

# California Watersheds - Natural Resource and Community Integrators

by **Richard A. Wilson, Director**

originally printed in the *CDF Comment*, August 1993

---

"Water is best," said the ancient Greek philosopher, Thales, summing up the simple science of his day. Just as science has progressed since 600 B.C., so has natural resource management. We can still say "water is best," in its role as general lubricant of life, agriculture, and industry in California. With respect to the management of forests, water supplies, and other natural resources, the time has come for us to recognize that "watershed is best." The goal of this management approach is to ensure the sustainability of both communities and the environment through recognition of forest watersheds' role as natural resource and community integrators. This approach requires more active and integrated management of the landscape, not less. The California Department of Forestry and Fire Protection (CDF) is committed to this goal and approach. Our state's natural resources deserve nothing less.

The watershed -- an area or region draining into the same watercourse -- is the fundamental building block of the landscape, and thus, natural resource systems. Watersheds can be scaled up or down, aggregated or disaggregated, to analyze and address problems or opportunities of varying scope. For example, from the 14,000 square mile watershed of the San Joaquin River, we can focus down to the 700-square-mile Mokelumne River watershed, to the 75-square-mile Middle Fork of the Mokelumne watershed, or to the 22-square-mile Forest Creek watershed.

We can trace recognition of watersheds as the appropriate basis for natural resource analysis and planning back at least as far as John Wesley Powell -- famed explorer of the Colorado River and first director of the United States Geological Survey -- in the late 1800s. While Powell's wisdom did not receive its due in his lifetime, we now appreciate its value. Watershed boundaries are inherently inclusive of most natural and social processes and communities. Political, administrative, and ownership boundaries are always artificial and typically drawn to exclude and separate, rather than include and integrate.

Forest watersheds integrate the water quality impacts of land management activities. Sediment generated by land management moves from the hillslopes to the intermittent draws to the small creeks, and on to the main stem of the river. If you want to assess the potential water quality impact of a proposed activity, you must look at the whole watershed -- upstream and downstream -- to see what's already being put into the stream system. Add a time dimension to this spatial analysis -- what's been moving through the stream in the recent past, what's going to be moving through the stream in the future -- and you've completed, in the professional lingo, a water quality cumulative effects analysis.

Habitat changes occur across the watershed landscape as a result of land management and natural processes. These changes, which can be measured in terms of total amount of each habitat type, sizes of habitat patches, and adjacency of habitat types, occur over space and time. Likewise, the various fish and wildlife species have different spatial and temporal dimensions to their habitat needs. For example, salmon spend part of their life in freshwater streams and part of their life in the ocean. Certain deer herds move back and forth from higher to lower elevations as seasons and food sources change. Thus, the shifting distribution of habitat types across the forest watershed landscape over space and time determines the survival of individual animals, local or regional populations, and entire species.

Forest watersheds are also social integrators for people, providing a basis of community that transcends race, class, age, and ideology. For rural dwellers, especially, watersheds are an important part of their sense of "place." And, perhaps most important, people relate to watersheds, as both community units and natural resource units, with a native intuition. Just as we work to cultivate a sense of citizenship in our communities as arbitrarily defined by political subdivisions, we must cultivate a sense of citizenship in the social and natural resources of our forest watershed communities. We have a familiar word for this form of citizenship -- *stewardship*.

These three integrating characteristics of forest watersheds -- water, wildlife, and community -- come together with a powerful synergy. Evidence of this is provided by the rising number of groups, organized on a watershed or landscape basis and concerned about the quality of their water or the general environmental health of their watersheds. At the same time, they respect the importance of producing timber or other commodities on their watersheds. These groups include the Mattole Restoration Council, the Friends of the Garcia, the Mokelumne River Watershed Project, the Plumas County "Library" Group, the Trinity Bioregion Planning Group, and, in southern Oregon, the North Applegate Watershed Protection Association.

At the same time as numerous forest watershed and landscape organizations are arising of their own volition, public agencies are taking steps to facilitate their formation and operation. Public agencies at all levels and the private sector are working individually and cooperatively. These efforts attempt to develop the information and to build the technological and institutional linkages needed to effectively address resource management at the watershed and landscape levels.

Examples of these efforts include:

- the wildlife habitat data and analysis software developed by the legislatively - created Timberland Task Force;
- the Memorandum of Understanding on Biological Diversity, which now has over 20 signatories from federal, state, and local governments and has led to the establishment of regional biodiversity councils;
- the Resources Agency's Sierra Summit process, which spawned the formation of at least two landscape associations;

- preparation of a habitat conservation plan for the northern spotted owl on private lands by a steering committee created by the Board of Forestry and chaired by CDF;
- the Board of Forestry's regulatory recognition of "planning watersheds" and "sensitive watersheds;" and
- CDF's initiative to develop watershed-based "planning information centers."

With our new perception of the watershed and landscape, we now see that what we have practiced on the national forests has been dominant use, not the true multiple use it has often been claimed to be. We have reached the limit of setting aside reserves, where timber harvesting and other habitat-altering land uses are prohibited, to protect rare or threatened or endangered things.

With additional threatened or endangered species and critical habitats being identified at a rapid pace, we can no longer afford to practice "reserve-based" management that sets aside special reserves for each species in various places across federal and private lands. There simply is not enough federal land to provide for every such need that arises. Neither is there the political will nor public "treasure chest" to acquire extensive reserves on private lands.

Instead, California needs more active and more integrated management of the forest landscape, not less. Reserve-based management, except for a limited number of purposes -- wilderness being the foremost -- is destined to be a technique of the less sophisticated past. We must manage our water (in terms of both quality and quantity), watercourses, and forestland more carefully for a variety of near equal or coequal purposes. Management of this kind is closer to the plain meaning of "multiple use" than what is currently practiced on most of our public and private forestlands. This carefully crafted management requires that closer attention be paid to forest watersheds as natural resource and community integrators.

By working to restore watersheds, we can increase our future options for land use, rather than limit them. The need for watershed restoration reflects the fact that our forests require more management, not less. Restoration requires a long-term commitment of resources at both the local and state level and participation from both the private and public sectors. The state must develop a strategy to establish a watershed protection and restoration program to improve the productivity of watersheds that have been degraded by past harvesting and other human activities, or by large-scale natural processes such as fire. This is by no means a single-person or single-group endeavor. The diversity of California's people and land, and the potential for tensions between rural watershed resource suppliers and urban consumers, requires regional participation and cooperation to assure balance. The watershed restoration efforts of the Plumas Corporation offer a valuable model to the state. The practice of watershed restoration is an important statement by the people of California that the battle for watershed resource protection will be waged now, while there are a number of options, rather than later, when there are few or none.

Some people, particularly private landowners, have looked at watershed- and landscape-based efforts to address forest resource sustainability with fear that current choices for land management and reasonable economic return will be restricted. We believe, however, that by engaging many of the pressing resource concerns at broader levels, over larger landscapes, and over longer planning horizons, we will be able to find greater latitude for flexible land management, rather than less. For example, by acting sooner, rather than later, to protect habitat of declining species, the strict requirements of endangered species laws may be avoided. Through bringing together private and public land managers, commitments have been made that the federal lands will shoulder a proportionately greater share of habitat protection burdens, leaving more management options for private land owners.

With California's ever-growing population and demands, we can expect ever-growing pressures on our water supply, streams, and forests. Can we both meet these demands and maintain a sustainable environment and sustainable communities? Our best chance to do so is by addressing natural resource management at the watershed and landscape levels, instead of in a piecemeal project-by-project, parcel-by-parcel manner. CDF is committed to being a leader in helping California take full advantage of the natural resource and community integrating powers of watersheds. Watershed *is* best.