplankton from the 1950s to the 1990s.....	Page 252
6.2.3 Response of the Phytoplankton to Changes in the Aquatic Environment.....	Page 258
6.3.1 Zooplankton Composition and Abundance.....	Page 264
6.3.3 Succession of Zooplankton and Response to Environmental Change.....	Page 270
6.4.1 Community Structure.....	Page 275
6.4.2 Distribution of Zoobenthos.....	Page 276
6.4.3 Response of Zoobenthos to Environmental Changes.....	Page 281
6.5.1 Fish Population Structure.....	Page 286
6.5.2 Changes in the Composition of Fish Catches.....	Page 287
6.5.3 Development of Hatchery Fishery and Its Effect on the Environment of the Lake.....	Page 290
6.6.1 Species Composition of the Aquatic Vegetation.....	Page 295
6.6.2 Succession of Aquatic Vegetation in Eastern Taihu Bay and Western Lake Taihu.....	Page 296
6.6.3 Effects of the Environment on the Succession of the Aquatic Vegetation.....	Page 301
References.....	Page 302
A. Species of Phytoplankton in Lake Taihu.....	Page 305
B. Species of Zooplankton in Lake Taihu.....	Page 311

C. Species of Zoobenthos in Lake Taihu.....Page 314
D. Fish Species in Lake Taihu.....Page 316
E. Species of Aquatic Vegetation in Lake Taihu.....Page 320
A.....Page 323
B.....Page 324
C.....Page 326
D.....Page 328
E.....Page 330
F.....Page 331
G.....Page 332
H.....Page 333
J.....Page 334
L.....Page 335
M.....Page 336
O.....Page 338
P.....Page 339
R.....Page 341
S.....Page 343
T.....Page 345
V.....Page 346
W.....Page 347
Z.....Page 348
..... (收起)

[Lake Taihu, China_ 下载链接1](#)

标签

评论

[Lake Taihu, China_ 下载链接1](#)

书评

Lake Taihu, China_下载链接1_