SNOW – Lifeblood of the west and a great place to have a second office!!
The Beginning

• 1906 - Dr. James Church began a systematic snow survey on Mt. Rose, Nevada.

• He developed sampling techniques that led to the first water supply forecast in the West.
Lake Tahoe

• The first forecast done by Dr. Church was to predict how much water Lake Tahoe was going to get the following spring.

• SUCCESS!!!
This led to the good old days!
Or maybe not!

• Skiing or Snowshoeing into a Snow Course, uphill both ways, floundering through three feet of fresh powder, with a pack full of snow tubes, water, food, survival gear, first aid supplies, and who knows what else?!?

• Why it actually starts to feel like real work!
The somewhat better days—Snowmobiles replace feet as the mode of transportation
To better days! In flight movies and quicker survey times!
Even better days, SNOTEL provides hourly data every day of the year, available on the internet!
Snow Data Network
Manual Snow Courses

- Manual Snow Courses … the workhorse of the program.
- 40 NRCS Snow Courses
- An additional 6 Snow Courses measured by the state of California in the Central Sierra Nevada Mountains.
Aerial Markers

- 16 Aerial Markers
- All in Central Nevada
- All were automated this winter with depth sensors and temperature sensors
Corduroy Flat Automated A.M.
Automated SNOTEL Sites

- 32 in California
- 38 in Nevada
Hole-In-Mountain, Nevada
Echo Peak, CA SNOTEL-Just shy of can’t fly weather!
Carson Pass, CA SNOTEL Site
Precipitation Gauge with Alter Shield

Ground Truth Marker

Soil Moisture

Drainage

Air Temperature

Shelter

Antenna

Solar Panel

Snow Depth Sensor

Hypallon Snow Pillow
Data Timing and Availability

- Snow Courses – measured 1 - 5 times a year. Snow Depth and SWE
- Aerial markers – were measured 1 – 5 times a year. Snow Depth and estimated SWE
- NOW measured four times a day, Snow Depth and Air Temperature
SNOTEL Sites

- Hourly Data is Collected and Reported
- Snow Depth
- SWE
- Total Cumulative Precipitation
- Air Temperature
- Soil Moisture/Soil Temperature Data
- Other Sensors as supported by the system.
Internet Address

• http://www.nv.nrcs.usda.gov/snow/
• Some uses of this data:
  – Drought and flood monitoring and mitigation
  – Streamflow forecasting
  – Reservoir operations management
  – Irrigation water management
  – Fire risk assessment
  – Crop production
  – Disease and pest outbreak mitigation
  – Natural resource management
  – Recreation