

# INDIANA BIOLOGICAL SURVEY

## ENVIRONMENTAL PUBLICATIONS

These publications provide a series of resource books for environmental scientists that are interested in biological indicators, biological reference condition development, biological criteria, and application of these topics to environmental issues. These documents include a variety of publications including background text that would make a great resource for college texts in an environmental assessment class. The Assessment book includes a variety of topics that should be in every fish biologist's library. The third book includes information on indicator patterns and using this information to diagnosis environmental impact response signatures. Every book includes contributions from the experts in the field and provides answers and These books are available through CRC Press, Boca Raton, Florida or may be ordered through the Survey.

### **Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making**

CONCEPTUAL FRAMEWORK FOR BIOCRITERIA DEVELOPMENT/ Introduction/ Protecting Aquatic Ecosystems: Clean Water is Not Enough/ Biological Assessment and Criteria: Building on the Past/ Defining Acceptable Biological Status by Comparing with Reference Conditions/ Ecoregions: A Spatial Framework for Environmental Management/ Multimetric Approach for Establishing Biocriteria and Measuring Biological Condition/ WATER RESOURCE PLANNING AND DECISION-MAKING/ Status of Biological Criteria Development and Implementation/ Development and Application of Biological Impairment Criteria for Rivers and Streams in New York State/ Biological Criteria Program Development and Implementation in Ohio/ Development of Regionally based Biological Criteria in Texas/ Biocriteria: A Regulated Industry Perspective/ Freshwater Benthic Macroinvertebrates and Rapid Assessment Procedures for Water Quality Monitoring in Developing and Newly Industrialized Countries/ METHODS ADVANCEMENT AND TECHNICAL APPLICATIONS/ Habiata indices in Water Resource Quality Assessments/ Use of Periphyton in the Development of Biocriteria/ Development and Application of the Invertebrate Community Index (ICI)/ Applications of the Index of Biotic Integrity to Evaluate Water Resource Integrity in Freshwater Ecosystems/ Biological Response Signatures and the Area of Degradation Value: New Tools for Interpreting Multimetric Data/ The Role of Ecological Sample Surveys in the Implementation of Biocriteria/ POLICY AND PERSPECTIVES/ Monitoring Water Resource Quality using Volunteers/ Merging the Science of Biological Monitoring with Water Resource Management Policy: Criteria Development/ Policy Issues and Management Applications for Biological Criteria/ Filling the Gaps in Water Quality Standards: Legal Perspectives on Biocriteria.

1995 [ISBN: 0-87371-894-1]/ hardbound / 415 pages / \$ 119.95

### **Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities**

PERSPECTIVES/ Introduction: Biological Integrity and Use of Ecological Health Concepts for Application to Water Resource Characterization/ Using Fish Assemblages in a State Biological Assessment and Criteria Program: Essential Concepts and Considerations/ Collaboration, Compromise, and Conflict: How to Form Partnerships in Environmental Assessment and Monitoring/ Historical Biogeography, Ecology, and Fish Distributions: Conceptual Issues for Establishing IBI Criteria/ Applications of IBI Concepts and Metrics to Waters Outside the United States and Canada/ GUILD AND METRICS DETERMINATION/ Assessment of Balon's Reproductive Guilds with Application to Midwestern North American Freshwater Fishes/ Toward a United Definition of Guild Structure for Feeding Ecology of North American Freshwater Fishes/ Influence of Family Catostomidae on the Metrics Developed for a Great Rivers Index of Biotic Integrity/ The Use of External Deformities, Erosion, Lesions, and Tumors (DELT Anomalies) in Fish Assemblages for Characterizing Aquatic Resources: A Case Study of Seven Ohio Streams/ REGIONAL APPLICATIONS OF THE IBI/ Effects of Drainage Basin Size and Anthropogenic Disturbance on Relations Between Stream Size and IBI Metrics in Virginia/ Characteristics of Fish Assemblages and Environmental Conditions in Streams of the Upper Snake River Basin, in Eastern Idaho and Western Wyoming/ Classification of Freshwater Fish Species of the Northeastern United States for Use in the Development of Indices of Biological Integrity, with Regional Applications/ Development of an Index of Biotic Integrity for the Species Depauperate Lake Agassiz Plain Ecoregion, North Dakota and Minnesota/ Applications of Indices of Biotic Integrity to California Streams and Watersheds/ APPLICATION TO FRESHWATER RESOURCE TYPES OTHER THAN WADEABLE WARMWATER STREAMS/ Development and Application of an Index of Biotic Integrity for Coldwater Streams of the Upper Midwestern United States/ Biological Monitoring and an Index of Biotic Integrity for Lake Erie's Nearshore Waters/ Considerations for Characterizing Midwestern Large River Habitats/ Applying and Index of Biotic Integrity based on Great River Fish Communities: Considerations in Sampling and Interpretation/ Tailwater Fish Index (TFI) Development for the Tennessee River Tributary Tailwaters/ Reservoir Fishery Assessment Index Development: A Tool for Assessing Ecological Health in Tennessee Valley Authority Impoundments/ Toward the Development of an Index of Biotic Integrity for Inland Lakes in Wisconsin/ Development of IBI Metrics for Lakes in Southern New England/ DATA VALIDATIONS/ Relations between Fish Metrics and Measures of Anthropogenic Disturbance in Three IBI Regions in Virginia/ Methods for Deriving Maximum Species Richness Lines and Other Threshold Relationships in Biological Field Data/ Adjustments to the Index of Biotic Integrity: A Summary of Ohio Experiences and Some Suggested Modifications/ Integrating Assessments of Fish and Macroinvertebrate Assemblage and Physical Habitat Conditions in Pennsylvania.

1999 [ISBN: 0-8493-4077-1]/ hardbound / 671 pages / \$ 139.95

### **Biological Response Signatures: Indicator Patterns Using Aquatic Communities**

CONCEPTUAL FRAMEWORK/ Biological Response Signatures: Towards the Detection of Cause and Effect and Diagnosis in Environmental Disturbance/ Biotic Community Response to Stress/ Using Biological Response Signatures within a Framework of Multiple Indicators to Assess and Diagnose Causes and Sources of Impairments to Aquatic Assemblages in Selected Ohio Rivers and Streams/ Using Biological Criteria for Establishing Restoration and Ecological Recovery Endpoints/ CONTAMINANT PATTERNS IN ECOSYSTEMS/ Effects of Contaminated Dredge Spoils on Wetland Plant Communities: A Literature Review/ Effects of

Sediment Quantity on the Health of Aquatic Ecosystems: A Case Study on Depth of Fines in Coastal Plain Streams in Alabama/ The Difficulty in Determining the Effects of Pesticides on Aquatic Communities/ Ecological Effects of Metals on Benthic Invertebrates/ METHOD ADVANCEMENT/ A Method for Assessing Outfall Effects on Great River Fish Populations: The Traveling Zone Approach/ Pioneer Species Metric Changes as a Result of Increased Anthropogenic Disturbances: Statewide Patterns and a Case Study of Four Ohio Streams/ Correlation between Nutrient Stimulation and Presence of Omnivorous Fish along the Lake Erie Nearshore/ Regional Ecological Normalization Using Linear Models: A Meta-Method for Scaling Stream Assessment Indicators/ LAND USE MODIFICATION PATTERNS/ Fish and Benthic Macroinvertebrate Assemblages as Indicators of Stream Degradation in Urbanizing Watersheds/ Conservation of Confined Disposal Facilities Based on the Biological Stability and Integrity of Pland Communities: A Case Study in the Laurentian Great Lakes Basin/ Macroinvertebrate Assemblages Associated with Patterns in Land Use and Water Quality/ Effects of Metals on Freshwater Macroinvertebrates: A Review and Case Study of the Correspondence of Multimetric Index, Toxicity Testing, and Copper Concentrations in Sediment and Water/ Relationships between Fish Assemblages and Organochloride Insecticides in Sediment and Fish Tissue in South Central Kansas/ Effects of Silviculture on Indices of Biotic Integrity for benthic Macroinvertebrates and Fish Assemblages in Northeastern Minnesota's Northern Lakes and Forest Ecoregion (USA)/ Biological Assessment of Mining Disturbance of Stream Invertebrates in Mineralized Areas of Colorado/ CASE STUDIES/ Patterns in Water Quality and Fish Assemblages in Three Central Indiana Streams with Emphasis on Animal Feed Lot Operations/ Response Signatures of Four Biological Indicators to an Iron and Steel Industrial Landfill/ Response of Diatom Assemblages to Human Disturbance: Development and testing of a Multimetric Index for the Mid-Atlantic Region (USA)/ Response Patterns of Great River Fish Assemblage Metrics to Outfall Effects from Point Source Discharges/ Evaluating the Effects of Thermal Discharges on Aquatic Life: Patterns in Multimetric Indices from Three Case Studies in Large and Great Rivers of the Midwestern United States/ Assessing the Ecological Integrity of the East Branch of the Grand Calumet River: Response of Four Biological Indicators/ Variable Assemblage Responses to Multiple Disturbance Gradients: Case Studies in Oregon and Appalachia, USA  
2003 [ISBN: 0-8493-0905-0]/ hardbound / 576 pages / \$139.95

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<b>ASSESSING THE SUSTAINABILITY AND BIOLOGICAL INTEGRITY OF WATER RESOURCES USING FISH COMMUNITIES (T.P. SIMON – ED)</b>	<b>\$ 139.95</b> _____
<b>BIOLOGICAL RESPONSE SIGNATURES: INDICATOR PATTERNS USING AQUATIC COMMUNITIES (T.P. SIMON – ED)</b>	<b>\$ 139.95</b> _____
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