

MDT WETLAND AND STREAM DELINEATION PROCESS

MDT Wetland Delineation Process:

- Use the Corps of Engineers (COE) 1987 Corps Wetland Delineation Manual, current appropriate Regional Supplement COE guidance, and appropriate regional wetland determination data form to complete the wetland delineation:
http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/
- Study Area: Delineate all wetlands out to the MDT specified distance from existing centerline as determined by project type and scope. Coordinate the specified distance and any variations in study area boundary for the project with the MDT District Biologist.
- If it is thought that the area to be delineated constitutes a Difficult Wetland Situation (problematic, wetlands that periodically lack indicators of wetland hydrology, wetland/non-wetland mosaics, etc.) as defined in the COE regional supplements – Coordinate with the MDT District Biologist prior to conducting the delineation.
- Wetland Boundaries: Identify wetland boundaries using a sub-meter accuracy GPS unit set to the NAD 1983 (2011) State Plane Montana International Feet. Map wetland boundaries in the field with a sub-meter accuracy GPS unit set to collect points at 2 second intervals along the wetland boundary. Wetland boundaries should follow the actual wetland limits within the landscape and be represented by an accurate polygon, rather than a simple rectangular shape encompassing the general wetland location
 - Accurate wetland boundary and acreage determination are essential to COE permitting and MDT wetland mitigation. Delineated wetland boundaries that do not follow vegetation, soil, and hydrologic transitions will be rejected.
 - Label each wetland with a numeric Wetland ID (e.g. WL1, WL2, etc.)
 - Wetland areas that are connected by the same surface water but are separated by non-wetland features (e.g. culvert) are considered the same wetland and should be labelled as alpha-numeric (e.g. WL1a, WL1b, WL1c, etc.).
- Paired Sample Points (Soil Pits): Collect paired points (one each of a wetland and upland sample point) at representative sites for each wetland area delineated. The location of the paired points should be selected to validate the wetland boundary of each wetland area. Include a minimum of one paired sample point for each wetland and/or wetland areas. If a wetland is comprised of multiple wetland areas (e.g. WL1a, WL1b, WL1c, etc.), then a minimum of one paired sample point is required for each of the wetland areas.
 - Each set of paired sample points (soil pits) will be excavated using auger or spade for recording soil characteristics, complete a soil profile description, determining presence or absence and description of hydric soil, and hydrology indicators for each sample point (wetland and upland).
 - Collect a paired point (wetland and upland sample point) at locations where the wetland type (emergent, shrub/shrub, forested) changes occur along the boundary of each wetland. If wetland type is the same throughout the wetland being delineated (e.g. total wetland is emergent) only one paired point is required.
 - Collect a GPS location of each paired point.

- Label each soil pit according to the corresponding Wetland ID for each delineated wetland area (e.g. WL1, WL1sp, UP1sp...).
- Maps
 - Study Area Map: Aerial photo(s) showing study area boundary (see 2nd bullet above) and the delineated wetland boundaries for the project corridor.
 - Wetland Map: Aerial photo(s) showing labelled delineated wetland boundaries with labelled paired sample points (wetland and upland). May include more than one wetland area per map, depending on scale.
- Photos of each delineated wetland and associated paired sample point location(s), If possible; attempt to get both wetland and upland sample points into one photo.
- Forms Required for each delineated wetland will be completed in their entirety for each wetland delineated on all MDT projects:
 - Wetland Determination Data Form: Complete ALL sections (Vegetation, Soils, Hydrology) of the appropriate Regional COE Wetland Determination Data Forms, including the remarks sections and appropriate check boxes for all delineated wetlands conducted for MDT projects.
 - Complete a soil profile description on each form. Simply stating the National Technical Committee for Hydric Soils (NTCHS) definition of “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” in the Remarks section and not completing a soil profile description will **not** be accepted by MDT.
 - Upland Determination Data Form: Complete ALL sections (Vegetation, Soils, Hydrology) of the appropriate Regional COE Wetland Determination Data Forms, including the remarks sections and appropriate check boxes for each corresponding wetland delineated on MDT projects.
 - MDT Montana Wetland Assessment Method (MWAM) Form (2008): Complete ALL sections, including comments sections to verify that functions and values are accurately assessed and documented correctly.
- GPS file submittals to MDT
 - Provide the final corrected (clean-up all extraneous lines, vertices, and other anomalies) GPS wetland boundary delineation file to MDT in ArcGIS shapefile (.shp) format.
 - Provide the final corrected (clean-up all extraneous lines, vertices, and other anomalies) GPS wetland boundary delineation file in the appropriate .dgn format (Enhanced workspace) using proper coordinates (English International Feet) for incorporation onto MDT plan sheets. Contact the MDT Biologist for details on the Enhanced workspace.
 - Provide a “wetland text” level separate from the “wetland boundary” level in a single .dgn file. Place labels outside/adjacent to the boundary of the corresponding wetland.
 - Submit Paired Sample Point (Wetland and Upland) GPS locations to MDT in ArcGIS shapefile (.shp) format.

Stream Ordinary High-Water Mark (OHWM) Delineation Process:

- Use most recent COE guidance to complete the OHWM delineation
<http://www.erdc.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/486085/ordinary-high-water-mark-ohwm-research-development-and-training/>
- Delineate the OHWM on each natural stream potentially impacted by the project.
- Delineate the OHWM out to the specified distance from or along the existing roadway as determined by project type and scope. Coordinate the specified distance and any variations in OHWM delineation distance for the project with the MDT District Biologist.
- Conduct OHWM delineation along the OHWM using a GPS unit with sub-meter accuracy set to the NAD 1983 (2011) State Plane Montana International Feet. Map OHWM in the field with a submeter accuracy GPS unit set to collect a point at 2 second intervals along the OHWM.
- Maps
OHWM Map: Aerial photo(s) showing labelled delineated OHWM(s). May be included on relevant wetland maps.
- GPS file submittals to MDT
 - Provide the final corrected (clean-up all extraneous lines, vertices, and other anomalies) GPS OHWM boundary delineation file to MDT in a ArcGIS shapefile (.shp) format.
 - Provide the final corrected (clean-up all extraneous lines, vertices, and other anomalies) GPS OHWM boundary delineation file in the appropriate .dgn format (Enhanced workspace) using proper coordinates (English International Feet) for incorporation onto MDT plan sheets. Contact the MDT Biologist for details on the Enhanced workspace.
 - Provide a "OHWM text" level separate from the "OHWM boundary" level in a single .dgn file. Place labels outside/adjacent to the boundary of the corresponding OHWM.