HGM Classification of Wetlands in Montane Areas, V1.0, December 2024

The contents of this key and subclasses are adapted from Hruby (2014), Reynolds et al. (2022), and the URAP User's Manual Version 3.0 (Appendix A) with additional information from the NRCS (undated).

1. The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size and at least 30% of the open water area is deeper than 10 ft (3 m).

YES – The wetland class is **Lake Fringe (Lacustrine Fringe) (Possible subclass: Impoundment Fringe)**
NO – go to 2

2. The unit is in a valley, or stream channel, **where it gets inundated by overbank flooding from that stream or river; the overbank flooding occurs at least once every 10 years.** The Riverine wetland can contain depressions that are filled with water when the river is not flooding. NOTE: See subclass sheet for information on how to classify sites with beaver influence or in headwater positions.

YES – The wetland is **Riverine (Possible subclasses: Beaver Riverine, Headwater Riverine)**
NO - go to 3

3. The wetland is on a slope (slope can be very gradual and appear nearly flat) where water flows through the wetland in one direction and usually comes from seeps, but can also come from high groundwater or irrigation water. It may flow subsurface, as sheetflow, or in a swale without distinct banks; the water leaves the wetland without being impounded. **Surface water does not pond** in these type of wetlands except in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NOTE: Slope wetlands are also found in the upper reaches of rivers in headwater positions before true channel and bank features form. See subclass sheet for details about headwater and irrigation slope sites.

YES – The wetland is **Slope (Possible subclasses: Irrigation Slope, Headwater Slope)**
NO - go to 4

4. The entire wetland unit is in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland. Beaver-influenced wetlands with at least 10% cover of ponds and irrigation-fed wetlands where the water ponds on-site may be classified as depressional; see the subclass sheet for details.

YES – The wetland is **Depressional (Possible subclasses: Beaver Depressional, Irrigation Depressional, Depressional Impoundment)**
NO – go to 5

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1–4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide).

Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.
For questions 1–4, the criteria described must apply to the entire unit being rated.
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1–4 apply, and go to question 5.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit, classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	**HGM Class to use in rating**
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

If you are still unable to determine which of the above criteria apply to your wetland or if you have more than two HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

HGM Subclasses for Wetlands in Montane Areas, V1.0, December 2024

Wetlands whose primary water source is **irrigation:**

- Irrigation Slope: Wetland is created by irrigation sheetflow that moves through the wetland unidirectionally without major ponding anywhere in the AA. Ponding can be hard to tell at time of site visit. Look for evidence of ponding both in field and in aerial imagery. If greater than 10% of the AA area has evidence of irrigation ponding, choose irrigation depressional instead.

- Irrigation Depressional: Wetland is created by irrigation water which ponds within the AA boundary. As little as 10% of the AA can have irrigation ponding to count as irrigation depressional. Look for evidence that water ponds and does not leave site, including basin-shaped wetland, bare soil with deep cracking, wetland plants associated with longer term standing water, or evidence of standing water in aerial imagery

Beaver-influenced wetlands:

- Beaver Riverine: Wetland is in a riverine landscape affected by beavers. **Less than 10%** of the AA contains beaver dams, ponds, or other water impounded by beaver activity.

- Beaver Depressional: Wetland is in a riverine landscape affected by beavers. **At least 10%** of the AA contains beaver dams, ponds, or other water impounded by beaver activity.

Headwater wetlands:

- Headwater Riverine Wetlands: Wetland is in a headwater position (upper reaches, near the start of a stream network), and has a channel with defined banks. Defined banks will have distinct edges with sudden breaks in vegetation and may be overhung in some places, whereas undefined banks will be sloping and often have continuous vegetation cover throughout. Headwater riverine sites often have groundwater inputs similar to headwater slope sites, but the important factor is that **headwater riverine sites flood at least 10% of their area at least every 10 years.**
    - Signs of past flooding include sediment or debris deposits in/near the channel, undercut banks which have been carved by floodwaters, and high water marks. NOTE: Sometimes cattle can erode slopes or springheads creating a false “bank” or headcut. Headcuts are NOT banks and should be considered as stressors when surveying heavily grazed headwater position wetlands.

- Headwater Slope Wetlands: Wetland is in a headwater position (upper reaches, at the start of a stream network), has a poorly defined channel or channel without defined banks (no sudden breaks in vegetation, sharp stream edges or overhangs), no signs of

flooding, and receives overbank flooding from channels **less than** once every 10 years. These sites often look like vegetated drainages that have groundwater flow or sheetflow from snowmelt. Sometimes there will be a seep or spring source upgradient large enough to create small channels of water flow exiting the wetland, but they **must not flood 10% or more of the wetland more than once every 10 years for the wetland to be considered headwater slope. Groundwater flow is not as flashy as riverine flow, so signs of flooding should not be present.**

Photo Examples:

1. A vegetated headwater slope wetland with no defined banks.

2. A headcut created by cattle erosion. This is a stressor, NOT a stream bank. The associated wetland is headwater slope, not headwater riverine.

3. A headwater riverine wetland with defined stream banks and obvious signs of past flooding along with significant groundwater input.

4. A very small channel created by springflow in a headwater slope wetland. This small channel is groundwater-fed, does not flood, and therefore the site is classified as headwater slope rather than headwater riverine.

Impoundment Wetlands (wetlands located within or adjacent to artificial impoundments >8 ha in size, but with water <2 m deep):

- Depressional Impoundment: Wetland located within an impounded area. Primary water fluctuations are vertical with rising and falling water levels due to steep impoundment sides and relatively even bottom surface level.

- Impoundment Fringe: Wetland hydrologically controlled by impounded area. Primary water fluctuations are bidirectional, with water spreading and receding horizontally with changing water levels. Sites often on mudflats that gently slope toward impoundments.

References

Hruby, T., 2014, Washington State wetland rating system for eastern Washington—2014 update:
Olympia, Washington Department of Ecological Publication #14-06-030, 126 p.

NRCS Wetland Team, Central National Technology Support Center, undated, The development of wetland functional assessment models using the hydrogeomorphic (HGM) classification System: CNTSC Technical Note, 55 p.

Reynolds, L., Lemly, J., Dickard, M., 2022, Draft AIM national aquatic monitoring framework—Field protocol for lentic riparian and wetland systems: Bureau of Land Management Technical Reference 1735-X, 149 p., 14 appendices.