ESRL Theme Presentation on the Weather-Climate Connection

Observing System Needs

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Atmospheric River Observatory

Atmospheric River (AR) Observatory: Russian River Prototype

Objectives: Detect and monitor the fuel and forcing that causes extreme precipitation

Observing systems:
1. Wind profiler/RASS
2. S-band radar
3. Disdrometer
4. Surface met
5. GPS-IWV
6. Rain gauges

MENDOCINO
LAKE

SONOMA

Elev. (m)

Pacific Ocean

Bodega Bay (12 m)

Cazadero (475 m)

Wind profiler/RASS
S-band precip profiler
GPS IWV
Sfc. met. + rain gauge
Raindrop disdrometer

Time (UTC)
-90 deg

Coastal rain (BBY) 0.75 in.
Mountain rain (CZC) 4.20 in.
A Different Flow Regime in the American River Basin?

Changes in Peak Flows
American River

American River Runoff
Annual Maximum 1-Day Flow

Unimpaired Runoff at Fair Oaks

Water Year

Red Line = Construction of Folsom Dam

Lester Snow, CA-DWR