



We heard that in areas where large quantities of water are stored behind dams, the dams segment rivers and thus impede the movement of fish and change the pattern of sediment deposition. Dams also allow the regulation of river flows, and the preference is generally for moderate flows with no floods and no low flows. Riverine ecosystems that evolved before the dams were built and the life they sustain may be eliminated. The most common examples are anadromous fish that can no longer navigate the river and riverine species whose food cycle depends on the frequent flooding of riverbanks. But dams also eliminate some of the effects of severe droughts, so species that could not survive as well in the natural hydrologic cycle may now prosper. New species, welcome and unwelcome, may be introduced. Reservoirs often support popular game fish that would not have been found in the natural river.

Drought also has repercussions on the morphology and hydrologic function of stream channel networks and on the chemistry and water quality of streams and lakes. On land, it can lead to major episodes of tree mortality, initiate outbreaks of insects and disease in forests, and limit an ecosystem's productivity and ability to cycle essential elements.

Witnesses noted that environmental resources often receive inadequate attention during drought emergencies and in drought planning, not so much because of lack of concern but because of lack of expertise in this arena, lack of adequate financial resources, and sometimes lack of awareness. Drought planners may fail to determine which drought-related environmental impacts can be tolerated and which cannot and

therefore would benefit from appropriate drought impact-reduction measures. Larger questions also remain to be answered, including the degree to which humans should try to eliminate the effect of drought on the environment if drought is a natural part of the environmental cycle.

Additional concerns center on use of water for humans and the environment, including adequate stream flows for wildlife species, and determination of preferences when one species competes with another for water. Some people suggested that during drought, environmental regulations—ranging from those concerning wildlife and wildlife habitat to those related to safe drinking water—should be more flexible. On the other hand, we heard that droughts are the very times when enforcement of such regulations is essential to protect environmental resources, including drinking water supplies, that are already stressed from factors not related to drought. We heard too that addressing environmental concerns in relation to drought might best be accomplished in the context of ecosystem management and restoration and as part of planning for watersheds or river basins because many of these concerns extend across human-drawn boundaries and borders.

The Commission appreciates the complexities of these issues. As the Western Water Policy Review Advisory Commission stated in its June 1998 report, "Today, there are a number of federal, state, tribal and local agencies with competing interests and missions related to water, but none with a sufficient political or legal mandate to override the concerns of the others. This means that implementing any proposal, for almost any

When drought hits arid farmland or fast-growing urban/suburban regions, it can heighten tensions over water use. This was the topic of lead stories on the March 13, 2000, CBS and ABC prime-time newscasts, which focused on

questions about who should get water and for what purpose in the Southeast and drought-stricken Texas. A few days earlier on March 9, the *Seattle Post-Intelligencer* reported on conflicts between the City of Seattle and King County

over the county's attempts to involve all municipal jurisdictions in the county—including Seattle—in development of a regional water resources plan that includes considerations for salmon runs.