

An aerial photograph of a city, likely Sacramento, California, showing a river winding through the urban landscape, surrounded by buildings, roads, and greenery. The text is overlaid on the image.

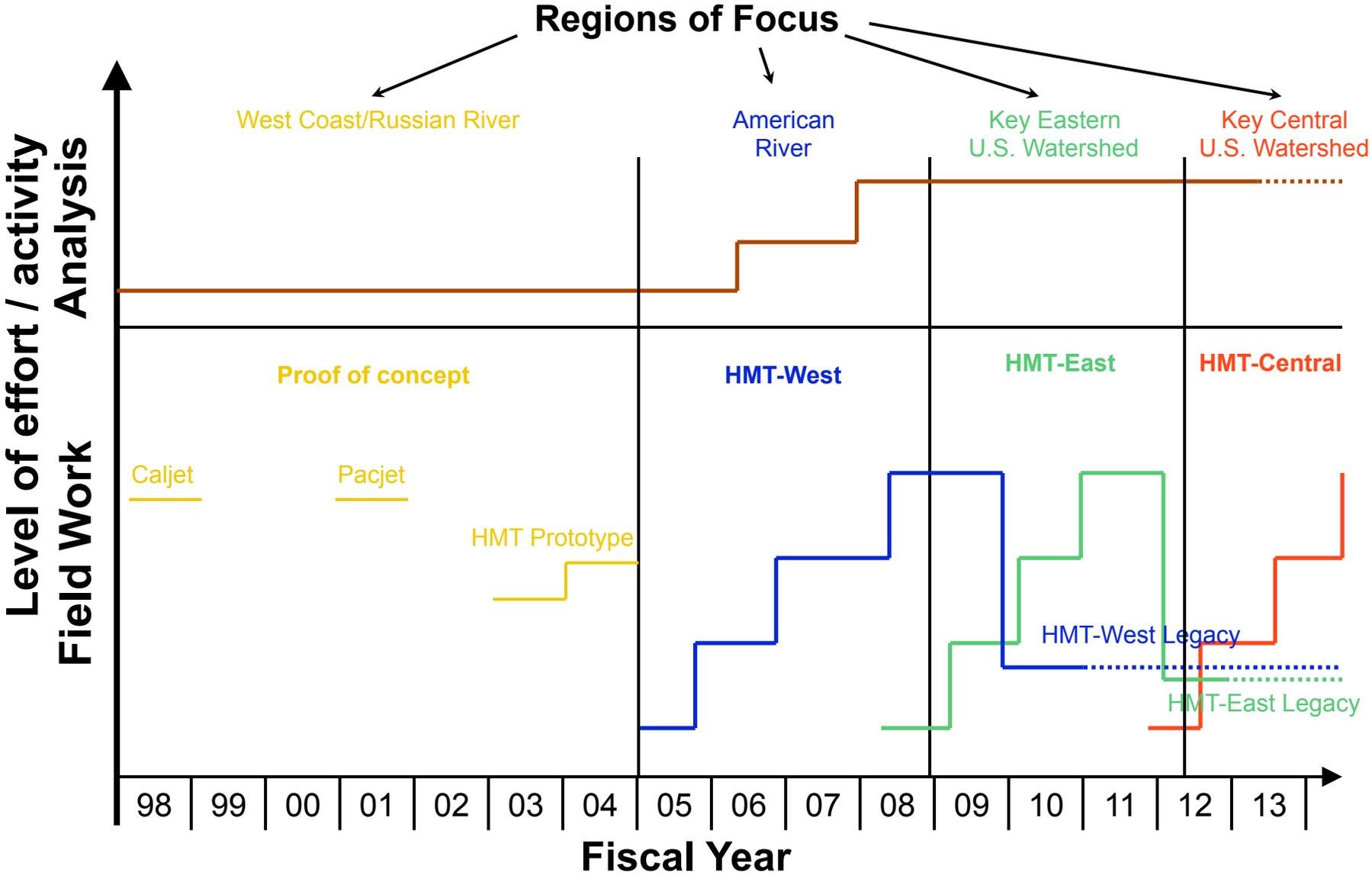
HMT-West End User Perspective

Michael Anderson
CA State Climatologist
Climate Prediction Applications Workshop
March 2, 2010

Talk Overview

- HMT West and California
- DWR Engagement
- Evaluation

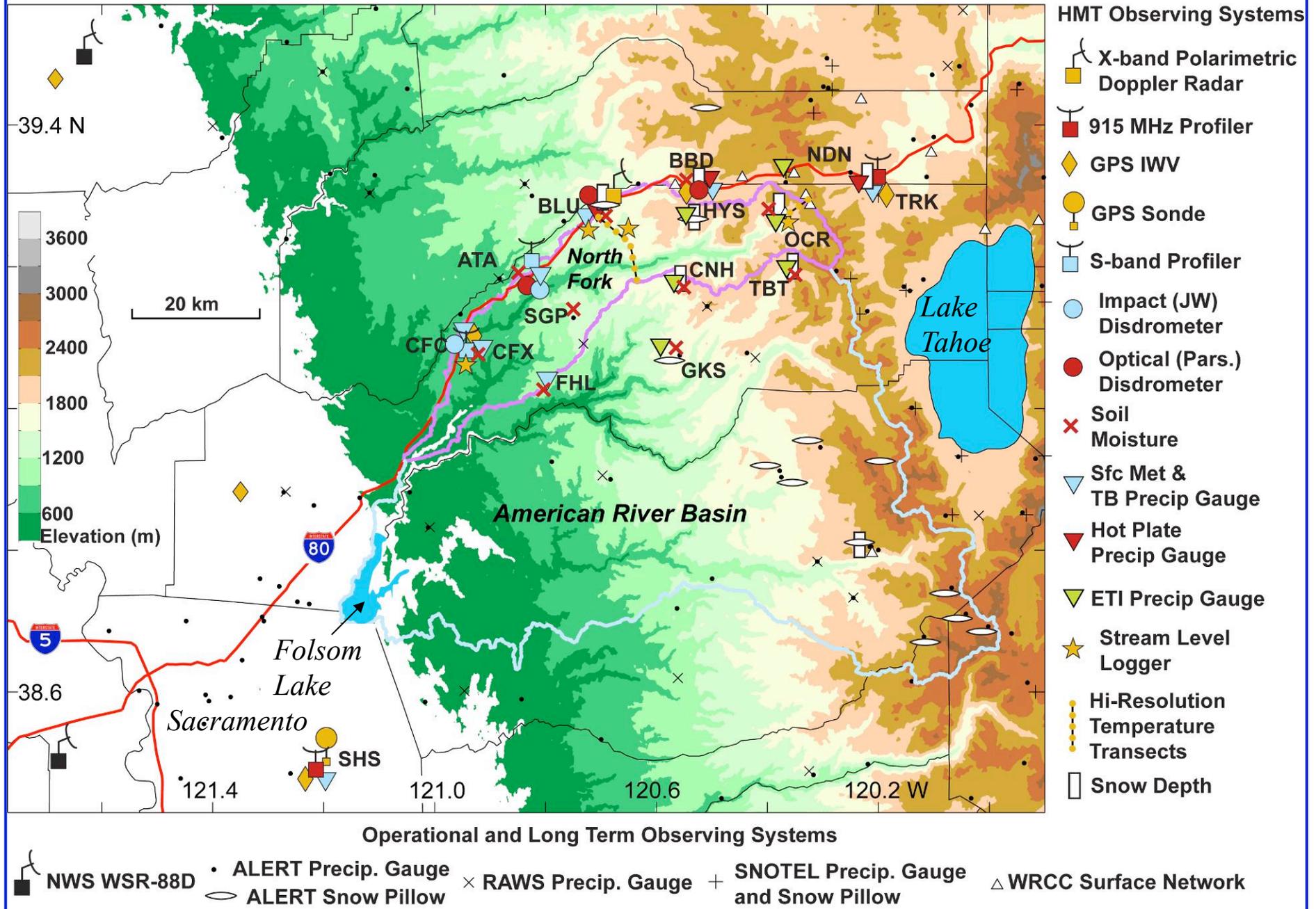
Hydrometeorology Testbed Timeline



NOAA Hydrology Program
(Water Resources Data Assimilation)

NOAA Science and Technology Infusion Program
(Hydrometeorology Testbed)

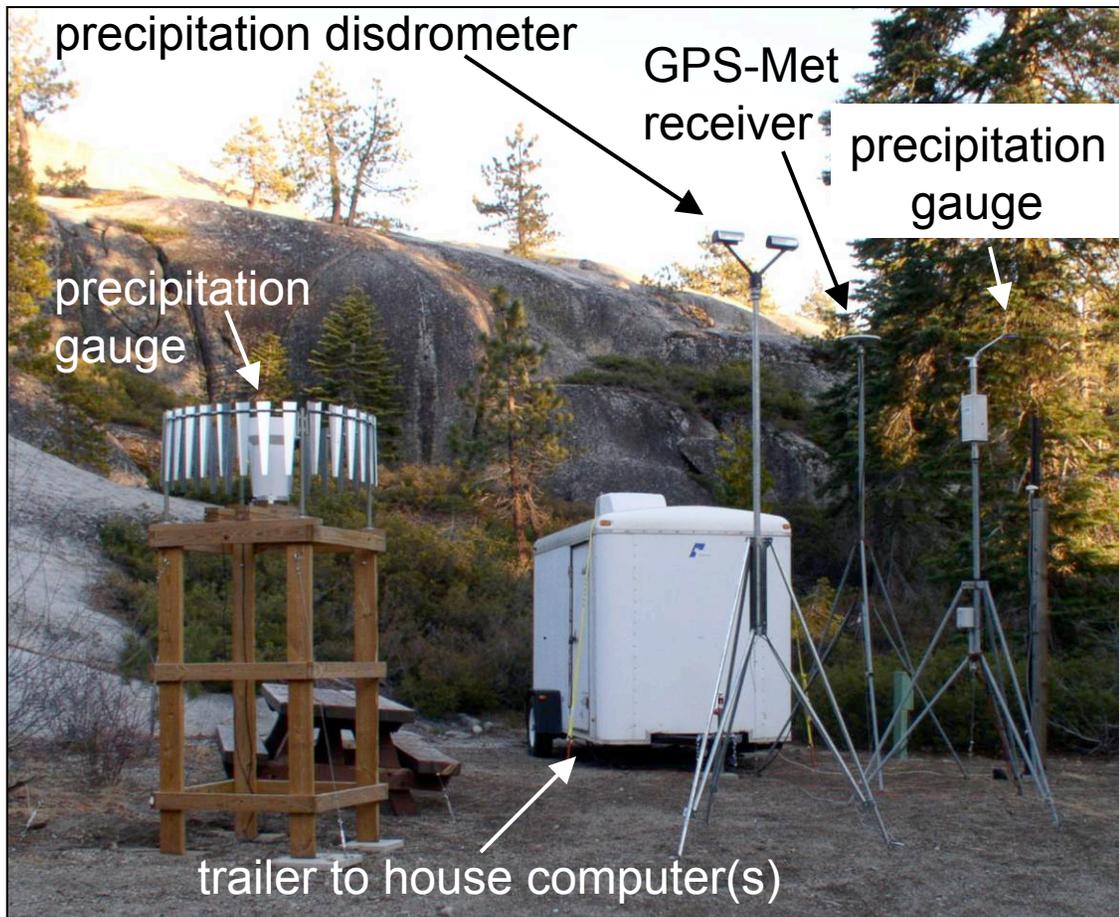
HMT-WEST 2007-2008: Basin Scale Domain



Data Acquisition Computer Field Sites

Used at sites where at least one of the instruments requires a computer to acquire its data

Example: Big Bend (BBD)



- Types of instrumentation at these sites:
 - radars, GPS-Met receivers, precipitation disdrometers, surface meteorology, precipitation gauges, soil moisture, snow depth
- Modes of communication at these sites:
 - telephone/modem
 - satellite internet

An aerial photograph of a vast, dense forest covering a valley and surrounding mountains. The trees are a mix of green and brown, suggesting a diverse ecosystem. The mountains in the background are also covered in forest, with some peaks appearing hazy. The overall scene is a lush, natural landscape.

DWR Engagement

- Field Assistance
- Review Committee
- Future Investment

Future Investment

- Cooperative Venture Between DWR, NOAA ESRL and Scripps Institute of Oceanography
- Snow Level Radar, Total Column Water Vapor, Soil Moisture Instrumentation
- Ensemble Modeling, Forecast Tool Development

Evaluation

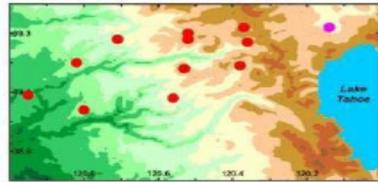
- Better QPF
- Longer Lead Time
- Incorporation into Operational Environment



NOAA ESRL Near Real-Time Data and Product Distribution System

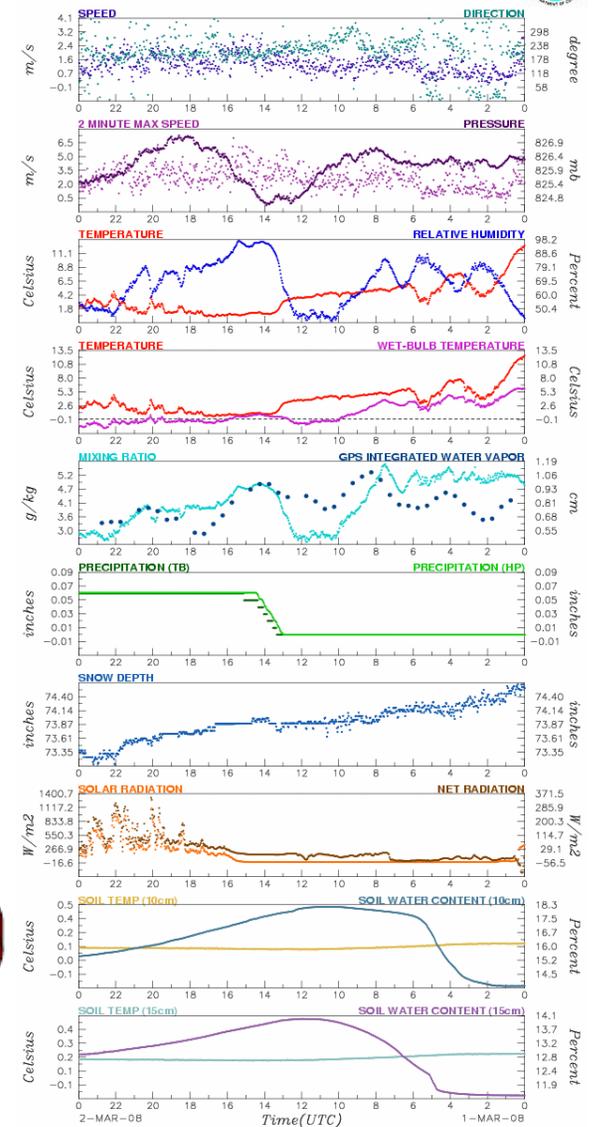


Remote Unattended Instrument Network



Sample Web product display for Big Bend

ESRL Physical Sciences Division
Surface Meteorology and Physics



Big Bend, CA (BBD)
39.30 N, 120.52 W, 1739 m

Hourly Asynchronous Data Transfers Executed in Parallel



GOES Satellite



Phone Lines



Direct and Satellite
Internet



NOAA David Skaggs Research Center - Boulder, CO

Data and Product Management



Archive



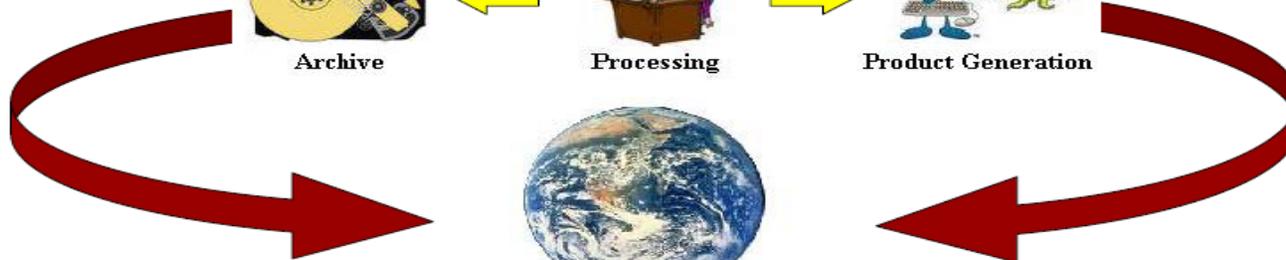
Processing



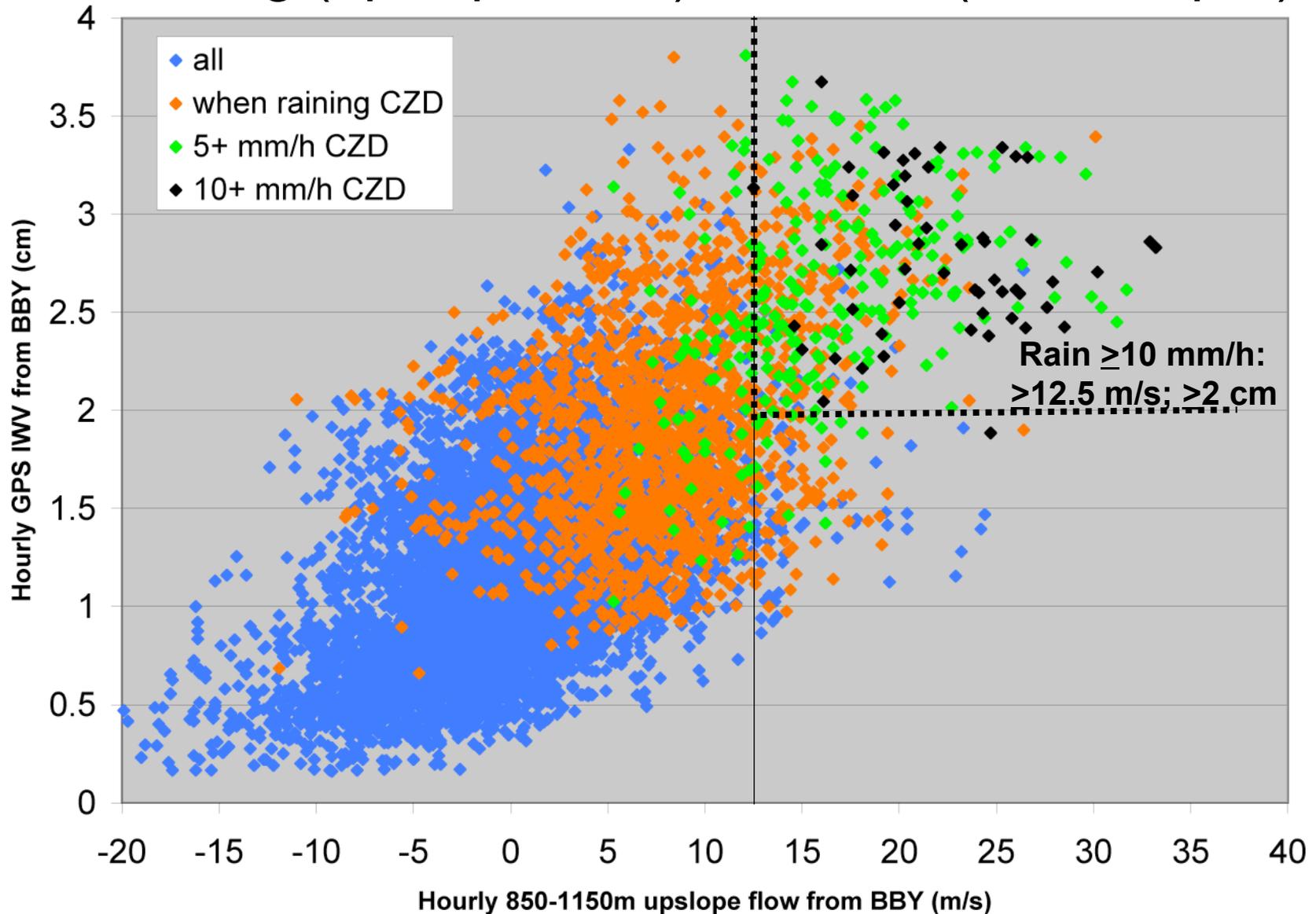
Product Generation



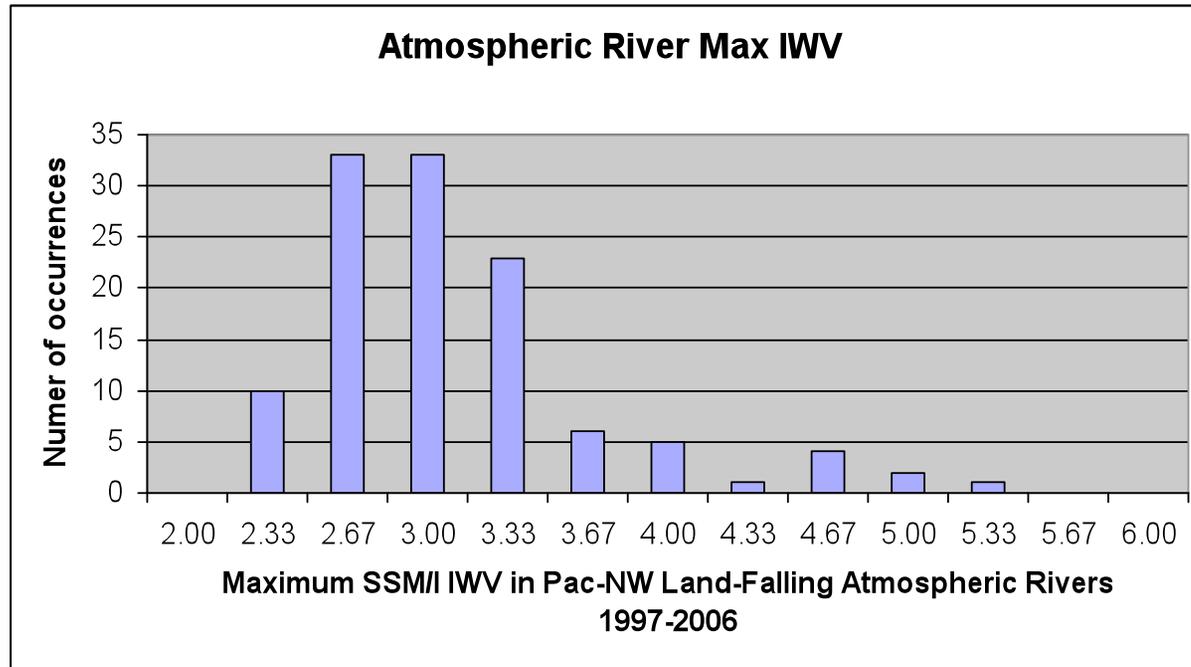
WWW Access and Distribution



Rainfall Intensity Derived From Thresholds of Forcing (upslope wind) and Fuel (water vapor)



A Histogram of AR Strength



Conclusion:

The Fall 2006 event in the Pac-NW was associated with a landfalling atmospheric river. This is similar to the Ralph et al. (2006, GRL) result for the Russian River floods from 1997-2006.

The event was tied for 2nd in terms of maximum IWV out of 118 events.

Conclusions

- HMT-West has enabled opportunity for investment in equipment and decision support tools to aid emergency response in CA
- Further development needed to fully transition research ideas and outcomes into existing or planned operational environment

A photograph of a sunset over the ocean. The sun is partially obscured by a layer of clouds, creating a bright, glowing effect. The sky transitions from a deep blue at the top to a dark, almost black blue at the bottom. The water in the foreground is dark and shows some ripples.

Questions?

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