

Ripple Effect #40

RED RIVER JAMMING

The Red River Basin is unusual because the Red River flows north into Canada and eventually into Hudson Bay. Consequently, the spring melt, and the eventual runoff, differs from many other rivers of North America.

Typically, the warmest temperatures and initial runoff begin in mid-March in the headwaters of the Red River, over northeast South Dakota and west central Minnesota. After this runoff enters Lake Traverse, it begins to move north. Weather conditions farther north or downstream, however, are usually very different from those of the headwater region, with melting and runoff yet to begin. Spring thaw occurs in mid-to late April in the northern portion of the Red River Basin.

Because of the valley's flat slope, the Red flows relatively slowly, allowing runoff to backfill into tributaries, particularly when the downstream river channel remains frozen. In addition, localized ice jams may impede the water flow, resulting in higher river levels.

Ice jams can have a major effect on Red river flooding causing sudden increases in water levels. River ice can cause property damage, erode stream banks, disrupt transportation and hydropower operations and make flood forecasting difficult.

Last year, the Province of Manitoba tried a new way to deal with these potentially hazardous ice jams by using an Amphibex AE-400 ice-breaking machine to mitigate ice jams. The \$524-thousand-dollar machine is used to prevent flooding and property damage by breaking up solid ice at locations where ice jams are likely to form by providing an open channel for the ice to run. It can also dislodge jams once they have formed.

The positive experience with the Amphibex machine last spring marked the beginning of a different approach to help manage the potential of flooding caused by ice jams.

The North Red Community Water Maintenance Inc., a corporation formed by the Rural Municipalities of St. Andrews and St. Clements and the City of Selkirk, owns and operates the Amphibex. Manitoba Water Stewardship paid for two-thirds of its cost, with the corporation paying the rest. The government can use the machine outside of the home municipalities when emergencies arise. The province has provided a conditional grant for the purchase of the Amphibex and has entered into a five-year operational agreement. The corporation and the province will cooperate on priority ice-breaking duties as the spring thaw progresses.

Better understanding and monitoring of the ice-jamming process emerged as a priority from a workshop held with municipalities and provincial officials. The province

established an extensive network using municipal volunteers to collect information on ice thickness for the Red River from Emerson to Lake Winnipeg to improve ice-jamming forecasts. Although ice jams are difficult to predict, data collected will help increase the understanding of this natural phenomenon and ensure the ice-breaking Amphibex is put to the best possible use.

On February 19, the Amphibex AE-400 started icebreaking activities at Breezy Point, north of Winnipeg, to prevent or break up ice jams. As part of the safety precautions, ice fishing shacks are being posted for early removal and warning signs are being installed at snowmobile entrances to the river advising users to exercise caution while icebreaking activities are underway.

The evaluation of the Amphibex is part of on-going efforts in the province to find effective ways to prevent or remove ice jams. Last year, the Amphibex was also deployed on the Whitemud, Saskatchewan and Waterhen rivers, successfully alleviating millions of dollars of property damage and significantly reducing flood fighting costs. To learn more about the Amphibex AE-400, go to the Manitoba Water Stewardship website at <http://www.gov.mb.ca/waterstewardship/>.

Until the next Ripple Effect,

The Red River Basin Commission (RRBC)

The RRBC is a grassroots organization that is a chartered not-for-profit corporation under the provisions of Manitoba, North Dakota, Minnesota, and South Dakota law. Our offices in Moorhead, MN and Winnipeg, MB can be reached at 218-291-0422 and 204-982-7254, or you can check out our website at www.redriverbasincommission.org.



[Amphibex AE-400](#)



The Ripple Effect

FROM THE
**Red River Basin
Commission**