



WWC's Helena, Montana office

Does Your Project Area Encroach on a Wetland?

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Introduction

A wetland by definition is "land or areas containing much moist soil." They are in essence the link between land and water. Wetlands provide important benefits to their surrounding ecosystems and to people by acting as a natural filter improving water quality; providing flood control; and supplying valuable recreation areas and wildlife habitat. The various functions a wetland provides are not always performed at the same level or in the same manner. The basic functions are grouped into four broad categories:

- ◆ Water Storage
- ◆ Sediment and nutrient containment and storage
- ◆ Facilitation of the growth and reproduction of plants and animals
- ◆ Assisting in the diversification of plants and animals.

The size and location of the wetland, to a large extent, determines the degree to which the above functions are provided. For instance, runoff from storm events are channeled into the wetland area; the runoff is slowed by the plant life, allowing sediments and nutrients to filter out; the nutrients are stored in the soils supplementing plant growth; the plants in turn provide a variety of habitats. When wetlands are removed from the landscape, or are significantly altered, the biological health of a watershed declines leaving in its wake an increased potential for flooding, poor surface water quality, and habitat degradation. To protect wetlands and ultimately water quality, the EPA has put a number of permitting programs into place. You may recognize these as Sections 401, 402, and 404 of the Clean Water Act. Each permit governs discharges into waters or wetlands, and all construction activities occurring within jurisdictional waters.

Defining Wetlands

Certain types of wetlands are easily recognized while other types are more difficult to determine because they are not frequently inundated. The

U.S. Army Corps of Engineers (COE) and the Environmental Protection Agency (EPA) both define wetlands as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands can include swamps, marshes, bogs, fens, prairie potholes, seeps, vernal pools, pocosins, and similar areas. In Montana, there are five different types of wetlands that occur.

- 1) Riverine Wetlands - these are associated with flowing water of rivers and streams such as sloughs, margins along rivers and creeks and meandering paths.
- 2) Depressional Wetlands - low spots in the landscape such as prairie potholes, wet meadows, and ephemeral ponds.
- 3) Lacustrine Fringe Wetlands - associated with lakes and deep water habitats such as the margins around lakes, reservoirs, ponds, or mud flats.
- 4) Slope Wetlands - groundwater discharge areas such as subalpine and montane areas of high elevation, fens, springs, and seeps.
- 5) Artificial Wetlands - areas created through human related activities.

Wetlands are classified using three key components: hydrology, soil type, and plant life. *To be officially classified as a wetland an area must exhibit any two of the three components.* In most cases it is necessary to consult with a professional to determine if a wetland exists and its extent. The following sections will describe the three components in brief detail.

Hydrology

All wetlands at some point collect and hold water and thus water will always be on or near the surface either all or part of the year. This holding and storing of water allows filtration, replenishment of the aquifer, and growth of specific adaptable plants. The water

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WWC Engineering (WWC) is a full service corporation that has been serving the Rocky Mountain region since 1980. WWC's range of consulting services is broad and our corporate experience is extensive. With over 85 employees and offices in Sheridan, Laramie, and Casper, Wyoming and Helena, Montana, we have an exceptional staff of professionally licensed engineers, hydrologists, surveyors, and geologists with a full complement of highly skilled field technicians, CADD and GIS specialists, and clerical staff. WWC prides itself on producing the highest quality of work for our clients in a time-and-cost-efficient manner.

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sources vary (direct precipitation, flooding, ground water, or a combination of contributors) as does the amount of time the soil stays saturated (from short seasonal saturation to permanent flooding). Perennial standing water or saturation of shallow soil horizons are obvious indications that an area has the hydrologic characteristics of a wetland.



Soil Type

Wetland soils are generally classified as hydric soils. The soils are typically poorly drained and develop characteristics such as distinct coloring and texture, due to continued saturation and oxygen deprivation. The soil profile in wetland areas is usually noticeably different than adjacent non-wetland areas. Heavy sedimentation and the presence of organic material are typically found in the upper regions of a wetlands profile. Significant mottling (dark colored clumping of soils) is also usually present throughout the soil profile. A significant presence of organic material and gleyed or abnormally dark soils are good indications that the area may be a wetland.

Plant Life

Due to the lack of adequate oxygen in the soils, wetland plants require special adaptations to temporarily survive without oxygen in their roots or the ability to transfer oxygen from the leaves or stem to the roots. Most inundated wetland species have flexible stems and leaves or have developed extensive spreading root systems to survive the constant flow and movement of water. Vegetative species existing in areas such as

wet meadows typically exhibit hollow triangular stems, "bushy" seed heads and a shallow root system. These factors alone don't qualify a wetland, but combined with a positive soil or hydrologic indicator provide sufficient evidence to support a wetland classification.

What are the options

It is important that the wetland and its extent are properly identified and the proper jurisdictional agency is notified. If the area is not under the jurisdiction of the COE, it typically falls under state jurisdiction. Identifying the proper jurisdictional agency is important as the rules and requirements vary from agency to agency. Land owners and project managers have a number of options at their disposal once a wetland is identified. The following are the most common approaches taken.

- ◆ Replacement/Relocation - Under most circumstances wetlands falling within a project area can be relocated or replaced. Agencies typically require that new wetland areas be of the same type and that the area be equal or greater than that of the replaced wetland.
- ◆ Incorporation - In some cases natural wetland areas can be incorporated into a project to enhance the surrounding area. Incorporation of wetlands in projects generally leads to increased public and agency support.
- ◆ Avoidance - If a wetland area is identified early in the project development process it can, in some cases, be advantageous to avoid the area. Disturbing or replacing wetlands can be a time consuming and costly permitting process which, in some cases, is best avoided.

No matter what the situation may be it is always beneficial to identify wetland areas early in the project development process. WWC's employees are well versed in wetland permitting, design and rehabilitation. Please feel free to contact our staff for consultation or additional information regarding this matter.