

For the last five years, almost every editor of the Canadian Caver has asked me to write an update on the Ottawa River Caves. Every year I have replied that we are almost finished with the survey and that in one more year I should be able to write a complete article on the caves and publish a final map. Every year I spend as much time as possible exploring and surveying the caves and the caves keep surprizing us with new passage! I certainly hope that next year we will finish, but for now, an update.

The Ottawa River Caves have been known to exist for a long time and several unidentified recreational scuba divers entered the first few meters in the late 1970s and early 1980s. My basic scuba instructor (Al Shames) and his friends first dived in the caves in 1984. In 1985 I joined the team and the first account of these caves was published in the Canadian Caver 18-2, fall 1986. At that time we had explored 553 meters of passage and were starting to survey it.

In the fall of 1986 we continued exploration and laid line through much more cave. In the Canadian Caver 19-1, spring 1987, I published an account of these explorations and a sketch map of the new passages. We had 1,335 meters of line surveyed and about 250 meters of additional unsurveyed line laid. Although neither Al nor I were certified cave divers at the time, we both had very extensive diving experience. Al was a SCUBA Master Instructor with many years experience and I was trained as a diving medicine specialist and had significant dry caving/diving experience. Never-the-less, we were not very efficient as we were largely working out ways to solve the many problems we faced in exploring and surveying this very large, complex, and completely flooded system. In the winter of 1988/89, Al and I (along with John Pollack) went to Florida and learned a great deal from the cave divers there. We dived with Lamar Hires for 8 days, saw some fantastic cave systems, were certified full cave divers, and greatly expanded our knowledge base. However, the problems we faced in the Ottawa River Caves were very different than those faced in the caves in Florida and we still had to develop most of our own solutions.

Exploration and surveying continued and in the Canadian Caver 22-1, spring 1990, I published an article on these explorations and a map with 2,535 meters surveyed, an additional 500 meters explored, and passage detail of some of the cave. The next few years we worked mainly on completing the passage detail and surveying the known cave. Some of the main difficulties with this project are that the caves are a five hour drive from Toronto, the visibility is at best 3 meters and usually less, the dive season starts in May or June and ends in Oct or Nov. The first and last few months the water is so cold that it is possible to do some exploration but surveying is very difficult. In addition, my job frequently makes it impossible for me to get to the caves in July or August and of course, the family wants a summer vacation! Never-the-less, work has steadily continued. The last few years an additional problem has been that passages with virtually no current

can only be surveyed when the river is in full flood while passages with excessive current can only be dived when the river is very low. As this stretch of the Ottawa River is entirely controlled by dams and as there does not seem to be any rime nor reason to the changes in the river level, we have to decide what area of the cave we are going to dive and work on after we get there.

In 1990 I dived with Al Shames, my wife Dana, Ian Mitchell, and Ric Browning. Ric had been cave diving in Florida for several years and soon became my main cave diving buddy. We mainly worked on passage detail in the sumps under the mainland and had a very productive year with a total of 66 hours spent surveying in the cave (all underwater of course). Unfortunately, 1990 was also the year that Al stopped cave diving. Nothing terribly interesting, just a change in activities away from diving.

In 1991 Dana helped with the survey, Ian moved on to other things part way through the year and Tony Ferguson joined the team. Dana, Ian, and Ric spent roughly equal time helping with the survey and we accumulated 47 hours surveying. We started to sort out the complex passages at the top end of sump 8, did passage detail through Larmond Loop, and started into Tony's Terrible Tummy Troubles (T4). I guess I had better explain that name. Tony and I did the first dive into T4. The passage was approximately 6 meters wide and almost completely filled with silt. There was no noticeable current and with only 10 to 50 cm of water, we spent much of our time forcing our way through the silt. I could see a bit as long as I was moving forward but as soon as I stopped (eg. to tie off the line), the visibility would immediately drop to zero. I would tie the knot by feel and head off in the direction the passage seemed to be heading and soon break back out into clear water. Tony of course saw nothing and was just following me in. When we turned around after laying approximately 100 meters of line, we both headed out in zero visibility. We had some problems on the way out, getting on the wrong side of the line, forcing our way through new piles of silt, regulator free flows, etc. When we got to the surface, Tony was in a terrible hurry to get back to the house and had explosive diarrhea. The next day he was too sick to dive so I did a solo dive and laid another 100 meters of line. At the end, the cave had degenerated into a series of rooms with no obvious way on and no current to give a clue as to where to go. This time it was my turn to rush out of the cave and make a made dash for the bathroom. I did not think too much about it until approximately one year later when I returned to T4 and surveyed the line. I again had to exit in a hurry. There just might be something in the silt that is not real friendly to the human digestive system! The name therefore stems from Tony's digestive distress as well as the fact that he had to dig a trough in the silt with his body to enable him to move through the passage!

When the river is in full flood and much of the peninsula is underwater, it is possible to enter the cave at the resurgence to sump 4 on the river's edge (need a boat to get there). You then have to fight the current up through sump 4 until you get to T4. In these very high water levels there is a small amount of current in T4

and we managed to complete the first half of the wall detail. We have been waiting for high river levels (during the summer) to finish the survey of this less than friendly passage for a couple of years now.

In 1991 we also finished the survey of Larmond Loop. Larmond Loop is a unique cave passage and deserves a more detailed description. It starts in the wall of sump #1 as a series of parallel rifts. The silt comes almost up to the roof between the rifts and again you have to force yourself through the silt to get to the next rift. After a while you drop into a bedding plane passage. This is followed by alternating rift and bedding plane passages until after 300 meters of passage, you finally surface in the bed of the river in less than 2 meters of water. It was very obvious that something different was happening. When we were surveying this passage the water temperature in the river was a balmy 21 degrees C. The water in the caves had cooled off a bit and was 17 degrees C. The water in the rift sections was 17+ degrees C but the water in the bedding plane sections of Larmond Loop was 7 to 8 degrees C! We were diving wet suits and we would freeze in the bedding planes and then hang around in the rift sections to warm up. In addition, when we went back into the passage several hours later, the water in the rift sections had cleared while the water in the bedding planes was still full of suspended silt from our earlier dive. The water in the rift sections seemed to be river water moving through the passage (slowly) while the water in the bedding planes was ground water and stationary.

In 1992 my wife Dana decided to give cave diving a break for a while and Ric was my main companion. Tony did some surveying and Marcus Buck even made it up for a few dives. We finally finished the exploration and survey of the top end of sumps 8 and 10 and moved on to survey Reekie's passage out under the Ottawa River. The feeling of being 500 meters up the passage, at a water depth of 25 ft with a solid rock roof over your head, listening to a motor boat go by can not really be described! In 1992 we also started to dig in the collapsed resurgence at the bottom end of Fitzpatrick Island. We have continued to dig periodically but it is unlikely we will get into the passage that must exist without using some "chemical cave maker"! We acquired a 3 horsepower outboard motor to use with Ric's 17 foot aluminium canoe and now had a great way to get ourselves and our gear to the dive sites. Exploration and survey of the caves under the islands could finally get under way. In 1992 we spent a total of 61 hours surveying in the Ottawa River Caves.

1993 was a cave diving disaster. The army decided that I would change jobs and spend most of July and August working at a cadet camp. To add insult to injury, they also decided that part of my new job was to work the Labourday weekend providing coverage for the Canadian International Airshow. Most of the cave diving season was shot. Never-the-less, Ric, Tony and I did managed to spend 17 hours surveying in the caves and Steve Worthington did some die traces. We also started the "logging operation".

The top entrances to all of the cave passages have been completely plugged

with logs. Most of the logs are from many years ago when the loggers used to float logs down the river to the mills. We are slowly removing the logs to allow access to the caves for diving, to increase the water flow in the caves to reduce the silt accumulation, and of course, there is nothing wrong with free firewood (actually very expensive when you consider the cost of gas, chainsaws, etc. but it is fun). We spent three long weekends removing logs from the extreme upstream end of sump 8 hoping to find the top end of T4. When all was said and done, we had 6 meters of new cave and yet another entrance into sump 8! It now seems that the water in T4 is coming from a swamp and has little to do with the river. In 1993 we also explored and surveyed Fitzpatrick Cave #1

1994 was a fabulous year for cave diving in the Ottawa River Caves. Ric and I had formed an efficient team and we spent 78 hours surveying (even though the army again decided I would spend three weeks working a cadet camp in the summer and work the Labourday weekend. We reexplored the passage upstream from the Reid Island resurgence (SQS cave divers from Montreal had started exploration in the late 1980's) and completed the exploration and survey of Lamarre passage. One hundred meters upstream from pool #1 on Reid Island is the place where Jean Lamarre met an untimely demise in 1988 (see the Canadian Caver 20-2, fall 1988). We also discovered the best (so far) passage in the cave, Dana's Gift. This passage is absolutely fantastic, approximately 3 by 5 meters in cross section, 30 ft deep at the downstream end and rising to 17 ft depth by Pool #1, with 0.5 to 1.5 knots of current and almost no silt. The name is in appreciation of my wife allowing me to spend so many weekends up at the caves that year. In the fall we had our most ambitious logging weekend yet. With the help of a generator and a 7000 lb electric capstan winch, we removed well over 100,000 lbs of logs from the downstream side of Alumet Pool and piled them up on the shore. When the river had dropped in 1995, we confirmed that we had an opening large enough for divers to get in and out. The current in this passage is incredibly strong, even with the entrance plugged with logs.

In the summer of 1994, Ric and I spent a fair amount of time trying to find a way through the log jam from the inside (having swum 500 meters upstream from the resurgence). On one occasion Ric had wedged himself on the upstream side of a desk sized rock when the current blew him and the rock down the passage taking the line and line reel with him! I had been trying to find a way through the logs off to Ric's left. When I crawled over to see how he was doing, he was gone, so too was the line. I was less than impressed as the permanent line was a couple of hundred feet away and all I had left to use as an emergency line was my 100 foot tape measure! I thought a few choice things about my "dive buddy" and had just tied on the tape and was starting back to where I thought the permanent line should be, through a very silty back eddy, when out of the silt came Ric, laying the line back to me! When we surfaced he explained what had happened. This passage can only be dived when the river is very low and even then, I have so far not been able to survey across the top end as the current is still too strong.

In 1995 we started the year off with another massive log removal weekend, this time working on the logs in Fitzpatrick Pool. We made a diver usable opening into Fitzpatrick Cave #2 and an entrance into the completely unsuspected Fitzpatrick Cave #3. We also completed the survey in the very complex passages in Fitzpatrick Cave #2. This is another cave where it is best to dive when the river is relatively low. Fitzpatrick Cave #3 has no obvious exit and as the downstream side of the island is all collapse features, we do not expect to find much passage. We completed some passage detail in the Reid Island Resurgence cave and encountered the most massive rock fall I have heard of in a cave. Because of the excessive current, we started to lay line up the right hand wall of the passage. Ric had laid a couple of hundred meters of line in June and in Sept we went back to survey it. After about 180 meters, the line went under a large rock. That sometimes happens. A rock the size of a desk had fallen on the line near the entrance to Reekie's passage during one winter. However, this was near no known entrances and during the summer. When we had fully checked it out, the rock that had fallen from the roof was approximately 0.6 by 5 by 30 meters and it had landed right on the line!!!. Apparently there had been a minor earth tremor in the area that summer and it must have triggered the rock fall. The line now runs over and around the several large pieces the rock broke into. Ric and I tend to spend as little time as possible in this section of the cave. I was very unhappy when I was wedging my body as far into the sides of the passage as possible with a tape measure to survey the passage details!

1995 was a quite productive year with 51 hours spent surveying. This is even more impressive when you realize that we were unable to dive one weekend in July due to illness, we lost one weekend in Nov due to weather, and we spent a long weekend diving up at Tobermory (finding a way into a potentially major new underwater cave and almost losing Ric in the process (see last Canadian Caver). In addition, I again had to work the Labourday weekend, we spent 10 days caving and cave diving on north Vancouver Island in Aug and we spent a lot of time fiddling with the outboard motor. We had made a drastic mistake and taken it in to be overhauled and serviced. Hopefully we have now got it running properly again!

The total surveyed length of the Ottawa River Caves is now just over 6.0 km. The passage under the mainland can be considered one cave with a length of 3,832 meters with potential for a few hundred more meters. We have dived for a total of 510 hours doing the survey and have done a cross-section every 5 meters. We know of only four unfinished, relatively small exploration/survey tasks. T4 can only be surveyed when the river is very high. The Reid Island Resurgence passage and the passage upstream from Alumet pool can be dived only when the river is very low and Fitzpatrick Cave #3 requires a relatively low river level. We are pursuing rumours of several more underwater caves in the general area but have not yet found anything else of note. The Ottawa River Caves have occupied the bulk of my recreational time for the past ten years and I would definitely like

to finish them this year and move on to another system!