

Forecasting the effects of climate change, wildfire, and restoration on forest health in the Wenatchee watershed

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Chelan County Climate Resilience Round Table
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Pacific
Northwest
Research Station

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Funders:

DOE Bioenergy Technologies Office
WA Department of Natural Resources



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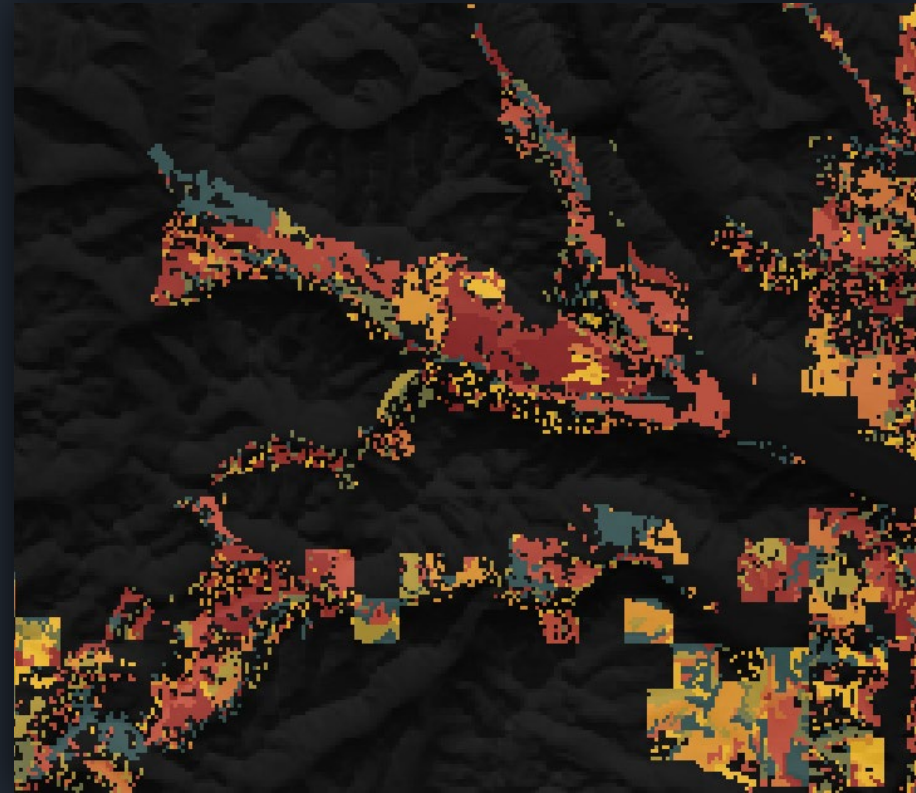
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LANDIS-II: a forest landscape simulation model

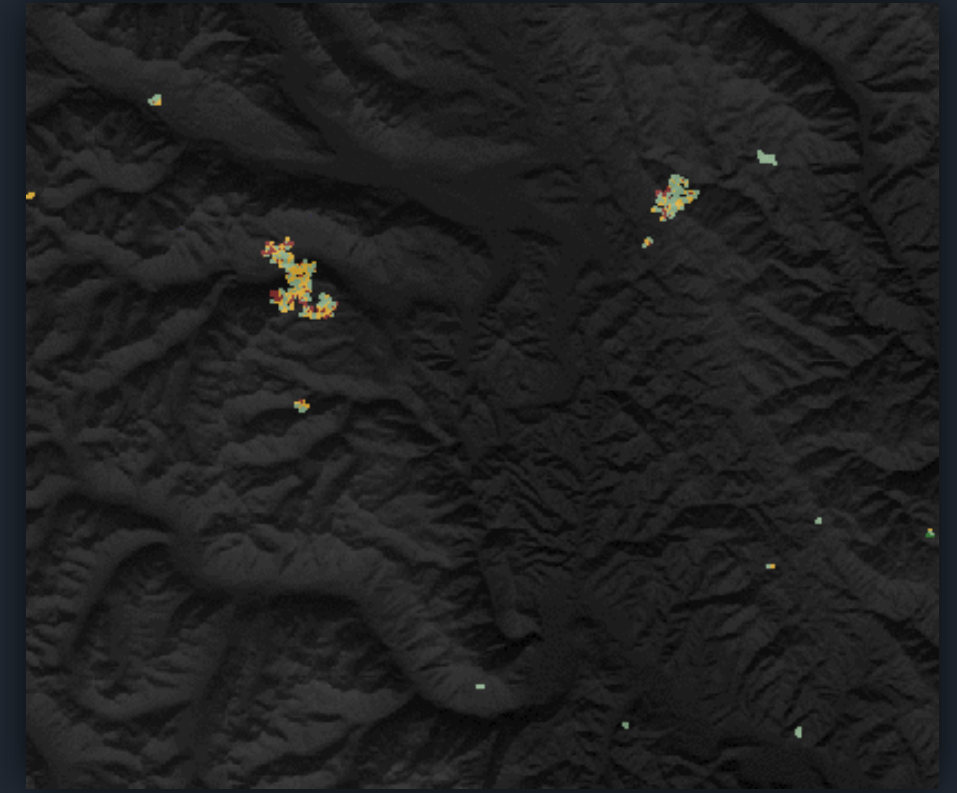
Climate and forest succession



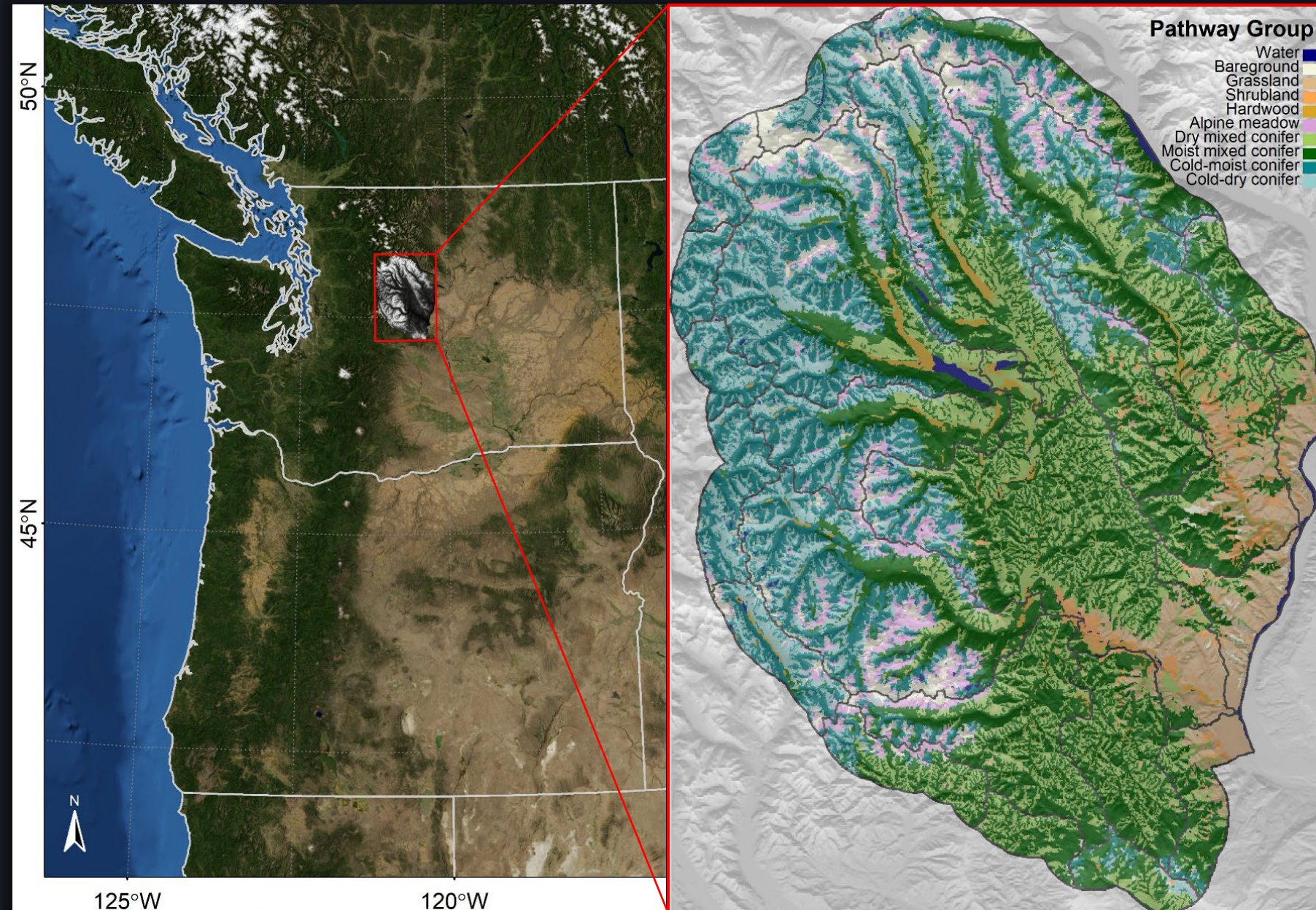
Mechanical thinning + Rx fire



Wildfire

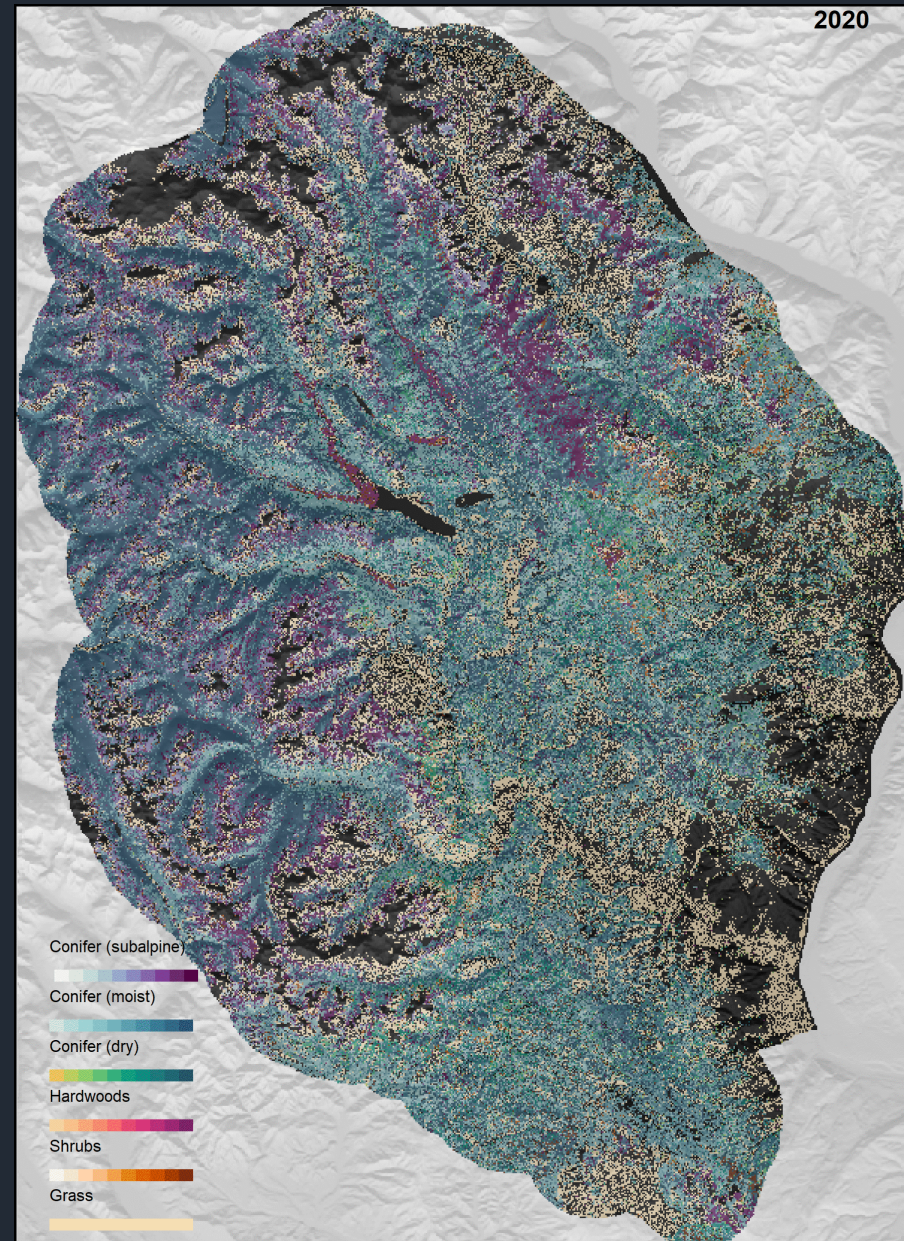


Initializing LANDIS-II in the Wenatchee sub-basin

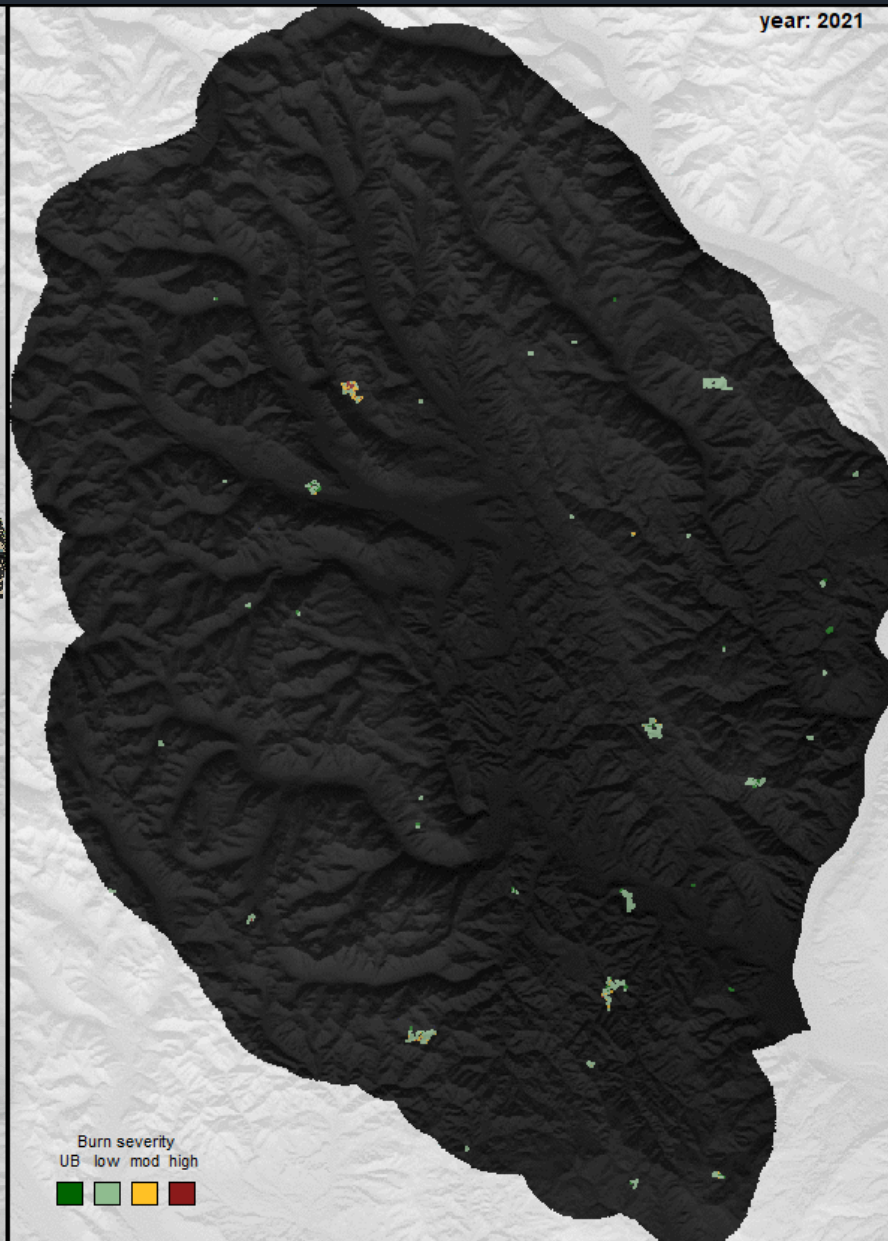


Initializing LANDIS-II in the Wenatchee sub-basin

Forest growth



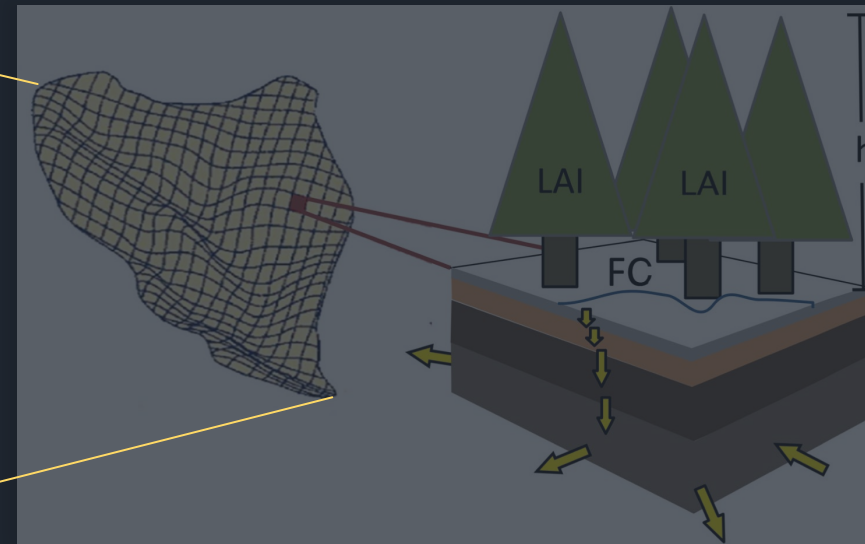
Wildfire



Forecasting future streamflow

LANDIS-II
(forest succession + wildfire)

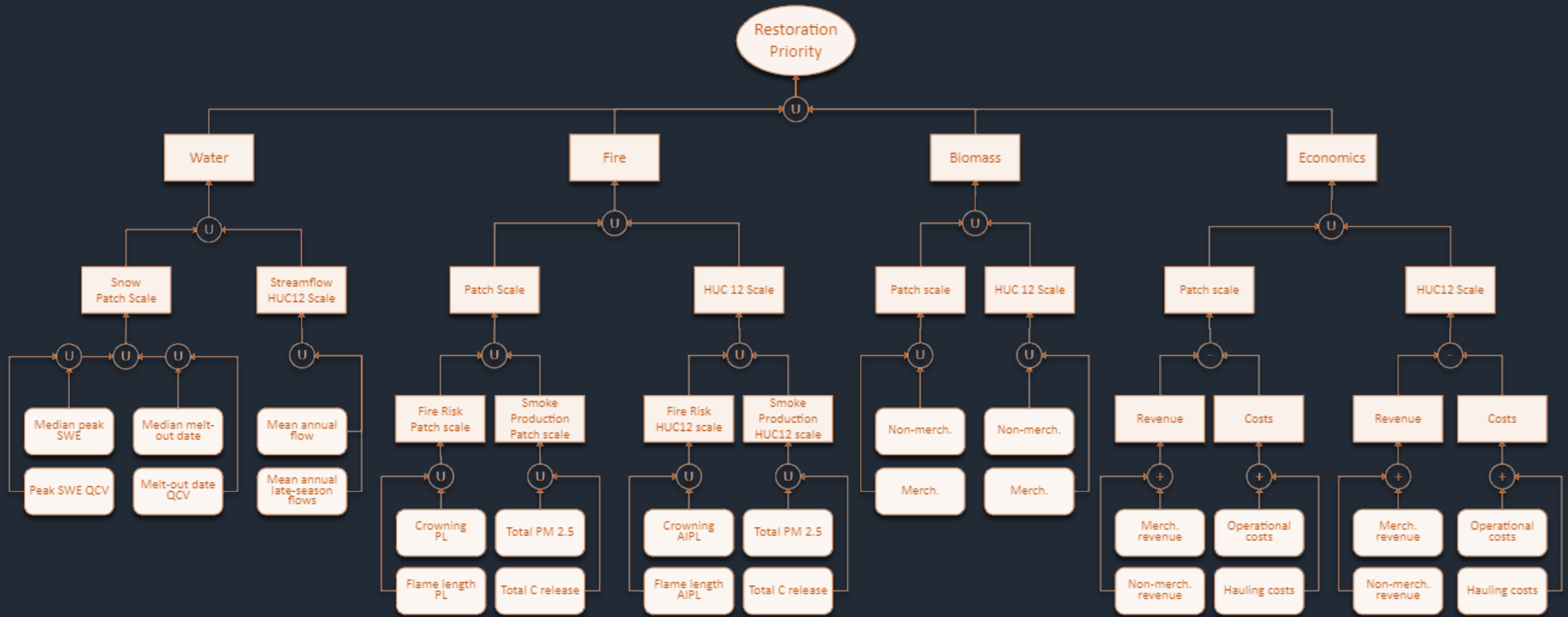
DHSVM
(hydrology)



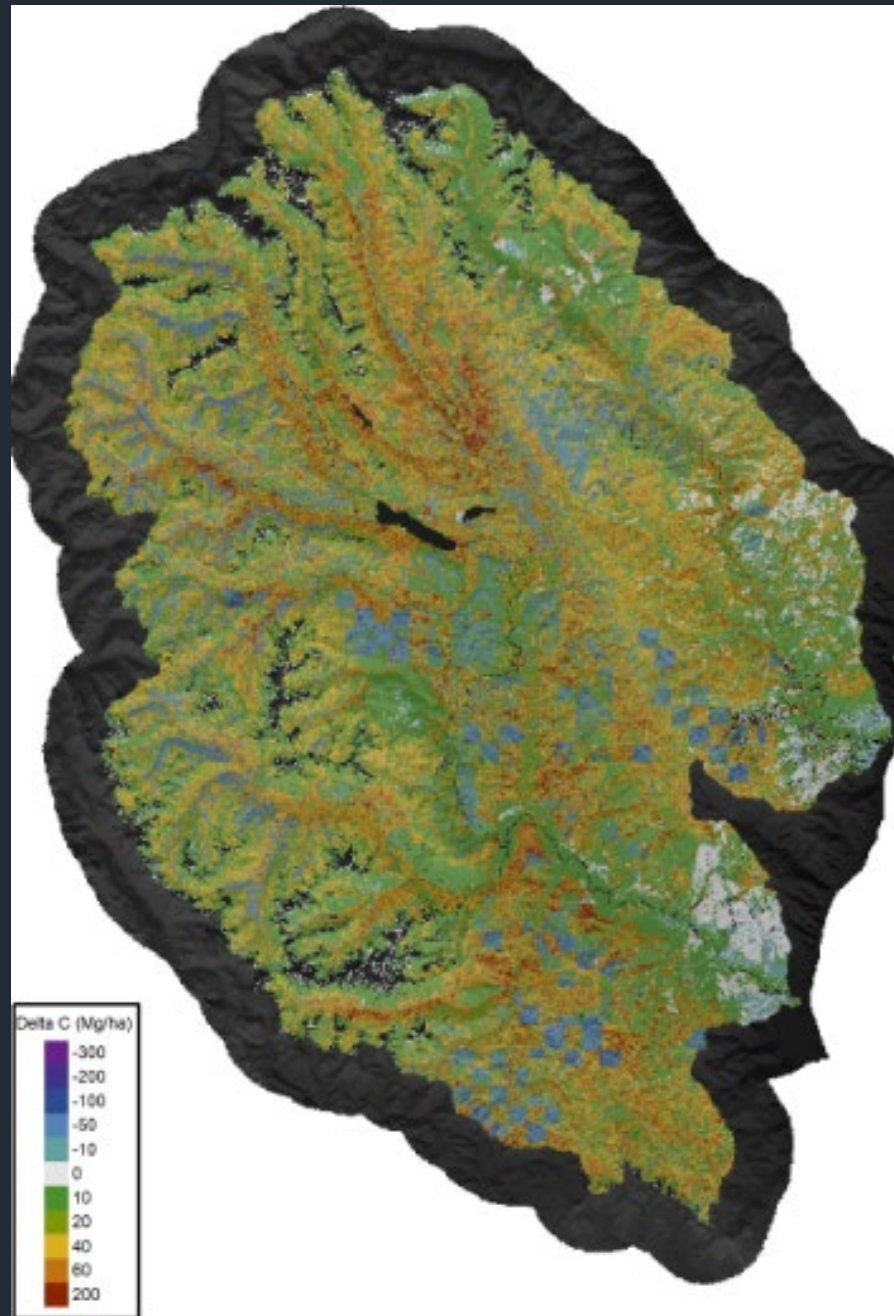
Forecasting future forest health



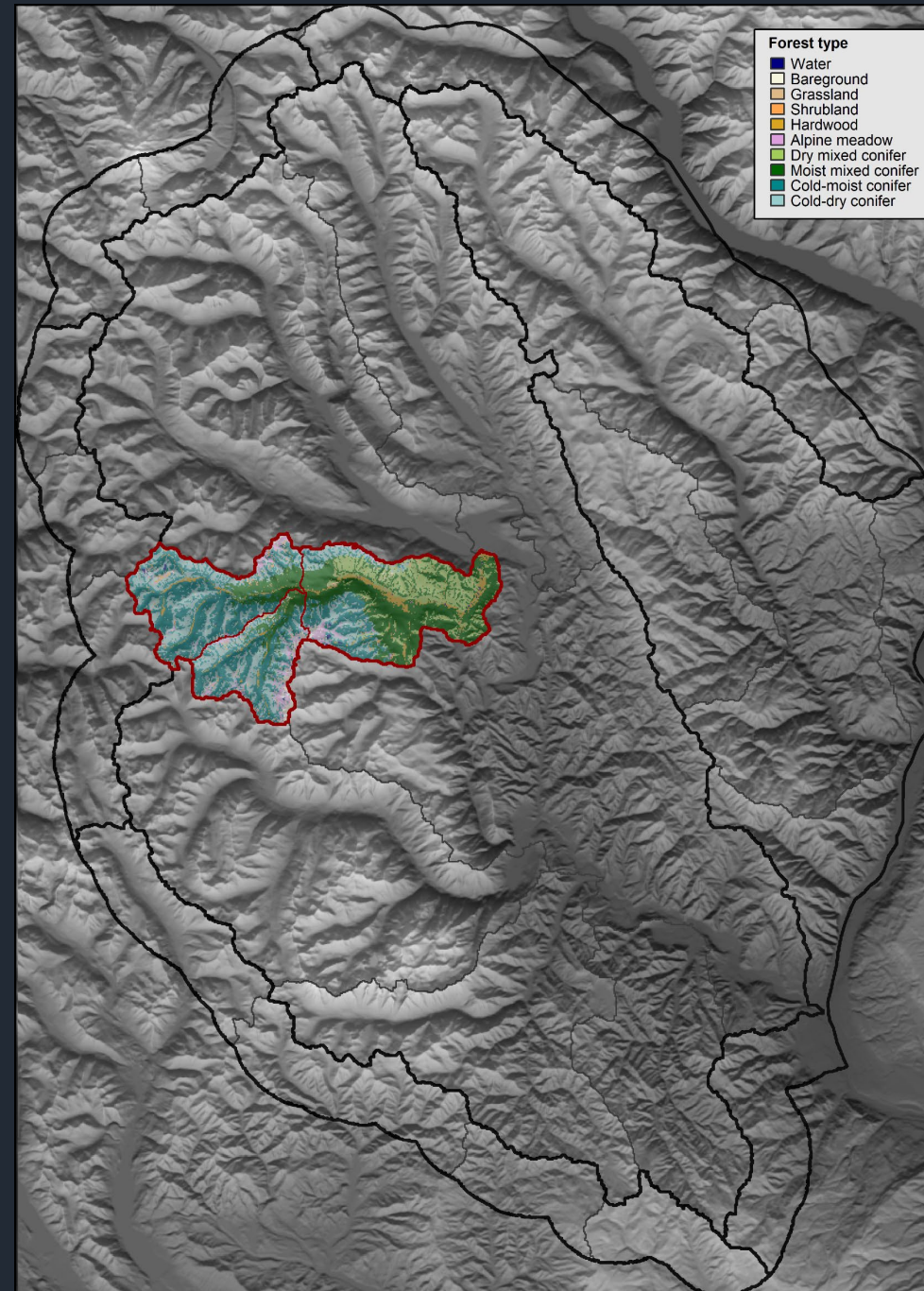
Decision support tools



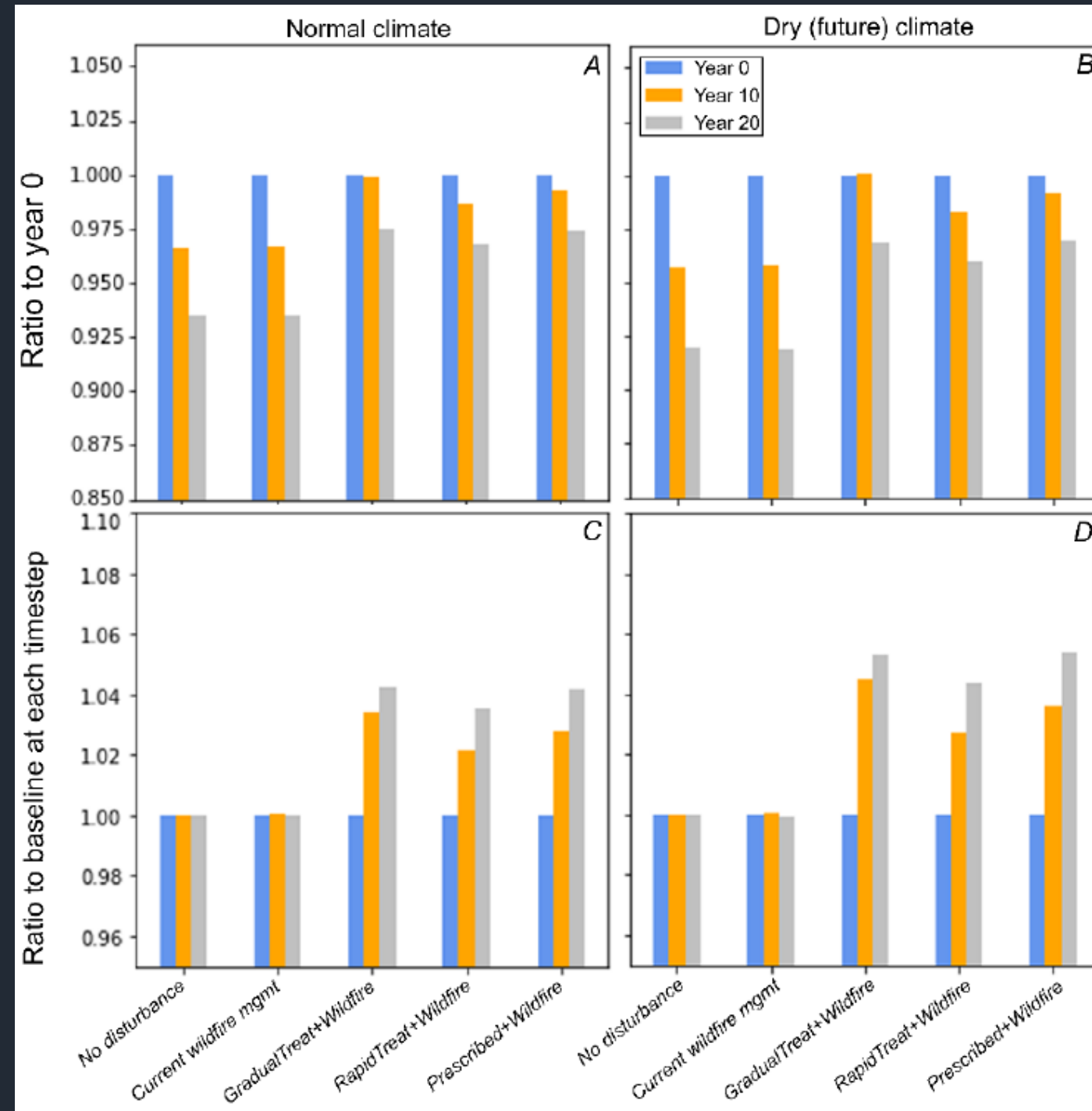
Spatial prioritization



Streamflow in Nason Creek



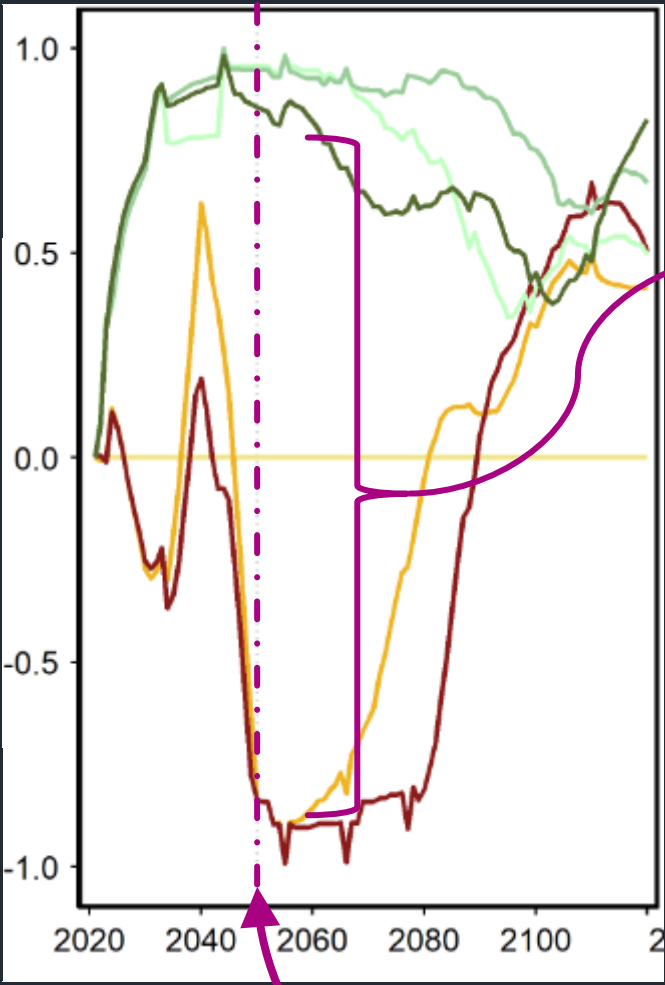
Streamflow in Nason Creek



Streamflow over time

More streamflow

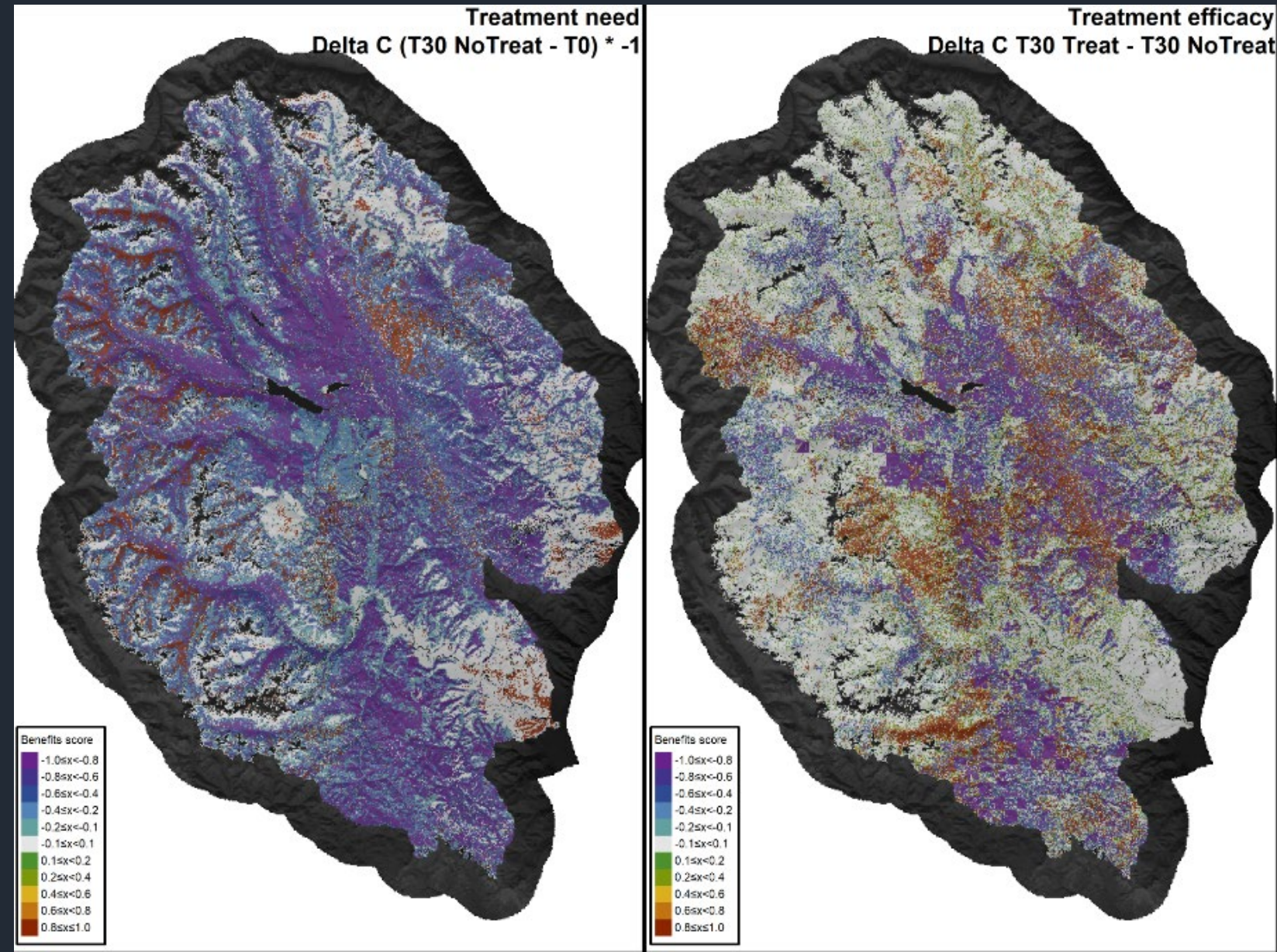
Less streamflow



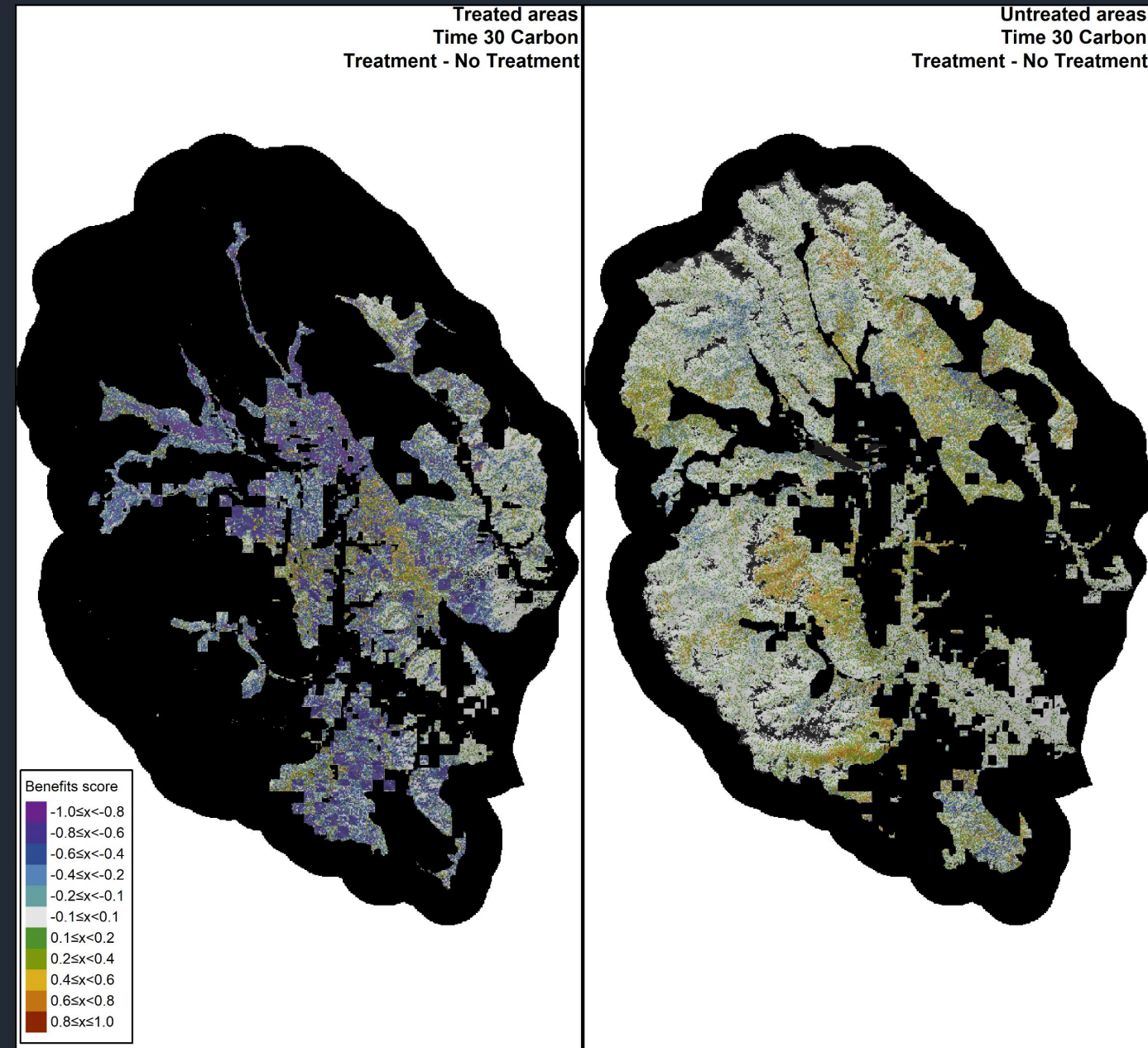
Lasting effects

Treatments stop

Treatment need vs. treatment efficacy



Neighborhood benefits



Treatment effects in
treated areas

Treatment effects in
surrounding *untreated* areas

Thank you!



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