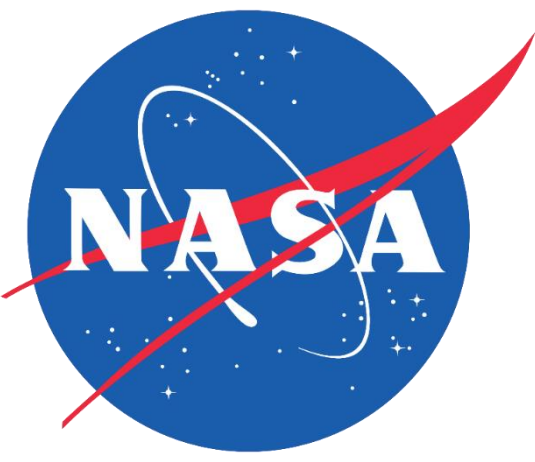
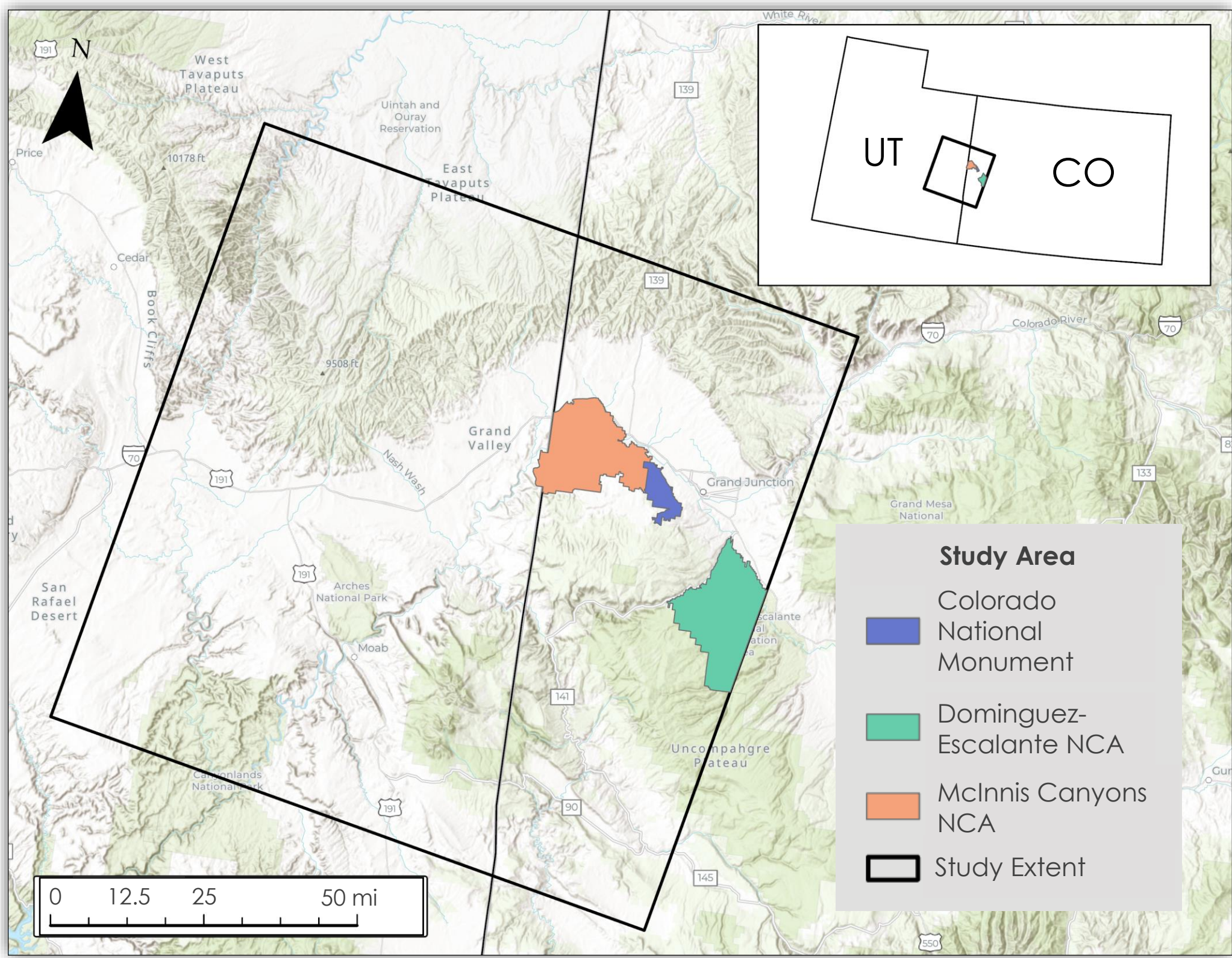




Forecasting Trends in Pinyon-Juniper and Sagebrush Habitat Relative to Wildfire, Drought, Beetle Disturbance, and Treatment Impact for Management Planning



Study Area



Drivers of Change



Temperature
Ideal temperatures = increased plant productivity



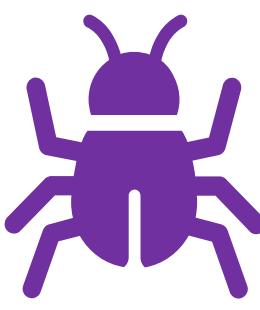
Precipitation
Severe drought = less plant nutrients



Elevation
Lower altitude = more growth



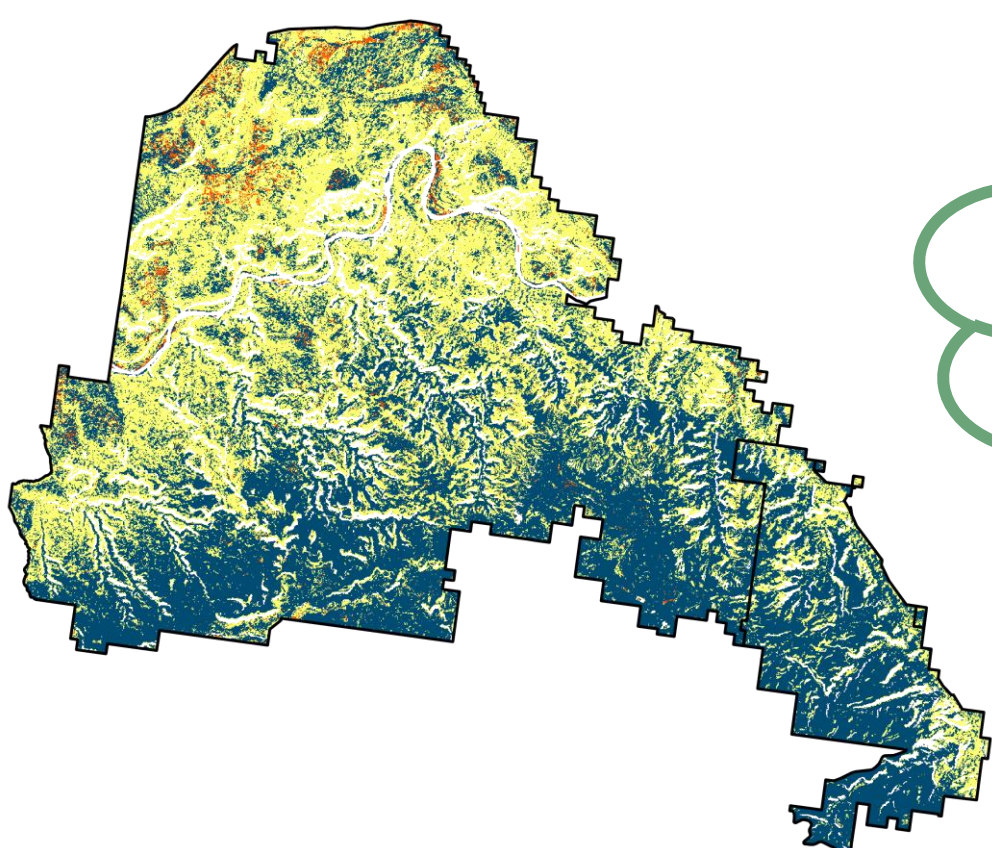
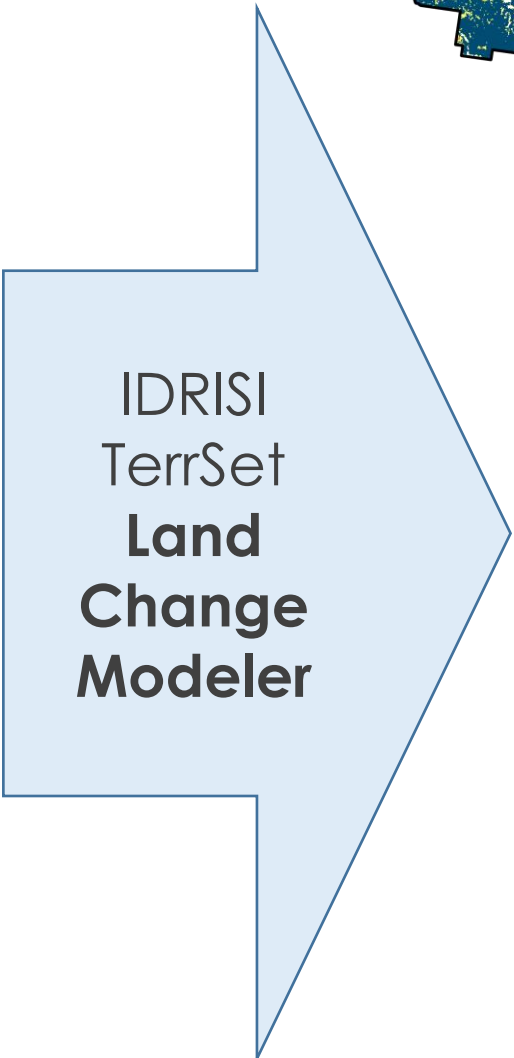
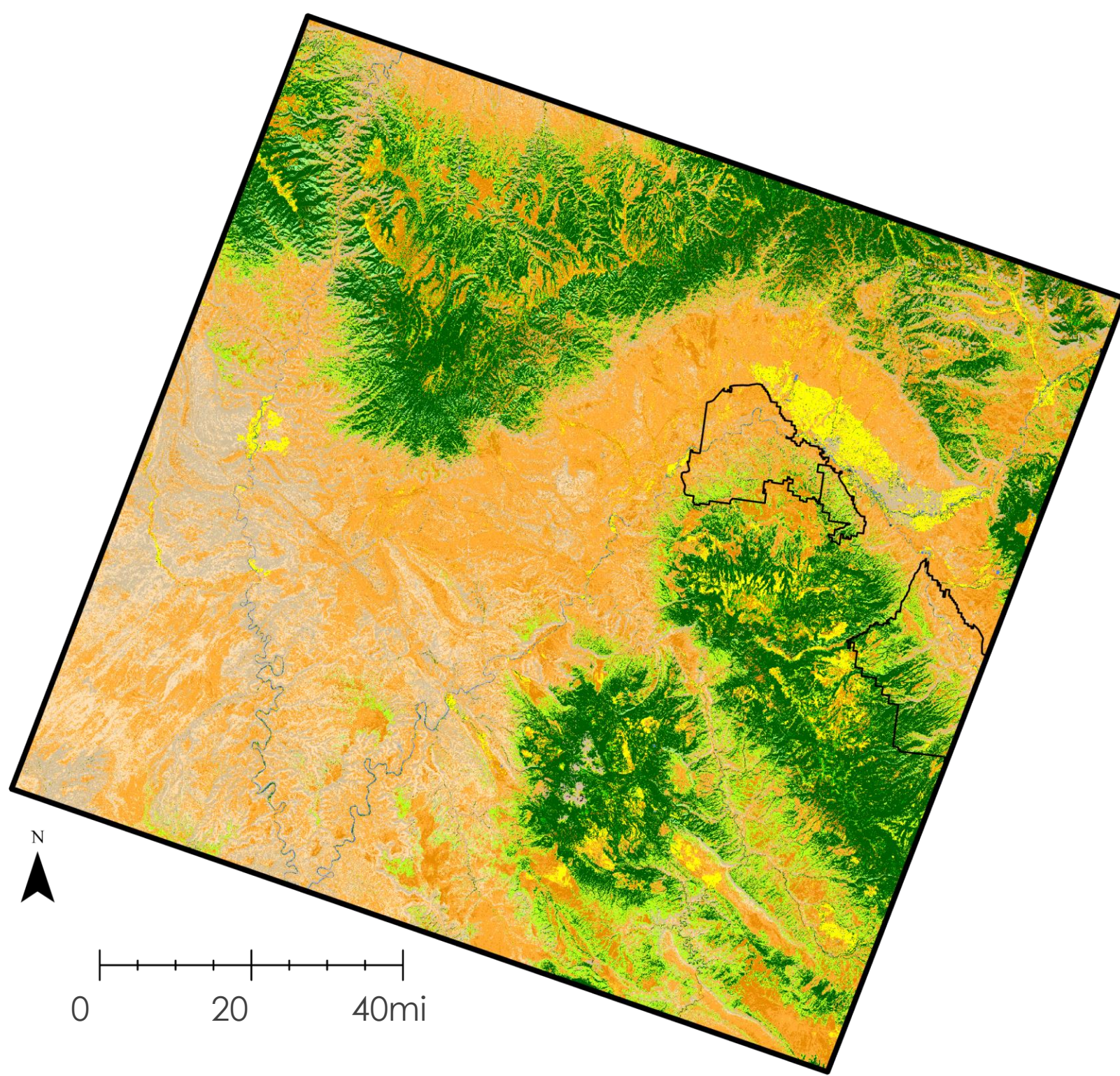
Wildfires
Frequent & severe fires = decreased plant productivity



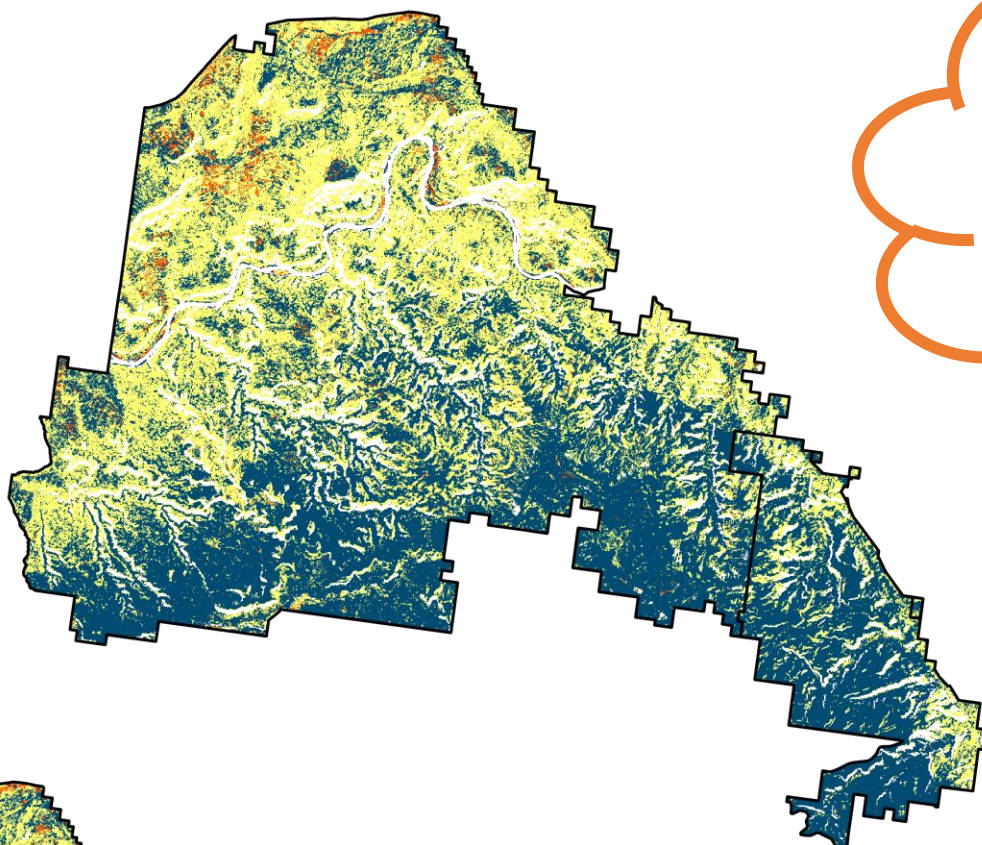
Beetle Infestation
More infestations = more tree mortality

Pinyon-juniper woodlands are under threat from increasingly frequent and severe **wildfires**, **beetle infestation**, and **drought** due to climate change

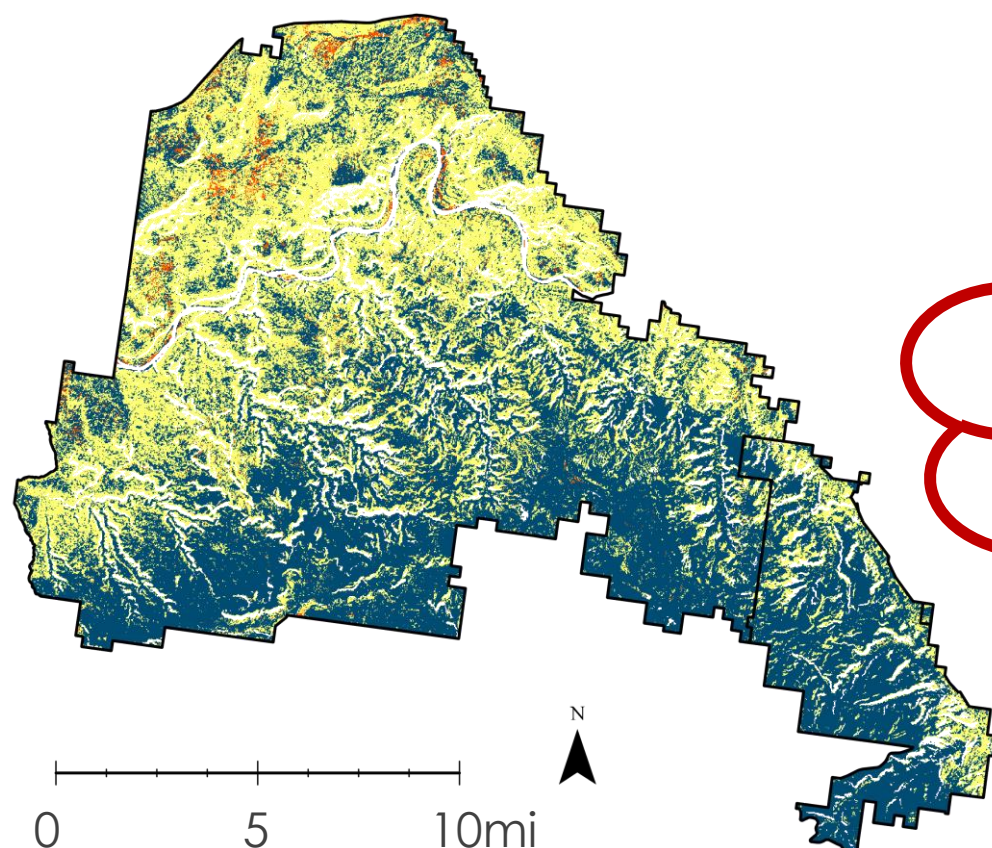
LCMS Land Cover in 2021



2025: **Expansion** of trees, into shrub areas



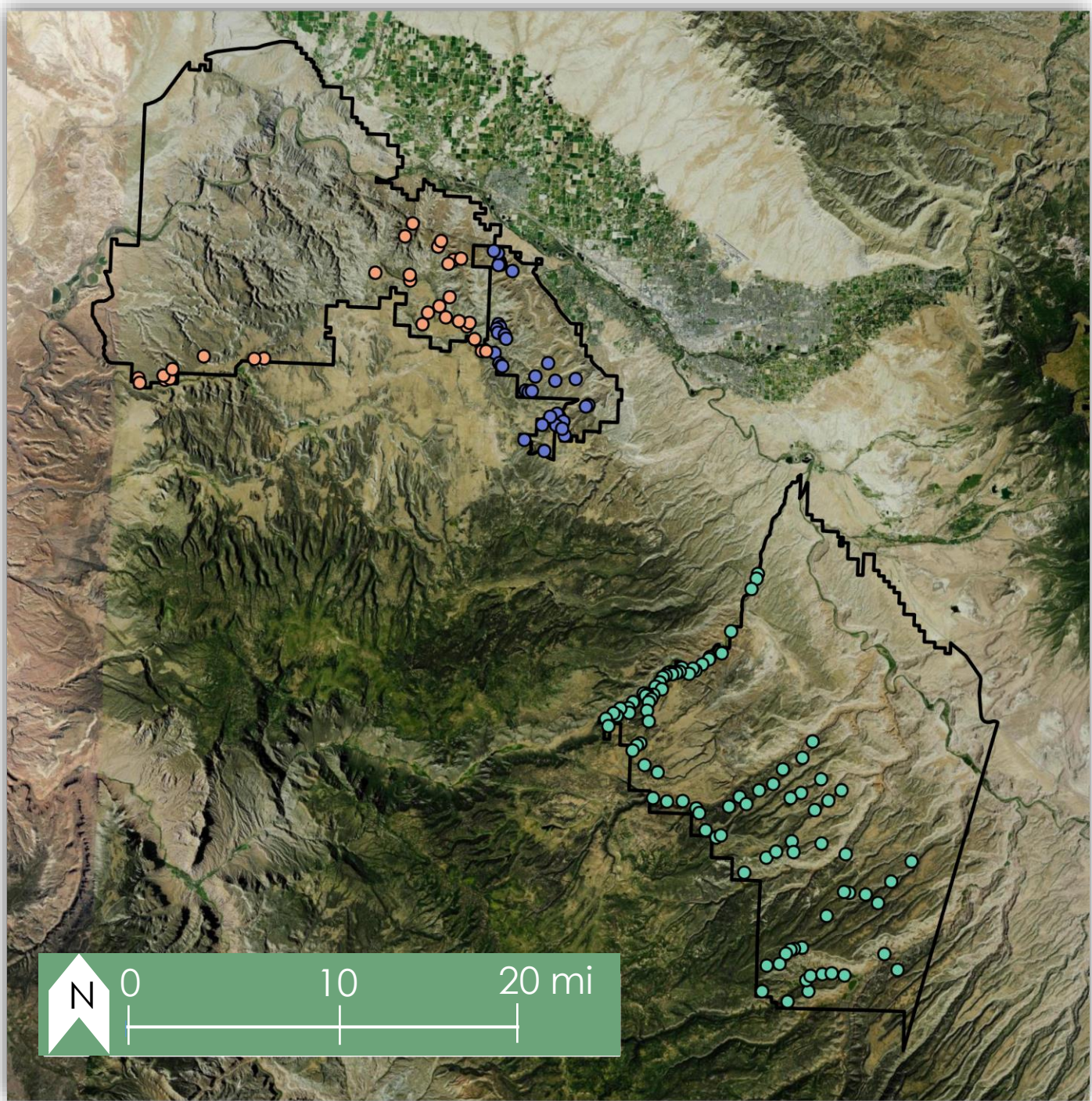
2030: **Continued expansion** of trees and encroachment of pinyon-juniper forest into shrub lands



2040: **Conversion** of shrubland to pinyon-juniper woodland in some areas

Land Cover Types
Tree
Shrub
Grass & Forb

Ground validation helps identify areas with beetle kill at points identified by remote sensing



Validation Points
McInnis Canyons National Conservation Area
Dominguez-Escalante National Conservation Area
Colorado National Monument
Partner Perimeters

Land cover change forecasts can help land managers **plan for the future** in the face of climate change

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Grand Valley Ecological Forecasting II