

PIBO and CHaMP

A comparison of two stream
habitat monitoring programs

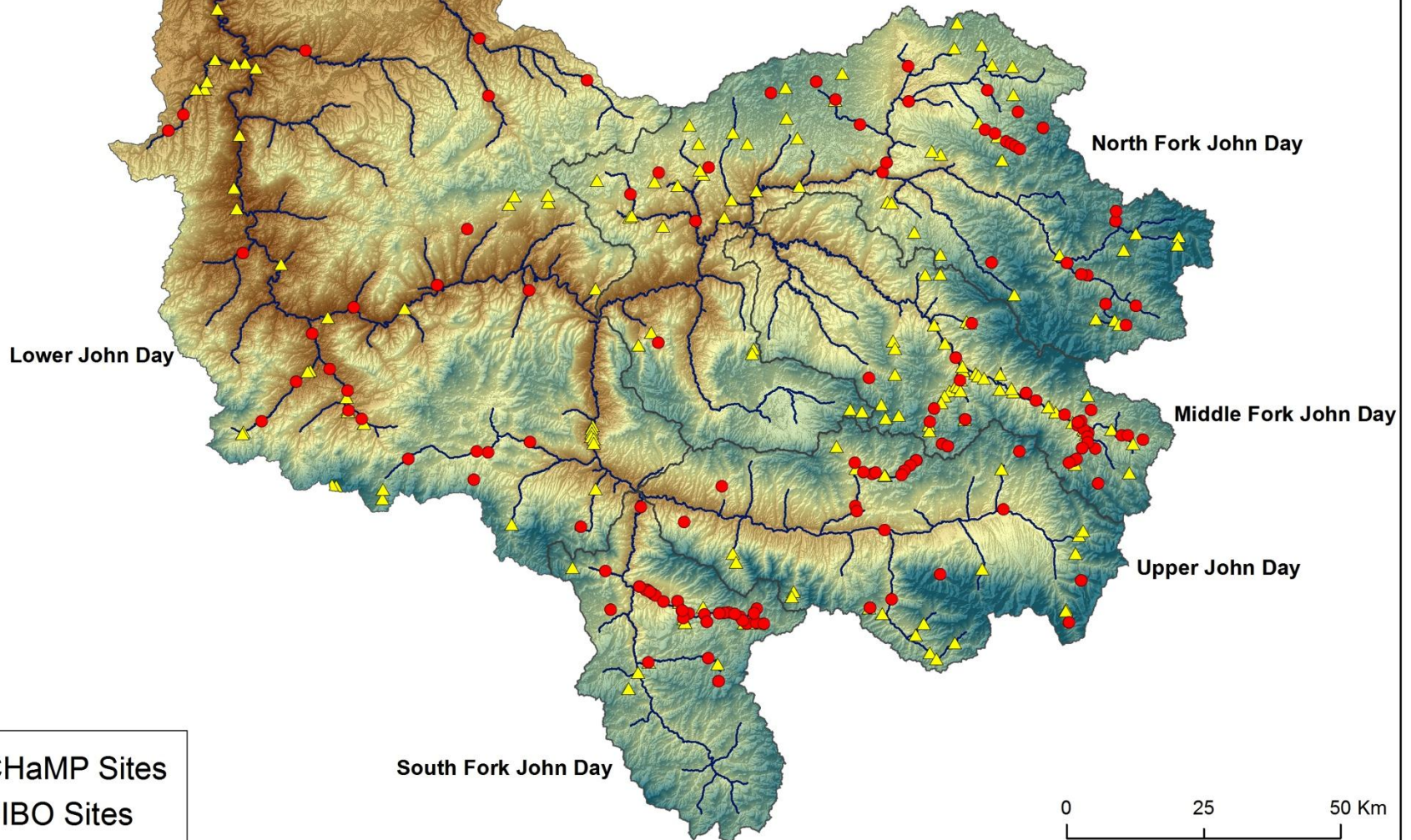
Why was this project undertaken?

- Data comparability
 - Are these data of similar quality/reliability?
- Determine if there are ways to more efficiently collect these data
- Can these data be used together to make statements about the conditions of streams?

Data Collection Approaches

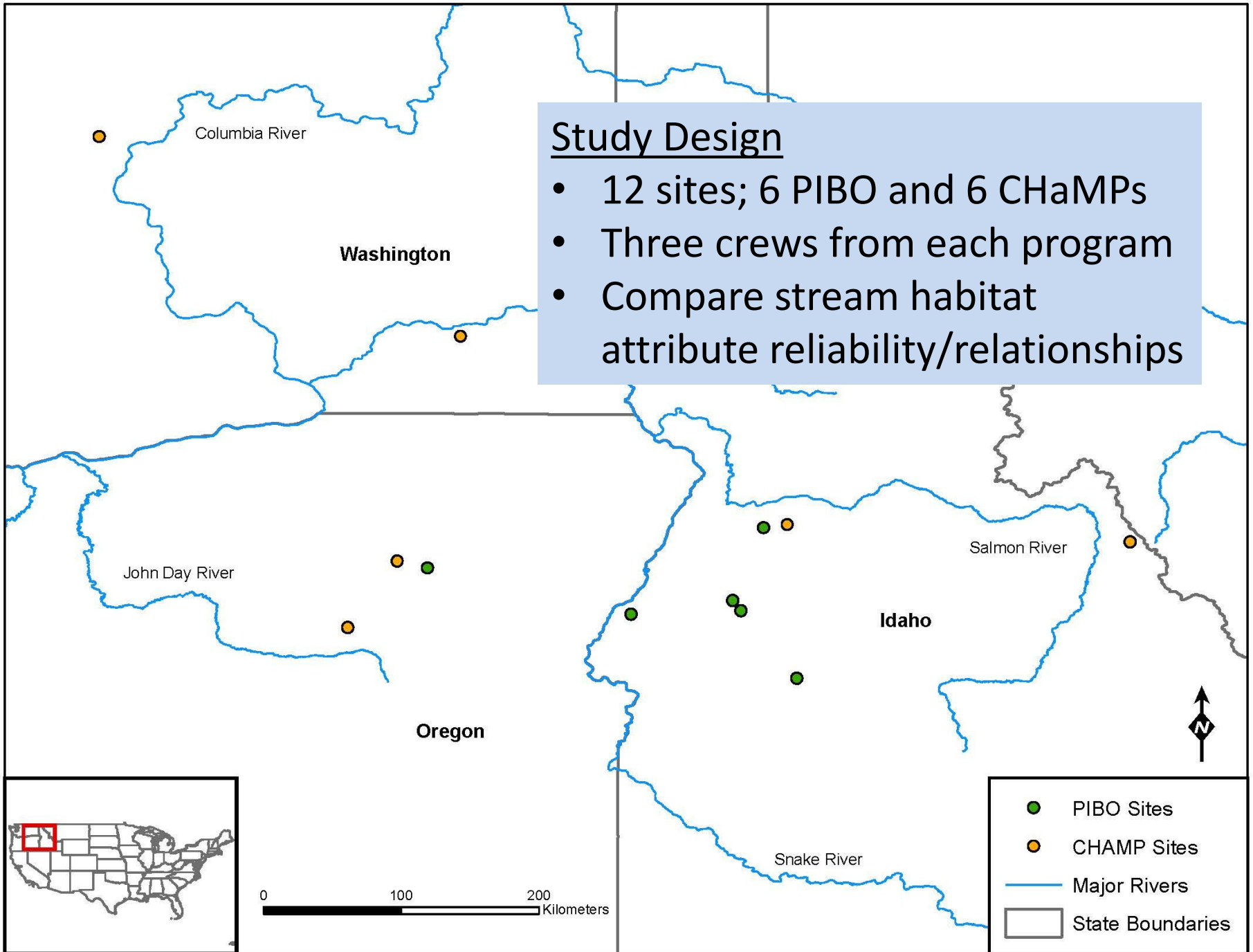
- PIBO is stick and tape for habitat, riparian species composition, benthic macroinvertebrates.
- CHaMP's total station 3D maps for habitat, qualitative riparian, drift macroinvertebrates.

Considerable overlap in some areas. How do we make sure we use all the data collected?



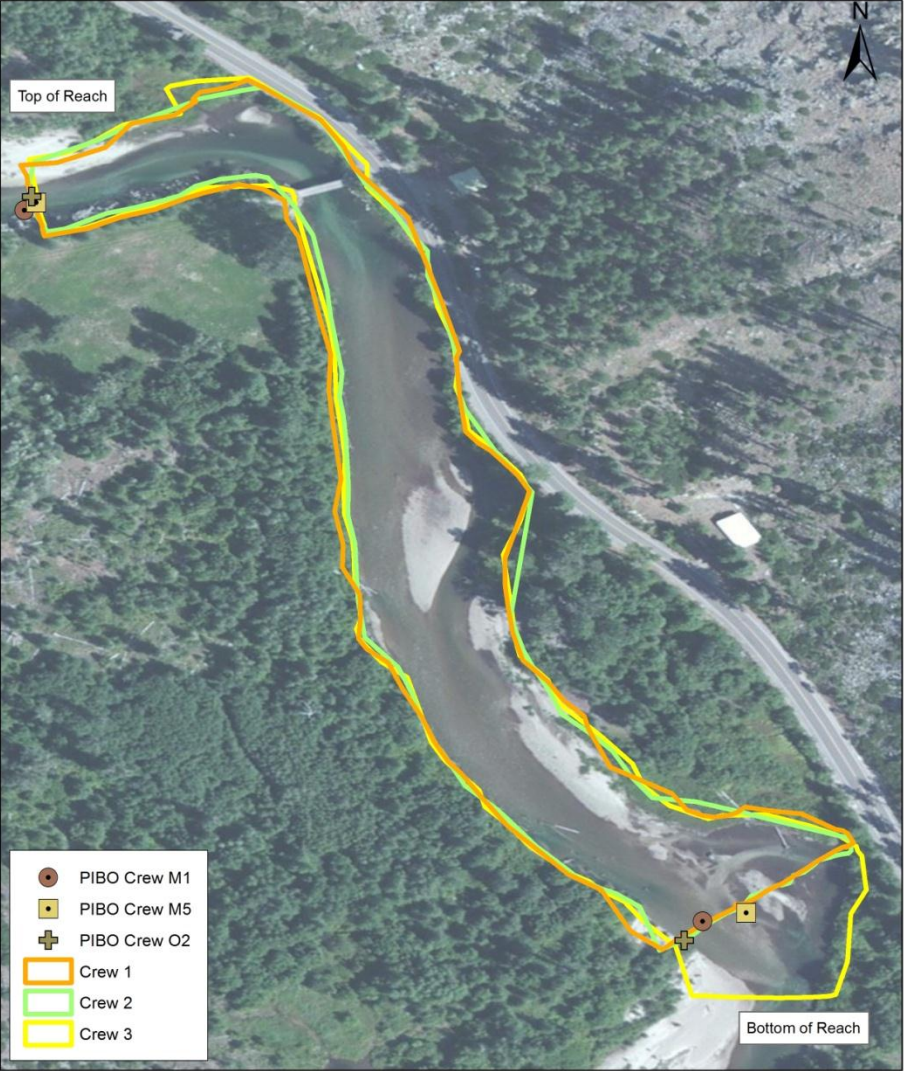
Study Design

- 12 sites; 6 PIBO and 6 CHaMPs
- Three crews from each program
- Compare stream habitat attribute reliability/relationships



Sites were chosen so as to maximize the site variability and challenge the comfort of each program.

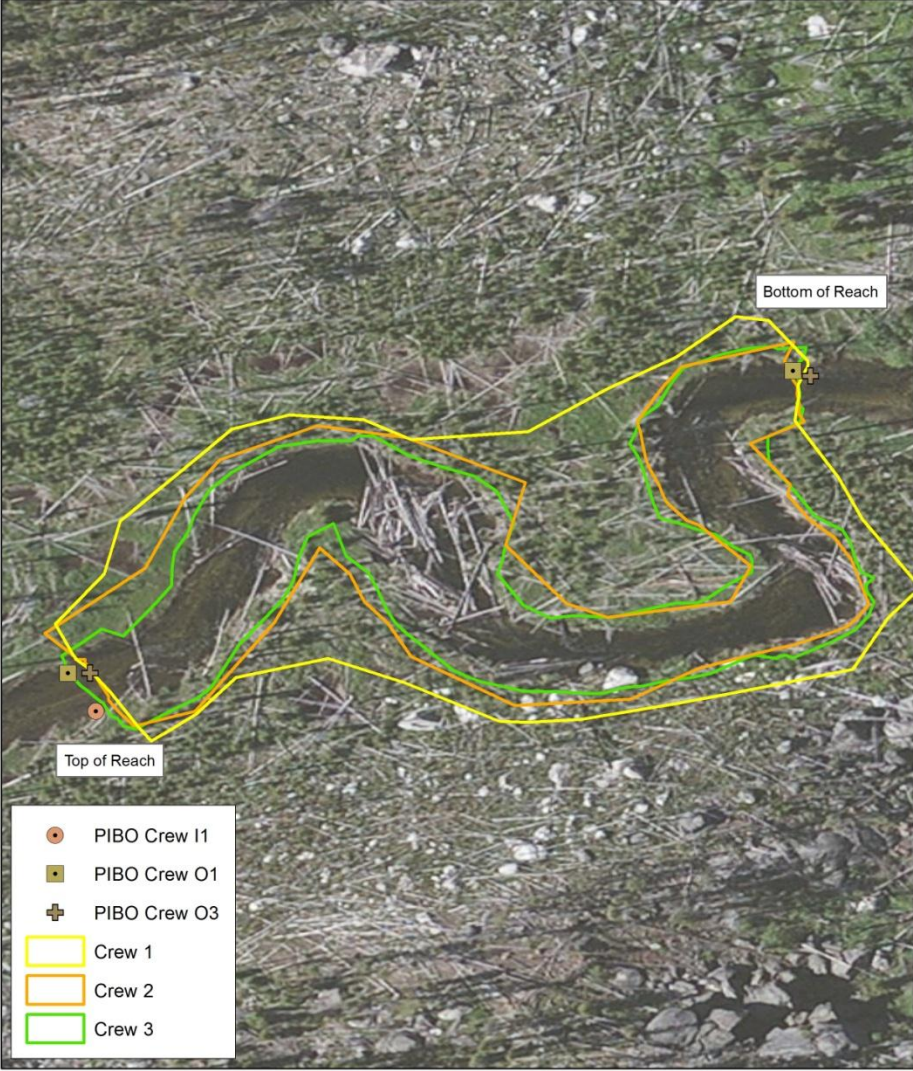
CHaMP Site ENT00001-2A6 and PIBO Site 3313
Entiat River 2012



Map By: Jean M. Olson - South Fork Research, Inc.
Date Created: October 26, 2012

0 0.05 0.1 Km

CHaMP Site PIB00001-769_1074 and PIBO Site 769
Little French Creek 2012

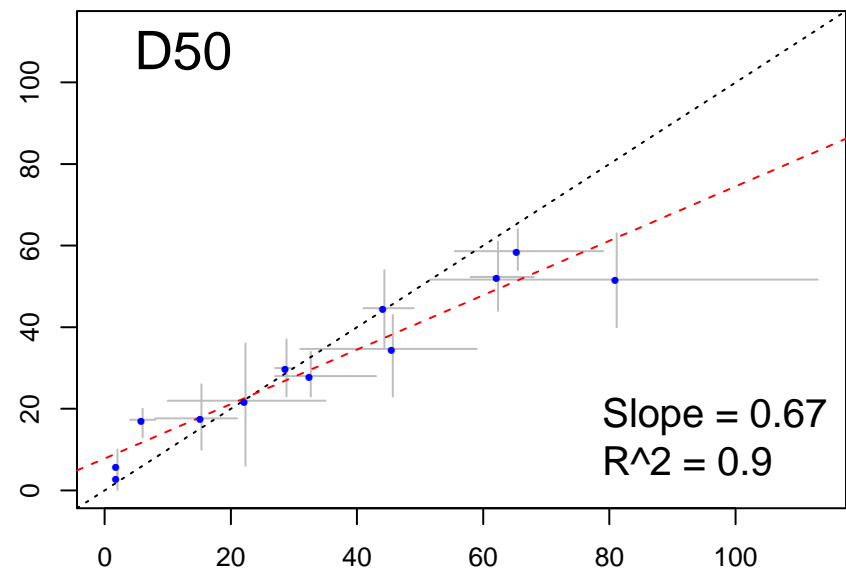
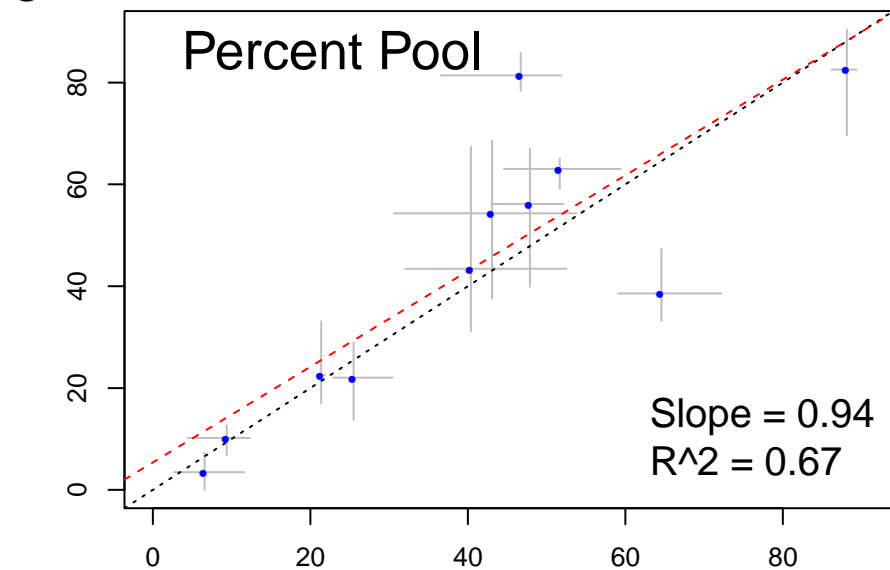
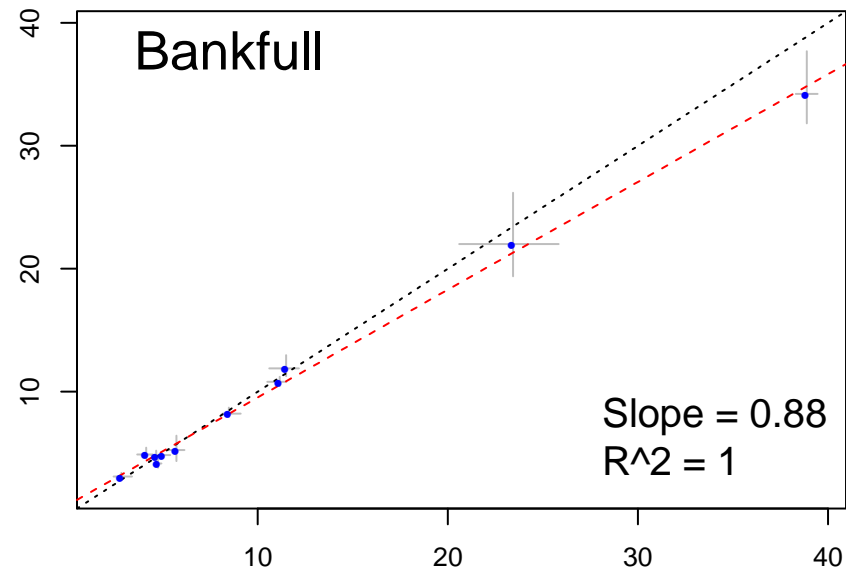
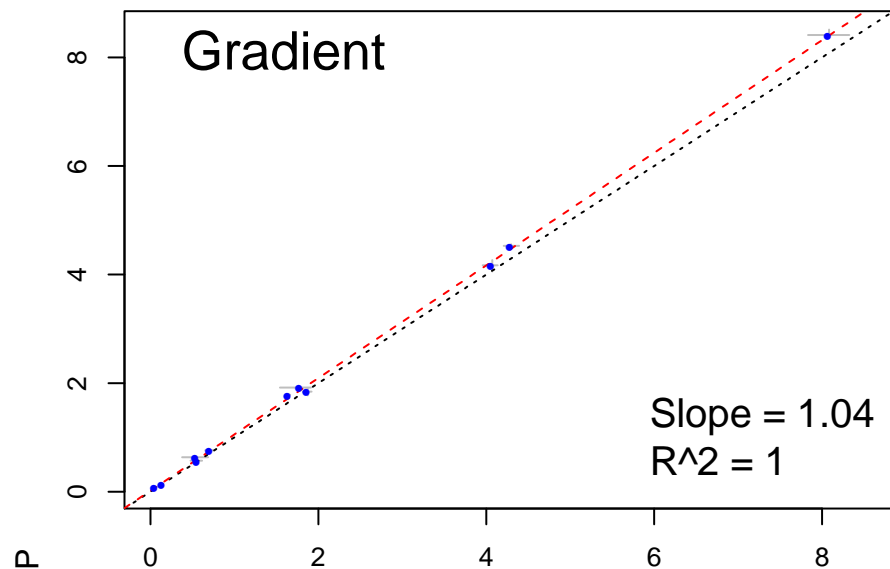


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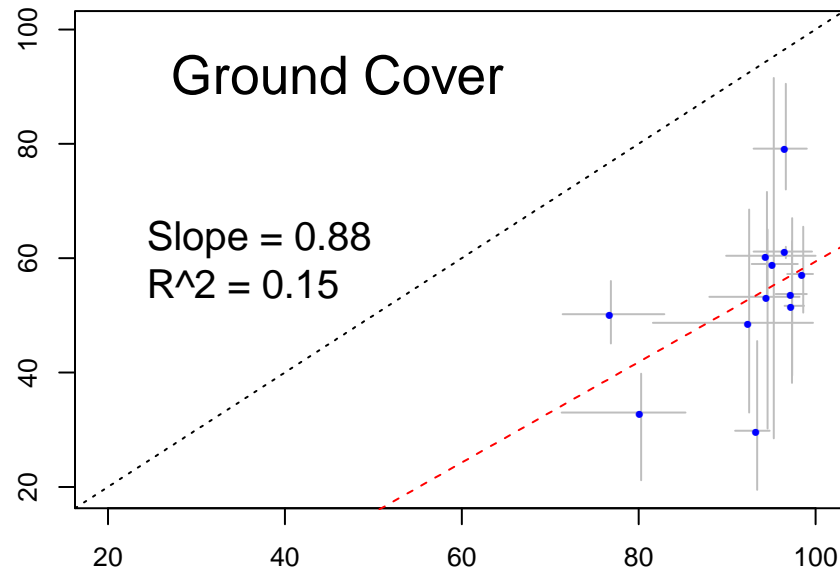
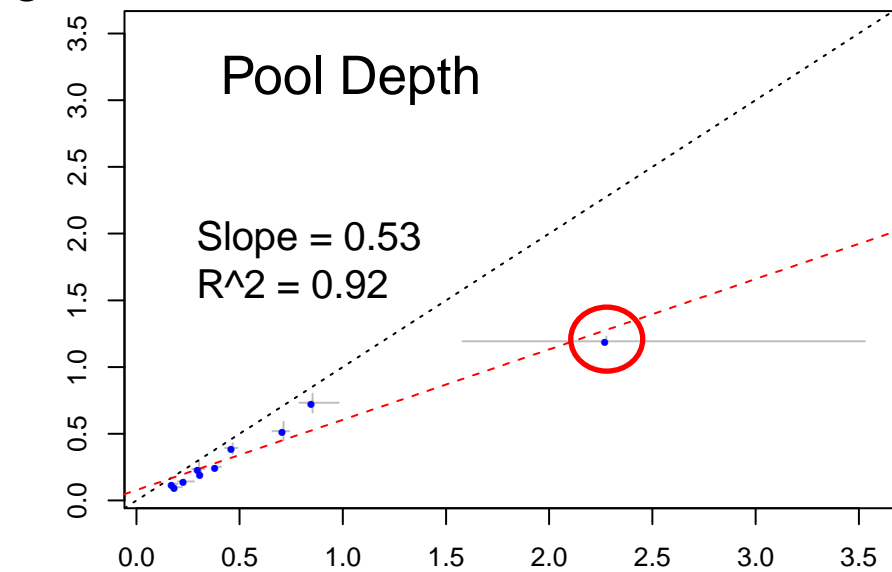
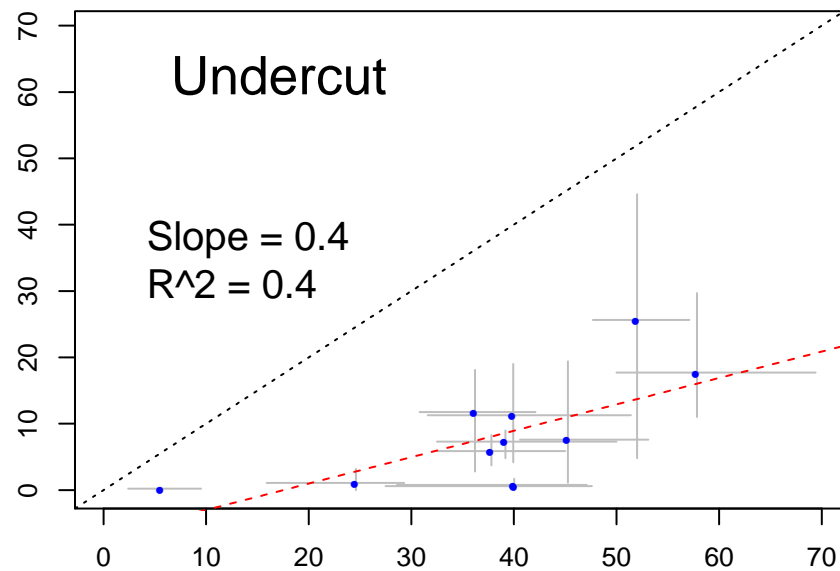
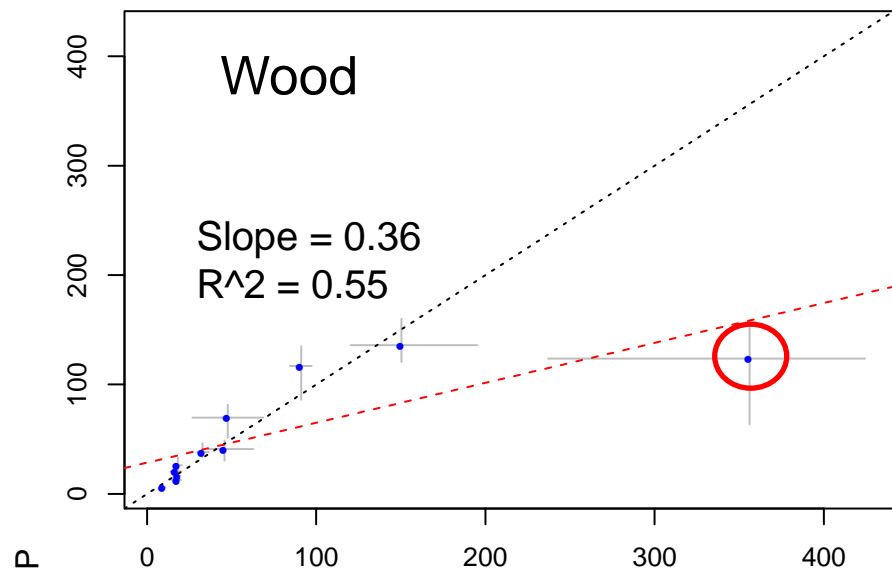
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Metric Reliability

<i>Attribute</i>	<i>Comparison</i>	<i>Reliability</i>
Gradient	CHaMP > PIBO	Both great
Sinuosity	CHaMP > PIBO	Both great
Bankfull	PIBO > CHaMP	Both great
Width to depth	PIBO=CHaMP	Both great
Percent Pool	PIBO>CHaMP	Both great
Residual Pool Depth	CHaMP > PIBO	Both great
Wood Counts	PIBO=CHaMP	Both good
D50	PIBO=CHaMP	Both good
Pool-tail fines	PIBO=CHaMP	Both good
Bankfull CV	CHaMP > PIBO	Great vs. Good
Undercut	PIBO>CHaMP	Good vs. Poor
Width to Depth CV	PIBO=CHaMP	Both poor
Effective Ground Cover	PIBO>CHaMP	Both poor
D16	PIBO=CHaMP	Both poor

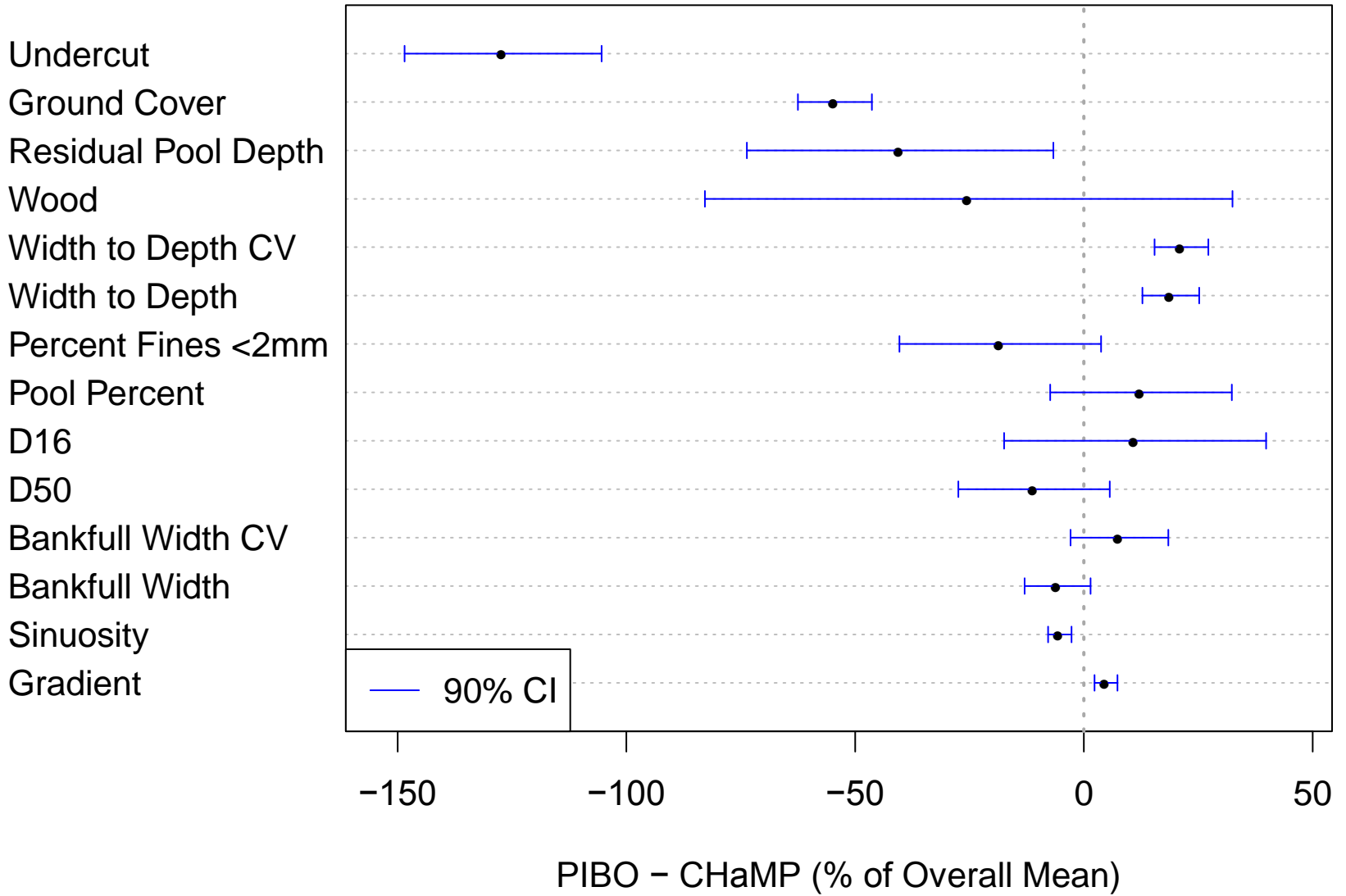


PIBO



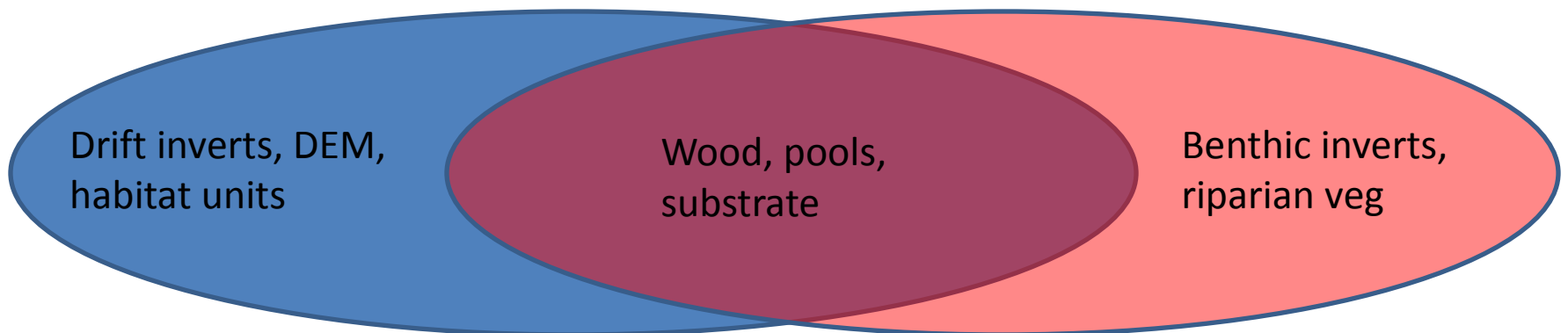
PIBO

Difference in Means



Conclusions

- Both programs collect data with high and similar reliability.
- There is a strong relationship between attributes collected by both groups that are major predictors of stream conditions and fish populations (e.g., stream size, gradient and pools).
- Strengths in the programs that have yet to be evaluated – Riparian/Benthic Invertebrates vs. DEM of Difference/Drift Invertebrates.



Next steps

- Test of programs' interoperability has only been inward looking
 - To really know the potential for coordination across multiple monitoring programs, we need to explore ability of programs to contribute data to address each other's management questions.
 - Watershed condition assessments
 - Fish habitat quality / quantity assessments
 - Other?