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**Truckee River Edition**

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providing hydrologic information to the people of Nevada and adjacent States



*In Memory of Michael P. Mann, a Dedicated Hydrologist, 1971 - 2005*

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## Editor's Notes

By Michael L. Strobel, Ph.D., Editor-in-Chief, Journal of the Nevada Water Resources Association and Deputy Director, USGS Nevada Water Science Center, and Laurel Saito, Ph.D., P.E., Co-Editor, Truckee River Edition and Assistant Professor, University of Nevada, Reno

### The Truckee River

Welcome to the Truckee River Edition of the Journal of the Nevada Water Resources Association (JNWRA). This special edition is the result of the **2005 Truckee River Symposium: Integrating Policy and Science along the Truckee River**, held last October at the Desert Research Institute in Reno. The papers in this edition of JNWRA were presented at this conference and represent a sampling of some of the excellent talks and posters. Included were many talks on flood management and an invited keynote speaker on climate change affecting hydrology in the Truckee River Basin. Two of the objectives of the Symposium were to increase dialogue and communication between researchers and policy-makers on the Truckee River, and overall knowledge about projects occurring on the river. This special journal edition is circulated to enhance the achievement of these objectives.

It is significant that this symposium on the Truckee River occurred about 3 months prior to major flooding of the Truckee River. The flooding that occurred over the New Year's holiday was significant, especially to those who were affected directly by the flooding. Because this flood took place during the New Year's holiday, many people have compared it to the 1997 flood that also took place during this holiday. Let's see how they compare.

The flooding of the Truckee, Carson, and Walker Rivers in 1997 resulted in about \$500 million in damages and two deaths. A rain-on-snow event resulted in extensive flooding in downtown Reno and high stage at many of the stations along the Truckee River. At Farad, California, discharge peaked at about 419.1 cubic meters per second ( $\text{m}^3/\text{s}$ ) (14,800 cubic feet per second ( $\text{ft}^3/\text{s}$ )) and had a stage of 4.01 meters (m) (13.17 feet (ft)) on January 2, 1997, which is well below the record 495.5  $\text{m}^3/\text{s}$  (17,500  $\text{ft}^3/\text{s}$ ) and stage of 4.42 m (14.50 ft) set back in 1950. The Truckee River at the U.S. 395 bridge in Reno had a peak discharge of about 515.4  $\text{m}^3/\text{s}$  (18,200  $\text{ft}^3/\text{s}$ ) and a stage of 4.56 m (14.97 ft) on January 2, 1997. The discharge was below the record of 589.0  $\text{m}^3/\text{s}$  (20,800  $\text{ft}^3/\text{s}$ ) that occurred in 1955, but the stage was a new record for this site (previous record stage was 4.22 m (13.83 ft) set in 1950; Berris and others, 1997).

By comparison, the flooding during the 2005-06 event resulted in a provisional discharge at Farad, California of 286.0  $\text{m}^3/\text{s}$  (11,800  $\text{ft}^3/\text{s}$ ) on December 31, 2005. At Reno, the provisional peak discharge for the Truckee River was about 464.4  $\text{m}^3/\text{s}$  (16,400  $\text{ft}^3/\text{s}$ ) and the stage was 4.08 m (13.38 ft) on December 31, 2005 (Steven Berris, USGS, written commun., 2006).

Therefore, this flood was significant, but was smaller than previous record flows in the Truckee River. The USGS estimates that the flows that occurred on December 31, 2005, were in the recurrence interval of between 25 and 50 years for the Truckee River.

One must keep in mind, however, that these are quantifications of the streamflow characteristics. With a growing population in the Reno-Sparks area and changes in land use, the effects of flooding on people, water quality, and the sustainability of the aquatic ecosystem will need to be evaluated more closely and included in discussions of flood impacts. Some of the presentations at the Truckee River Symposium and in this edition of the JNWRA contribute to our understanding of these factors.

*Editor's note: In this edition of the JNWRA, we include a number of papers that discuss modeling efforts on the Truckee River which include discussions and figures on model inputs and outputs that use English units. In addition, a number of the papers discuss management actions for the Truckee River based on flows and elevations in English units. The policy in the past for the JNWRA has been to require metric units for all submissions, but because of the structure of the models and management decision values used for the Truckee River, we decided to include both values when possible and only English units when warranted. We apologize for any confusion caused by this change in our usual policy.*

#### References:

Berris, S.N., Hess, G.W., Taylor, R.L., and Bohman, L.R., 1997, Flood-control effects of Truckee River Basin Reservoirs, December 31, 1996, through January 4, 1997, California and Nevada: U.S. Geological Survey Fact Sheet FS-037-97, 4 p.