

## OUR DAM AND HOW IT WORKS

The water level of Big Pond has always been a topic of discussion for the summer residents. 2010 was no exception. The extremely dry spring and summer produced lower water levels than we have become accustomed to. This led to the age old question “Are the boards in the dam?”

Big Pond gets its water from three sources; its tributaries, underwater springs and rainfall. The major tributaries are the Inlet, on the north shore of Camp Bonnie Brae, and Ice Tea Brook, just north of the Magovern property. Anyone who has visited these sites knows that they are hardly raging rivers. In fact there is little to no water entering the lake from these sources under normal conditions. Through the years I have heard that Big Pond is a “spring fed lake” and while swimming I have encountered many “cold spots”. However I have also heard limnologist (study of lakes and ponds) Ken Wagner state that underwater springs are a very minor source of water for a lake. Clearly rainfall, both directly into the pond and runoff from the immediate watershed is the determining factor in the water level of Big Pond. If there is still any doubt, check the increase in water level the day after a rain storm compared to the amount of rain that a newspaper or website lists for accumulation.

The dry, hot summer of 2010 made picking a nice week for vacation very easy. It also produced about 35% less rainfall in Western Massachusetts from April through August than average. This dry spell came on the heels of two very wet summers which produced a false sense of the normal water level.

The current dam at the end of the Creek was built by the Commonwealth of Massachusetts in 1974. It was constructed to produce water levels which adhere to the Land Court decision of 1939, which set the minimum and maximum heights for Big Pond. This Land Court case was brought by the residents of Big Pond against the Farmington River Water Power Company that wanted to raise the lake by FOUR FEET. The height of the spillway, the concrete that runs from where the water goes downstream to the far shore, is set at the maximum allowable height for the lake. The base of the area that the water goes over is set at the minimum level that the lake is allowed to be. Boards are added to slots in the raised structure to hold back the water. These two slots are then padlocked preventing the boards from being tampered with. Pretty low tech system isn't it?

Currently three boards make up the dam. The bottom board is 4” thick and 4” high. The top two are each 2” thick and 7” high. These are actual dimensions, not like today's fake lumber sizes. This brings the lake to a height 18” above the minimum allowed. The water level never dipped below the height of the top board in 2010. These boards can't be removed or altered without permission of the Otis Conservation Commission or the Department of Environmental Protection. Paul Adams, of the Department of Conservation and Recreation (DCR) that controls the dam, states that there has never been any tampering with this system.

For many years DCR has obtained permission from the Otis Conservation Commission to remove these boards for the winter. This drawdown, when successful, prevents shoreline damage particularly on the west and north sides of the pond. Board removal usually takes place in mid to late October. The Big Pond Association emails its members in advance of the drawdown. Board removal is an amazingly basic

operation. Two DCR employees drop ropes with hooks on them from above the boards and attempt to remove them one at a time. If the water is high, they are unable to raise the boards as the pressure of the water on them is too great. This is why it took until almost Thanksgiving 2009 to remove the last board. The boards are replaced in the dam just after ice out in the spring.

From ice out until mid-October, "the boards are in," and if the lake seems too low, pray for rain.