

Note from the Superintendent

The year 2001 will long be remembered for the extreme conditions imposed on the Klamath Basin agricultural community. A serious drought in the region became evident by mid summer 2000. Total precipitation at Klamath Falls from March 2000 through October 2001 was about 55 percent of normal. Net inflow to Upper Klamath Lake from April 1, 2001 through September 31, 2001 was about 200,000 acre-ft; about 40 percent of historical average inflow. This was greater than inflows during droughts in 1992 (155,000 acre-ft) or 1994 (179,000 acre-ft) when most Klamath Reclamation Project lands received near normal irrigation deliveries.

The drought of 2001 was compounded by Federal regulatory actions intended to provide habitat needs for protection of Federally listed threatened and endangered species in the Klamath River and Upper Klamath Lake. Biological Opinions released by the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) on April 6, 2001, required minimum river flows and lake elevations that exceeded projected available storage and inflows to Upper Klamath Lake. To comply with these conditions, the Bureau of Reclamation's Klamath Project 2001 Operations Plan precluded diversion of irrigation supplies from Upper Klamath Lake and Klamath River, leaving about 170,000 acres within the Klamath Reclamation Project with no surface water supply for 2001.

The Klamath Experiment Station (KES) does not have well water. With the exception of cover crops for erosion protection on bare fields, crops were not

planted at KES in 2001. A deep drain at KES provided sufficient irrigation water for maintaining about 1 acre of forage trials established in 2000. Two off-station fields provided limited research opportunities. Cereal variety trials were conducted at a Lower Klamath Lake site that received winter flooding but no irrigation during the growing season. Potato and cereal trials also were conducted at a site 25 miles east of Klamath Falls with well water irrigation. This report presents the results of our efforts at these locations.

The "Klamath Crisis" as the irrigation project situation became known, received national recognition and attention. Oregon State University (OSU) and the University of California faculty members embarked on an ambitious task to document the consequences of denial of irrigation supplies on the citizens, natural resources, and economy of the region. A team of about 20 university faculty developed extensive materials to describe social, economic, and natural resource responses to the crisis and a partial historical perspective. KES faculty participated as co-authors of chapters on "An Overview of the Klamath Reclamation Project and Related Upper Klamath Basin Hydrology" and "Soil Resources in the Klamath Reclamation Project. We also were reviewers of other chapters and participants and organizers of several tours of the region. A final report from the team is expected to be released by July 2002.

KES hosted the OSU Agricultural Experiment Station (AES) Summer Tour on August 1, providing a 3-hour bus tour of the Klamath Reclamation Project to 45 participants. Local producers and agri-business personnel joined the tour group for

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lunch and an opportunity to hear first-hand stories of the effects of the water curtailment.

Having spent 15 years working closely with many individuals affected by the situation, I could appreciate the anguish of families whose lives were severely affected by actions uninfluenced by the economic consequences of political decisions. I welcomed the opportunity to provide information in several venues, including written and oral presentations to a National Academy of Sciences National Resource Council (NRC) review team, appointed to review the science behind the Biological Opinions. It was very gratifying to me personally, and to the agricultural community, when the NRC issued a draft preliminary report on February 4, 2002 stating that minimum river flows and lake elevations required by the 2001 Biological Opinions could not be justified by the available science.

The long-term prognosis for Klamath Reclamation Project irrigators remains uncertain. Biological Opinions issued by NMFS and USFWS for 2002-2011, while acknowledging the NRC preliminary report and findings, continue to call for higher river flows and lake levels than the regional hydrology can support without significant changes in project operations.

KES has served the agricultural community since the late 1930's. Our projects have been instrumental in developing superior varieties of crops for the region and cultural practices to optimize crop performance and minimize losses to pests and diseases. Reclaiming saline/saline sodic soils, developing nutritional supplements for livestock, improving irrigation technology, and assisting in the introduction of new crops have been traditional roles for KES programs. In the

current climate of uncertainty, however, the role of the KES in supporting the region's agricultural industry must be reevaluated. If irrigation security is not assured, fine-tuning of cultural management practices, releasing superior crop varieties, and developing improved disease or pest management technology will be of little value.

During the next two years, KES staffing and research priorities need to be evaluated to develop a plan for the future. Traditional agronomic research will continue to be needed; but watershed management, water quality issues, and development of more water-efficient production techniques likely will present opportunities for an expanded role in finding solutions for long-term survival of a viable and sustainable industry in concert with environmental objectives. The timing for such a review is appropriate, as I will be retiring on June 30, 2004. The selection of my successor will be an important factor in future directions for KES research programs and contributions.

We hope our clientele, collaborators, and other interested parties find our 2001 Annual Research Report interesting and useful. This is the 15th consecutive KES Annual Report of our programs and progress. We welcome any suggestions for improvements. We extend our appreciation to our colleagues who cooperate in research activities, industry and organizations who provide financial support for research projects, members of our station Advisory Board for their counsel, and to Klamath County for continuing financial support for staffing, facilities, and equipment. Where appropriate, cooperators and financial support are acknowledged in project reports. For those with an interest in KES research reports from earlier years, printed copies of Annual Reports for most years from 1987

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through 2000 are available by request from:
kenneth.rykbost@oregonstate.edu.

Those with Internet access can review annual reports for 1999-2000 and other information about the Klamath Basin on our Internet Web page at:
<http://www.orst.edu/dept/kes>.

I extend thanks on behalf of KES, OSU, our clientele, and me personally, to our staff for their efforts and dedication during a very difficult year. Uncertainty for the future of Klamath Basin agriculture and for budget support for OSU, the AES, and KES, created a climate of instability and concern. Our staff overcame many obstacles to continue viable research projects, produce reports and publications, and maintain the infrastructure to meet future challenges.

We welcome our newest permanent employee, Efren Valencia, to his position as Farm Worker, funded by Klamath County. Efren served as a seasonal employee in two previous years and has gained experience with many of our field and laboratory procedures. Special thanks to Jewel Haskins, our Office Specialist II, for assembling and formatting this report.

Kenneth A. Rykbost
Superintendent
Klamath Experiment Station

Major Cooperators in KES Research Programs

Oregon State University

Mr. Mylen Bohle, *Crook County Cooperative Extension Service*
Mr. Phil Hamm, *Hermiston Agricultural Research and Extension Center*
Dr. Dan Hane, *Hermiston Agricultural Research and Extension Center*
Dr. Patrick Hayes, *Department of Crop and Soil Science*
Dr. Russell Ingham, *Department of Botany and Plant Pathology*
Mr. Steve James, *Central Oregon Agricultural Research Center*
Dr. Russ Karow, *Department of Crop and Soil Science*
Dr. Kerry Locke, *Klamath County Cooperative Extension Service*
Dr. Alvin Mosley, *Department of Crop and Soil Science*
Dr. James Petersen, *Department of Crop and Soil Science*
Dr. Clinton Shock, *Malheur Experiment Station*
Mr. Rodney Todd, *Klamath County Cooperative Extension Service*

University of California

Dr. Harry Carlson, *Intermountain Research and Extension Center*
Mr. Donald Kirby, *Intermountain Research and Extension Center*
Mr. Herb Philips, *Department of Vegetable Crops*
Dr. Ron Voss, *Department of Vegetable Crops*
Dr. Lee Jackson, *Department of Agronomy and Range Science*

Others

Dr. Chuck Brown, *USDA-Agricultural Research Service, Prosser, Washington*
Dr. Dennis Corsini, *USDA-Agricultural Research Service, Aberdeen, Idaho*
Dr. Steve Fransen, *Washington State University*
Dr. David Holm, *Colorado State University*
Dr. Stephen Love, *University of Idaho*
Dr. J. Creighton Miller, Jr., *Texas A&M University*
Dr. Richard Novy, *USDA-Agricultural Research Service, Aberdeen, Idaho*
Dr. Robert Thornton, *Washington State University*
Dr. Darrell Wesenberg, *USDA-Agricultural Research Service, Aberdeen, Idaho*

We deeply appreciate their involvement and contributions to KES research efforts.

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