Spatial Analysis Lab Updates

Jessica Mitchell, UM Spatial Analysis Lab Director

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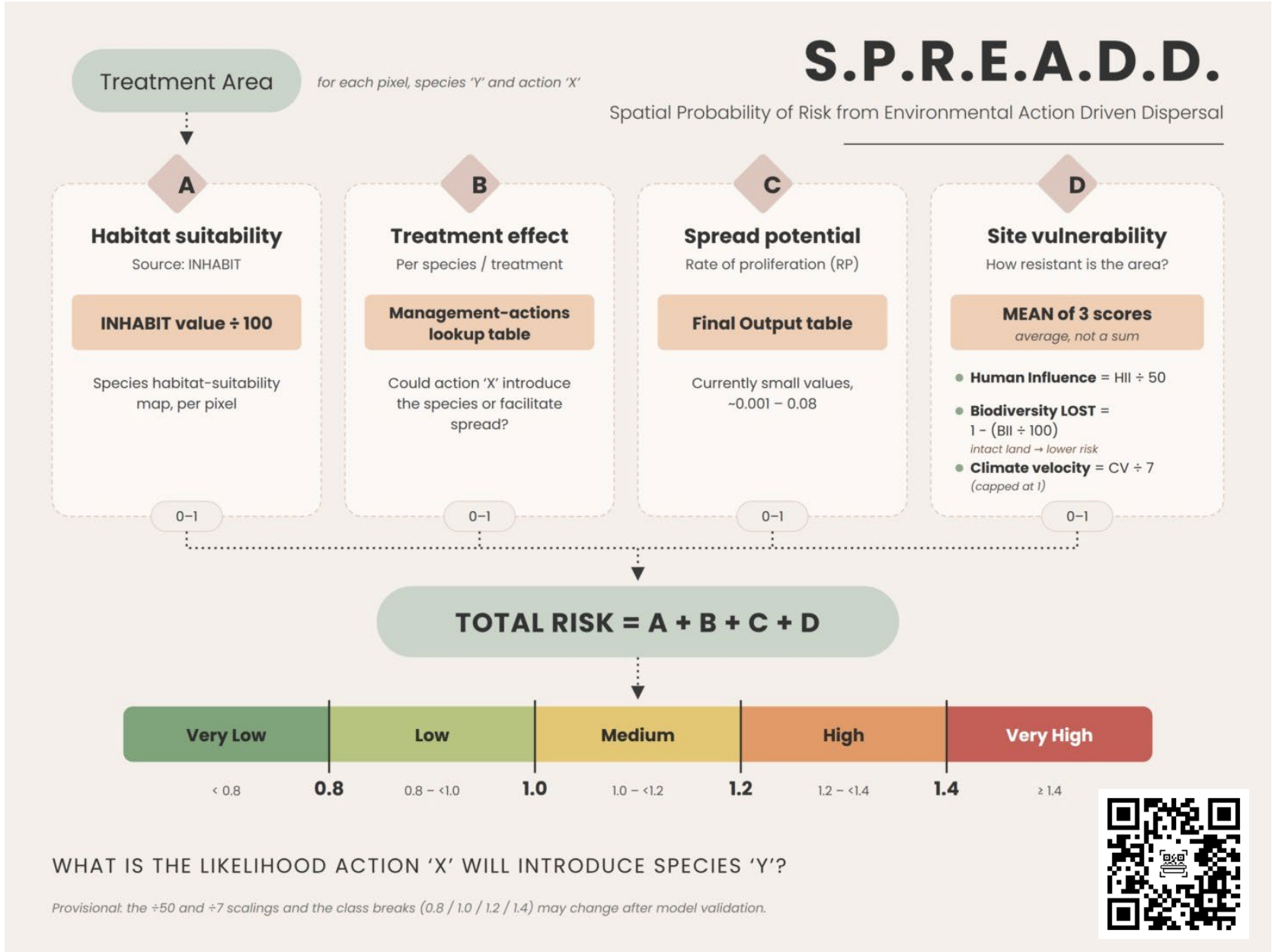
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SPREADD Tool

Tool to Quantify the Risk that Forest Service Management Actions have of Introducing Invasive Species

Prototype Available

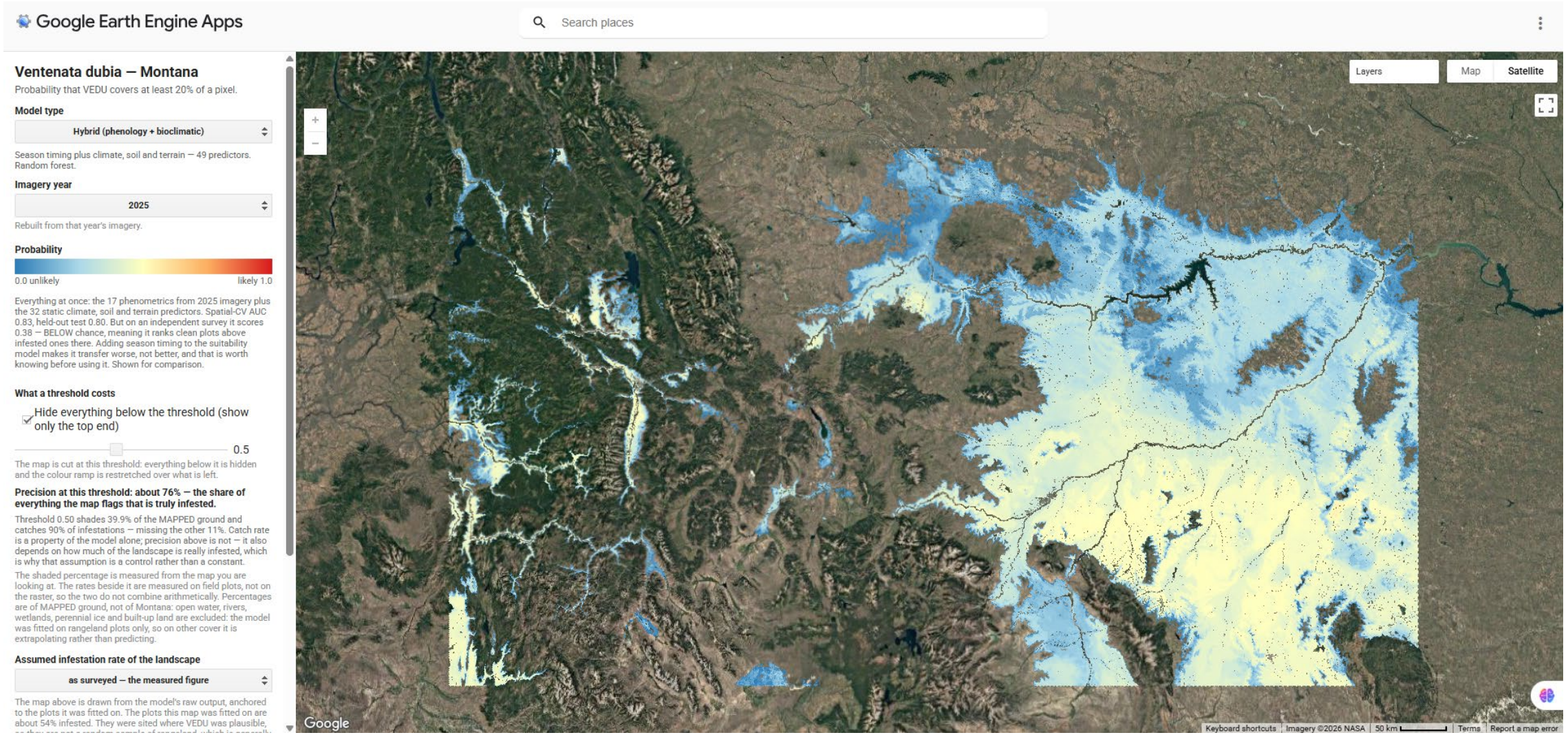
Feedback welcome!



Project Development Made Possible by the Western Wildland Environmental Threat Assessment Center (WWETAC)

Statewide Ventenata Mapping

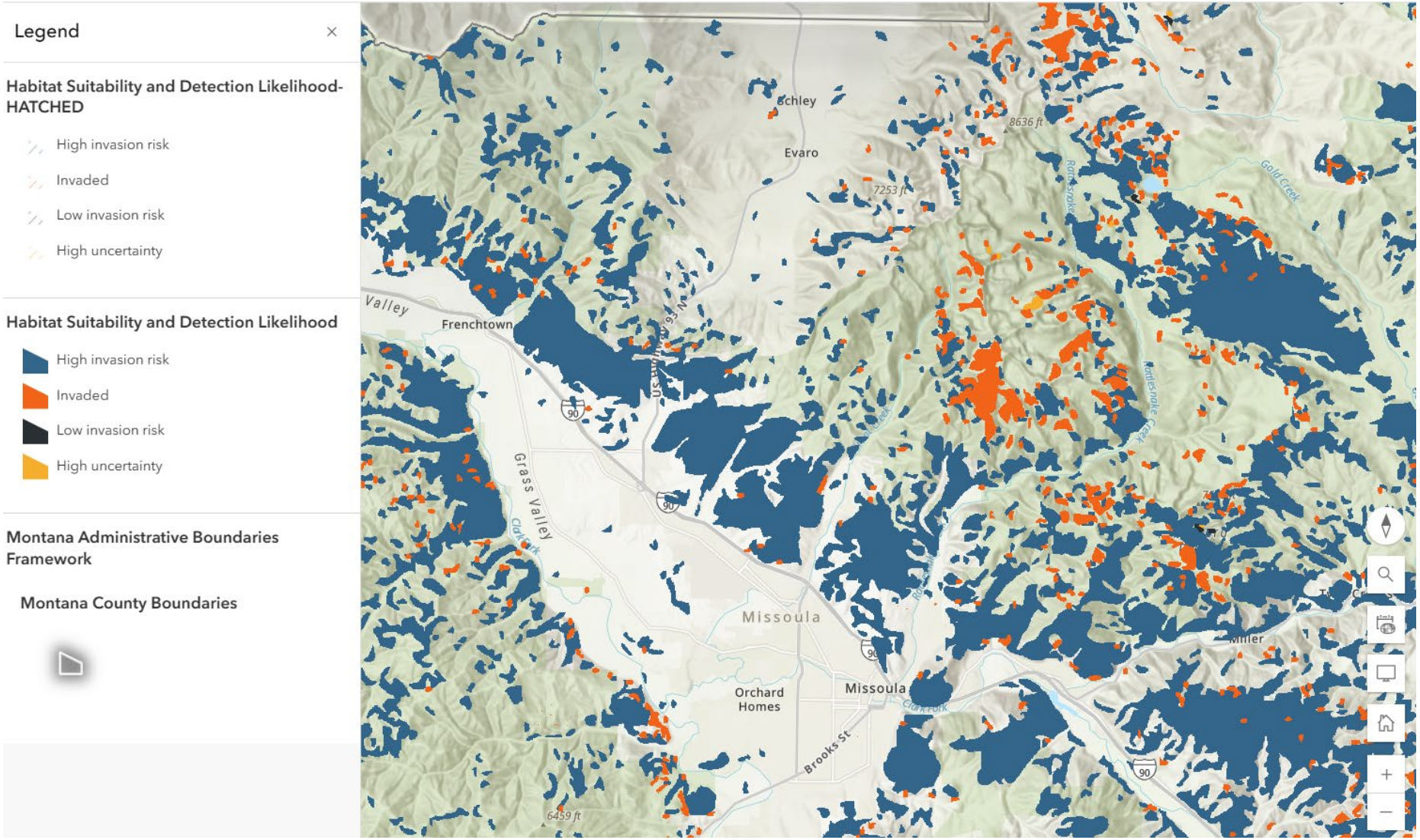
Likelihood of Occurring on the Ground & Bioclimatic Suitability Maps



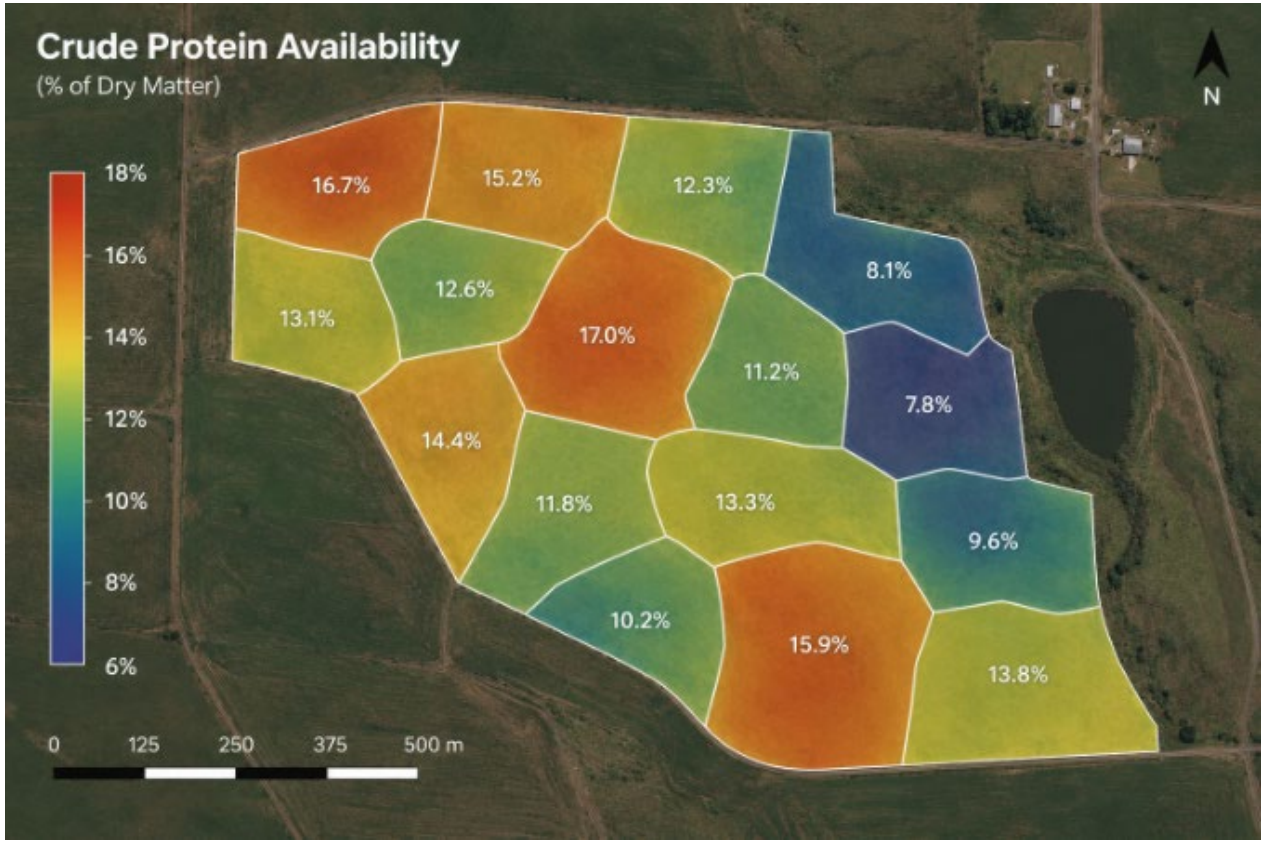
Adding Functionality and Layers in Google Earth Engine & AI Modeling Platform (e.g., Grazing Allotments, Conservation Easements)

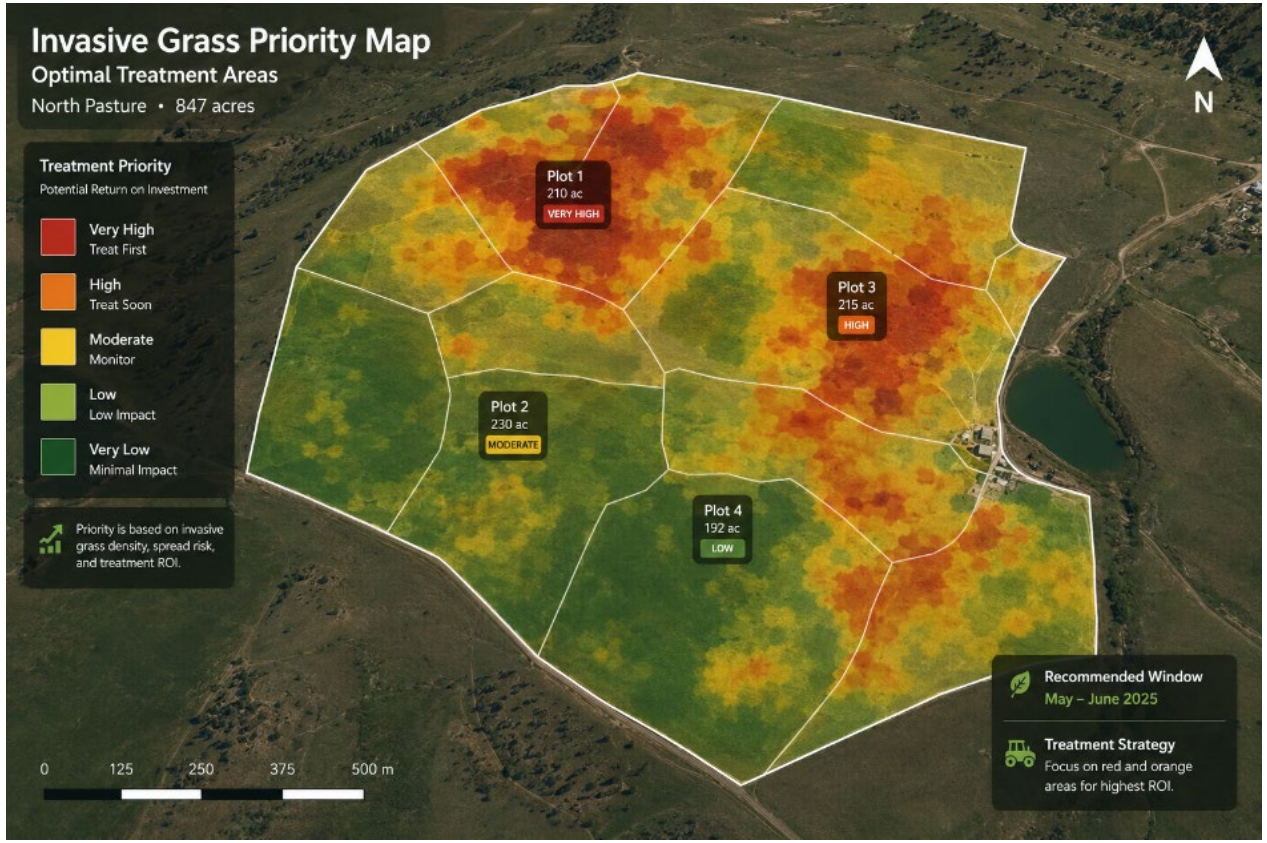
Statewide Ventenata Mapping

Likelihood of Occurring on the Ground & Bioclimatic Suitability Maps = > Invasion Risk



Drone-based Forage Quality





Drone-based forage quality and diagnostics using a sensor we are working with MSU OpTeC to customize and a dashboard front end that integrates cost-benefit financials (e.g., cost of treatment vs forage production gains)

Land Cover and Other Ecological Community Updates

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NatureServe

Aquatic Community Classification and Mapping…still underway

https://fieldguide.mt.gov/displayEG.aspx?Level1=Open+Water

Streams and Rivers (Lotic) - Northern Rockies

Northern Rockies Large Perennial River - Draft Account

State Rank:





Northern Rockies Medium Perennial River - Draft Account

State Rank:





Northern Rockies Small Perennial Stream - Draft Account

State Rank:





Northern Rockies Small Intermittent Stream - Draft Account

State Rank:

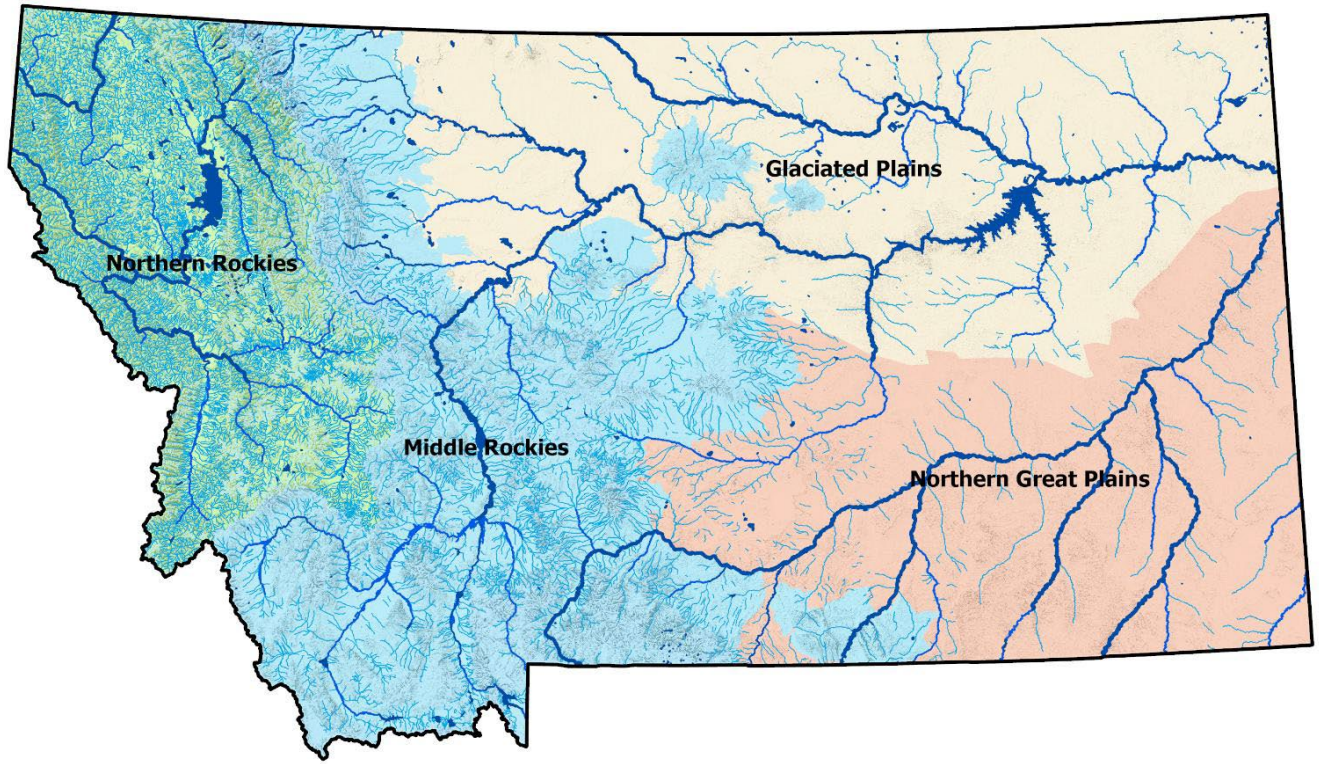


Northern Rockies Small Alpine and Subalpine Stream - Draft Account

State Rank:







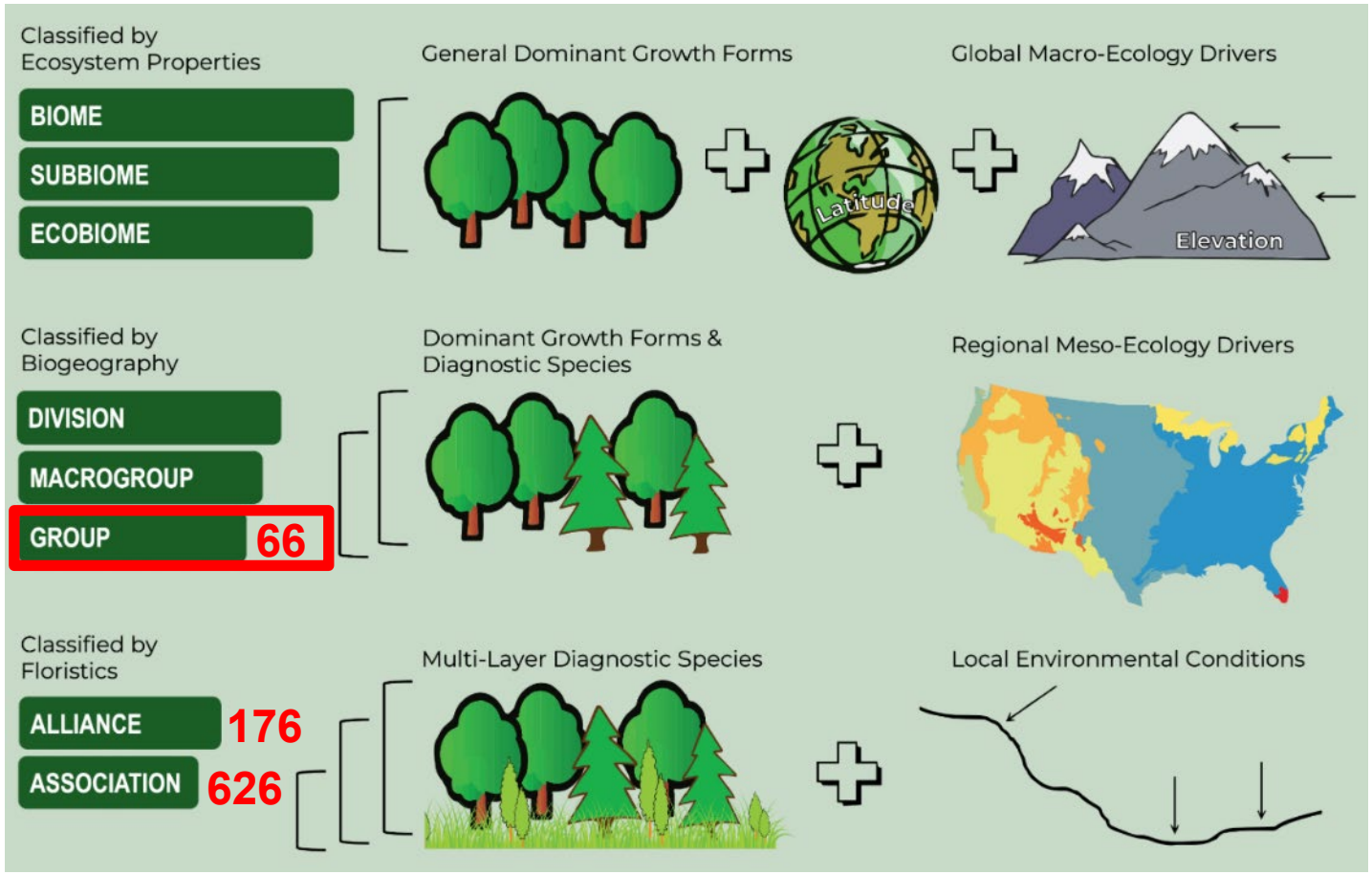
- Ecoregion
- Stream size
- Stream flow

+

- Lakes & Reservoirs

Implementing National Vegetation Classification System Mapping in Montana Land Cover

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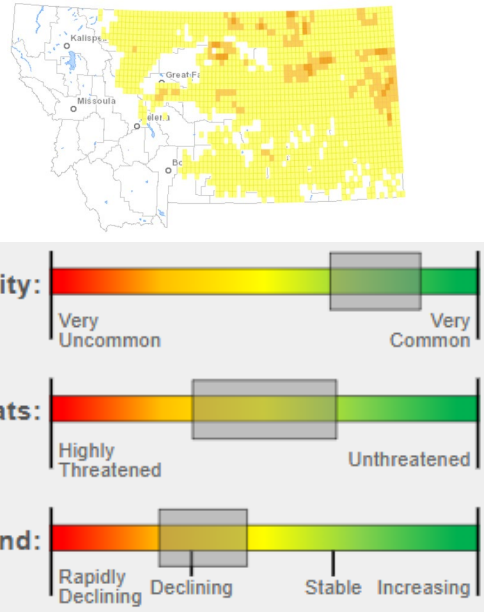
- National Standard for study, classification, inventory, and mapping of natural and cultural vegetation
- Comprehensive classification for U.S. and is being extended into Canada under the IVC
- Maintained through formal partnership of federal and non-federal entities
- Global and subnational conservation status ranks

11 NVC Groups of Conservation Concern in Montana

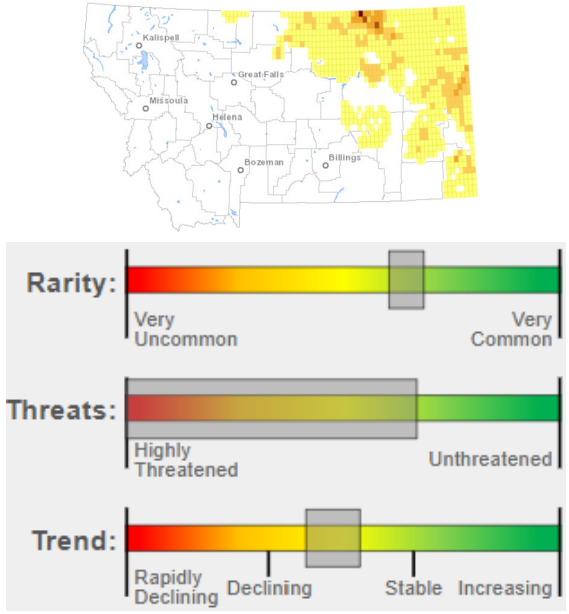
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MT_Level_1	MT_Level_2	MT_Group_Name	G_Rank	S_Rank	MT_Status	FWP_SWAP
Alpine	Alpine - Sparse and Barren	Glacier and Ice Field	GNR	S1	HOC	
Forest and Woodland	Deciduous Forest and Woodland	Great Plains Mesic Forest and Woodland	G3?	S3	HOC	HGCN
Forest and Woodland	Montane - Subalpine Forest and Woodland	Whitebark Pine - Subalpine Larch Forest and Woodland	G4G5	S3	HOC	HGCN
Grassland	Lowland - Prairie Grassland	Great Plains Mesic Mixedgrass Prairie	G3?	S3	HOC	HGCN
Grassland	Lowland - Prairie Grassland	Rocky Mountain Low Elevation - Dry Grassland	G4G5	S3	HOC	HGCN
Grassland	Lowland - Prairie Grassland	Semi-Desert Grassland	G3?	S3?	HOC	
Shrubland	Sagebrush Shrubland	Basin and Wyoming Big (Threetip) Sagebrush Shrubland	G3?	S3	HOC	HGCN
Wetland and Riparian	Peatland	Great Plains Alkaline Fen	GNR	S2?	HOC	HGCN
Wetland and Riparian	Peatland	Rocky Mountain Acidic Fen	G4G5	S3	HOC	HGCN
Wetland and Riparian	Riparian and Wetland Forest	Great Plains Floodplain Forest	G3?	S2	HOC	HGCN
Wetland and Riparian	Riparian Shrubland	Great Plains Floodplain Shrubland and Herbland	G3	S2S3	HOC	HGCN

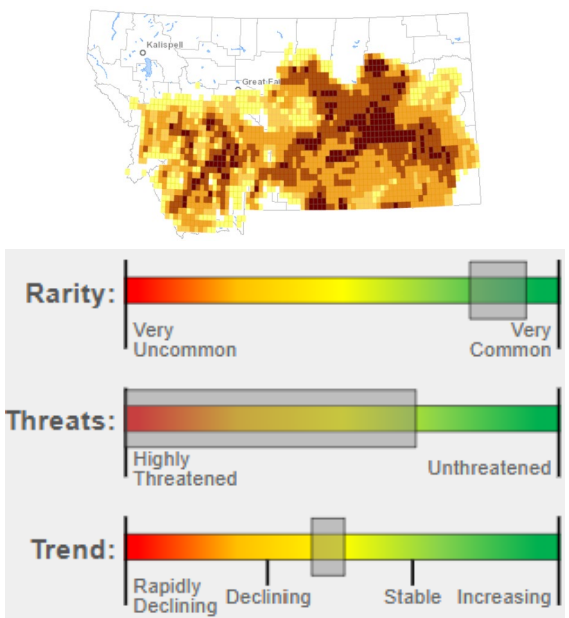
GP Mesic Forest and Woodland



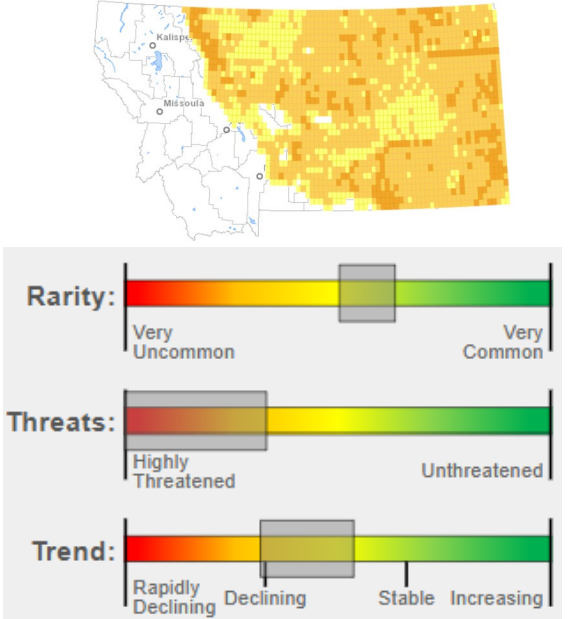
GP Mesic Mixedgrass Prairie



Basin & WY Big Sage Shrubland



Great Plains Floodplain Forest



Web Page Tour of Land Cover Information

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Application of NVC Standard in Montana
https://mtnhp.mt.gov/resources/ecology/nvcs/

Land Use/Land Cover page
https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

Land Cover in Map Viewer
https://mtnhp.org/mapviewer/?t=1

Ecological Community Field Guide…new stewardship statistics
https://fieldguide.mt.gov/displayEG.aspx

Habitat Status and Stewardship Dashboard
https://mtnhp.mt.gov/webapps/dashboards