

Great East Lake dam# 241.14 in Wakefield

- This dam is constructed across the dredged outlet channel of Great East Lake in the Salmon Falls River Watershed 5.3 miles upstream of Milton Mills
- Great East Lake is the source of the Salmon Falls River which forms the lower boundary between New Hampshire and Maine
- The dam is 68 ft long, 15 feet high concrete structure
- There are two 20.50 ft wide spillways with 2 feet of freeboard to the top of the dam
- There is one 6'w x 7'h sluice gate with stoplogs upstream of the gate
- The drainage area is 16 square miles
- The lakes surface areas is 1,800 acres
- The length of the impoundment is approximately 3.8 miles
- The downstream channel is a stone lined channel 1,800 feet long with a 13 foot bottom width and 10 feet high banks which was purportedly built with civil war labor
- It takes approximately 6.10 inches of runoff to fill the 3 foot drawdown
- One inch of runoff raises the lake by approximately 5.4 inches
- Snow samples are taken throughout the winter to help determine the estimate rate of refill
- If the dam were to fail the lake would drop by approximately 20 vertical feet

Great East Lake dam was originally constructed around 1825 for the Great Falls Manufacturing Company to supplement several other storage reservoirs on the Salmon Falls River. The purpose of these reservoirs was to furnish power to operate downstream mills in Rochester, Somersworth and other towns. These rights were sold to Public Service Company of N.H. around 1929 to supply water for hydroelectric generation along the Salmon Falls River. With taxes on storage reservoirs and dams for hydroelectric generation increasing, the Public Service Company of NH sold seven dams and reservoirs in NH and Maine to the State of N.H. for \$1 in 1963.

Since 1963 the Dam Bureau has maintained, owned and operated this dam. In 1972 the dam spillway was enlarged to increase the discharge capacity. In 1995 a pitched roof was placed on the gate house, 1996 racks were installed below the spillway to discourage jumping, and in 2001 the spillway was raised to exclude the use of flashboards.

Beginning around October 1st the level of Great East Lake is dropped, by request of the Association and with concurrence of N.H. Fish & Game to assist with fish spawning, as well as to provide flood control storage for winter and spring runoff. Throughout the winter snow samples are taken within the drainage basin to determine the potential amount of water in the snow pack which will run off. This information, as well rainfall, estimated monthly precipitation, historic information and other various forms of data, assist in helping to determining the operations necessary for refilling the lake. There are river gauges in the downstream reach where measurements are monitored daily. Throughout the year the dam operators average a weekly visit to this dam and during high flows visit the dam as much as necessary.

This dam is a Class B, significant hazard dam. It has been estimated that the breach flow from the failure of this dam would overtop Horn Pond Dam. Overtopping of Horn Pond dam and the resulting damage or possible failure would be considered "significant economic loss". Per the 1979 Army Corp of Engineers Phase I inspection report, the impact of failure of the dam at maximum pool was assessed and covered the reach extending from the dam to Milton Mills, 5.3 miles downstream. The analysis determined that failure of Great East Lake dam would likely result in an increase of 7.7 feet in the pond level at Horn Pond. An increase in depth of this magnitude would probably flood many of the cottages along the shore. Hazard to life resulting from the rise in water level should be minimal as it would rise at a rate of about one foot per hour. Between Horn Pond and the Town of Milton Mills 3.9 miles downstream, there are very few structures affected by any rise in stream stage. At Milton Mills the breach outflow plus spillway discharge would probably result in a river stage of about 7.2 feet which would appear to cause no damage.

Great East Lake Word Search

Q J D T H E T O N G U E D R A W D O W N
 C L A N Z S S R A S P I L L W A Y F D K
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ACTON	ANDERSONCOVE	ANDREWSISLAND	BOATING	BUZZELLCOVE
COPPBROOK	DAMOPERATOR	DAMSAFETY	DRAWDOWN	DROUGHT
FIRSTBASIN	FISHING	FOSSPOINT	GATE	GREATEAST
HORNECOVE	HORNESROCKS	HUNGRYPOINT	JODOBROOK	LAMBCHOPISLAND
LOONISLAND	MAINE	NELLYCOVE	NEWHAMPSHIRE	PARSONSPOINT
PRECIPITATION	RECREATION	ROGERSCOVE	ROGERSPOINT	SAILING
SCRIBNERBROOK	SECONDBASIN	SOUTHCOVE	SPILLWAY	SWIMMING
THENARROWS	THETONGUE	THIRDBASIN	TURNIPPATCH	WAKEFIELD
WILKINSPOINT				