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The Instream Flow Council, Instream Flows for Riverine Resource Stewardship

Quiet would you spread to me
hums and hums of sinewing,
nimble tissues at their work
of joining joy to drudgery.

Thank you for this resting me,
for the whys persisting me,
I take this heel to my hand,
paddle, Lord, this promised land."

Justice Greg Hobbs reveals a great deal about himself in these writings – his love of the land, his passions about justice and community, and love of family. "The most beautiful occurrence ever happening in my life is the day I met Bobbie on the face of Baldy Mountain ... and every day since." What a great tribute to your life's partner. This is a rewarding book, which readers will cherish and enjoy.

THE INSTREAM FLOW COUNCIL, INSTREAM FLOWS FOR RIVERINE

RESOURCE STEWARDSHIP (Revised Ed. 2004) Instream Flow Council, Cheyenne, WY (2004); 267 pp; ISBN: 0-9716743-1-0, hardcover.

Review by Larry MacDonnell

In 1988 the Natural Resources Law Center convened a conference to discuss the burgeoning number of state programs in the West intended to provide some legal protection for unappropriated water needed for environmental purposes. The very idea that water left in-stream had value and should be legally protected represented a dramatic break with traditional notions of western water law and policy. Yet it was clearly an idea whose time had come.

We have come a long way in the past 16 years. Interestingly, the laws have not changed much since that time. But the science of rivers blossomed, greatly increasing our understanding of how rivers function. In the 1980s the law focused primarily on how to keep in place some minimum amount of water necessary to sustain a fishery. Today we view instream flows in the context of the larger question of river health. Fortunately, a comprehensive guide now exists for those wanting a better understanding of river function and the central role of stream flows (hydrology) in support of river function. Produced by the Instream Flow Council, the book is called *Instream Flows for Riverine Resource Stewardship*. The Instream Flow Council recently published book in a richly illustrated revised edition.

The Instream Flow Council ("IFC") is an association of the United States and Canadian state and provincial fishery and wildlife agencies. IFC emerged out of a project intended to evaluate processes in use in

the two countries to identify and protect instream flows. Participants recognized the need to share knowledge and experience; they agreed on the need to develop guidance for their programs and their assessment practices. *Instream Flows* is an important outcome of this process.

The Council views its role as promoting the protection of rivers as well as providing guidance for achieving that protection: "The IFC promotes the goal of maintaining the ecological integrity of unregulated rivers and restoring regulated rivers to the ecological conditions that more nearly approximate their natural form and function" Throughout the book, the authors present council policy statements on a wide range of topics. The authors collect the policy statements in an appendix.

The authors organize the book around eight "components" for evaluating and prescribing instream flows. The following five components are technical: hydrology, geomorphology, biology, water quality, and connectivity. The following three components are social: legal, institutional, and public involvement. The authors fully recognize the complexity of their subject and the need for integration of many different considerations. It is this integration, one of great teachings of the science of ecology that provides perhaps the book's most important contribution.

We live in a world of specialization. Increasingly, professionals come to know more and more about their particular expertise. Managers and decision makers, however, have to deal with the general. They are responsible for outcomes and how these outcomes affect people. They need access to the learning of experts but in a form that is comprehensible and usable. In my view, *Instream Flows* serves this very purpose.

Rivers are the terrestrial form of the hydrologic cycle. They are the manifestations of water's passage through land. The science of hydrology focuses on the water resource itself, its patterns of availability, and its flow regimes. Geomorphology considers the interactions between water and the earth, how sediments are carried, and what channel forms result. Biology adds in the dimension of plant and animal life. Water quality focuses on physical, chemical, and biological capacity of the water. Connectivity brings attention to the dynamic system of instream and out-of-stream exchanges of organisms, energy, and matter.

Instream Flows provides an informative and comprehensible overview of these essential components of a healthy river. Its purpose is to explain why it is necessary to take all of these components into account when considering the manner in which human actions can intervene in normal river function in order to capture some of its benefits. In particular, its focus is on human uses of stream flows and the effects such uses have on river function.

In the more arid regions of the United States and Canada, it is common for communities to store water in on-stream reservoirs and divert it out-of stream for human uses, particularly for irrigated agriculture. In other places, groups straightened and even concrete-lined river channels in an attempt to prevent overbank flooding. Groups constructed levees to contain floods and enable human use of lands formerly in the floodplain. Communities also constructed many dams to take advantage of the energy that falling water produces. People widened and deepened rivers and installed lock structures in order to use rivers for navigation. All of these uses have provided human benefits.

Engineering development of rivers as a tool of economic development no longer plays as important a role in the United States economy as it once did. Yet such river uses continue, and those who still directly benefit understandably oppose any change. Nevertheless, there is growing interest in restoring rivers where possible to return at least some of the lost functions and values. That interest may be recreational—to improve sport fishing, for example, or to enable swimming or whitewater boating. It may be aesthetic—to support a greenway through an urban area. It may be ecological—to support aquatic-dependent wildlife and vegetation. In situations where a species is in danger of extinction because of river alteration there may even be a legal imperative to restore the river. Whatever the motivation, the demand for healthy rivers increases.

Instream Flows offers a framework for developing comprehensive ecologically based instream flow management. The authors are primarily state and provincial wildlife managers. They recognize that people and policy will shape any such program as much as science and management will shape it. They find legal support for their approach in the public trust doctrine, the common law duty of the state to act as public steward of common property resources such as water and wildlife, and in other sources of law. Wisely, they encourage active public involvement in formulation of instream flow programs.

Ultimately, the authors focus the book on the specific subject that initiated their efforts: instream flow assessment tools. A variety of assessment methodologies for determining desirable stream flow conditions now exist. *Instream Flows* provides a survey of these methodologies that includes such considerations as their scale, the riverine components considered, their intended application, and their strengths and weaknesses. The authors emphasize the importance of choosing an assessment methodology that is suited to the situation at hand. No single methodology will always be appropriate.

Primarily intended to serve as a sourcebook for those working to develop and use instream flow assessments, *Instream Flows* meets an even larger need: it is a guide for those interested in promoting improved river health and function. It brings together in one book the

science, the process, and the law. *Instream Flows* is an important contribution to ongoing efforts to ensure that America's water resources are serving today's needs.

SHERRY L. SMITH, ED., THE FUTURE OF THE SOUTHERN PLAINS, University of Oklahoma Press, Norman, Ok. (2003); 275 pp; \$29.95; ISBN 0-8061-3553-0, hardcover.

This book contains collection of eight essays about the past, the present, and the future of the Southern Plains. The authors each wrote sections to collaborate with the others, never overlapping but always complementing each other's work. The topics include: the history of the people in the Plains, the development and evolution of family farms, the history of droughts and their implications on the Plains, an overview of the Ogallala Aquifer and a comparison of how water districts deal with the limited water supply, the role of the petroleum industry in the Plains, the political history and future of the people in the Plains, the history of Hispanic people in the area, and conservation plans and parks. Larry McMurtry, author of *Lonesome Dove* and resident of the Southern Plains, called the collection "informative, provocative, and stimulating."

Each essay incorporates the same themes that make up the character and essence of the geographic area that primarily includes western Texas, Oklahoma, and eastern New Mexico. The book starts with an essay about the human history of the Southern Plains, including everything from early American Indians, to their eradication and the eradication of the buffalo, to present-day tourism. The book concludes with an essay summarizing the results of human action and several suggestions for the restoration of the wild, animal-filled, expansive grasslands that used to make up the area. In between, the essays cover specific aspects of the Southern Plains. Each essay paints a vivid picture of both prosperous and desperate times with the bleak resignation of the fact that people migrating away from the area. This movement results from a combination of natural and manmade factors including weather, climate change, drought, depletion of resources and natural ecology, fewer jobs, and the demise of the family farm.

The first essay, *Trails and Footprints*, by Elliott West, compares the oldest known human history of the Plains with the present day. The author describes the importance of the area for early Americans because of the trade of flint, bison, people, crops, and horses and the impact of European settlers on these practices. American Indian tribes who hunted in the area, and those who farmed elsewhere, engaged in a huge bison and crop trade. The author goes into detail about the arrival of Coronado and the Spanish, giving a description of the native people and their practices from the Spanish point of view. In addition