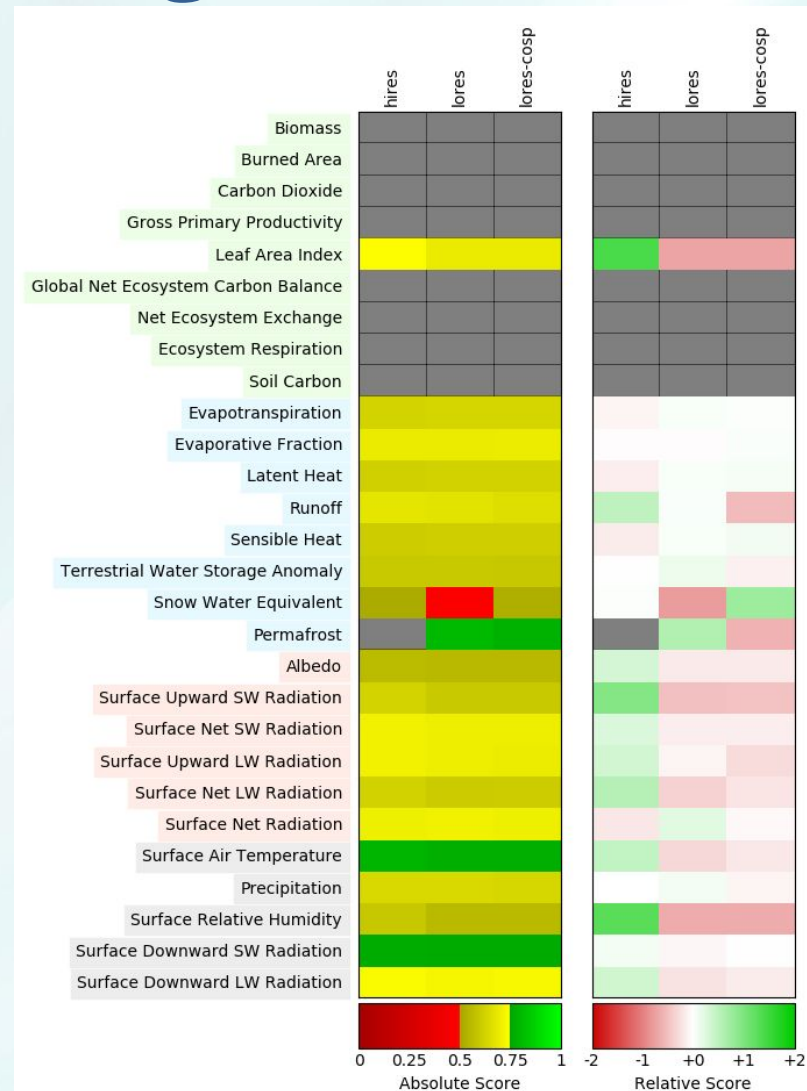


A Quick Look at High Resolution Land Performance

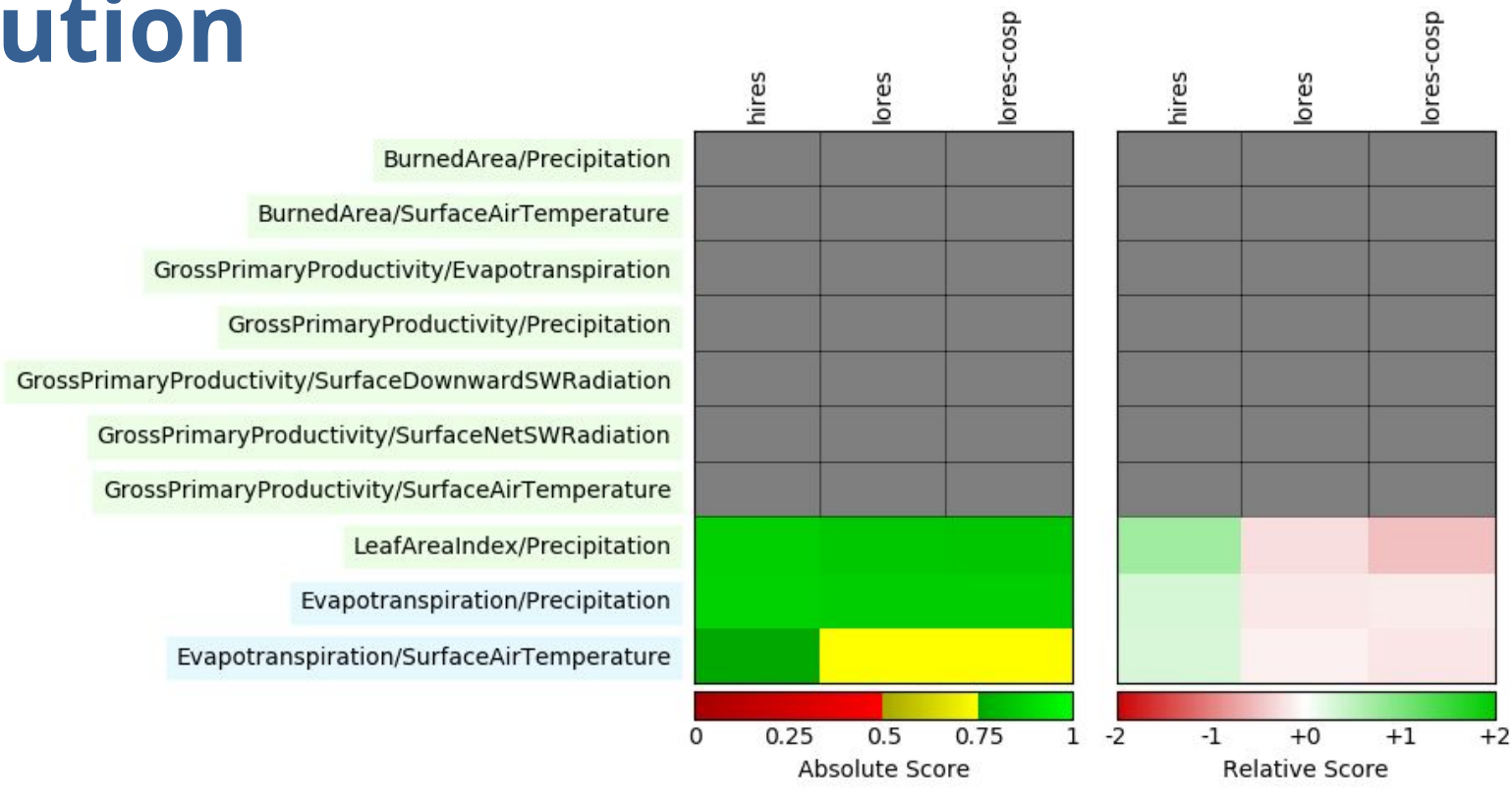
Peter Thornton and Forrest Hoffman

ILAMB Comparison of High to Low Resolution

- ILAMB analysis of high resolution (last 30 years), low resolution, and low-res cosp
- Water cycle configuration, so no BGC variables; numerical errors in analysis for permafrost
- Slight improvements in most variables because resolution matters
- Largest improvements in runoff, upward SW and relative humidity



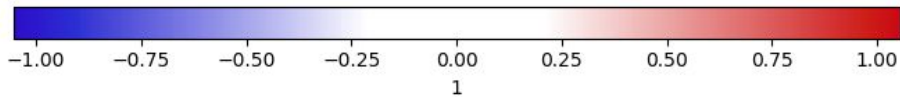
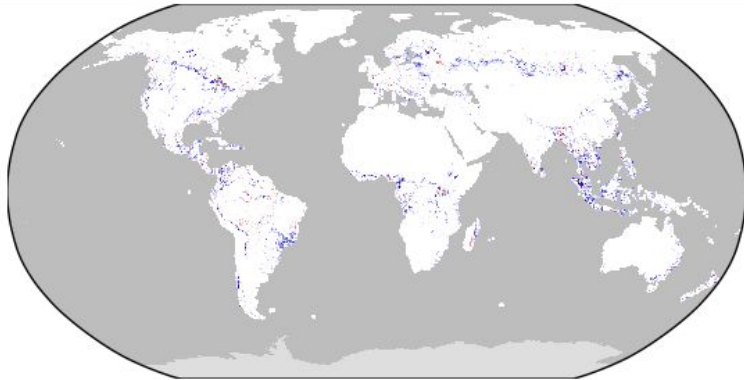
ILAMB Comparison of High to Low Resolution



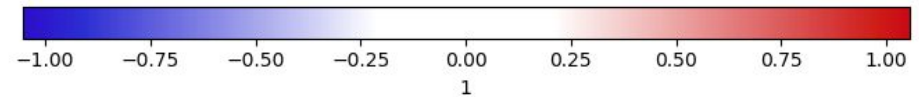
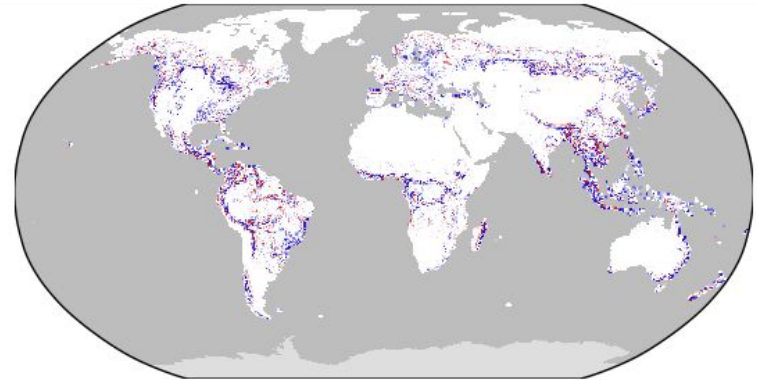
- Functional relationships are all better
- LAI/Precip better due to higher LAI resolution

LAI/Precip Functional Relationship: Spatial Mean LAI Bias & Relationship

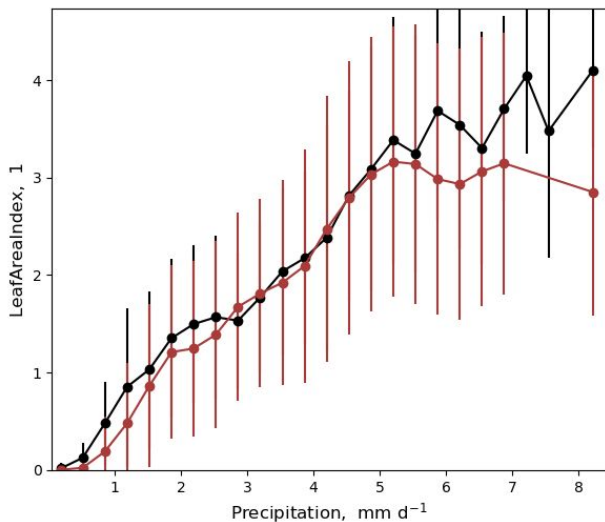
hires



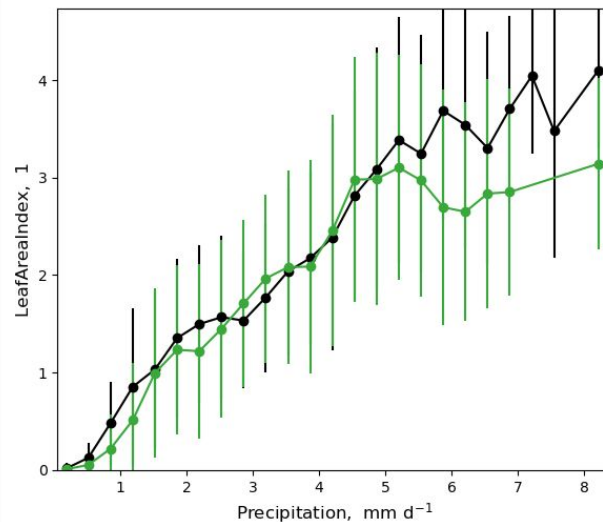
lores



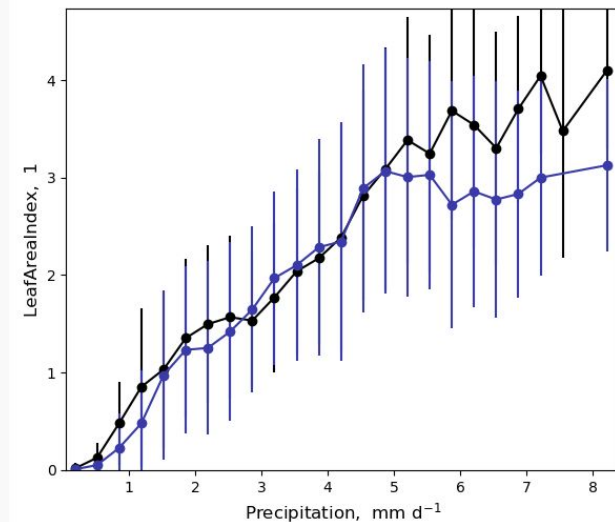
hires



lores



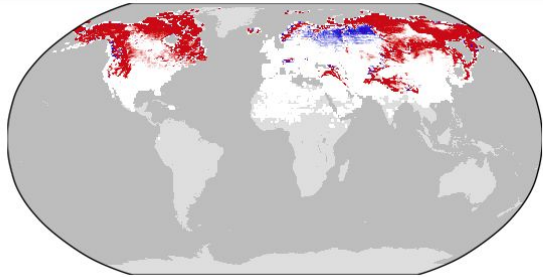
lores-cosp



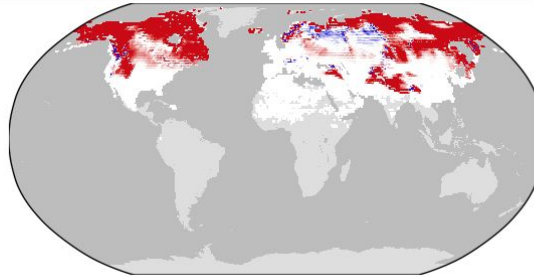
Snow Water Equivalent: Slightly Smaller Spring/Fall Bias

Temporally Integrated Period Mean Bias

hires



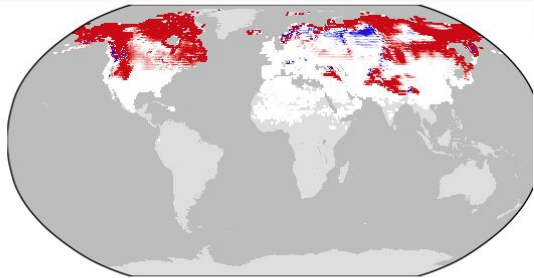
lores



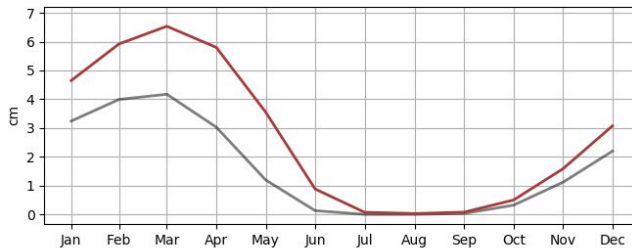
Better resolved snow cover and surface temperature reduces shoulder season biases

Spatially Integrated Regional Mean Annual Cycle

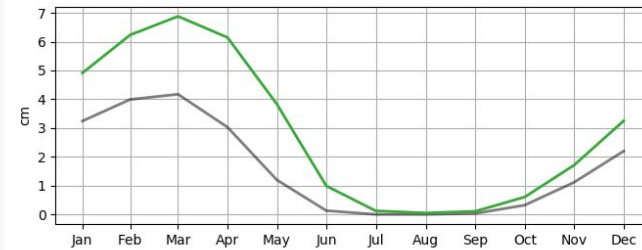
lores-cosp



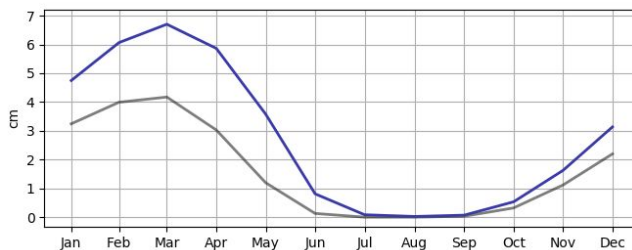
hires



lores



lores-cosp



Next Steps

- Examine differences between hi-res and lo-res in atmospheric states and fluxes over land.
- Quantify changes in biases in temperature, precipitation, humidity, and radiation over land.
- (Possible) Capture sub-daily outputs and do some off-line land model tests with prognostic vegetation state (BGC).

We could help to evaluate NA precip, temp, humidity, SW downwelling radiation

