Lake Outlet Dams

Outlet Dam Maintenance

DNR Waters owns and maintains more than 300 lake outlet dams in Minnesota. The primary goals for dam maintenance are to protect existing shoreland owners' rights and downstream owners' rights to water available within natural precipitation variations.

Maintenance involves ensuring that each dam is safe and functional, operates at the authorized runout elevation, and provides free-flowing conditions. Inspections of dams are conducted to ensure that the stop logs are at the authorized setting, to repair or replace damaged or worn equipment, and to remove obstructions as necessary.

Historical Operation of Outlet Dams

Most lake outlet dams, which were built in the 1930s to conserve water, generally feature several 5-foot-wide openings, called bays, with provisions to add and remove wooden stop logs. The runout level of a dam depended on the number of stop logs placed in each bay. Stop logs were managed by local observer/operators at each lake for 10-12 years after the dams were built. When precipitation suddenly (and unpredictably) returned to normal and above normal, flooding occurred around many lakes resulting in claims for damages by lakeshore property owners. It became apparent that stop log operation by local observers could not maintain uniform lake levels.

Thereafter, department engineers inspected each dam, examined the shore of the affected lake, and analyzed all water level records and other available information about each lake. A decision was then made to set an authorized stop log level for each dam. The goal was to set the stop logs at an elevation that would retain as much water as possible yet eliminate complaints of high water and the associated claims of damage from flooding. The authorized stop log setting is maintained by DNR Waters as the legal runout elevation.
Changing a Runout Elevation

It is the goal of DNR Waters to maintain existing flows and water level conditions at lakes with outlet dams to the maximum feasible extent. However, shoreline owners on a lake may have varied and differing opinions about “desirable” lake water levels. Proposals to change water levels are difficult to accomplish due to legal, environmental, and financial realities (see details in sidebar on page 1).

Potentially serious consequences may result from changing a runout elevation, such as navigation problems, shore erosion, water quality degradation, ice damage, and flooding. Changing a runout to solve a problem may create new problems that are unacceptable to other owners or to future owners. Regardless of the runout elevation of a lake, water levels will fluctuate because of variations in precipitation, which cannot be controlled.

Legal Considerations

Unauthorized tampering with set runouts is an ongoing problem at dams in Minnesota. According to Minnesota Statutes Chapter 103G, it is unlawful to change the runout elevation of a dam without prior permit authorization from the DNR. Persons found to be responsible for unauthorized changes to a dam are subject to criminal enforcement action. Along with the criminal action is the potential of lawsuits brought by aggrieved shoreland owners for flooding, lack of access, or downstream damages due to flow changes resulting from the illegal tampering.

The state cannot legally alter a stop log elevation in response to individual requests because of high or low water level conditions. To raise a runout would cause water to cover land it did not previously cover, which may be a “taking” of land without compensation. It is unconstitutional for government to take private property without due process. DNR Waters’ position and legal obligation is to maintain the authorized stop log setting and allow water levels to fluctuate in response to precipitation that falls within a lake’s watershed.

A formal permit process exists for those shoreland owners who may wish to pursue a permanent change in runout elevation (see sidebar, page 1). It must be clearly understood that no permit decision by the DNR is required until complete information is provided by the applicant(s). Costs associated with design, engineering, flowage easements, and structural improvements are the responsibility of the applicant(s), or a local governmental unit acting on behalf of the applicant(s).
Introduction

Minnesota Statutes, Section 103G.005, subdivision 14 defines "ordinary high water level" (OHWL) as the boundary of waterbasins, watercourses, public waters, and wetlands and:

(1) the OHWL is an elevation delineating the HIGHEST water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial;

(2) for watercourses, the OHWL is the elevation of the top of the bank of the channel; and

(3) for reservoirs and flowages, the OHWL is the operating elevation of the normal summer pool.

The OHWL is the landward extent of DNR jurisdiction over anyone who works in the bed of public waters or public waters wetlands (collectively referred to as public waters) - see Figure 1. It is commonly used in public waters work permits and by local zoning authorities to determine lot size, structure setback, and drainfield location and elevation. It is NOT:

- a runout elevation;
- an average water level;
- an extreme high water level;
- nor an arbitrary elevation set by an individual, group or agency.

It has no significance with respect to private ownership.

FIGURE 1
Note: The vegetation types identified above are common examples, but are not all inclusive.