

AQUATIC BIOLOGY AND HYDROELECTRIC POWER DEVELOPMENT IN NEW ZEALAND

EDITED BY
P. R. HENRIQUES

Auckland
Oxford University Press
Melbourne Oxford New York



Contents

Contributors	vi
Introduction <i>P. R. Henriquez</i>	1
BACKGROUND: HYDROELECTRIC RESOURCES AND THEIR UTILIZATION	
State (Large-scale) Hydroelectric Resources <i>G. G. Natusch</i>	4
Local (Small-scale) Hydroelectric Resources <i>R. E. Stewart</i>	18
LEGAL AND PLANNING FRAMEWORK FOR HYDROELECTRIC POWER DEVELOPMENT	
Environmental Impact Assessment <i>A. J. Voice</i>	28
Town and Country Planning <i>J. A. Paul</i>	40
Water Rights at the National and Regional Level <i>J. C. Town and D. C. Best</i>	49
Wild and Scenic Rivers: Conservation of Natural Water Amenities <i>C. J. Collins</i>	59
Submissions, Recommendations and Objections: The Nature Conservation Council's Experience <i>C. W. Burns and P. D. Crisp</i>	75
Aquatic Noxious Plants Legislation <i>L. M. Harper</i>	87
MANAGEMENT AND IMPROVEMENT TECHNIQUES IN EXISTING HYDROELECTRIC POWER SCHEMES	
Flow Control <i>J. R. Irvine and I. G. Jowett</i>	94
Lake Level Control <i>A. F. Mark</i>	113
Aquatic Weed Problems <i>I. M. Johnstone</i>	124
Fish Passage, Control Devices and Spawning Channels <i>I. G. Jowett</i>	138
Trout Hatcheries and Fish Stocking <i>R. T. Hutchinson</i>	156
Measures to Benefit Wetland Birds <i>J. M. Neilson</i>	168

ENVIRONMENTAL INVESTIGATIONS FOR FUTURE
HYDROELECTRIC POWER DEVELOPMENT

Prediction of Phytoplankton Abundance and its Effect on Water Quality <i>R. A. Hoare, R. D. Pridmore and W. N. Vant</i>	180
Periphyton <i>B. J. F. Biggs</i>	192
Aquatic Macrophytes <i>P. R. Henriques</i>	207
Invertebrates <i>M. J. Winterbourn</i>	223
Fish and Fisheries <i>S. F. Davis and L. D. Teirney</i>	237
Wetland Birds <i>K. F. D. Hughey</i>	264
Index	277