



From the
**Tip of an Iceberg
to My Tap Water**

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— *Diving the Arctic Underworld
& the St Lawrence River*

Dramatic scenery in the Great Canadian North. PREVIOUS PAGE: Ice forms into strange shapes in the Arctic.

Award-winning underwater cinematographer and documentary producer Nathalie Lasselin reflects upon her dive expeditions in the Arctic and her epic project to raise awareness about the state of fresh water in the St Lawrence River, closer to home in Montreal.

It was the end of April, and it was supposed to be the end of winter. But once again, I had to refrain from putting my thick winter coat on the very top shelf of my wardrobe. I was already looking for the first barbecue party with friends, but the north was calling me—the Great Canadian North—and how could I say no to going back to the floe edge? So, I packed my winter coat, my diving and filming gear, and headed to a small vil-



A polar bear is filmed by the author's Arctic expedition team.

lage in the remote north called Pond Inlet. It was one of the isolated hamlets where the only road was the sea of either water or ice.

The journey was a long one, taking three flights from my home town of Montreal and then embarking on a *qamutik* (a sled towed by a snowmobile) to reach the ice floe edge nearly 80km away.

The minute one sees

the endless white sheet of ice, punctuated by some iceberg raising from the frozen sea, the magic just starts. Each time, I arrive here, I must admit, I become a bit emotional, feeling the cold dry air on my face, hearing what I consider the real world of silence. The minute I step down from the sled. I feel like an astronaut putting her feet on a new planet—an ephemeral planet upon which the landscape is continuously changing, becoming one of the biggest warning signs of climate change on earth.

I was in the most harsh, yet pristine environment in which, each day, the cold, wind and sun carved the home of

amazing animals like polar bears, walrus and, of course, narwhals. With a bit of luck, patience and ancient Inuit knowledge of the territory, I would be the witness of a world one cannot tame. Each day, fellow divers and I drove on the ice, sometimes for hours, looking for the best seat in the house to enjoy the display of nature, animal watching and floe edge diving alongside magnificent icebergs.

Diving in the Arctic

When guiding tours or filming nature in the Arctic, I look for the best spot to dive. If I find a big crack that seems to be stable, or an iceberg that is somehow

anchored to the bottom of the ocean and the floe, then we test the edge to verify it is solid enough to support a safe entry into the water.

We geared up and attached ourselves onto a line. In case the current pushes us too far under the ice, or any other kind of problem, it was safer to be on a rope that does not limit our descent to the bottom, around 30m or so below.

As we descended in the -2°C water, we crossed below the ice upon which algae and marine life from the base of the food chain stick in wintertime. From the first second, the colors and shapes of the ice mesmerized us. As we dropped



View under the Arctic ice where one can witness the illumination of an iceberg's inner world

into the darkness of the ocean, we witnessed the illumination of the iceberg's inner world.

Reaching the bottom and looking up, we stood in front of a giant iceberg that would eventually melt as it made its way south to Newfoundland via what is called the Iceberg Alley. Some of them would simply melt in the salty water, while others would be mined, so vodka and beer could be produced with the unique, rich fresh water of the iceberg.

Each year, the Inuits and the scientific community restate the same eye openers: Temperatures are rising, ice is forming later in the season, and there are less animals. But still, if we can enjoy the Great North, maybe we will be moved to save it. Every time I dive there, I realize how privileged I am not only to see it

but to experience it, to feel it. So, I bring back images, films and stories to be shared on the big screen.

Diving the St Lawrence River

Heading back home, ready to share my Arctic iceberg stories, I flew over Montreal. My hometown is actually an island of two million people on the St Lawrence River. I looked down at the greenish-brown body of water and wondered what I could possibly find down there. It was certainly not the most sexy or inviting place to dive. In fact, it was such an uninviting thought, that I tried to put away that curious question, but I wanted an answer.

It was a bit crazy to want to traverse underwater, this formidable river, which had stopped even great Europeans

explorers. It was filled with deadly rapids, eight bridges, two tunnels, and occupied by heavy maritime traffic and recreational boating. But one day, I just couldn't help it anymore. I had to know what it would be like to be a single drop of water and follow that 70km journey alongside Montreal.

A daring undertaking

So, I started the Urban Water Odyssey Project. Not only it would be an underwater traverse that nobody had ever dared to try before, but it would be a scientific mission, and most importantly, it would be a project to raise awareness.

The melting glaciers and icebergs are the best distress signal of the Arctic, and more generally, of the environmental health of the planet. Unfortunately, so



Lasselin descends down the wall of a giant iceberg in Arctic waters



MJEE DE CARUFEL

Lasselín snowshoes across the floe edge in the Great Canadian North.

few of us can see what is actually happening; and well, as so often happens with human nature, if we do not see it, it does not quite exist. But it was what had awakened me and made me even more aware of the fresh water situation in the world.

The Great Lakes and the St Lawrence River hold nearly 25 percent of the earth's surface fresh water. On top of that, 50 percent of the population in Quebec drink it, and our waste water goes back into it after treatment.

Beyond the feeling that it was not looking so great to become a freshwater diver, I was going to face the most challenging dive of my life. Despite my experience diving deep caves and wrecks, I did not know what to expect and could not ask for advice from the dive community about this body of water, which I wanted to traverse. Most parts of it had not been dived by anybody. The rapids were supposedly undiv-

able, and they complicated the logistics. In order to be followed by support staff for the distance, I would need more than one boat and one team.

After a proof of concept of 21km—which I completed in six hours using a closed circuit rebreather, underwater scooter and surface communications, so I could figure out which azimuth (direction) to follow—I felt confident I could do the traverse. I was also supported by several manufacturers who were willing to help with redundancy of equipment and adapting my equipment for such an unconventional dive.

For those wondering what kind of equipment I used, the dive was done on a close circuit rebreather from AP Diving, plus a modified heated scrubber canister from Kiss. I used a Kirby Morgan mask and a bidirectional communication system. I also used a heated undergarment system by DTEK and an Aqualung Fusion drysuit.

The dive was monitored on a Shearwater computer, and I was propelled mainly by Submerge scooters with my own personal modified seat. Crossing the rapids was done on open circuit with an Apeks regulator.

An epic journey

Last September, in the last hot and sunny week of the summer, I started my epic journey of 70km in the St Lawrence River, scooting underwater for more than 30 hours. The entire expedition took over 40 hours, during which time I had to navigate in low visibility—most of the time, less than a meter—through a series of high currents, counter-currents and swirls. In the shallows, I had to escape the maritime traffic and try to avoid the aquatic plants that had grown too long over an overly hot summer, which had allowed them to grow all the way up to the surface.

During the last step of the



Fresh Water



Lasselín takes a selfie under the Arctic ice; Top view of an iceberg floating down to Newfoundland in Iceberg Alley (top)





BENEDICTE LASSELIN

For her dives in the St Lawrence River, Lasselin used a rebreather by AP Diving, a modified heated scrubber canister from Kiss; Kirby Morgan mask; bidirectional communication system; DTEK heated undergarment system and Aqualung Fusion drysuit; Shearwater computer; Submerge scooters with a modified seat. Crossing the rapids was done on open circuit with an Apeks regulator.

of fresh water in our region.

Through the project, I realized that we often look for adventures in exotic places on the other side of the world, and forget that right on our doorstep, there is still a lot to discover and document. Diving in our own surroundings often becomes diving with a purpose, putting ourselves in a position in which we can make a difference. It may not be the best warm blue waters with beautiful wrecks or the most colorful marine life, but in many cases, it may be the most precious body of water we have—the blue gold—our drinking water. ■

If you want to know more about the project and its next phase, including the publication of the *Urban Water Odyssey* book and film, please visit: Nathalielasselin.com.

project, after having traveled 350km, I took samples of the water and sediment at over 40 sites in order to find out how much emerging contaminants were in the water, such as pesticides, herbicides, drugs, etc. What I discovered was frightening: Not only did we need to clean up the river of debris of all sorts, including plastic, but we were now at a point where we had a big new invisible tasteless enemy—those emerging contaminants, of which we know only the tip of the iceberg about their negative effects on not only the river, but also on the marine life we eat, the water we drink, and ultimately, the state of our health.

Afterthoughts

My series of dives that weekend in the St Lawrence River was the most challenging project I had ever led in terms of the logistical, technical and mental aspects. I could not do a continuous dive for many reasons, including the high-traffic boating, which pushed me off my original plan. But with the help of my team—which included 24 people, five boats and 30 partners from ten countries—I was able to complete the traverse and reach the finish line. More importantly, the project was able to raise awareness in the general public about the state and use



BENEDICTE LASSELIN

Lasselin submerged in the murky low visibility of the St Lawrence River



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