

# **Introduction**

## **The situation**

Controversy continues to rage about 2001 allocations of Upper Klamath Lake waters. An April 2001 Endangered Species Act determination required a minimum level for Upper Klamath Lake. Another determination, issued at the same time, required minimum discharge from Iron Gate Dam into the Klamath River downstream from Upper Klamath Lake.

Discharges from Upper Klamath Lake into the Klamath River to meet the Iron Gate requirement could not be used by the Klamath Reclamation Project administered by the Bureau of Reclamation. Approximately 1,200 farmers, who normally irrigate more than 200,000 acres of Klamath Reclamation Project land, did not receive water from April to July. Some surplus water was then allowed to flow into the Project's canals and ditches for about 6 weeks. These waters were too little and too late to permit most affected farmers to maintain a viable agricultural operation in 2001.

The Endangered Species Act requirements of minimum Lake levels and minimum discharge from Iron Gate Dam were based on biological opinions of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. These opinions were binding on all federal agencies with responsibility for water allocation, specifically the Bureau of Reclamation. They addressed the effects of the Klamath Reclamation Project on the endangered Lost River sucker, the endangered shortnosed sucker, the threatened bald eagle, and the threatened coho salmon. As noted, these opinions required a minimum water level in Upper Klamath Lake and minimum discharges from Iron Gate Dam on the Klamath River downstream from Upper Klamath Lake. Given these requirements, it is far from clear whether there will be sufficient water every year to maintain Upper Klamath Lake levels, meet discharge requirements from Iron Gate Dam, and provide irrigation water for Project lands.

Under the arid conditions in the Klamath Basin, the way water is used has great effect on the ecological, economic and social future of the area. Thus, it is no surprise that the 2001 Klamath Basin events generated great controversy. Sharp differences of opinion exist among people residing in the area, as well as among those living elsewhere who have an interest in the Klamath Basin.

These differences of opinion arise about many issues. Some believe that irrigated agriculture is not compatible with the type of ecological development they favor for the area. Others believe substantial irrigated acreage is consistent with ecological sustainability. Some disputes arise about historical interpretations. For example, how unique was 2001 in a long-run sense? Are similar years likely to arise 1, 2, or 3 years in 10? Other questions abound. For example, what is the relation of water quantity to water quality in fish survival? How will the future of rural communities, rural families, and low-income people be affected by decisions related to issues such as those just identified? There also are debates about water rights priorities and who should bear the costs of decisions intended to benefit the greater good. These

questions do not exhaust the differences that exist among those with an interest in the Klamath Basin.

## **The need for reliable information**

Generally speaking, the greater the controversy, the more valuable reliable information becomes. When great controversy exists, there usually is uncertainty or lack of knowledge about many factors related to that issue. Furthermore, if most people have a vested interest in an issue, they have a strong incentive to develop information favorable to their point of view, but little incentive to develop information unfavorable to their point of view. Even though information developed by those with a vested interest may be correct, it is likely to be incomplete.

Such conditions clearly are present in the Klamath Basin controversy. As this report will show, there is complexity, uncertainty, and lack of knowledge concerning many issues related to the controversy. Few individuals or organizations have an incentive to develop information that would improve the quality of the arguments being advanced.

From the outset, both Oregon and California Extension personnel in the Klamath Basin recognized the need for improved information. As events in 2001 unfolded, they held and attended numerous meetings in the communities affected by water allocation decisions. Many of the participants at these meetings also recognized the need for more complete and reliable information. They were concerned about the factual accuracy and completeness of items reported in the media and used in arguments. Extension personnel in both Oregon and California are faculty members at Oregon State University and the University of California and, as the controversy developed, they drew increasingly on the resources of their respective universities. This report is a continuation of activities to obtain reliable information that have been underway from the onset of the controversy.

### **The nature of this report**

The intent of this report is to provide an authoritative, non-advocacy account of the ecological, economic, social, and institutional policy issues in the Klamath Basin relevant to the 2001 water allocation controversy. Reliable information is unlikely to remove all controversy, but it serves to narrow, reduce, or eliminate differences of opinion on many matters. To the extent differences of opinion remain after improved information becomes available, debate and negotiation likely will become more productive.

In July 2001, it was decided this report would be prepared. The decision was made by a group of scientists and administrators from Oregon State University and the University of California, together with local Extension personnel. The group had participated in a field trip in the area and reviewed the existing controversy. Several had previously conducted research or participated in educational activities in the Basin. All were familiar with natural resource issues in the West. The group agreed the report should be prepared promptly, with a final version to be made available early in 2002.

To the extent time and opportunity permitted, the report:

- Increases understanding of what is known, and what is not known, about natural resources, people, economics and institutions. Information is presented through data and analysis in the text, as well as sources referenced in the report.

- Provides interested parties a set of references on a wide range of subjects related to Klamath Basin water allocation.
- Identifies management alternatives and lessons that can be learned from the Klamath experience.
- Proposes future actions to address particular information needs and reduce remaining uncertainties.
- Assesses potential (and, where possible, documented) consequences of the decision to withhold irrigation water.

The report is intended to serve policy makers, citizens, administrators, journalists, and others. Many difficult water allocation decisions will need to be made in the Klamath Basin after 2001, and they will have important ecological, economic, and social consequences. The Klamath experience also may be useful to those facing similar problems elsewhere in the West.

The Klamath Basin water allocation problem is a constantly changing issue. As this report was being prepared, many individuals and groups were conducting investigations, making reports, and otherwise providing new information. One example is the National Academy of Sciences review of the biological opinions of the U. S. Fish and Wildlife Service. The authors of this report were aware of these efforts and have taken advantage of additional information as it became available.

Nonetheless, there are characteristics of this report that distinguish it from others. Thus, duplication has not been a significant problem. A distinctive feature of this report is its comprehensive nature. It examines the entire system affected by water allocation decisions—including social, institutional, biological, and economic components. Because of the breadth of expertise in the two university systems, it has been possible to assemble information about the many pieces of the system and show how they fit together. The report makes clear that changes in one part of the system often have consequences throughout the system

The geography of the Basin posed special problems in the preparation of this report. The minimum lake levels and minimum discharges from Iron Gate dam required the Bureau of Reclamation to reduce water going to the Klamath Reclamation Project that lies to the south of Upper Klamath Lake in Oregon and northern California. Yet clearly there are broader geographic implications. Each author has the responsibility to state the geographic frame of reference for his or her chapter. For example, the economic analysis did not examine the economics of the downstream Klamath River fishery, and there is only limited discussion of water quantity and quality factors above and below Upper Klamath Lake. Examples of such factors include nutrient concentrations in waters entering the Lake and downstream inflows of cool water.

Those preparing this report did not always agree about every subject included in the report. It could not have been otherwise. When the ecological, economic, and social issues of the Klamath Basin are considered, there is no single, correct answer to questions such as what constitutes relevant data, how data are to be interpreted, and the relative importance of many variables. Each author was expected to bring “state of the art” knowledge in his or her field of expertise. Accepted peer review procedures were used to provide quality control throughout the report. The name(s) of those responsible may be found on each section of the report. The differences of opinion that remain among the authors arise for many reasons. These include the

lack of previous research and data about many important issues, the unsettled state of science, and differences of opinion among those doing peer reviews.

Several of the chapters are lengthy and, in places, somewhat complex. A summary of each section will be prepared as part of the final report.

The 2001 Klamath Basin water allocation decisions were unusual in the history of the West generally, and in the history of the Endangered Species Act in particular. They created uncertainty and hardship for many people. Those decisions also revealed needed adjustments in government performance at the federal, state, and local level. This report makes clear that such adjustment must be made if the ecological, economic, and social future of places in the West such as the Klamath Basin are to be served.