

THE ROLE OF CATCHMENT STORAGE IN CONTROLLING STREAM TEMPERATURE RESPONSE TO FOREST HARVESTING

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A LITTLE CONTEXT

- Contemporary forest harvest practices have vastly improved, but still a subject of debate
- In pursuit of improvements, better understanding of controlling factors is needed

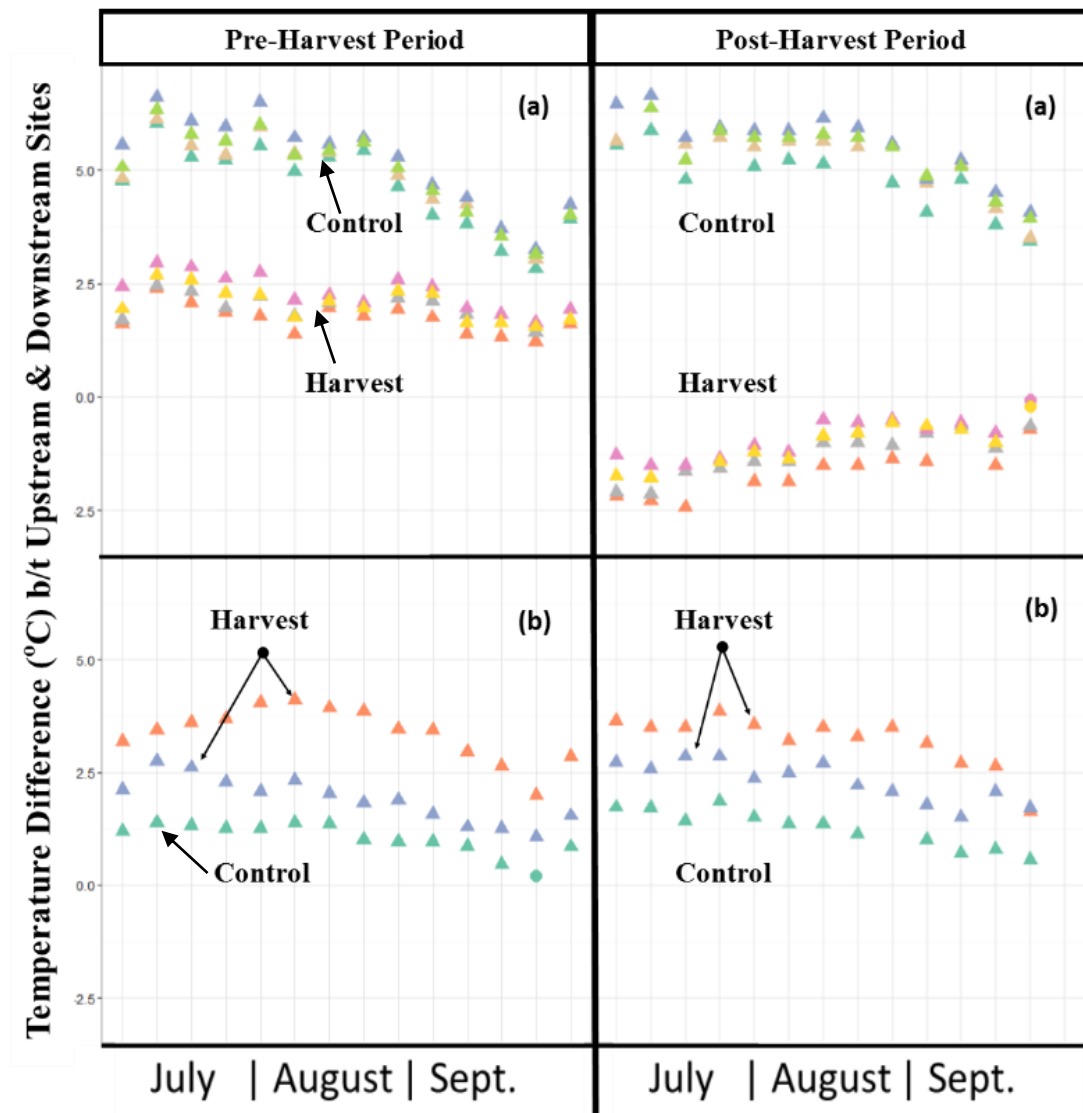
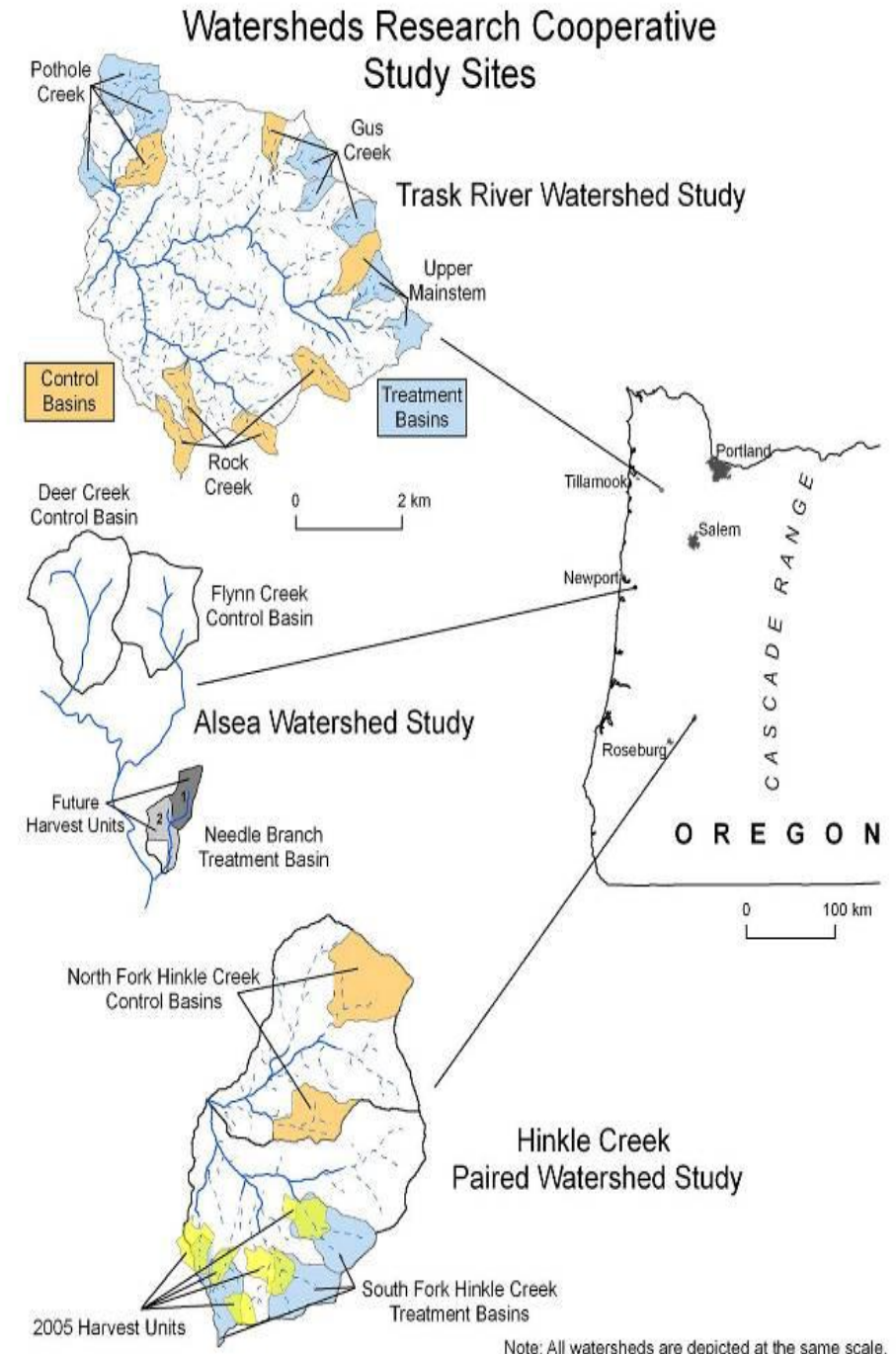


Fig. 1: Relative upstream/downstream temperature differences at Upper Mainstem (a) and Pothole Creek (b) before and after harvest.



BUILDING ON PREVIOUS WORK

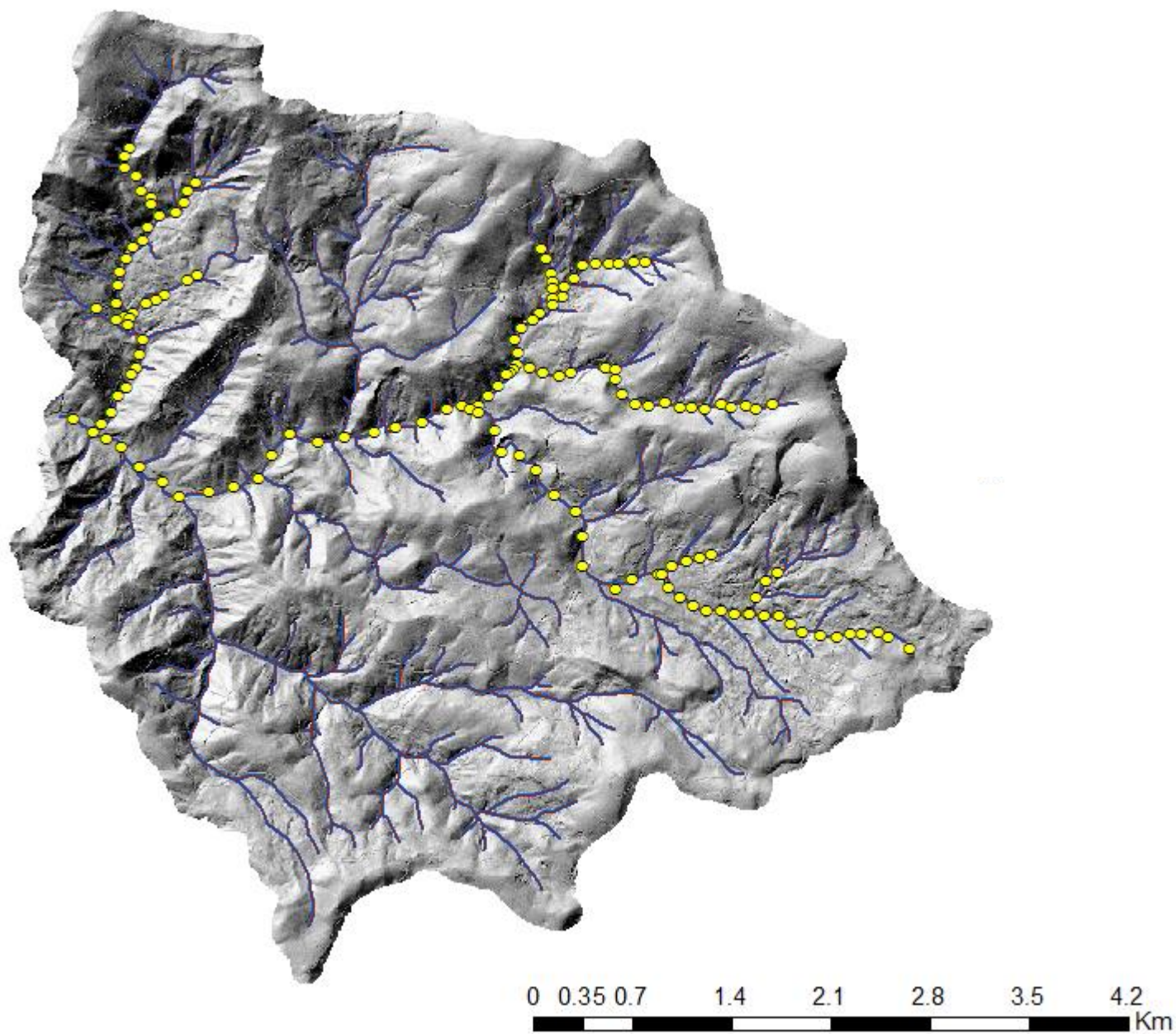
- Watershed Research Cooperative
 - 15 years of data
 - Several examples of harvest with minimal stream response
 - Opportunities to examine controlling **factors on stream temperature**
 - Groundwater sourcing
 - Paired with study-related field data collection
- The Trask watershed provides a geologically and harvest response diverse location for study



TIMELINE

Activity	FY17											
	J	A	S	O	N	D	J	F	M	A	M	J
Field work: Synoptic sampling	█	█	█									
Lab analysis of isotopes				█	█	█	█	█	█	█		
Data analysis							█	█	█	█		
Dissemination of results											█	█

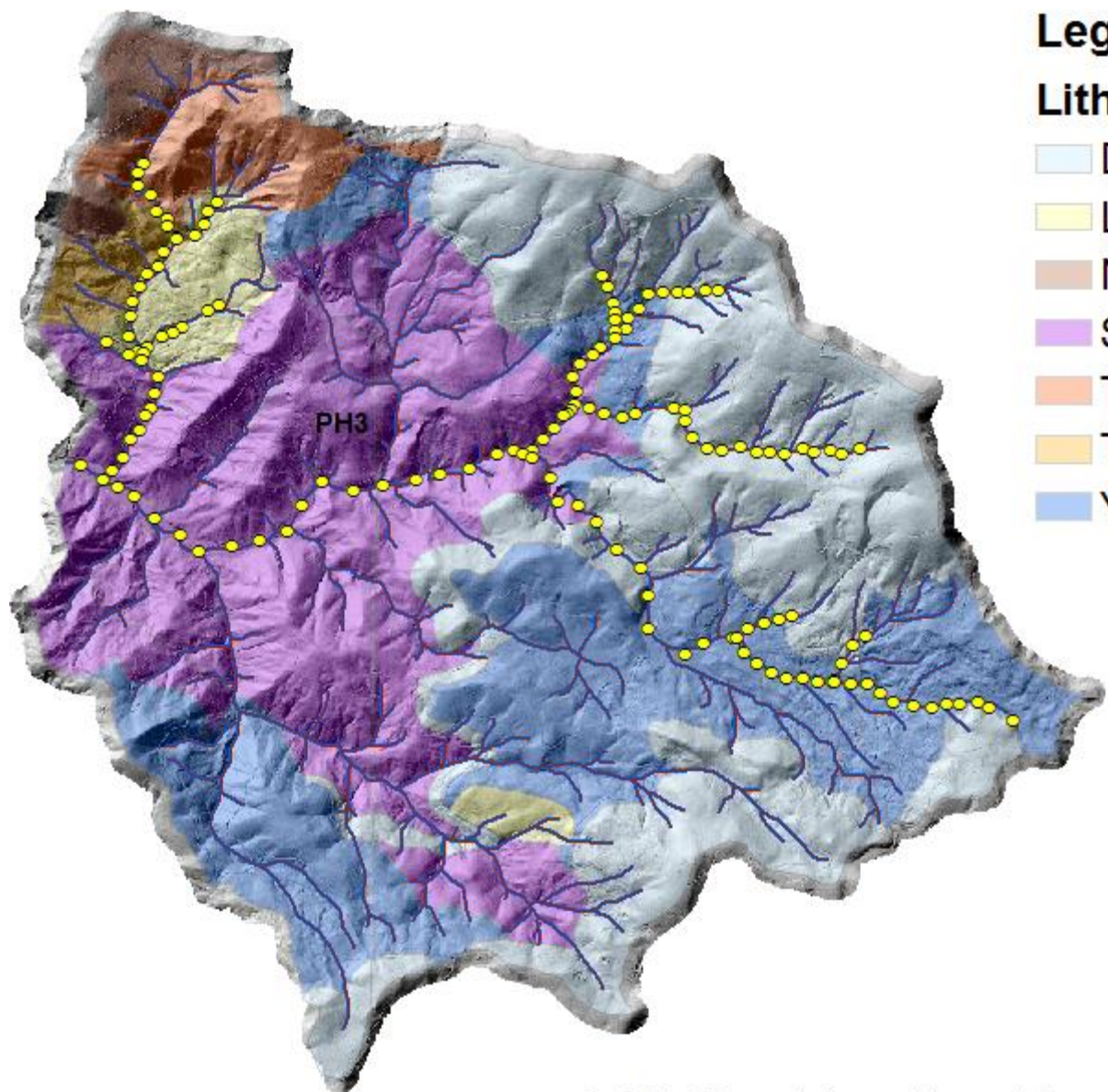




We collected ~130 water samples for lab analysis during each of 3 field campaigns (~390 total samples) in July, August, and September 2016.

30% percent of the samples have been analyzed for water stable isotopes

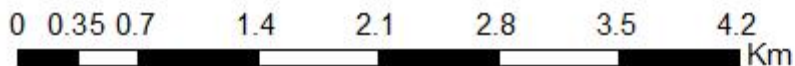




Legend

Lithologic Units

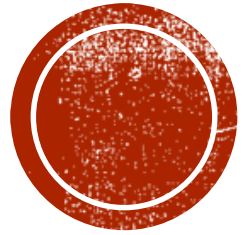
- Diabase of Lee's Falls
- Landslide deposits
- No data
- Siletz River Volcanics
- Tillamook Volcanics
- Trask River Formation
- Yamhill Formation



PLAN WORK

- The analysis of samples for water stable isotopes will be complete between November and December 2016.
- Data analysis will follow, incorporating the 2016 stream temperature data that has been collected in the Trask.
- Spring 2016 – Segura will participate in a workshop “Spatial Statistical Network Models” to strengthen the analysis.
- Summer 2017 – Synthesize data and prepare manuscript.





QUESTIONS?