streams rather than on disturbed rivers that, unfortunately, increasingly represent the "normal" condition. Statzner and Kohmann (Chapter 14) point out an emerging problem. Given the degree of deterioration that has occurred already, and emerging efforts to restore these systems, restoration or "re-naturalization" is being pursued with little background knowledge of the natural ecosystem structure and function. They go further and say that their chapter is more about human disturbance than about other ways to generalize on running waters!

The conservation perspective shown consistently in the book reminds me of the role that stream ecologists must play in the protection and restoration of our imperiled riverine resources around the globe. Look throughout this book for examples of the numerous dams on rivers and streams of southern South America, the increases in arable land in many watersheds, enrichment of streams and rivers from fertilizer-laden runoff, destruction of the riparian zone, and water withdrawals for urban and agricultural use. Particularly disturbing was the Bogatov et al. (Chapter 19) forewarning of the planned reservoir cascade in the Amur River basin, and regulation of the floodplain lakes. What will it take for us to learn from our past mistakes? This book, as pointed out by Dudgeon (Chapter 20), can be of great value to those who must formulate conservation and management strategies for lotic ecosystems.

Nicholas G. Aumen
South Florida Water Management District
West Palm Beach, Florida

Dynamics and geomorphology of mountain rivers. Peter Ergenzinger and Karl-Heinz Schmidt (editors). ISBN 0-387-57569-3. Lecture Notes in Earth Sciences, No. 52. Springer-Verlag, Berlin/Heidelberg, 1994. 326 p. $ 74.00 (paper). (Available from Springer-Verlag, 175 5th Avenue, New York, NY 10010)

Although many stream ecologists work on mountain streams, most of the work over the last 50 years in fluvial geomorphology—the science of river processes and landforms—has emphasized lowland rivers. The classic work on rivers, *Fluvial processes in geomorphology* by Leopold, Wolman, and Miller (1964) makes scant reference to dynamics of the steeper, coarser-bed streams typically found in montane environments. While a more recent book *The fluvial system* (Schumm 1977) develops the idea of mountain rivers as sources for the water and sediment transported downstream, the unique character, morphology, and processes of mountain rivers are little discussed.

The past 10–20 years have witnessed a dramatic acceleration of stresses on montane environments. Increasing population and extraction of natural resources, burgeoning tourism and recreation industries, and new energy and water developments place unprecedented demands on these high-elevation ecosystems. While the rate of change to mountain landscapes still far outdistances our understanding of how aquatic systems respond to such changes, new studies on dynamics and processes in mountain rivers are improving our ability to interpret and predict the effects of human disturbances. What emerges from these studies conducted around the world is that mountain rivers form a distinct class of channels, different in many fundamental respects from their lowland counterparts. Lowland streams typically exhibit a mostly regular sequence of channel and bed forms resulting from the interaction between a mobile bed of sediment, erodible boundaries, and a low-energy flow regime. Mountain streams are characterized by highly disorganized beds, resistant boundaries formed of bedrock, roots, and wood, high-energy flow hydraulics, and sediment transport that occurs only episodically during major floods. Processes external to the channel, such as landslides and debris flows, are important in both creating channel morphology and disturbing riparian and aquatic ecosystems.

Studies describing these processes and their consequences for the physical structure of mountain streams are the focus of this book, which consists of a series of edited papers presented at the meeting having the same name as the title, held in Benediktbeuern, Germany, in June 1992 and sponsored by COMTAG (Commission on Theory, Measurement, and Application in Geomorphology). The conference site was chosen for its proximity to the Lainbach catchment, a major site for studying mountain stream processes in the Bavarian Alps. The focus on the Alps is retained in the organization and content of the book. Of the 20 papers included in the volume, 11 describe studies in the Alps, with a particular emphasis on work by the

1997. Journal of the North American Benthological Society 16: 719-720. (Book Review).

This geographic bias is both a strength and weakness, as the reader emerges with a good sense of what the Germans and their colleagues are doing, but a rather one-sided view of the overall state of geomorphic research on mountain rivers.

The book's strengths are the descriptions of new techniques for measuring processes in these steep, high-energy streams. The Lainbach group has pioneered the use of sophisticated new technologies, including pressure sensors for evaluating forces acting on particles in streams, radio telemetry for tracing the movement of individual rocks, electromagnetic detectors of bedload transport, and precise techniques for mapping the hydraulics of channels and corresponding changes in the bed morphology. Papers describing this work, and related studies using hydrophones to measure sediment transport, and other tracer studies, form the heart of this book. While these new technologies offer a more detailed look at processes operating in mountain streams than has previously been possible, the reader is sometimes left wondering exactly what questions are being addressed by these high-tech approaches.

Noticeably absent from this volume is the work of the Japanese who, because of the constraints imposed by their limited and rugged land base, are world leaders in confronting the geomorphic, engineering, and natural hazard problems posed by mountain rivers. Even more noticeable to the readers of *J-NABS* will be the dearth of studies focused on relationships between geomorphology and ecology in mountain streams, despite the growing recognition that many of the most critical problems faced by fluvial systems are at the interface of these disciplines. Even the one paper on 'renaturalization' of an Alpine river emphasizes only the sediment-transport aspects of the problem. Restoring damaged fluvial ecosystems is a now a global issue; one would like to see more attention paid to how an understanding of basic physical processes in rivers can be used to improve ecological assessments and functioning.

This book will be most appreciated by practicing geomorphologists, fluvial engineers, and fluvial ecologists wishing to improve their understanding of the physics of mountain river systems, or interested in new technologies for studying river dynamics. It will be of less interments or restoration. A book integrating geomorphic and ecological processes and interactions in mountain rivers would be a welcome addition to any river professional's library, but has yet to appear.

Gordon Grant
United States Forest Service
Pacific–Northwest Research Station
Corvallis, Oregon

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America by rivers. Tim Palmer. ISBN 1-55963-263-1. Island Press, Box 7, Covelo, California 95428. 1996. 336 pp. $26.95 (cloth).

This book on American rivers was written by an activist in the field of river conservation. He has written 9 other books, including *The Snake River, Wild and scenic rivers of America*, and *Lifelines: the case for river conservation*. The publisher (Island Press) is a non-profit organization whose principal purpose is to produce books on environmental issues and natural resource management. Both Tim Palmer and his wife are avid canoers/rafters and have first-hand experience with rivers throughout the continental United States, including Alaska. They are supported by many groups including the Compton Foundation, American Rivers, Teton Science School, and Outward Bound. The book is aimed at a non-technical audience, with primary emphasis on describing the best remaining free-flowing rivers and giving an overview of environmental problems. *J-NABS* readers are unlikely to learn any new ecological concepts, but will obtain a greater appreciation of key environmental issues outside their particular region.

There are 10 sections, each devoted to a specific geographic area: Glaciated Northeast; Appalachian; Coastal Plain and South; Midwest; Great Plains; Rocky Mountains; Deserts and Drylands; Sierra Nevada; Northwest; and Alaska. Appendices list the largest rivers, long (undammed) sections of rivers, and rivers canoed