

## *Manicouagan trips by Andrew S. Nuquist*

*Excerpts of emails from Andrew S. Nuquist (Vermont) to Rob Rutten (Netherlands) in April 2011, answering an enquiry whether he had kayaked the Manicouagan impact reservoir during the 1990s.*

Having led several canoe trips previously on eastern Canadian lakes, I was curious about the unusual circular lake shown on maps, but knew and could find nothing about it until reading an article about extinctions in the June, 1989, National Geographic that identified it as an impact crater. I was hooked, but it took five years and a lot of reading before I saw it for myself.

From August 8 until August 20, 1994, three of us in one E. M. White guide canoe and one Klepper kayak completed a clockwise circle around Ile René-Lavasseur, then unspoiled unlike your observations of rape by the Kruger Company. We had better weather than did you, and great camping sites because of the annual 60-65 foot change in water level that kept the shore clean and unvegetated. I believe concern about dam safety led to less annual variation in water level by the time of our 1998 visit and your 2007 visit. Our trip was shorter than yours, I estimate about 125 miles, because we never left the island shoreline except to cross and re-cross from Highway 389. Incidentally, we stumbled on some buildings, boats, and a dock at a turn-off signed "Manicouagan Expeditions" where we put in. We saw no one there to request parking permission either year, so we just parked out of the way, crossed our fingers, and paddled away. No problem. You may have parked a bit south of there where we saw a small put-in fitting your description. I was awe-struck by the size and geology of this significant impact structure of planetary significance. No need to comment more because you report a similar reaction, and probably have a better background to understand the rock formations which I noted but could not fully understand. I did collect rock samples which I gave to the University of Vermont Geology Department. They wished I had gotten closer to the center of the impact than 15 to 20 miles.

What a great excuse to return. From August 4 to August 13, 1998, seven of us poked around the east side of Ile René-Lavasseur and entered Memory Bay in anticipation of climbing six miles from the west side of the bay to Mont de Babel. No way. We struggled for hours climbing through tangled rocks and trees before facing reality and giving up. Later the Geology Department was satisfied with rock samples collected six miles from the center of impact, probably very similar to those at the summit of Mont de Babel. In 1998 we were wind bound twice, but were not on a fixed schedule. On this trip a hermit pulled out of a hidden cove of Memory Bay and allowed us to visit his hidden and comfortable wooden hut. He remembered seeing us paddle by the entrance of the bay in 1994. A lonely hermit. Is that a contradiction?

Before and after my trips to Manicouagan I spent many, many hours in the UVM library trying to better understand the nature and frequency of impacts, the risks, and the effects of a hit. One five kilometer asteroid hitting your backyard at 20 miles a second could ruin your whole day, I discovered. I remain amazed at how few people appreciate the importance of Manicouagan as a conspicuous example of a world-class impact structure.

I fail to understand how an impact of this size could not have caused mass extinctions, and wonder if scientists might have miss-dated either the impact date or the Triassic/Jurassic boundary date.

You mentioned fossils. I found some fossils that, given the explosive bang of an impact, appeared too old to possibly be located in the crater. My geologist contact at UVM consulted a colleague and concluded they had been transported from the area of the Yukon via glacial express and dropped into the crater convenient for me to pick up and puzzle over.