

Alsea Watershed Study Revisited

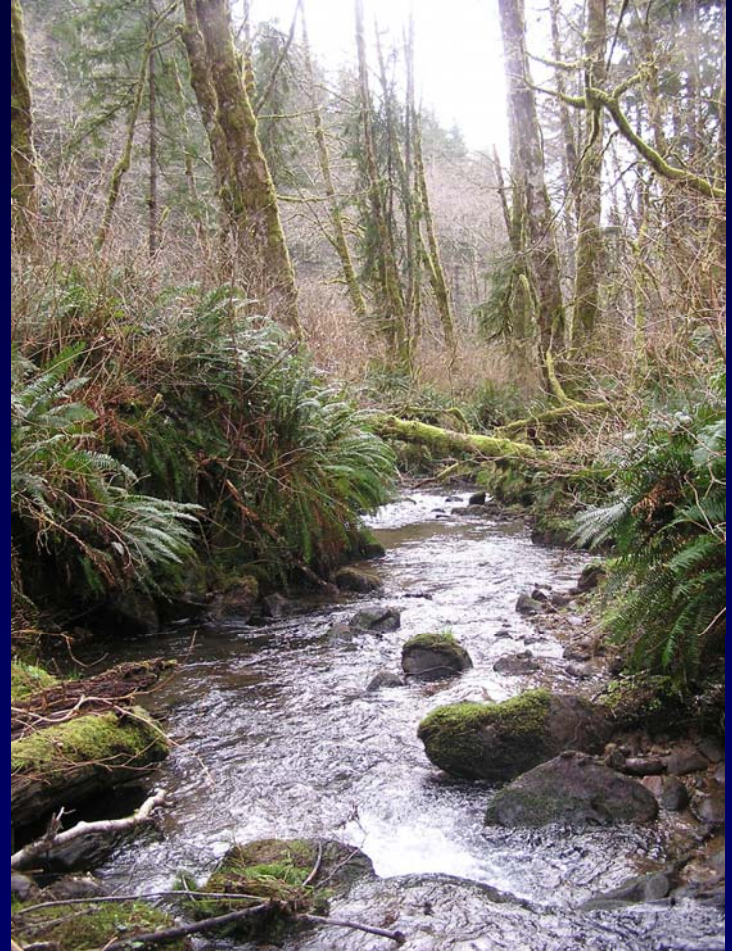
Hydrology and Water Quality Update

Watershed Research Cooperative
Advisory Committee Meeting
December 18, 2007

Cody Hale

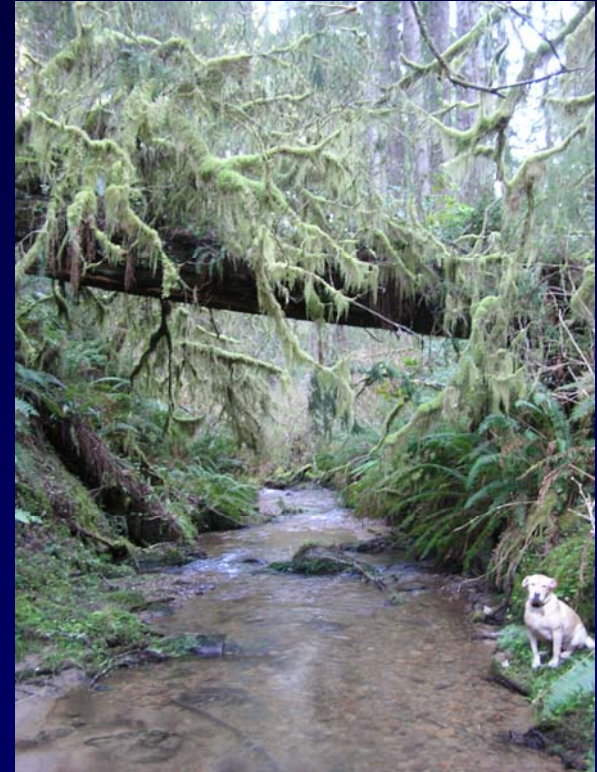
Outline

- *Data collection update*
- *Master's summary*
- *Collaborations*
- *Conclusions*



Calibration Data

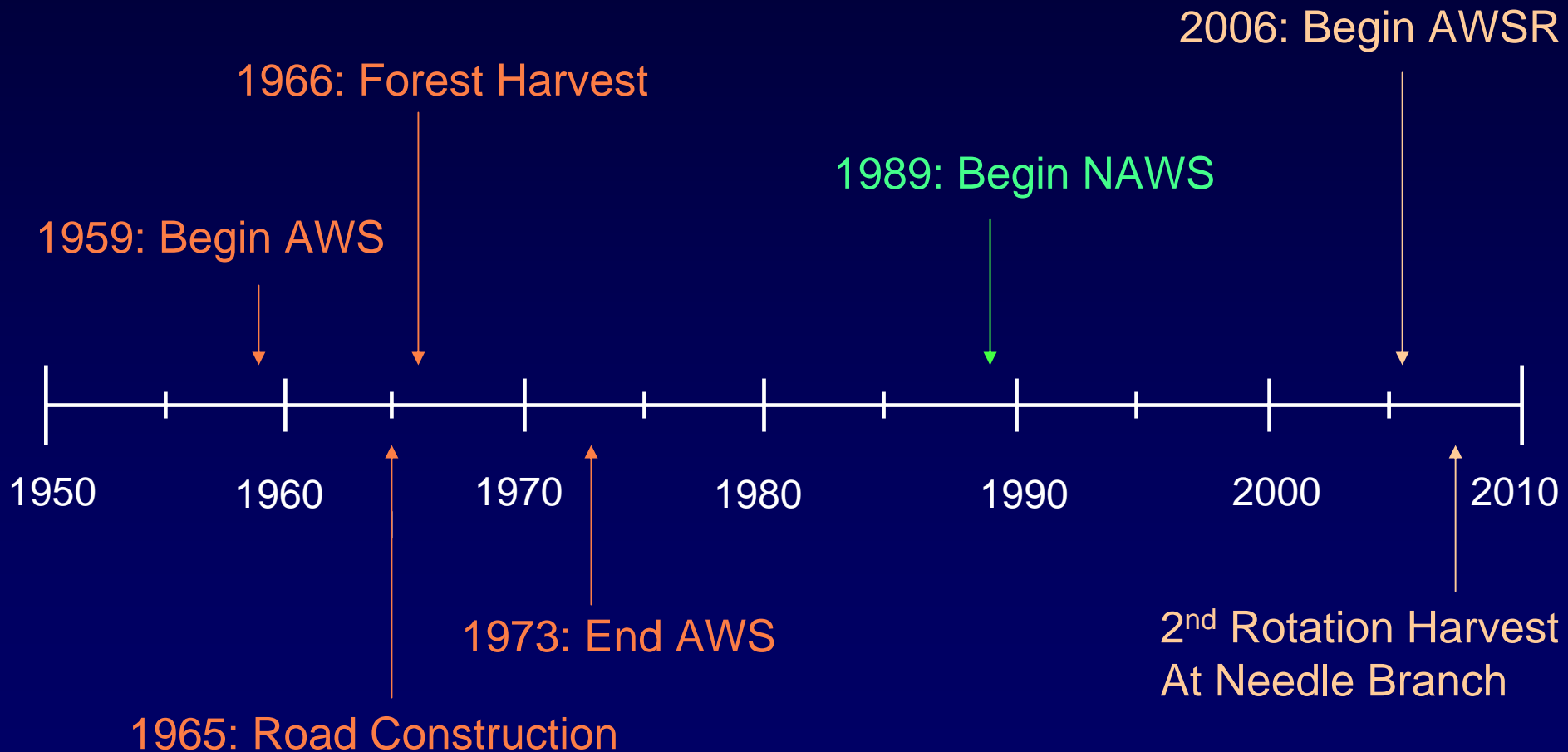
- Streamflow and Precipitation
- Turbidity and Suspended Sediment
- Stream Temperature
- Stream Nutrients



Master's Objectives

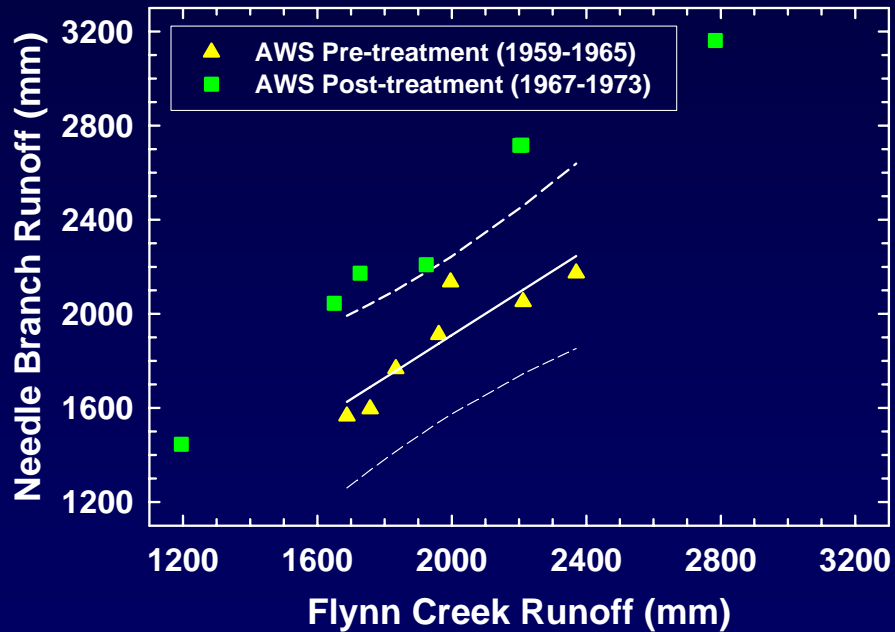
- Assess presence of long-term effects
 - Streamflow
 - » Annual runoff
 - » Peak flow
 - » Low-flow days
 - Annual suspended sediment yield
 - Maximum summer stream temperature

Alesa History

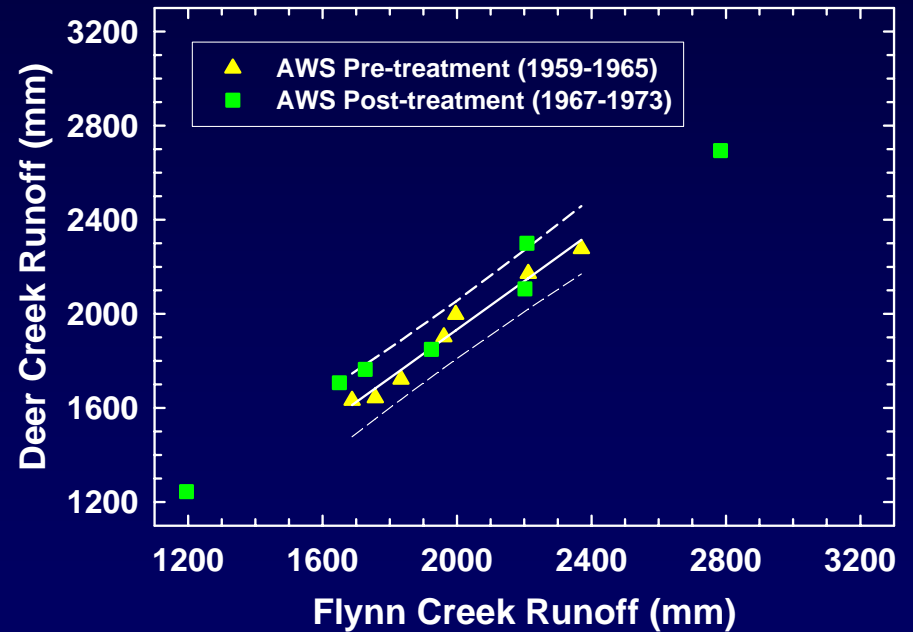


Annual Runoff: Historic

Needle Branch (CC)

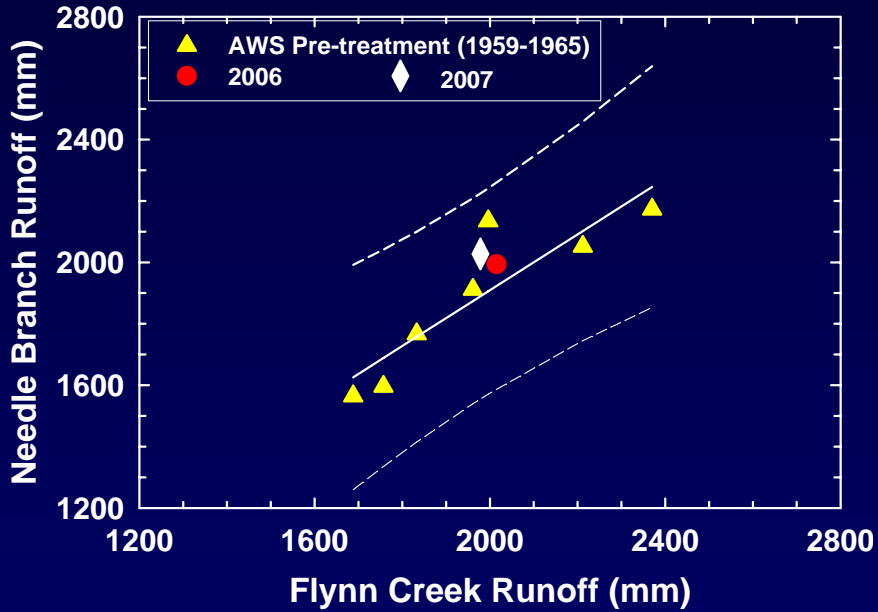


Deer Creek (PC)

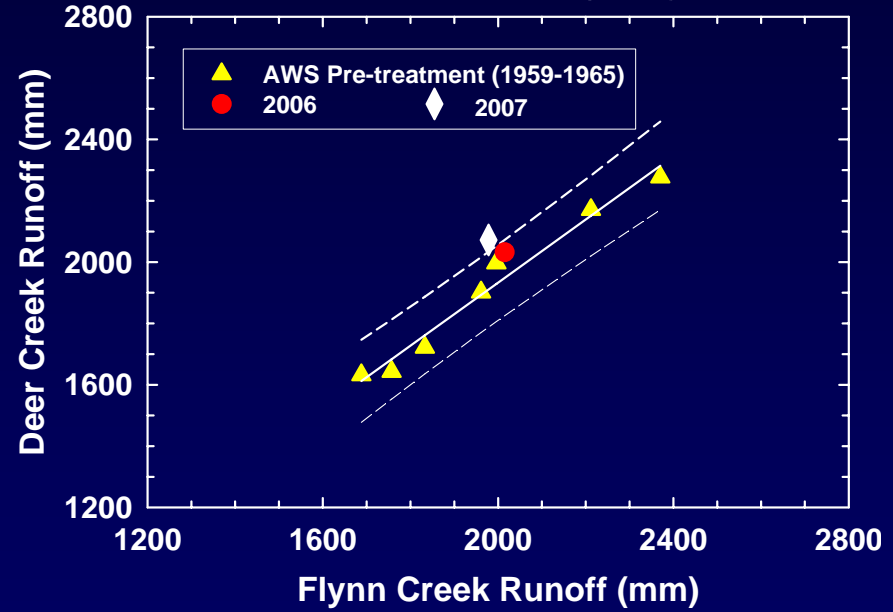


Annual Runoff: Current

Needle Branch (CC)

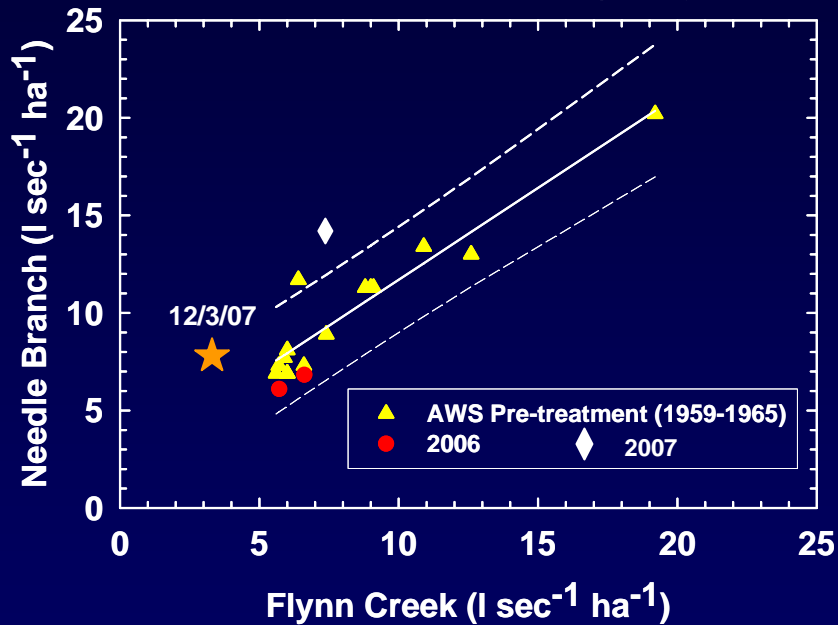


Deer Creek (PC)

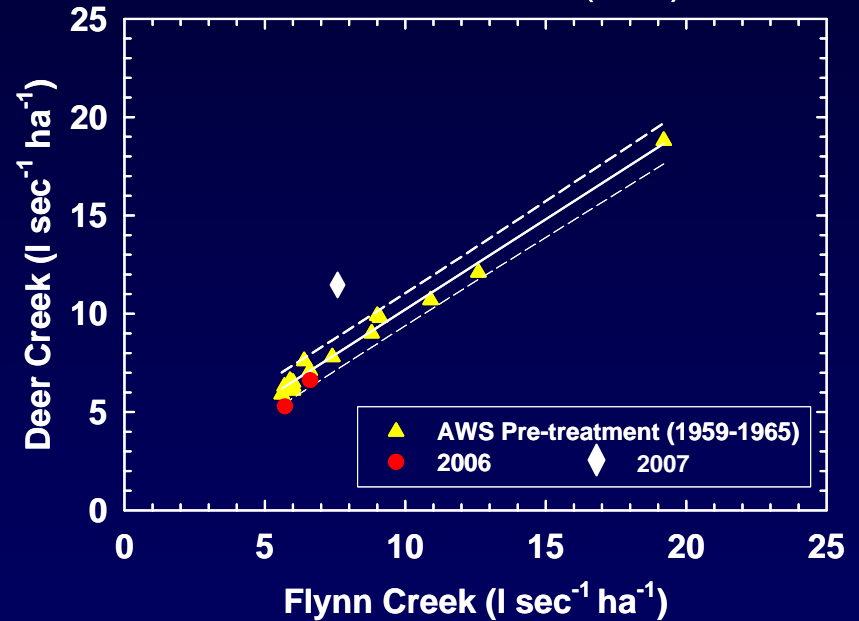


Peak flows: $Q \geq 5.46 \text{ l sec}^{-1} \text{ ha}^{-1}$

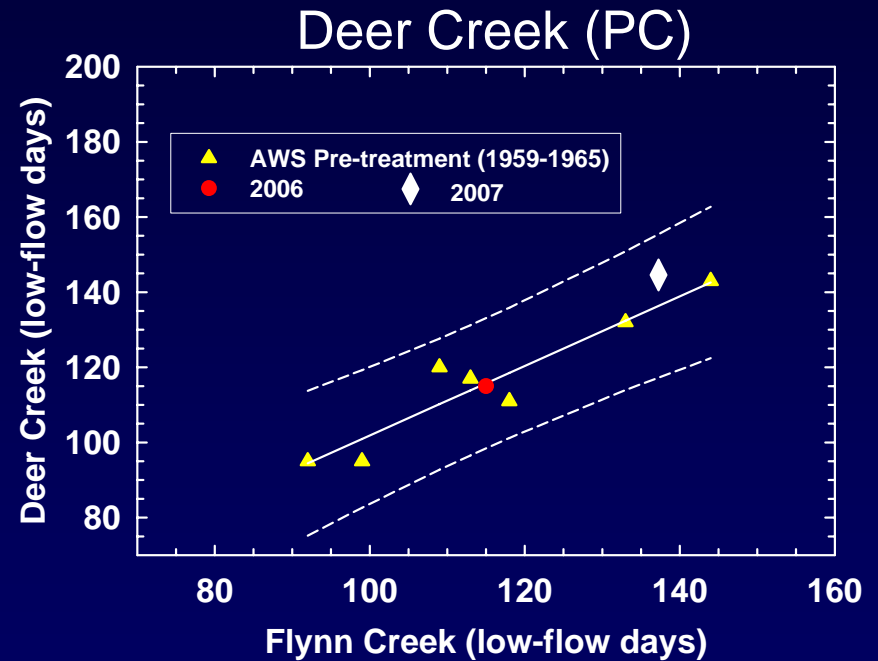
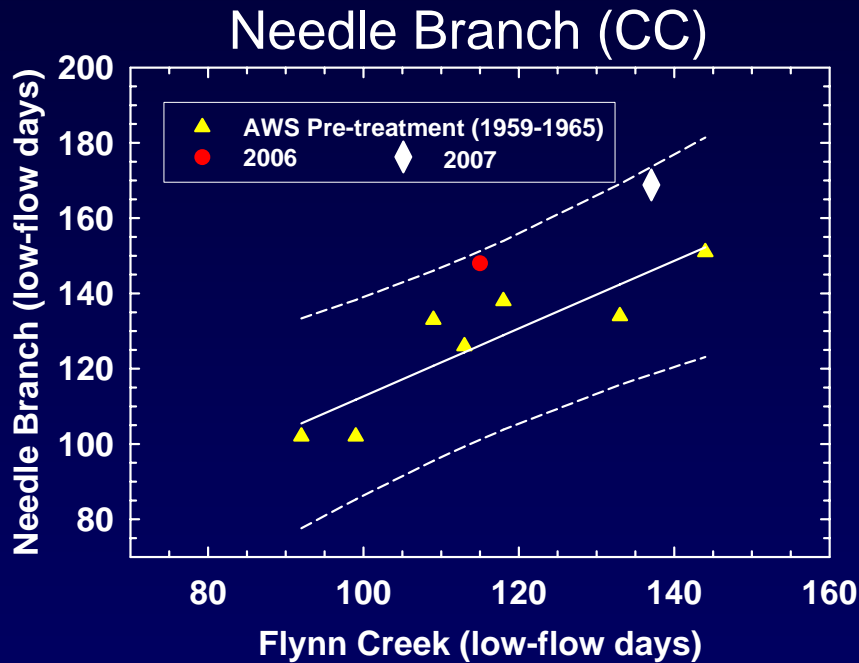
Needle Branch (CC)



Deer Creek (PC)

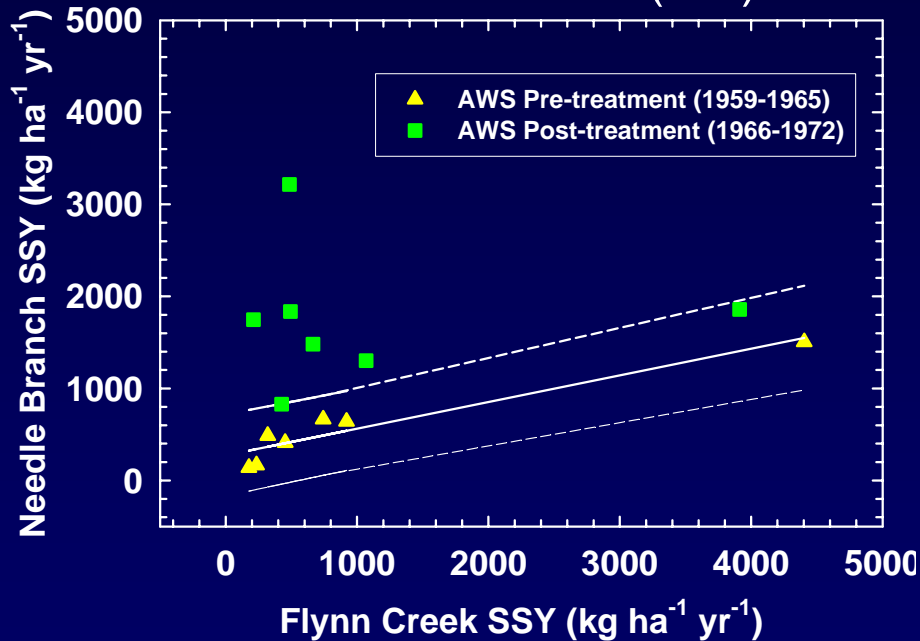


Low-flow Days: $Q < 0.11 \text{ l sec}^{-1} \text{ ha}^{-1}$

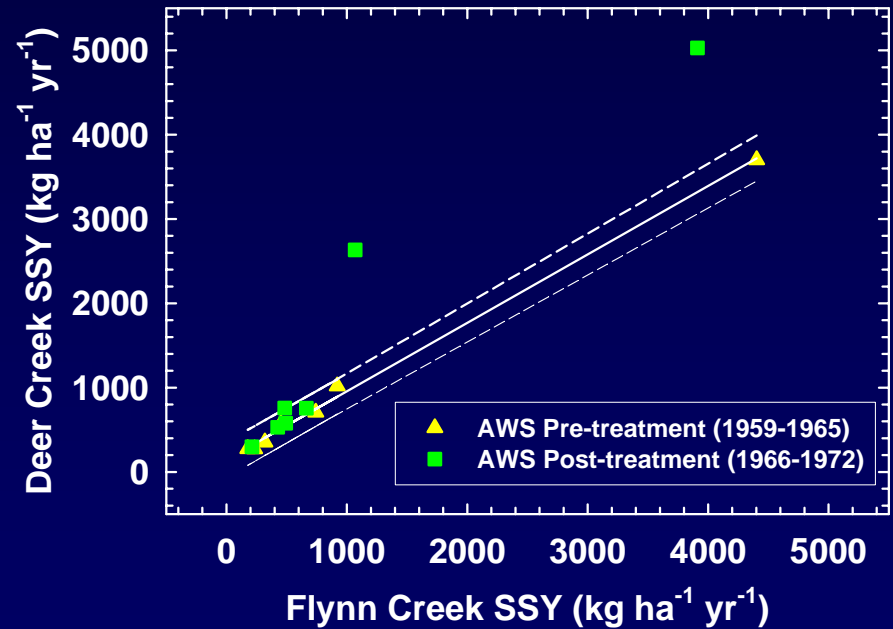


Annual Suspended Sediment Yield: Historic

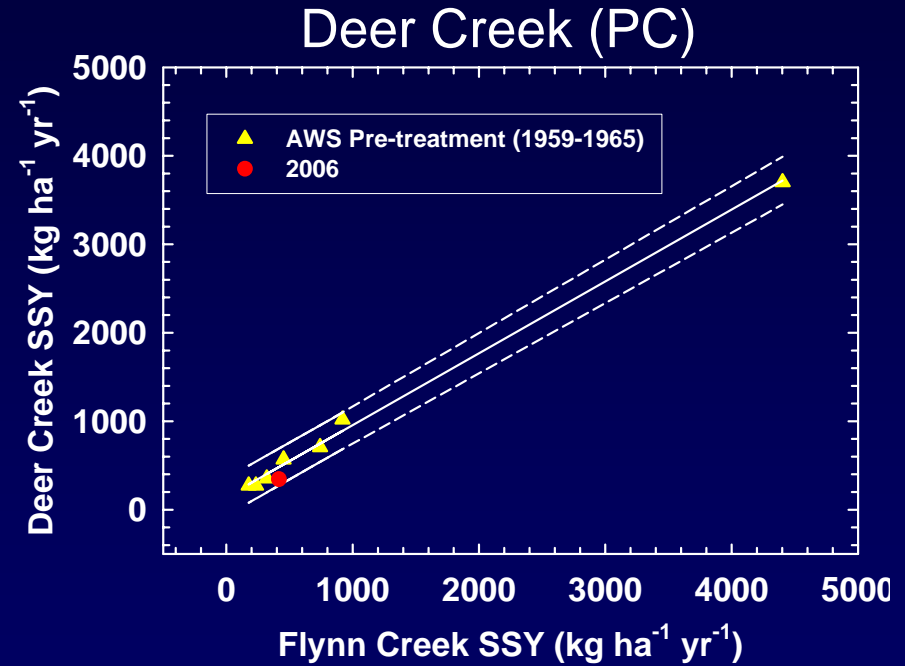
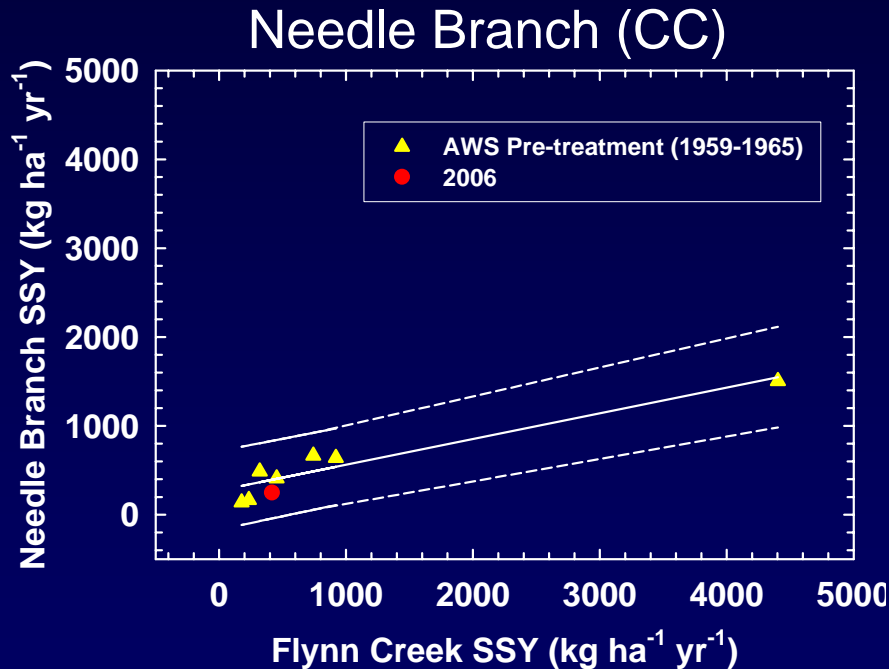
Needle Branch (CC)



Deer Creek (PC)

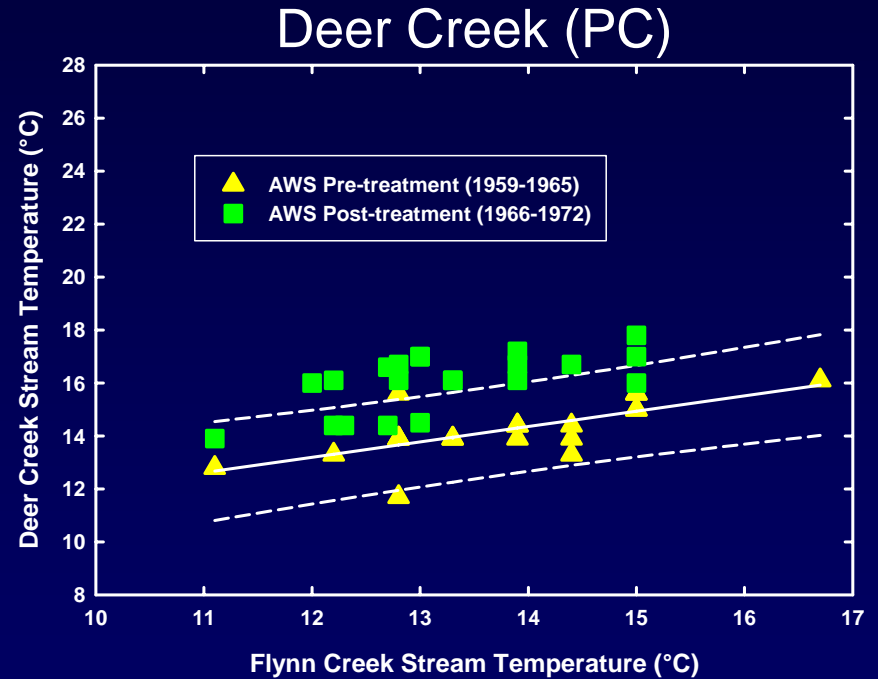
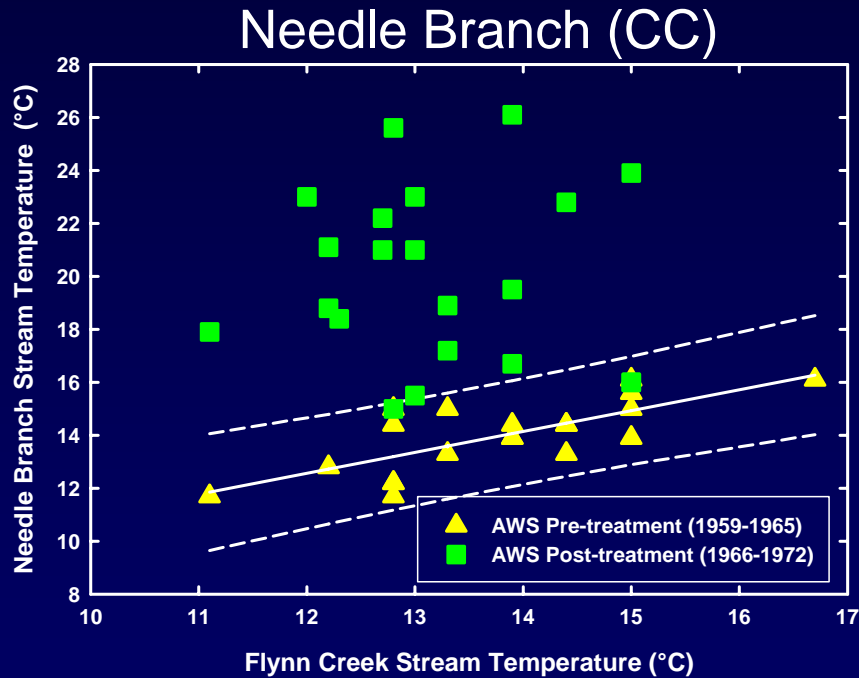


Annual Suspended Sediment Yield: Current



No statistically significant differences detected for water year 2006

Maximum Summer Stream Temperature: Historic

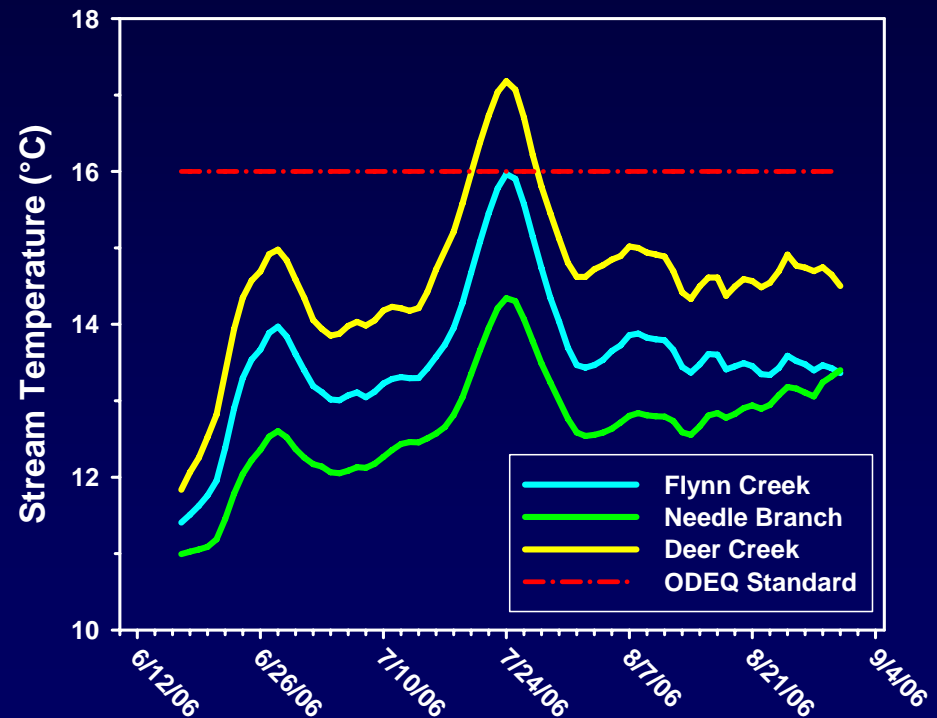


Temperature Standard

Exceedance

- Mainstem Mean
 - Deer Creek: 7 days
- Discrete Locations
 - Flynn Creek:
 - 4 of 7 loggers
 - 6 days
 - Needle Branch:
 - 1 of 7 loggers
 - 3 days
 - Deer Creek:
 - 5 of 6 loggers
 - 13 days

Mainstem mean 7-day moving mean of the daily maximum temperature



Recent Collaborations

- College of Oceanic and Atmospheric Sciences
 - Sediment sourcing: headwaters to estuary
- New Post-doc
 - Comparing Asea to Cloud Forests in Mexico

Conclusions

- Calibration phase continues
- Preliminary results interesting
- Collaborations will enhance project benefits

