

Setting Out 1

The mighty Sturgeon — it’s a laughable phrase today, but Robert Lema remembers a time when it was not.

Lema’s family has lived on the banks of the river for over a century, just a few kilometres from St. Albert. His calloused hands push aside branches as he walks down to the water. “In my father’s day, he used to come down here to water his cattle,” he says.

The river was a fun place, he says, a place to swim, canoe, and fish. At the time, the Sturgeon River was home to an abundance of fish, including, he claims, lake sturgeon, the river’s namesake. “By the beaver dams, there were so many fish that you could spear them.”

You won’t find sturgeon in the Sturgeon today, except where it joins the North Saskatchewan.¹ And the only person fishing in the river at Lema’s house these days is Gill, a decorative scarecrow made by Lema’s grandkids.

Lema, 68, steps into the river. The water creeps over his boots; 30 years ago, he claims, it would have almost reached his knees. “I figure in 20-to-30 years there won’t be any flow at all in the river at this point of the year,” he says.

You can hear stories like Lema's all along the river. Thirty years ago, Derril Butler, the Reeve of Lac Ste. Anne County, says he could drink from the river. Now, it is too polluted with sewage. Ten years ago, Roger Belley, parks co-ordinator for the City of St. Albert, could launch a canoe from the dock by St. Albert Place. Now, the dock is gone, and the river is clogged with storm-water sediment.

And that's a drop in the bucket, says local environmentalist Elke Blodgett. "In just one generation, we have wrecked this river," she says.

The Sturgeon isn't the only "wrecked" river out there. To the north, flow rates in the Athabasca River have plunged 30 per cent since 1970, despite greater flows from glaciers and a lack of major water withdrawals. To the south, summer flows in the South Saskatchewan River have dropped 84 per cent since the early 1900s, leaving fields and cities dry.²

That's just Alberta. Around the world, people are looking at their local rivers and coming to the same conclusion: that in little more than a century — a geological twinkle of an eye — humans have so altered rivers that they are no longer adequately performing many of their natural functions.³ The Colorado in the U.S. and the Yellow River in China are so drained by irrigation that they frequently run dry before reaching the sea. The Rio Grande, once the subject of song and source of drinking water for many, is now so polluted that it was declared America's most endangered river in 1993. Then there's the slow death of the Dead Sea, which has fallen 10 meters since 1900 due to mass diversions from the Jordan River.

Aquifers and lakes are in trouble too. Many have heard of the Ogallala aquifer, the water source for much of the U.S., and how its precipitous decline has had Texas on edge for years. Some know of Mexico City, which has sucked so much water from the ground beneath it that it has sank 20 meters; ironically, the city was also host to the 2006 World Water Forum. Lake Erie

now sports a notorious “dead zone” of blue-green algae, caused by pollution. Africa’s Lake Chad, once a source of the Nile River, is dropping by about 100 meters a year (you can wade across it in dry years, writes author Marq de Villiers, if you dodge the crocodiles). Most infamous of all is the Aral Sea. Soviet engineers practically sucked the sea dry to irrigate local farms, transforming the immense 1,075 cubic kilometre lake into a 54 cubic kilometres puddle in just 50 years and leaving some 28,000 square kilometres of salt-crust seabed exposed to the wind. Salt and other toxic dust now falls like snow throughout the region, according to observers, sending local cancer rates skyrocketing.⁴

The state of the Sturgeon is a lot like the state of water in the rest of the world: it’s in trouble, and so are we. There is a finite amount of water in the world but an infinite demand for it. This has been true since the creation of water on Earth about four billion years ago, but it’s only in the last few decades that North Americans have paid serious attention to it.⁵

The wake-up call for Alberta came in the late ‘90s. A drought, worse than any seen during the Dirty ‘30s, devastated the province, leaving reservoirs dry and farmer’s fields cracked and ruined. The province declared it a disaster and started work on a long-term plan to manage

What’s a cubic meter?		
This paper will use several units of measure that are tough to visualize. Here’s a chart that might help matters.		
1 cubic meter	1,000 litres of water	About six average bathtubs
2,500 cubic meters	2,500,000 litres of water	One Olympic-sized swimming pool (50 by 25 by 2 meters, according to FINA, the international body that governs amateur swimming)
1 cubic kilometre	1,000,000,000,000 litres of water	About 4,255 <i>Exxon Valdez</i> -sized oil tankers (235,000,000 litres each)

what looked like a major water crisis.⁶ “If we don’t do something,” warned then-environmental minister Lorne Taylor, “in 15 years or less from Edmonton south, we’re not going to have enough water for population growth, industrial expansion or agricultural growth.”⁷

The result was the Water for Life Strategy, launched by Taylor in November 2003. Citing population and economic growth combined with drought as a threat to the health of Alberta’s economy, ecosystems, and people, the Strategy called for a major shift in the way the province managed its water. “All Albertans must recognize that there are limits to the available water supply,” it declared, and must share responsibility in protecting it.⁸ It set out an ambitious plan to reform all aspects of the province’s water policy, aiming to have safe drinking water, healthy aquatic ecosystems, and reliable water supplies for business and industry, and to cut the province’s water use by 30 per cent by 2015. It would implement these reforms through a series of watershed planning and advisory councils, regional boards composed of local citizens and interest groups that would identify their neighbourhood’s water problems and figure out how to solve them.

Now, three years later, the plan seems to have dried up entirely. Look around the Sturgeon, and you don’t seem to find anything happening as a result of the Strategy. “It’s in the same bin as the Kyoto Protocol,” quipped one local resident, when asked about it.⁹ But the water crisis has not gone away, and ordinary folks like Robert Lema are looking at rivers like the Sturgeon and asking hard questions. What’s happening to this river? What’s being done about it? Will Water for Life protect the Sturgeon River for life?

Dangerous days lie ahead for the Sturgeon. Rising temperatures, drought, cities, farms, and gravel mines all threaten to drain it of the water that sustains its life. Water for Life, in its current form, won’t stop these threats, but it does point the way ahead. If Albertans want to do

something about the state of the Sturgeon, they will have to band together and make some tough choices about the way they live their lives. The Sturgeon and rivers like it have shaped the history of the West for centuries — now, they are poised to disappear, and could soon vanish unless they are protected today.

This work will look at the Alberta water crisis and the Water for Life Strategy from the perspective of the Sturgeon River. We'll determine where the problems are, what's being done about them, and what more needs to be done.

Chapters two and three introduce the Sturgeon River, taking an end-to-end look at its state and how it got that way. Chapters four through six take us down the Sturgeon as we examine the nature of the threats to the river. Roughly speaking, farms, factories and cities are the source of most of Alberta's man-made water woes, and will also be an integral part of their solution. We'll pay particular attention to issues of drinking water safety, irrigation, and oil extraction. The last chapter will look around the next bend at the future of Alberta's water. The future, as it turns out, will probably be pretty expensive, and will definitely involve a major shift in attitudes towards and use of water. That future may, or may not, include the Sturgeon River.

¹ Nelson and Paetz write that members of the Sandford Fleming expedition caught sturgeon weighing 10 kilograms in the Sturgeon River as late as 1872 (102). Biologist Daryl Watters has worked in the Edmonton office of Alberta Fish and Wildlife since 1983 and studied sturgeon in the North Saskatchewan region since the early '90s. "During the past 23 years, I have never heard of a sturgeon caught in the Sturgeon River," he says. "Given the uniqueness of the fish, I am quite confident that if a sturgeon had been caught in the Sturgeon River, I would have heard about it." He says that he gets reports of one or two sturgeons caught near the confluence of the North Saskatchewan and the Sturgeon every year, but has never heard of any in the Sturgeon River. A canoeist reported spotting a 15-inch sturgeon near St. Albert's Boudreau Bridge in June 1994, he says, but this was never confirmed. It would be "an extremely rare occurrence" for a sturgeon to show up in the river today, he adds.

² David Schindler and W.F. Donahue, "An Impending Water Crisis in Canada's Western Prairie Provinces," *Proceedings of the National Academy of Sciences* 103.19 (2006), 7211.

³ Sandra Postel and Brian Richter, *Rivers for Life*, Washington, D.C.: Island Press 2003, 2.

⁴ Marq de Villiers, *Water*, Toronto, Ont.: McClelland & Stewart 2003, 13, 47, 118–119, 183, 271–272, 289, 338–389.

⁵ V.I. Babkin and R.K. Klige, “The Hydrosphere,” in *World Water Resources at the Beginning of the 21st Century*, I.A. Shiklomanov and John C. Rodda, eds., Cambridge, U.K.: Cambridge University Press 2003, 10–12.

⁶ The 1998–2004 drought was officially declared a disaster on June 1, 2001 (Thompson, Graham). Hagan reported that the worst-hit region was located south of Grande Prairie, west of Highway 2, which in 2001 was drier than it ever had been in the preceding 130 years. Schindler and Donahue write that the 2004 drought was more severe than that of the Dirty Thirties.

⁷ Quoted in Olsen.

⁸ Alberta, *Water for Life: Alberta’s Strategy for Sustainability*, Edmonton, Alta.: Alberta Environment 2003, 5–6.

⁹ Derril Butler, Reeve of Lac Ste. Anne County, in-person interview by author, Onoway, Alta., 21 July 2005.