

Presentation to the Columbia Basin Regional Advisory Committee
April 21, 2021

Assessing Climate Change and Hydrologic Impacts in the Columbia Basin

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Outline

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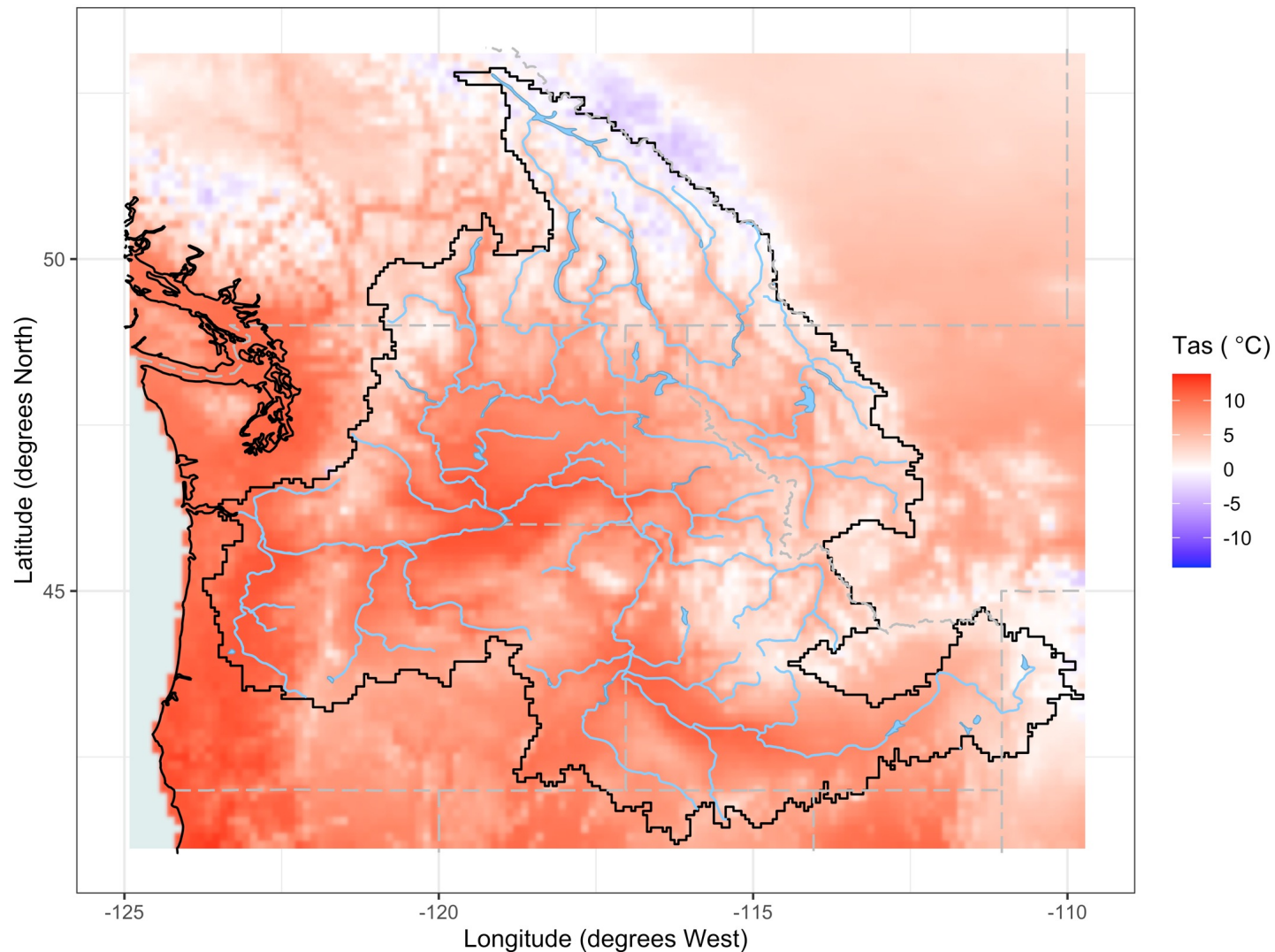
Study Area Physiography

Columbia River Basin



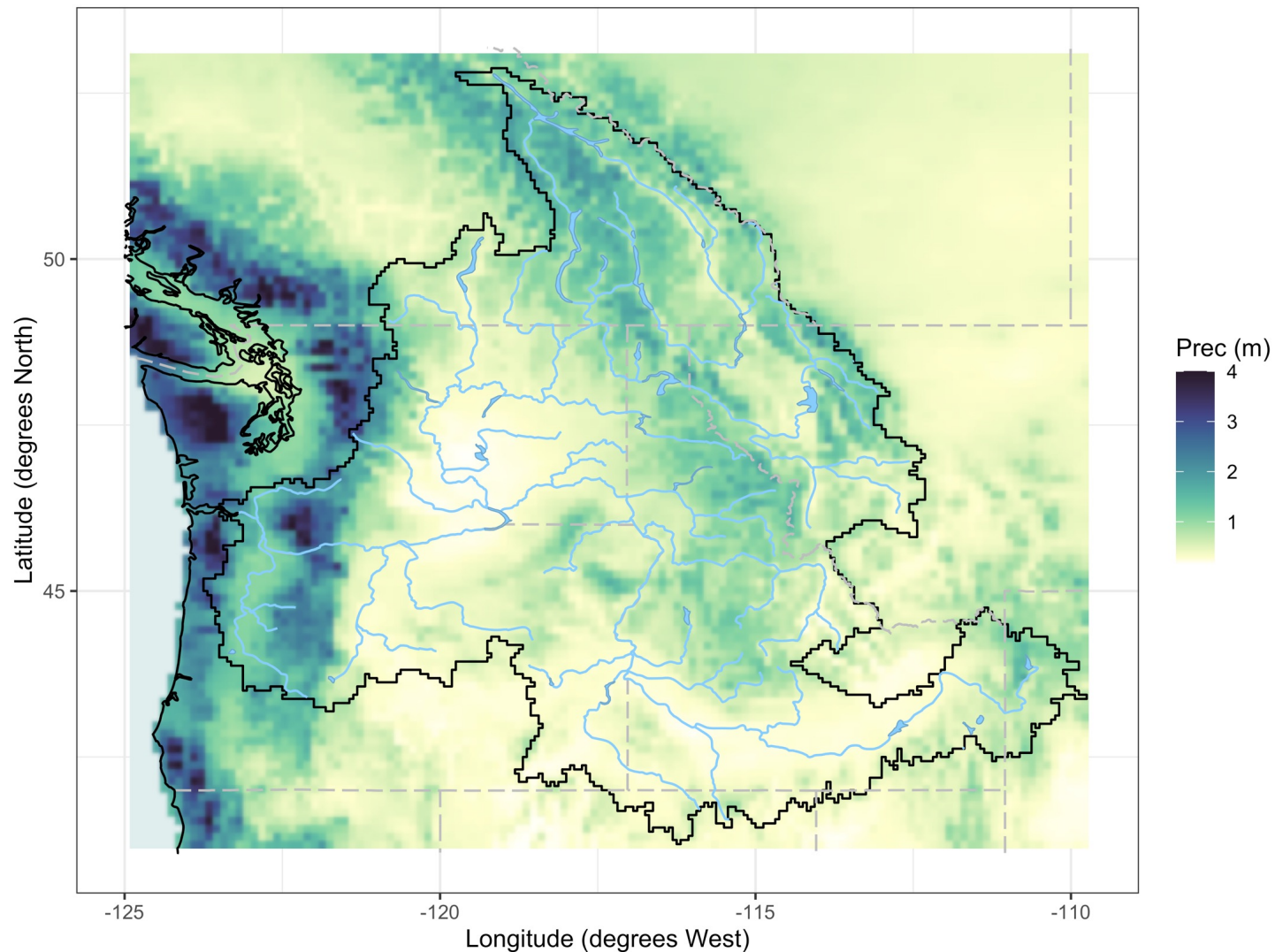
Study Area Climate

Mean Daily Temperature, 1971 to 2000



Study Area Climate

Mean Annual Precipitation Totals, 1971 to 2000

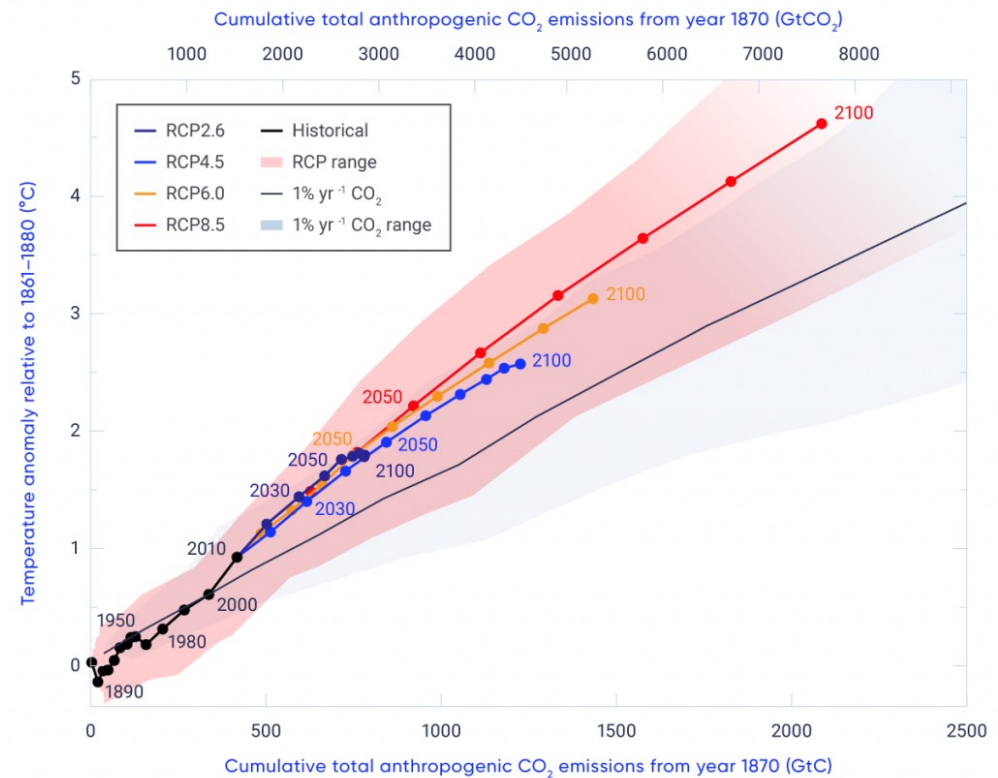
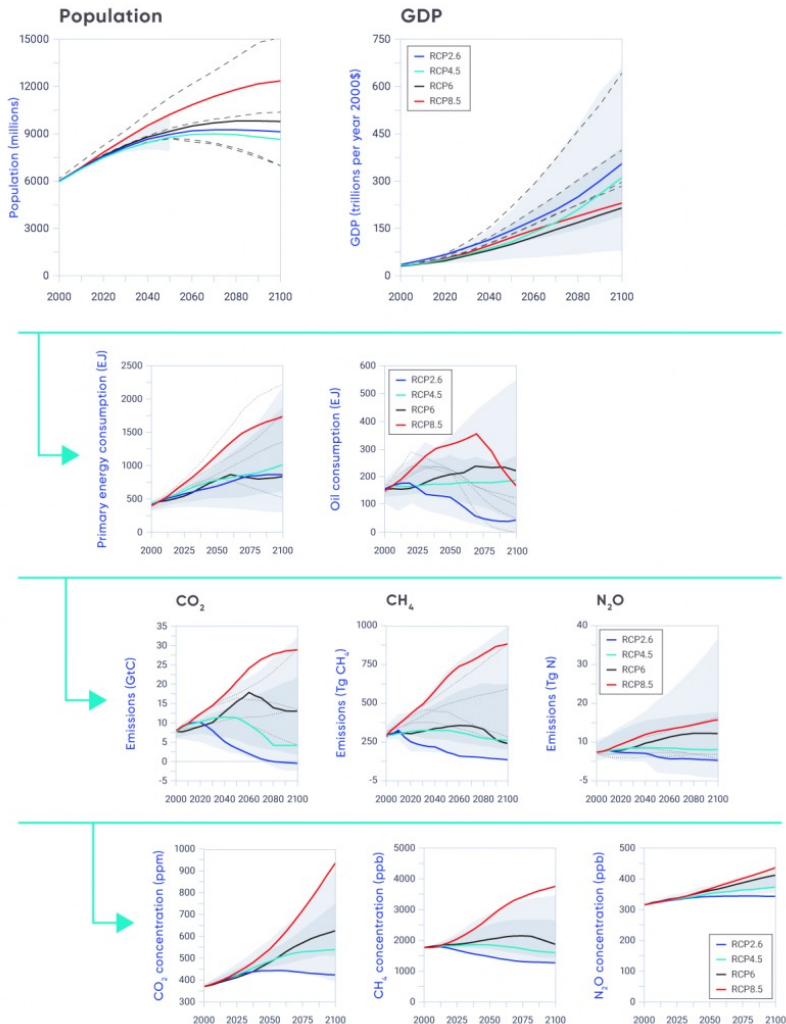


Scenarios



Methods and Tools

Emissions Scenarios - Representative Concentration Pathways

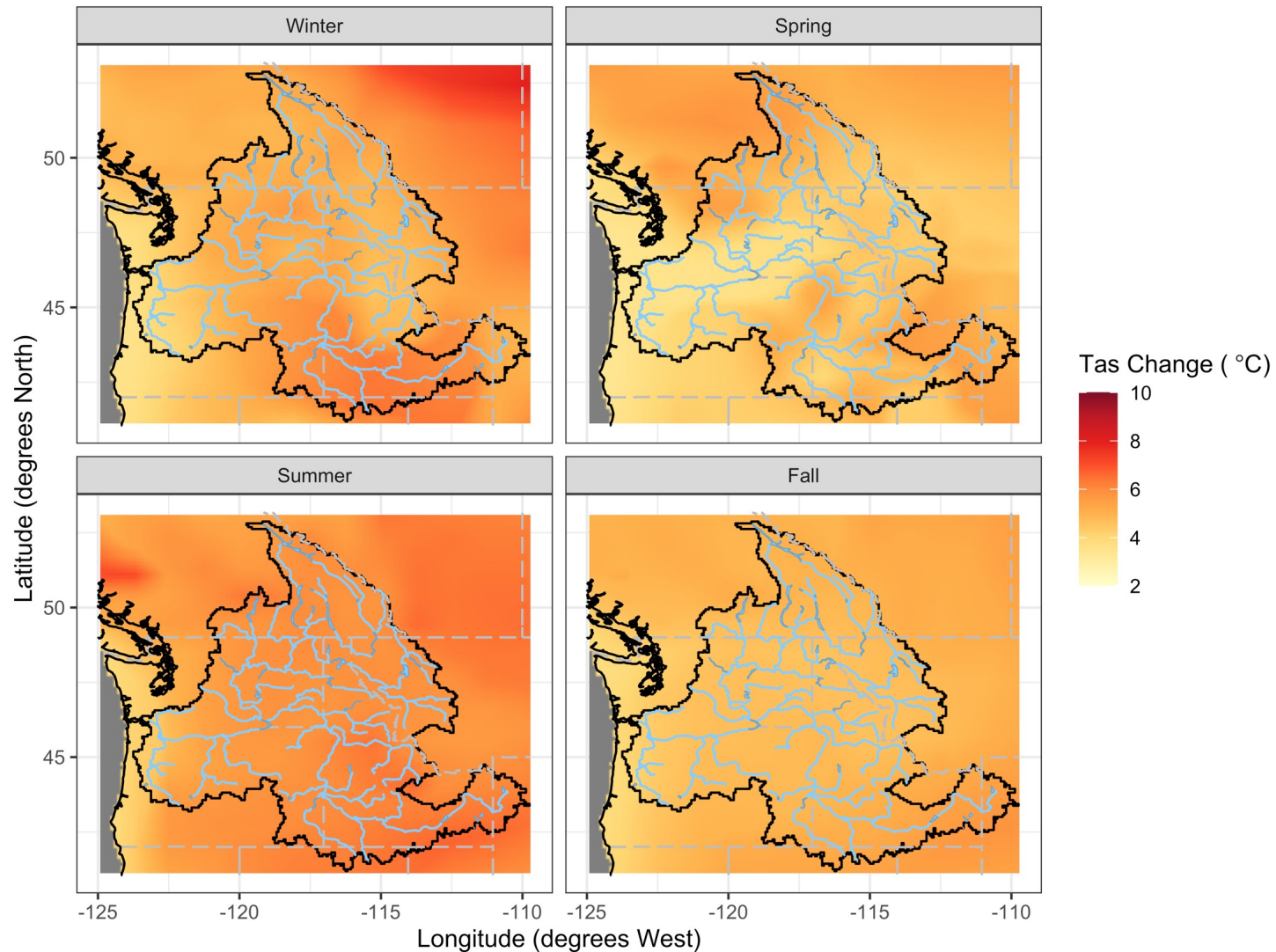


Results



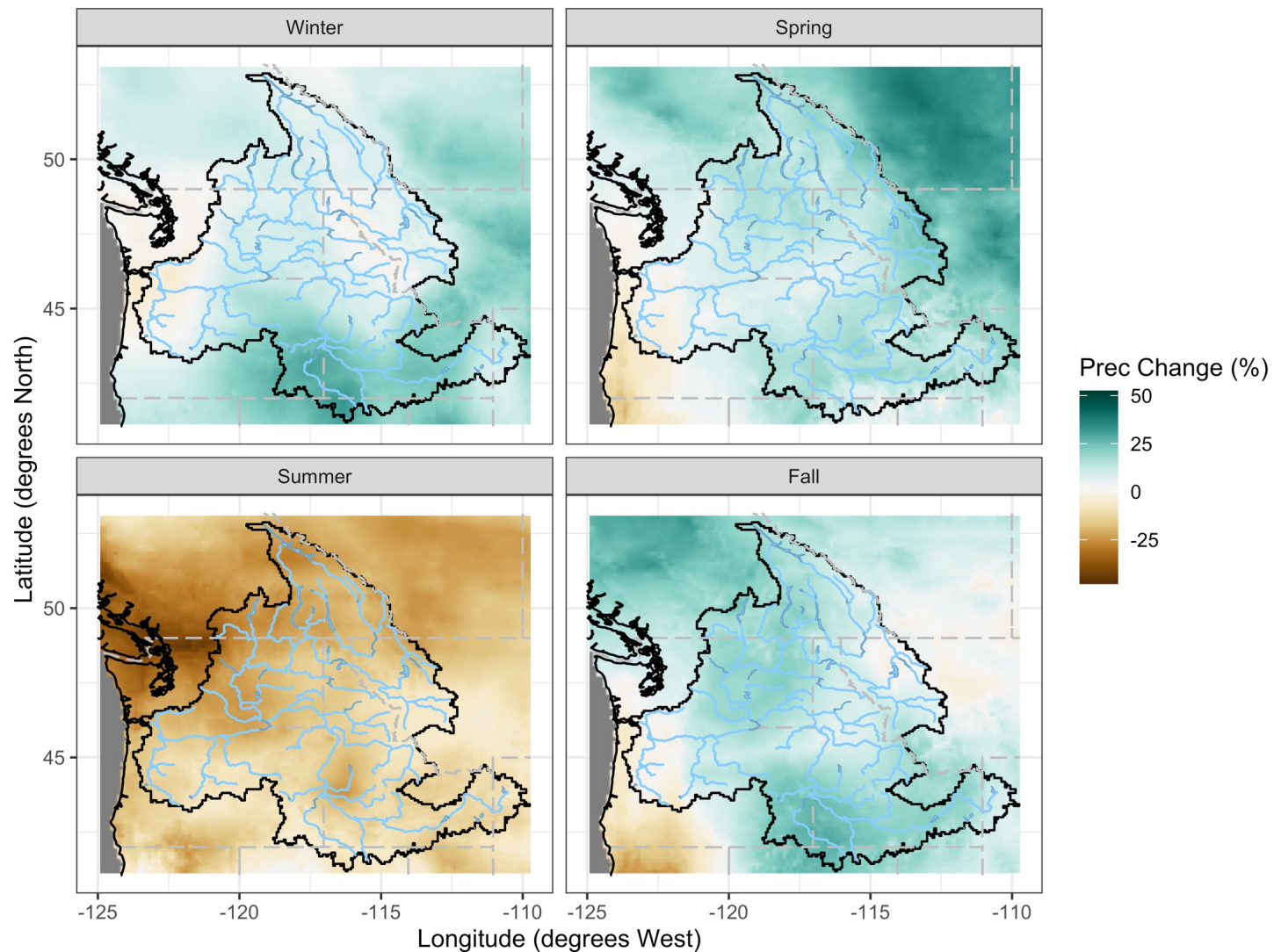
Changing Climate

Temperature Change – end-century RCP8.5 compared to 1971-2000



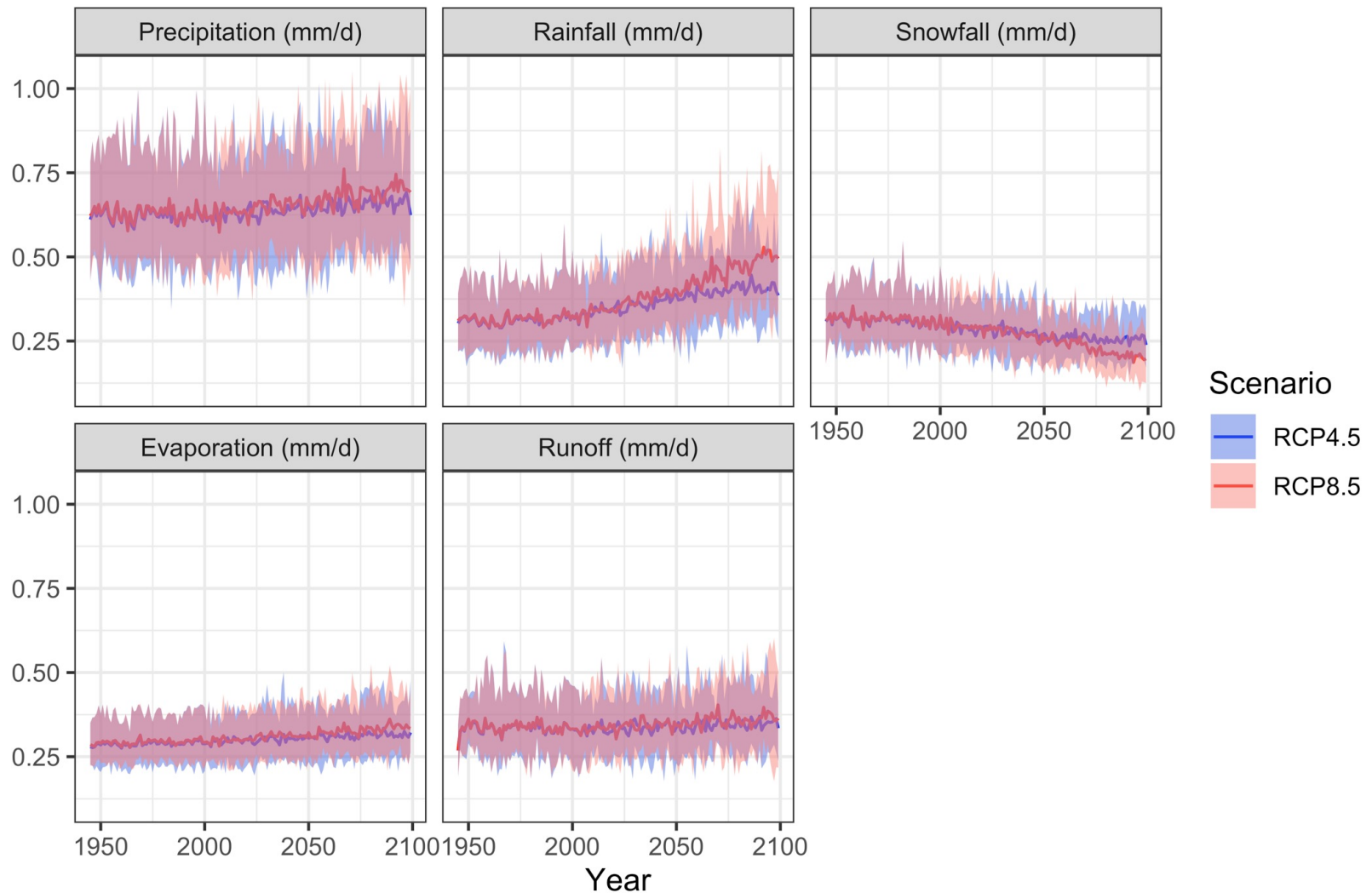
Changing Climate

Precipitation Change – end-century RCP8.5 compared to 1971-2000



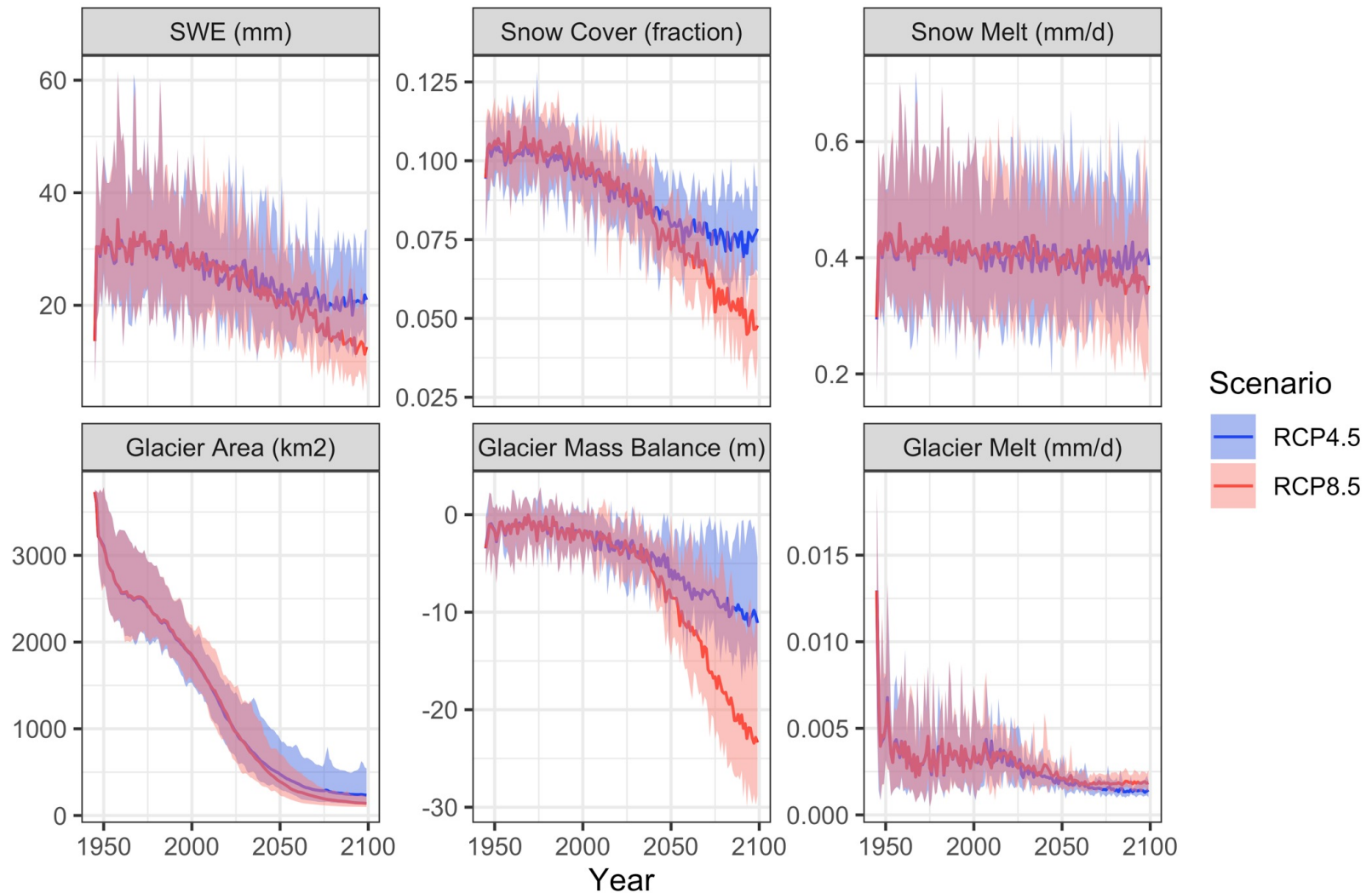
Changing Climate

Changes in Annual Water Balance



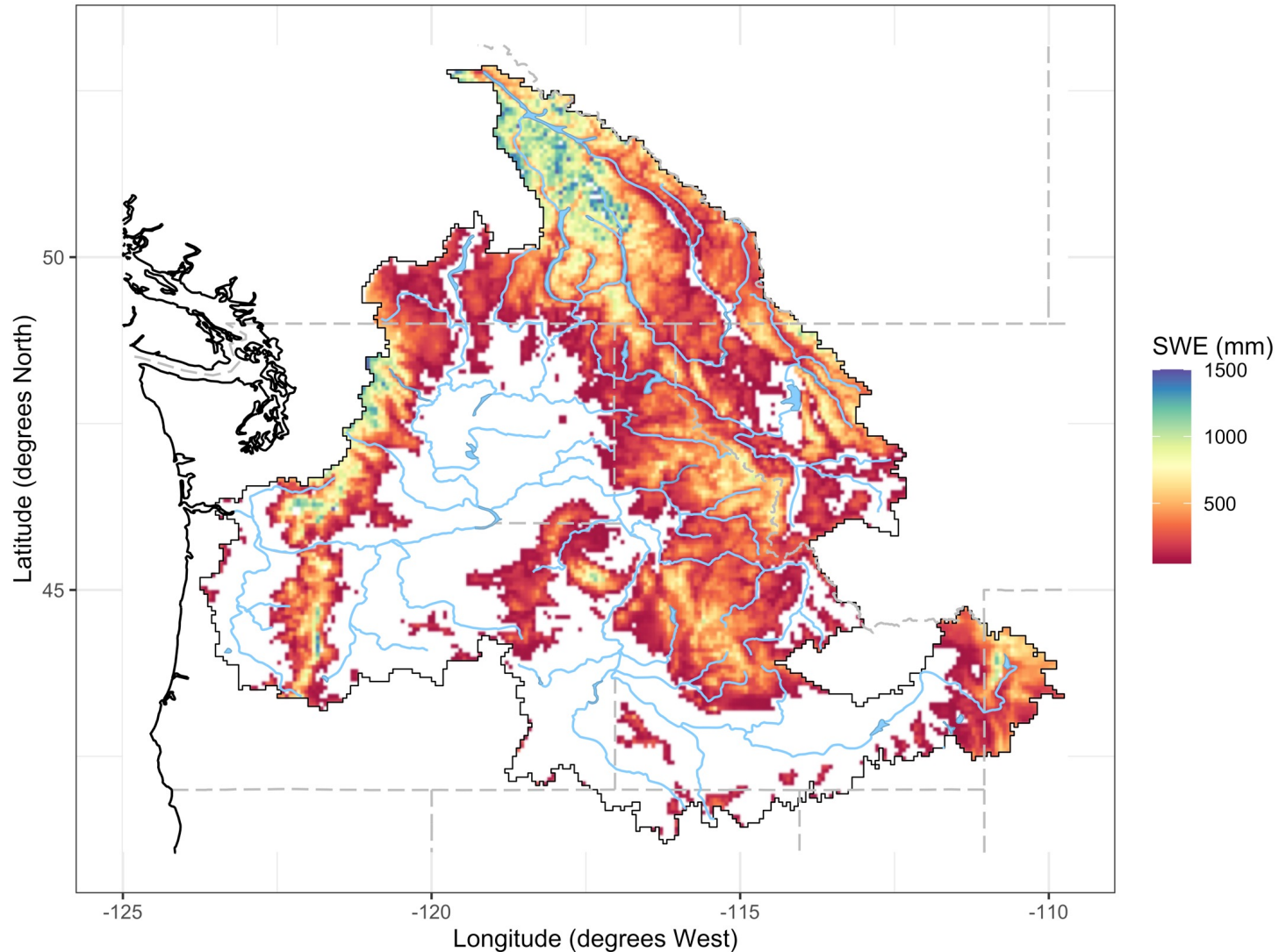
Changing Climate

Changes in Cryosphere



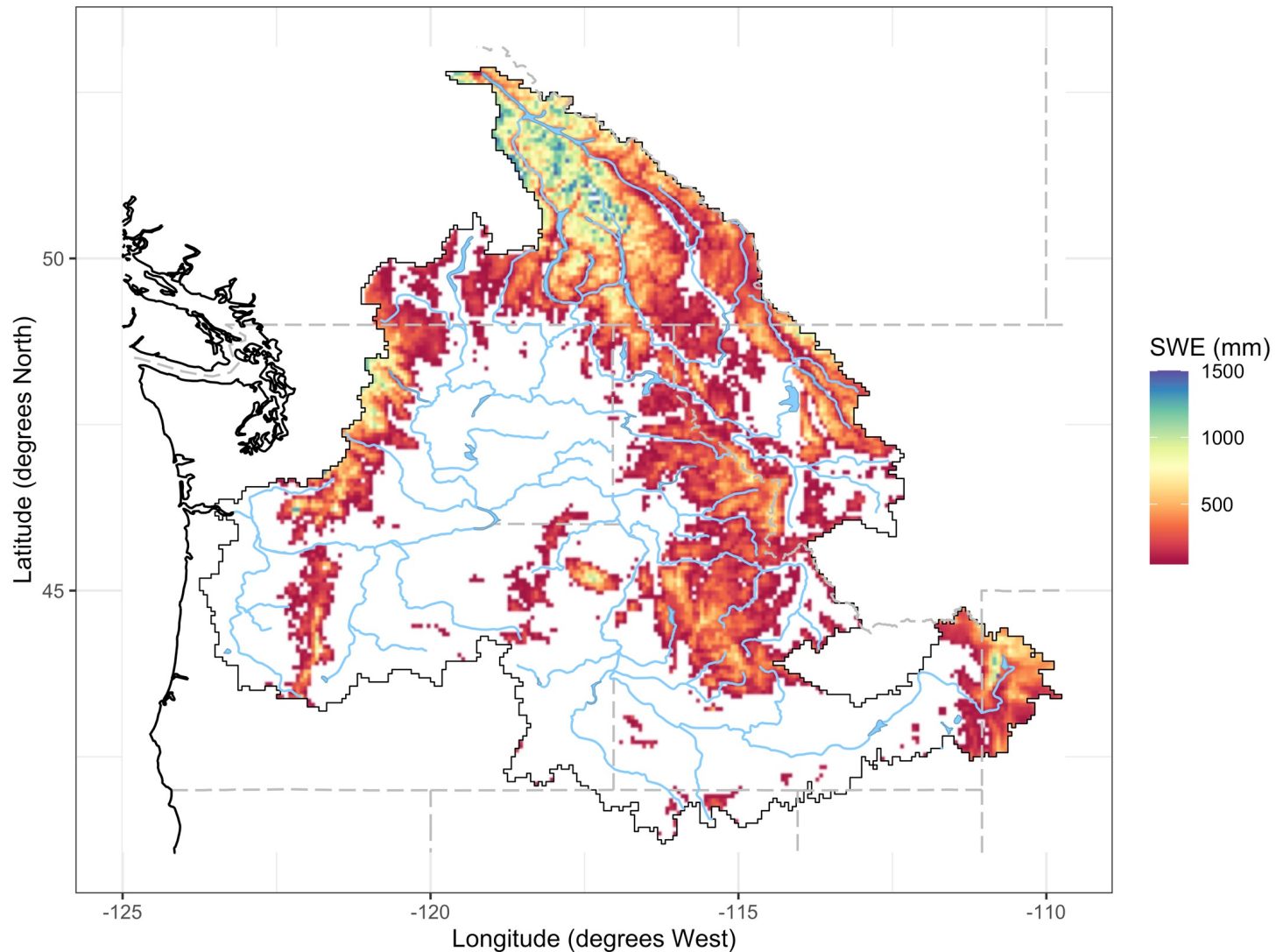
Changing Climate

Peak (April 1st) Snow Water Equivalent, 1971-2000 Ensemble Mean



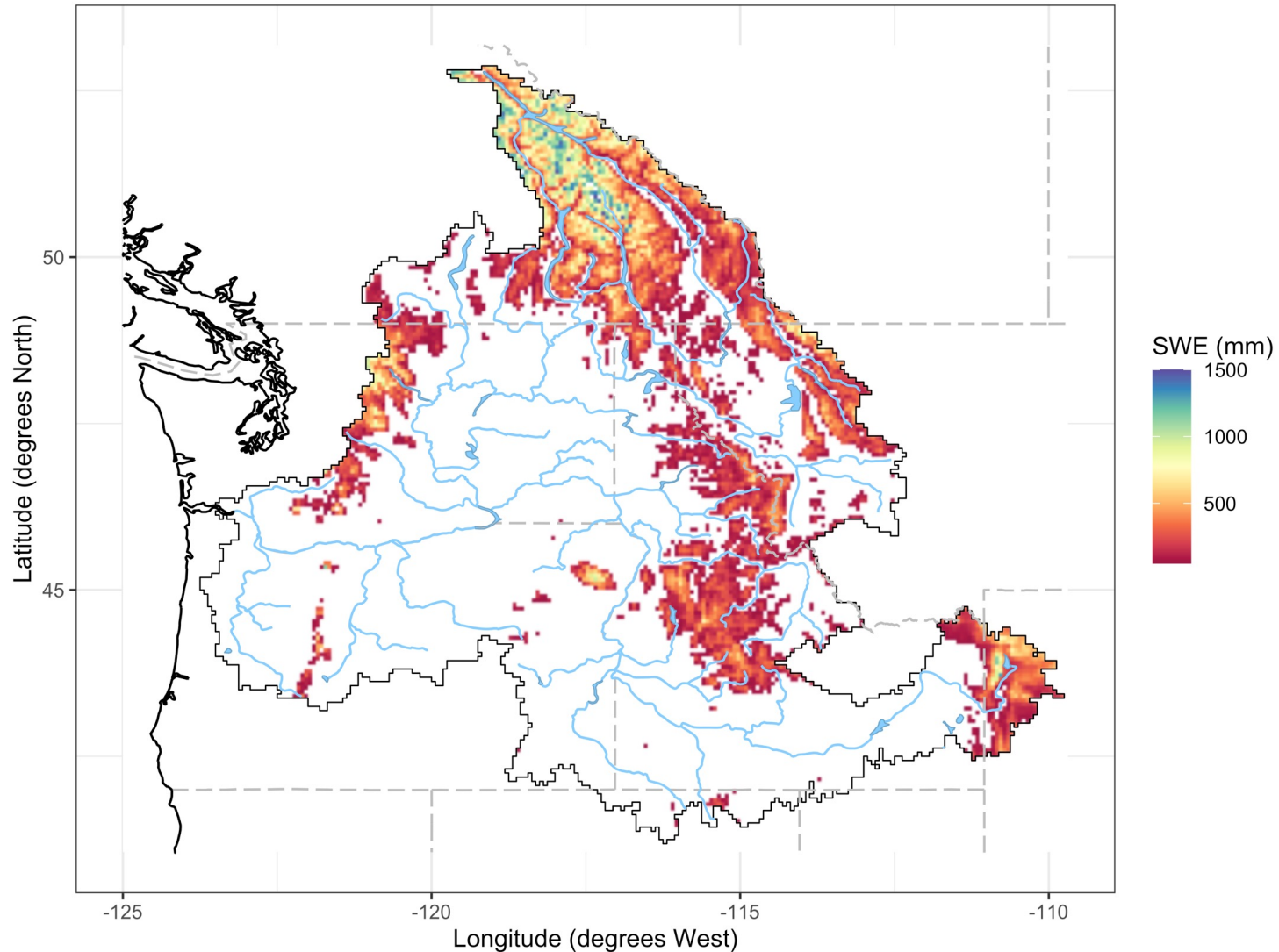
Changing Climate

Peak (April 1st) Snow Water Equivalent, 2041-2070 Ensemble Mean

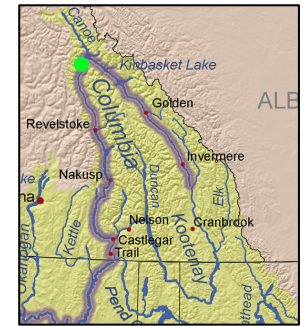





Changing Climate

Peak (April 1st) Snow Water Equivalent, 2071-2100 Ensemble Mean



Columbia River at Mica Dam: Annual Mean Inflow

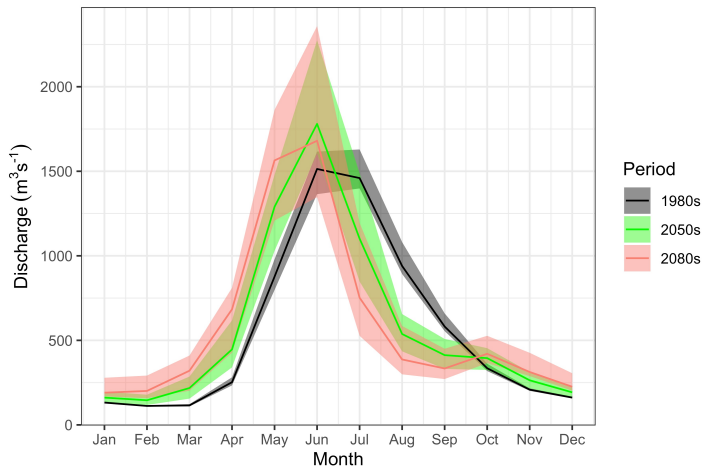


 Historical
 RCP4.5
 RCP8.5

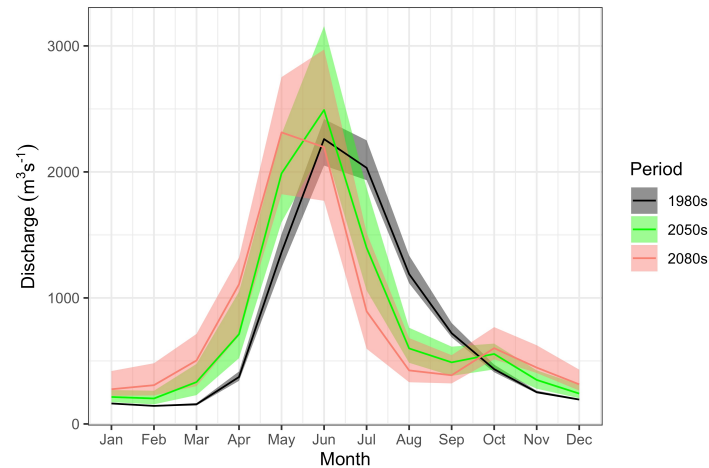
Changing Hydrology

Mean Monthly Reservoir Inflow, RCP8.5

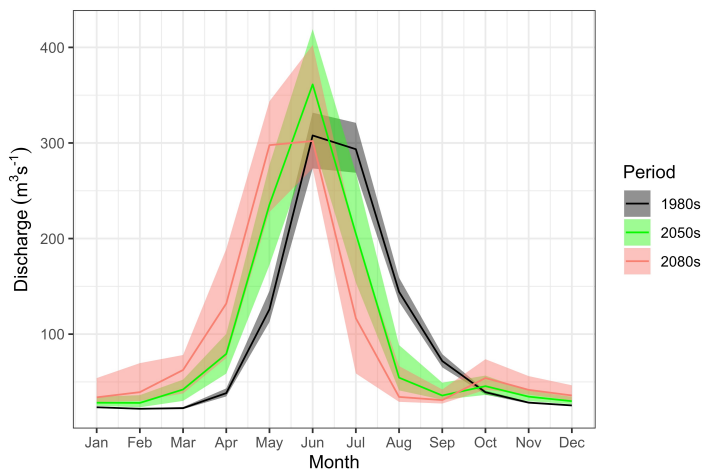
● Columbia River at Mica Dam



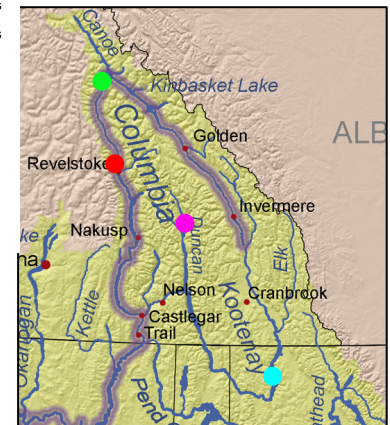
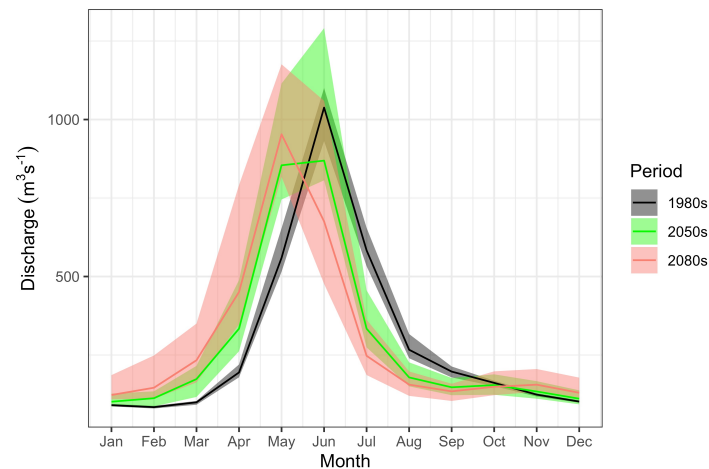
● Columbia River at Revelstoke Dam



● Duncan River at Duncan Dam

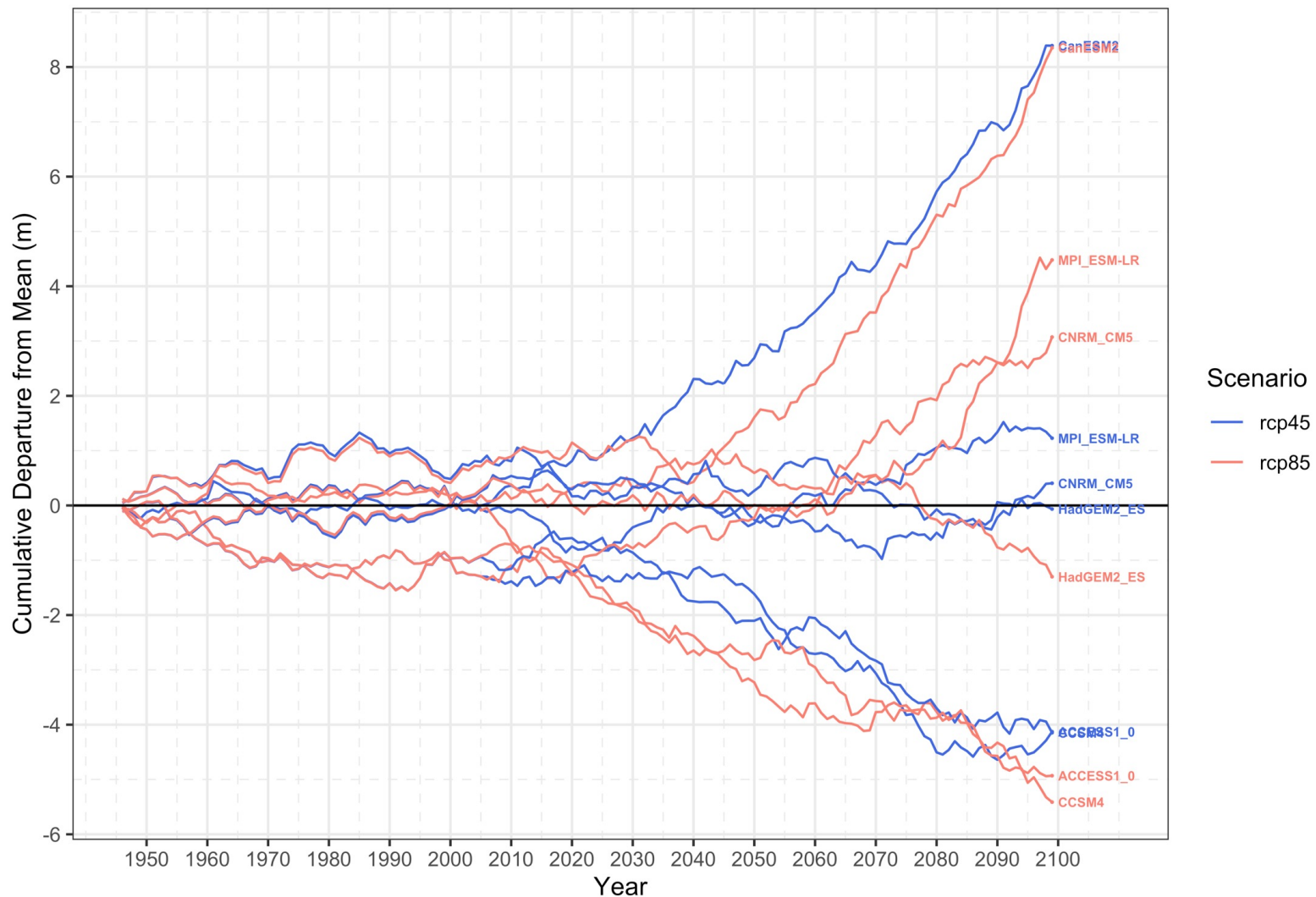


● Kootenai River at Libby Dam



Changing Hydrology

Cumulative Departure from the Mean – Mica Dam Annual Inflow



THE END

