



# Cape Cod Cranberry Growers' Association

## GROWER ADVISORY

### Dam Maintenance, Safety and Liability

Water control structures are essential to a successful cranberry operation. Among these structures are dams, spillways, and conduits used to temporarily divert water flow, dikes and flumes, and structures fitting the more traditional definition of a dam, used to permanently detain water, creating the reservoirs required in the bog system. As old bogs are taken out of production, new bogs are constructed and new engineering techniques are adopted some existing water control structures will inevitably become obsolete, at least from the perspective of the grower. This advisory will discuss the responsibilities of the owner of the structure in terms of maintenance, safety and liability on both structures in-use and those that have been abandoned.



#### **Structures Controlled by The Dam Safety Regulations of The Department of Conservation and Recreation**

Currently the Department of Conservation and Recreation (DCR) defines a "Dam" as any artificial barrier, including its associated spillways and water conduits 25' or more in height or having the capacity for water storage of 50-acre feet\* or more. In addition, the Commissioner of the DCR has the authority to classify any structure as a dam which if breached could endanger property or public safety. Any structure greater than six feet in height or impounding more than 50 acre feet of water may also be classified as a dam. \*An acre-foot is equal to 43,560 cubic feet of water. \*

In 2002 the CCCGA negotiated with the state legislature to **exclude from the definition of "dam" any structures which are used to temporarily divert water on land in agricultural use. Also excluded from the associated regulations are any barrier classified as small and/or low hazard that is on land in agricultural use. Consequently, this advisory applies to only a small group of growers.** These exemptions were incorporated into the 2003 draft review regulations and should be approved in the near future effectively removing many water control structures on the bog from regulation under 302 CMR 10, Dam Safety.

#### **Dam Owner Liability**

302 CMR 10.13 states that the dam owner is responsible for damage to the property of others and any injuries resulting from the operation or failure of a dam. It also emphasizes that the DCR does not accept liability for dam failure even if the dam was permitted and approved by DCR, ultimately making it the owner's responsibility.

#### **Dam Registration**

The state has long kept a list of dams that are known in the commonwealth and has used this list to help keep track of inspections, which were the responsibility of the state. In addition, the state sent consultants to inspect all dams in 1998. It is important to note that neither of these activities constitute dam registration with the commonwealth. Dam registration is new to the commonwealth and is intended as a means to establish public record of the dam. The Office of Dam Safety expects 302 CMR 10 to be promulgated (enacted) in Fall of 2005 and expects to start mailing out "Dam Registration Forms" shortly thereafter. **These forms will not be mailed to growers whose dams fall under the exemption and exempt dams do not need to be registered.** Within 30 days of receipt of these forms the owner must return it completed along with the registration fee. If DCR approves the registration, a Certificate of Registration will be issued which must be filed with the county office of the Registry of Deeds within 14 days of receipt. In addition, a dam owner must notify DCR of the proposed transfer of legal title of the dam if it, with surrounding land, is to be sold.

#### **Dam Size and Hazard Classification**

To know if water control structures on your property will be exempt from the regulations of a defined dam, you must first understand how DCR classifies dams according to size and hazard class. [See Table 1 & 2] In addition, size and hazard classifications dictate inspection schedules and adherence to design criteria based on their potential for damage to life or property in the area downstream from the dam in the event of a failure. These classifications will be made by the commissioner of the DCR and will be noted on the owner's Certificate of Registration. Note that it may be necessary to periodically reclassify dams according to new and changing environmental conditions as well as additional development downstream.

For dams that are found in a series any upstream dam that is capable of causing failure in a downstream dam because of its flood wave will have the same hazard classification or higher as the downstream dam. If the dam will not cause failure of the downstream dam, the upstream dam may have a different classification from the downstream dam.

**Table 1**

Size Classification Table		
Category	Storage (acre-feet)	Height (feet)
No Jurisdiction	Not in excess of 15 feet (regardless of height)	Not in excess of 6 feet (regardless of storage)
Small	>=15 and <50	>=6 and <15
Intermediate	>= 50 and <1000	>=15 and <40
Large	>= 1000	>=40

**Table 2**

Hazard Potential Classification Table
<b>High Hazard (Class I)</b> Dams located where failure will likely cause loss of life and serious damage to homes, industrial or commercial facilities, important public utilities, main highways or railroads.
<b>Significant Hazard (Class II)</b> Dams located where failure may cause loss of life and damage homes, industrial or commercial facilities, secondary highways or railroads or cause interruption of use or service of relatively important facilities.
<b>Low Hazard (Class III)</b> Dams located where failure may cause minimal property damage to others. Loss of life is not expected.

**Dam Inspection Schedule**

The owner of the dam must periodically inspect all dams in accordance with this schedule. The time periods listed here [See Table 3] are the maximum time allowed between inspections. High and significant hazard dams in which the condition is deemed poor must be inspected and reported on every six months until the dam safety repairs are completed and the dam is found to be in satisfactory condition.

**Table 3**

Formal Inspection Frequency	
Hazard Potential	Inspection Frequency
Low	10 years
Significant	5 years
High	2 years

In the inspection process the owner must employ a registered professional engineer experienced in dam design. The inspection report completed by the engineer must be submitted in a sealed envelope. In addition, the owner must submit a statement of his or her intent to implement the recommendations of the engineer. If the owner fails to inspect the dam in the necessary time frame, the state may do so and charge the owner for the service.

When performing the inspections, engineers use a template addressing Embankment, Spillways, Concrete/Masonry Dams and Outlet Works which you can download by clicking here: [Inspection Checklist](#) (this will download an Excel file with multiple tabs for each; simply click on the appropriate tab to see the checklist criteria. Use the arrows on left to scroll through all tabs in file)



Click arrows to scroll left or right

### **Compliance With The Inspection**

Ultimately it is the commissioner of the DCR who determines whether a dam meets accepted safety standards. If the commissioner determines that the dam does not meet these safety standards and a threat to life or property exists, he can issue a certificate of non-compliance, which will be recorded with the registry of deeds in the county where the dam is located. If the dam meets safety requirements the owner will be issued a certificate of compliance. The commissioner of DCR has the authority to determine maximum allowable water elevations in reservoirs where dams have been determined to be unsafe. When the spillway capacity of the dam does not meet the necessary criteria, an impact analysis may be required by the owner.

### **Dam Repair, Alteration, Breach or Removal Permitting**

Any person proposing to construct, alter, breach, or remove a dam must file a notice of intent with the DCR so that a determination can be made as to whether a permit is required. It is important to note that normal maintenance does not require a permit. All permit applications must comply with DCR's standard design and construction criteria, 302 CMR 10.14, which is not covered in this advisory. For any of these proposed projects on a dam, a preliminary report and final design report must be filed with the application. Approval or denial to perform alterations on the dam will be issued within 60 days of receipt of the final design report and permit application. If the application is not approved a detailed explanation will be provided. The preliminary report and final report may be submitted as one document.

The information in this guide is provided by the Cape Cod Cranberry Growers' Association as a service to its members. The information represents our interpretation of the state requirements and by no means is intended to act as a substitute for reading and following the specific regulatory requirements.

Department of Conservation and Recreation's Dam  
Safety Rules and Regulations can be viewed at:

#### **302 CMR 10**

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### **For more information, please contact:**

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