

CE 890 Graduate Seminar

DATE: February 18, 2009
TIME: 4:00 p.m. (refreshments served at 3:45 p.m.)
PLACE: Fiedler 2144
SPEAKER: Dr. David Chandler, Assoc. Professor, KSU Civil Engineering Dept.
TOPIC: “Long-Term Snow, Climate, and Streamflow Trends at the Reynolds Creek Experimental Watershed, Owyhee Mountains, Idaho, USA”

ABSTRACT

Forty-five water years (1962 – 2006) of carefully measured data on temperature, precipitation, snow, and streamflow for valley bottom, mid-elevation, and high elevation sites within the Reynolds Creek Experimental Watershed (RCEW), located in the state of Idaho, USA, were analyzed to evaluate the extent and magnitude of the impact of climate warming on the hydrology and related resources in interior northwestern United States. This analysis shows significant trends of increasing temperature at all elevations, with larger increases in daily minimum than daily maximum. The proportion of snow to rain has decreased at all elevations, with the largest and most significant decreases at mid- and low elevations. Maximum seasonal snow water equivalent has decreased at all elevations, again with the most significant decreases at lower elevations, and the length of the snow season has decreased by nearly a month. All trends show a significant elevation gradient in either timing or magnitude. Though inter-annual variability is large, there has been no change in water year total precipitation or streamflow. Streamflow shows a seasonal shift, stronger at high elevations and delayed at lower elevations, to larger winter and early spring flows and reduced late spring and summer flows.