

PREFACE

Surface water and agricultural water are uniquely associated as they provide many of our basic needs, including food and fiber, power, transportation, and recreation. Like other volumes in the *Water Encyclopedia*, we have selected articles as varied in content as they are in technical sophistication. To this end, the reader will also recognize that single topics are occasionally duplicated at varying levels of scientific acumen.

Articles are also provided that demonstrate that surface and agricultural water are associated in yet another way: They must be used efficiently and protected to assure their productiveness far into the future. For example, agricultural water use efficiency is discussed from several viewpoints with respect to irrigation technology. River basin planning is approached in diverse ways, including stream classifications, watershed hydrology, modeling, erosion control, and water conservation.

We have necessarily included articles addressing issues of quality with respect to both surface and agricultural water. In addition to an assessment of pollution outflow from agricultural areas, the quality of reclaimed irrigation is addressed from both chemical and microbial standpoints. Watershed areas are examined according to their contribution and vulnerability to contamination, flooding, sediment transport, and trace elements.

Discourses on surface water would not be complete without articles related to fish. Accordingly, we have included articles on fish growth, fisheries, fishponds, and the use of fish scales in toxicological studies as examples.

Another vital area of study in this volume is perhaps best described as the practical side. These areas are of less esoteric origins, including salt tolerance of plants, irrigation wells, weed control, tile drains, and moisture content in to agriculture. Similar topics in surface water include riparian systems, reservoir design, wetlands, lakes, levees, and the unit hydrograph.

Finally, and *appropriately*, this volume of the *Water Encyclopedia* contains articles on specific water bodies and the consequences of their being. Included are the Aral Sea, the Ganga River of India, the Great Lakes, and the Yellow River in China, only to name a few. Here, too, the association of surface water and agricultural water are reinforced. This volume presents an important segment of the topic of water. We believe that the reader's educational pursuits will be well met by its contents.

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