



Too Much or Too Little? Eco-hydrology in Arid and Semi-arid Regions

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Around the world, disastrous effects of floods and droughts are painful evidence of our continuing struggle between human resource demands and the sustainability of our hydrologic ecosystems. Too much or too little rainfall is often deemed the culprit in these water crises, focusing on water "lacks and needs" instead of exploring the diverse mechanisms of the hydrologic functions and processes that sustain us. Applicable to regions around the world, this unified approach focuses on the connections between our human and ecological qualities, with user friendly concepts and how-to guides backed up by real life experiences. From the poorest parts of Africa to Urban France to the wealthiest state in the USA, examples from surface to groundwater to marine environments demonstrate how the links between vulnerable natural areas, and the basins that they support are integral to the availability, adequacy and accessibility of our drinking water. The interactions of watersheds within our diverse communities can link our resource practices with our human needs, serving as a basis for our ecological health and human well-being.

Hydrologic ecosystems provide links to geographic and cultural information traversing physical and social boundaries. This international, community-based project demonstrates how our human resource demands can be managed within ecological constraints. An inter-disciplinary process is used that specifically explores the connections between ecological integrity and the preservation of potable supplies. A monitoring strategy is developed that assesses risk to human health from resource use practices, and explores the similarities and interactions between our human needs and those of the ecosystems in which we all must live together. This work is geared as a reference for groups, individuals and agencies concerned with land use and watershed management, a supplement for interdisciplinary high school through University curriculum, for professional development in technical and field assistance, and for community awareness in the trade-offs and consequences of resource decisions that affect our shared hydrologic eco-systems. Disastrous conditions worldwide have triggered reactions in crisis relief rather than crisis prevention. Through a unified management approach geared towards traversing boundaries in professional disciplines, geographic areas and cultural interests, the flows of water that connect all water users can serve as a basis for the maintenance and protection our valuable watersheds.