

# **Report for 2001ID4521B: Statistical Model Development for Predicting Winter and Spring Precipitation Over Northern Idaho**

- Water Resources Research Institute Reports:
  - "Observational evidence of the influence of Pacific SSTs on winter precipitation and spring stream discharge in Idaho" by Brian Harshburger, H. Ye, J. Dzialoski.
- Other Publications:
  - AAG 2002 abstract: "Observational evidence of the influence of Pacific SSTs on winter precipitation and spring stream discharge in Idaho," Brian Harshburger.
- Dissertations:
  - "Observational evidence of the influence of Pacific SSTs on winter precipitation and spring stream discharge in Idaho" by Brian Harshburger, in progress.

**Report Follows:**

**Problem and Research Objectives:** to examine the regional patterns of associations between SSTs in the Pacific and Idaho winter precipitation and streamflow variability

**Methodology:** Forty years of winter precipitation records (23 stations) and spring stream flow discharge records (5 stations) from across Idaho are analyzed to reveal regional patterns of association with SSTs in the Pacific Ocean.

**Principal Findings and Significance:** Winter precipitation in northern Idaho mountains between 45-48N is strongly correlated with fall SSTs in the eastern tropical Pacific Ocean. Winter precipitation north of 45N is negatively correlated with winter SSTs in the northern Pacific. Spring stream discharge in Idaho is also negatively correlated with SSTs in the eastern tropical and northern regions of the Pacific Ocean. The association is asymmetric with stronger responses during negative SSTs for both regions in the Pacific Ocean. Wet and dry conditions are most likely associated with the combination of La Nina-negative PDO and El Nino-positive PDO respectively.