

## **USDA Natural Resources Conservation Service Snow Survey and Water Supply Forecasting Program**

MICHAEL L. STROBEL<sup>1</sup>

### **ABSTRACT**

The Snow Survey and Water Supply Forecasting Program collects high elevation snow data in 13 states in the western U.S. and provides snowpack information, climatic data, and water supply forecasts.

The demographic, physical, and political landscape of the western U.S. is changing rapidly, and there is competition over water for irrigation, municipal and industrial customers, and in-stream uses, such as river-based recreation, fish and wildlife habitat, and hydroelectric power generation.

Extremes in the snowpack could result in less reservoir storage in warm, dry years, complicate reservoir regulation in cold, wet years, and cause extensive local and regional flooding. Earlier snowmelt, caused by warming conditions, increases the length of time between peak flows and summer water user needs, while a delayed snowmelt, caused by cool weather, shortens the melting season and produces potentially disastrous flooding. Drought throughout much of the western US and declining winter snowpacks have stressed hydrologic conditions and increased the risk of wildfires.

Water supply forecasts are used by: (a) irrigators for agricultural production needs; (b) Federal government in administering international water treaties; (c) State governments in managing intrastate streams and interstate water compacts; (d) municipalities in managing water supplies and drought; (e) reservoir operators; (f) Federal and State governments to mitigate flood damages; and (g) Federal and State governments to support fish and wildlife management activities. SNOTEL and SCAN networks provide information on soil moisture and soil temperature used by a wide range of agencies and organizations.

---

<sup>1</sup> USDA-NRCS National Water and Climate Center, Portland, OR, USA