



## *Information Sheet*

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### **History of Project**

Jackfish and Murray Lakes' water levels have been regulated since 1932 by a control structure at the south end of Jackfish Lake. The Jackfish Lake Watershed Association Board (JLWAB) constructed the present structure in 1966. The control structure and downstream ditches were licensed under *The Water Rights Act* and allows the JLWAB to impound sufficient water to maintain a water level of 1737.0 feet (529.44 m).

### **Current Management Operations**

In 1984, *The Water Rights Act* was repealed and Sask Water was given the responsibility to regulate the use of water in Saskatchewan under *The Water Corporation Act*. This responsibility was transferred to the Saskatchewan Watershed Authority (Authority) on October 1, 2002. The Authority has several roles in the management of Jackfish and Murray Lakes. The first is to allocate the use of water from the lakes and within the watershed, approve the construction and use of works (equipment) that will use water, and deal with unapproved and unauthorized use of water or with landowners violating conditions of their approval. Another water management role is to collect data (streamflow, lake levels) and use the data to carry out planning studies (the last study was completed in 1996). The third role is to provide technical and administrative assistance to the JLWAB.

The JLWAB was set up to construct, operate and maintain projects to control and develop the water resources of Jackfish and Murray Lakes. The role of the JLWAB includes ensuring it operates the control structure within the conditions of the license, maintaining the works in good operating condition and dealing with issues that may impact its being able to receive full benefit from the rights obtained from its license.

Under the conditions of the license, the JLWAB is responsible for opening the gates of the control structure when water levels rise higher than the licensed level of 1737.0 feet (529.44 m). Furthermore, the license requires the JLWAB to supply water to landowners along Jackfish Creek downstream from the control structure. The downstream landowners have a right to water that would normally flow down the creek. When the control structure impounds water and prevents normal flow, the JLWAB is obligated under common law to supply water to these landowners. The amount diverted averages 150 cubic decametres annually. The impact to the lake from this release is to reduce the level by .06 of an inch.

A third situation when the gates are opened is to supply water to the Ducks Unlimited Canada (DUC) Jackfish Marsh Project. In 1988 the JLWAB entered into an agreement with DUC to supply up to 1000 cubic decametres per year from the lake to replenish water in its marsh. From a water management viewpoint, the 1000 cubic decametres was approximately the same volume of water that had previously been released to supply the downstream landowners. Prior to the construction of the DUC project, the entire marsh had to be filled before water would flow to the downstream landowners. With the DUC project in place, its dykes channelize the water through the marsh and water required to be released for the downstream landowners has been significantly reduced.

Under the agreement, if DUC takes water to replenish the marsh, it is responsible for releasing the water to the downstream landowners. The only qualifier is that when water quality from the marsh is not suitable for livestock purposes, the water will be released from the lake. Since DUC constructed the marsh project in 1990, the release has averaged 525 cubic decametres per year or approximately .2 of an inch per year. Relative to conditions previous to the marsh being constructed, there is no net loss of water from the lake because of the DUC project. The average release to the DUC marsh is lower than the agreed amount because, during past periods when the lakes were low, DUC voluntarily gave up all or a portion of its water allotment.

The impact of releases made when the water level is below 1737.0 feet is cumulative and will increase each year, until water has to be released because the water level has exceeded the 1737.0 foot elevation. June 1997 was the last time a release was made because the water level was above the 1737.0 foot elevation. The cumulative impact since June 1997 from the DUC and downstream landowners releases has been about 2720 cubic decametres or just over one inch.

The main player in determining water levels is nature itself. A water balance for the lakes reveals, on average, that runoff contributes 13.6 inches, precipitation contributes 15.2 inches, groundwater contributes 7.6 inches and summer inflows contribute 1.1 inches. On the other side of the equation, using an annual average, evaporation removes 32.6 inches, outflows when the lake is above its licensed level removes 4.1 inches and all uses remove .8 of an inch. Over the last few years both the runoff and precipitation levels have been below average and, as a result, the lakes have fallen to levels not seen for several generations. The recovery of water levels will depend on above normal precipitation levels, especially winter precipitation.

The use of water from the lakes by man provides many benefits to the surrounding environment. The water provided to the DUC marsh enhances the bio-diversity of the area, provides backflood irrigation for two landowners, attracts wildlife and waterfowl to the area and provides a venue for citizens to enjoy. The water supplied to the golf courses increases the recreational use of the area. The water provided to irrigators increases crop dependability and provides a local source of fresh vegetables. Water supplied to communities and cabin owners provides a source for drinking water and household use. Added together, all of the uses have a very small impact on lake levels but they do enhance the enjoyment of the lake by all who visit. Water management is about managing, developing and protecting the water resources. The water in Jackfish and Murray Lakes is a valuable resource that is available for all users to share in a responsible manner.

**For More Information Contact:**

The Jackfish Lake Watershed Association Board  
Box 1623  
North Battleford SK S9A 3W2  
Brad Pattinson - Phone: (306) 445-3534  
Fax: (306) 445-0679

Saskatchewan Watershed Authority  
North Battleford Regional Office  
402 Royal Bank Tower  
1101 - 101 Street  
North Battleford SK S9A 0Z5  
Phone: (306) 446-7450  
Fax: (306) 446-7461