

WD-WB-10

2011

Wetlands Permitting for Construction and Maintenance of Ponds

Wetlands provide important functions and values, so all construction, development, and activities intending to impact a wetland area require a permit from the DES Wetlands Bureau. When evaluating a wetlands application, DES considers the necessity of the wetlands impact, the effectiveness of any proposed mitigation, and the individual significance of the particular wetlands resource in question.

Individuals often want to develop their wetlands into ponds. Ponds are constructed for many purposes, such as fire protection source water, irrigation for agriculture and livestock, wildlife habitat, aesthetic value and recreational use. An understanding of the location and type of wetland at issue will help provide an accurate picture of the site, and assist in determining the appropriate project impact classification for a wetlands permit.

Step 1: Identify the wetlands on your property

First, it is necessary to locate all wetland boundaries on your property before you design the pond. Wetlands can be identified in the field using these three indicators:

- Wetlands hydrology (the presence of water at or near the surface for at least part of the growing season).
- Hydric soils (the presence of poorly drained or very poorly drained soils).
- Wetlands vegetation (its prevalence and type).

For purposes of pond construction, it is necessary to establish the boundaries of the those wetlands with two types of soils: very poorly drained and poorly drained. For both major and minor impact projects, DES requires the wetlands to be identified by a certified wetlands scientist (see: <http://www.nh.gov/jtboard/wslist.htm>). This will be important for DES to classify your project.

If after locating the wetland boundaries on the property, you are able to design a dug pond that does not impact wetlands, surface waters, areas in or adjacent to municipally designated prime wetlands, or other jurisdictional areas, no DES permit is necessary for the construction of the pond. This includes doing maintenance dredging, in most cases, even if it is done when the water is low or has been “drawn down.” Exceptions to this are certain man-made non-tidal drainage ditches, culverts, catch basins and ponds that may be cleaned out when necessary to preserve their usefulness. As these are very specific cases, you should review RSA 482-A:3, IV (b) thoroughly before starting any activity.

Step 2: Does the pond's purpose match the site?

The topography, soils and hydrology on the property will affect how your pond functions and whether the type of pond you want will match the landscape and soil conditions. Consider the following requirements and design techniques for specific types of ponds.

Wildlife Ponds

As different animals require different habitats, the design of a wildlife pond involves more than a simple dug basin. Wildlife ponds have both shallow and deep areas.

Areas of water less than two feet deep allow emergent vegetation to grow and provide food, nesting, and cover sources for waterfowl, wading birds, reptiles, amphibians, and sometimes fish. To survive the winter, however, some animals require deepwater areas that do not freeze completely. A pond that contains medium and large rocks and roots, and is surrounded by diverse vegetation of various heights around and near the pond, will have a greater potential for diverse wildlife. Ponds that are irregular in shape have more shoreline and therefore a greater contact zone between wetland and upland habitats. An increased edge, or shoreline, provides more diverse habitat, greater numbers, and diversity of wildlife. Providing native shrub species, such as winterberry, high bush blueberry, silky or red-osier dogwood and speckled alder, around a large part of the pond will serve as both cover and a food source for wildlife. Providing live trees and leaving upright, dead trees or "snags" near the pond will offer food and nesting sites for additional species and increase habitat diversity. Varying the types and heights of vegetation and allowing dead materials to remain also facilitate a diverse range of animal species.

Fish Ponds

Ponds constructed to support native fish populations should contain deep areas with a minimum eight to ten feet in at least 25 percent to 50 percent of the pond area. The depth helps to ensure that wintertime dissolved oxygen will be adequate to support fish populations and that there will be unfrozen areas within the pond. Cold-water species, such as trout, require cool water temperatures year-round and thus may require more than ten feet of water depth. Be sure to check with the New Hampshire Fish and Game Department (see: www.wildlife.state.nh.us/) regarding its stocking rules before introducing fish into the pond.

Agricultural Pond

Agricultural ponds can be used to water livestock, irrigate crops, or to raise fish for commercial sale. Raising fish for commercial sale requires a commercial aquaculture license from NH Fish and Game. Construction of an agricultural pond may qualify as a minimum impact project, provided the project meets certain criteria. Applicants must obtain certification from their county conservation district and have established conservation plans. Impacts for the proposed pond are limited to wet meadow wetlands. While the area to be impacted must not include more than 15 percent very poorly drained soils nor exceed three acres, and may not be located in or adjacent to municipally designated prime wetlands (see: http://des.nh.gov/organization/divisions/water/wetlands/prime_wetlands.htm). To apply for a *Wetlands Minimum Impact Agriculture Projects permit*, please refer to: <http://dev.des.nh.gov/organization/divisions/water/wetlands/permit-min-impact-agric.htm>.

Fire Protection

A fire protection pond must meet several DES requirements, including a written statement from the town fire chief addressing the need for the fire pond. If a dry hydrant is to be installed, the location and configuration must be shown on the pond construction plans. It is important to provide an area to access the dry hydrant connection and intake for use and maintenance.

All Ponds Other than Wildlife Ponds

Unless a pond is meant to provide habitat for wildlife, many owners wish to control the growth of aquatic vegetation in the pond. The best way to help control this vegetation when designing the pond is to build most of the pond deeper than two feet and to build the inner slopes of the pond as steep as possible. This will limit the area of the pond that is suitable for growth of emergent vegetation. Steep slopes can create a safety hazard, so be sure to take appropriate precautions.

Step 3: Permitting Process

Classification of Project

DES classifies each project that seeks to impact a wetland or other jurisdictional area according to the severity of the proposed impact, and does so by assigning one of three labels: minimum, minor, or major. Some of the criteria used to determine the impact classification of pond projects are described below. For pond construction, it is necessary to establish the boundaries of the wetlands with very poorly drained soils and poorly drained soils, as that may affect DES's classification of the project.

Classification Related to Pond Projects with Impacts to Jurisdictional Areas		
Minimum Impact	Minor Impact	Major Impact
<ul style="list-style-type: none">o Project is not in or adjacent to prime wetlands.o Project is not in an area with recorded occurrences of threatened or endangered species or exemplary natural community.o Project is not located in any bog, sand dune or tidal wetland.		Any pond proposed in any bog, sand dune, and tidal wetland or within the undeveloped 100 feet of the highest observable tide-line, in or adjacent to prime wetlands, in an area with recorded occurrences of threatened or endangered species, or exemplary natural community.
Construction of a pond with less than 20,000 square feet	Disturbance of less than 20,000 square feet, that:	Disturbance of more than 20,000 square feet.

Minimization of Impacts

Design

To receive a permit from DES, the pond design needs to minimize or avoid impacts to wetlands and surface waters. Consider alternatives to constructing the proposed pond in the wettest portion of the property; do not construct the entire pond in a wetland. A pond should straddle the wetland boundary, so it is minimizing impacts by using some wetlands to provide the water and the uplands to provide more area.

Impounding water from a perennial stream to create a pond usually is generally not the least impacting alternative. This changes the stream flow and water quality of the pond's footprint as well as further downstream. The construction of a pond should pose minimal to no effect on stream flow or aquatic habitat. In addition, ponds constructed in streams require frequent maintenance because of the sediment that becomes trapped in the pond by flowing water.

Around Your Pond

It is important to leave an un-mowed vegetated buffer around as much of the pond's edge as possible, grass and other herbaceous vegetation, shrubs and trees for example. This benefits water quality - by stabilizing the slopes with strong roots thereby minimizing erosion - and

provides diverse habitat for food and cover. In addition, a wide vegetated buffer also reduces the inflow of nutrients, helping to control the growth of algae and undesired aquatic vegetation.

Construction

How a pond is constructed can have a significant impact on the existing wetlands. Therefore, it is important that the plans include a “construction sequence.” A construction sequence provides a description of when and how the work is done, including equipment access, proposed erosion control methods, duration of exposure to the disturbed area, and how stockpiled soil will be managed. To ensure the smallest impact possible, plan to work during low flow or dry conditions. Erosion controls must be installed before construction begins, and maintained until the area is stabilized.

Step 4: Application Processing

To minimize delays in the application review and approval process, make sure that you review “How to Make Your Application Complete” at:

<http://dev.des.nh.gov/organization/divisions/water/lrm/summary.htm>

Once received, you must post your wetlands permit in a conspicuous location at the site.

Step 5: Pond Maintenance

Once your pond is constructed, over time it may be necessary to maintain the designed depth by dredging. This also requires a wetlands permit, even if the dredging is done after the pond has been drained.

Invasive Plant Species

Consideration should also be given to avoiding conditions and practices that encourage the growth of invasive and exotic plant species. Any time soil is disturbed, there is potential for invasive plants to take over. Plants such as purple loosestrife, fanwort and Eurasian milfoil can be unwelcome additions to your new pond.

For more information, please contact the Wetlands Bureau at (603) 271-2147.