MONTANA LANDSCAPE-LEVEL WETLAND ASSESSMENT

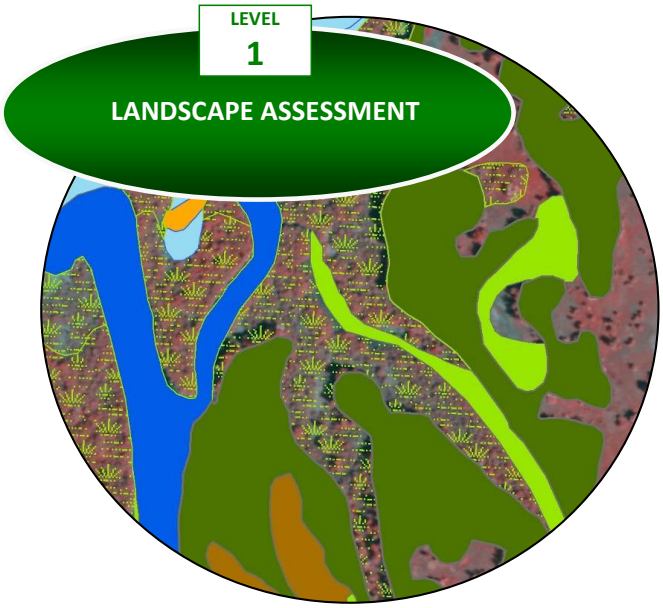
MONTANA Natural Heritage Program

LANDSCAPE ASSESSMENT

Landscape assessments use GIS and readily available digital data, including wetland mapping, to characterize the land uses across a given area (e.g., watershed, county, etc.). They can also be used to summarize the distribution and abundance of different wetland types.

Landscape assessments can be used to prioritize geographic areas that may require more intensive assessment.

The resulting maps can help identify areas to target conservation and restoration efforts.



Attribute	Metric
Transportation	Distance to 4-wheel drive roads
	Distance to local roads
	Distance to highways
Hydrology	Distance to wells
	Distance to canals or ditches
Land Cover	Percent of envelope in crop/agriculture
	Percent of envelope in hay/pasture
	Percent of envelope in developed, open space
	Percent of envelope in low density residential
	Percent of envelope in medium density residential
Soils	Soil type
Climate	Relative effective annual precipitation
Wetland characteristics	Wetland polygon size
	Perimeter to area ratio of wetland polygon
	Distance to nearest five wetlands

DIGITAL DATA LAYERS

Using data layers representing both environmental and anthropogenic characteristics, we can characterize the landscape context around wetlands at multiple spatial scales.

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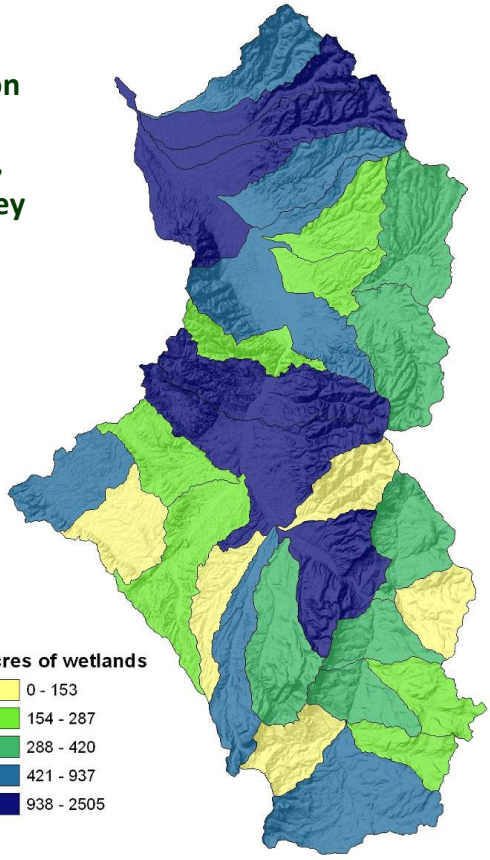
WETLAND LANDSCAPE PROFILE

Wetland landscape profiles offer a rapid characterization of function and condition across an area of interest, such as a subbasin or watershed. Using digital wetland mapping, they describe the types, abundance, and distribution of wetlands across a defined area. They can also help target or prioritize management efforts such as restoration, conservation, and mitigation.

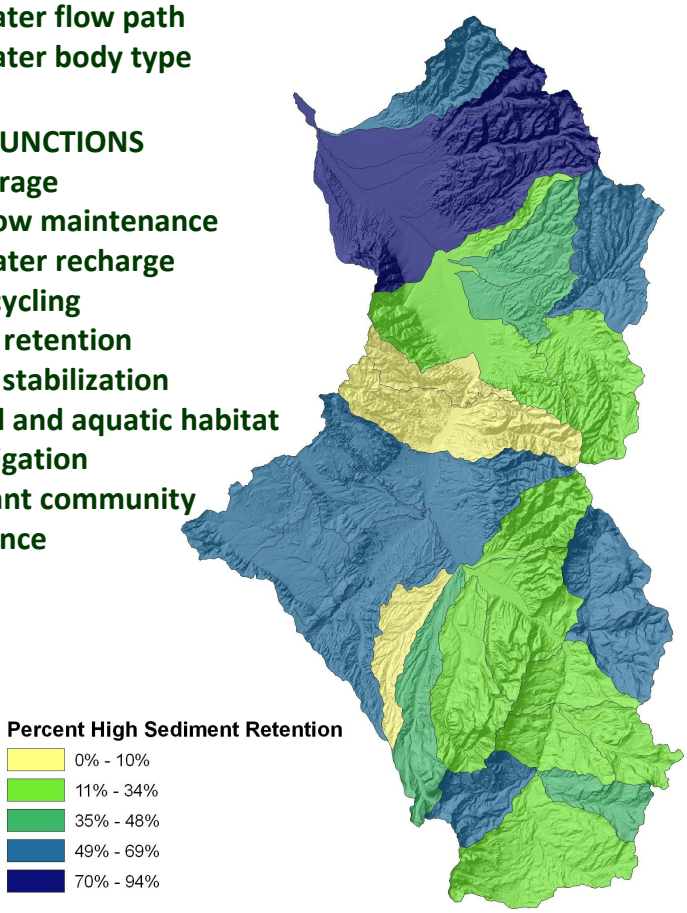
Digital wetland mapping can be enhanced with addition of hydrogeomorphic (HGM) descriptors that link wetland type with potential wetland function. HGM codes consider:

- **Landform**
- **Landscape position**
- **Water flow path**
- **Water body type**



WETLAND FUNCTIONS

- **water storage**
- **stream flow maintenance**
- **groundwater recharge**
- **nutrient cycling**
- **sediment retention**
- **shoreline stabilization**
- **terrestrial and aquatic habitat**
- **flood mitigation**
- **native plant community maintenance**



QUESTIONS ANSWERED WITH WETLAND LANDSCAPE PROFILES

- **Which wetlands have the most human impacts?**
- **How many wetlands have been altered? Impounded? Excavated?**
- **Which wetlands are within the floodplain?**
- **How many wetlands occur on public lands vs. private lands?**
- **Where are large wetland complexes?**

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