

## The Asiatic Clam (*Corbicula fluminea*) found for first time in the Fraser River

by George P. Holm

On Sunday, July 31, 2011 I found some shells of the introduced Asian clam, *Corbicula fluminea* (Müller, 1774) at McDonald Beach Park in Richmond, British Columbia.



George Holm photos

McDonald Beach Park where Woods Island Marsh drains into the Fraser River. The clams were found between the end of the beached log and the river. Fraser River Park in Vancouver is directly across the river.

This park is one kilometer long and is located on the south shore of the north arm of the Fraser River, next to the Vancouver International Airport. It is composed of woodlands and marshes, and being near to the point where the Fraser River empties into the ocean, it has a sandy tidal beach that extends the length of the park. With trails in the woods for walking and cycling, and the entire length of the beach posted as an off-leash area where dogs can run and play, it has become a favorite place for me to take my dog, Zoe.

It was at the eastern end of the beach, at a place where Woods Island Marsh empties into the river, that I spotted a small clam, upside down on the sand. It looked at first glance to be a *Cardium*, but when I picked it up and turned it over I saw that it was a *C. fluminea*. There was still some tissue attached to the muscle scars so I was confident that it was not just a shell that a person walking their dog had dropped on the beach.

The small marsh estuary had become exposed by the receding tide, and as I looked about me on the sand, I found the shells of eleven more *C. fluminea*. I did not find any shells in the narrow channel that connects the marsh with



*Corbicula fluminea* collected on river bank at McDonald Beach Park. They range in size from 11 mm to 22 mm.



The channel that fills and drains the marsh (behind). The sieve is centered where the clams were collected. (Right) The 81 *C. fluminea* collected at that location. These are much more typical of the color and shape of the species than those found on the river bank.



the river, nor did I find any along the river bank on either side of the marsh estuary. I returned again the following day, and found that many more empty shells had become exposed on the estuary by the tide and along with them were four live ones. A woman who stopped to talk even dug out a live clam with her toe while I was showing her the shells I had found, making it five live *C. fluminea* for the day.

A week later I found a few dead *C. fluminea* shells on the shore at the Fraser River Park in Vancouver. This park is on the opposite river bank, directly across from where I found the clams at McDonald Beach.

The last time *C. fluminea* was found in British Columbia was in 2008 when they were discovered in two man-made lakes in the Sooke Watershed on Vancouver Island [The Asiatic Clam (*Corbicula fluminea*) 'Rediscovered' on Vancouver Island by Lisa Kirkendale and Jeremy Clare, *The Dredgings* Vol. 49 No. 1, 2009, pp. 6-8].

In the article, it is mentioned that "the oldest documented record of this species in North America, and the first record of occurrence in Canada, was based on dead shells collected from Nanaimo, BC in 1924 (Counts 1981)". "Later surveys in Nanaimo by the Field Museum of Natural History (Chicago) did not uncover *Corbicula fluminea* (Haas 1954)". Also mentioned in the article was "a confirmed observation of the species at the confluence of Scott Creek and the Coquitlam

River in the Lower Fraser Area (Maurice Coulter-Boisvert, pers. comm.)". I made a visual search of the area over two days in August and found no evidence to confirm that *C. fluminea* is still present in that particular location.

This was to be the extent of my article for this time, but then Melissa Frey, from the Royal BC Museum in Victoria, emailed that she was going to conduct talks and beach walks over two days at the White Rock Museum. This would be in conjunction with a traveling exhibit her museum has on display there about introduced species, and she would like to have some *C. fluminea*, as well as other introduced mollusk species from the Serpentine River and Boundary Bay for showing. She hoped I would be available to show her where they were. Melissa and her husband, David Robichaud, arrived via the first ferry from Victoria on Friday, August 26 and I met them at McDonald Beach. We quickly made our way to where I had found the clams, and we located some dead shells plus a few live ones on the sand. Melissa also dug some live clams from a square meter area in the sand. It was as we were returning to our cars, that we had the sheer good fortune to meet the lady who had dug out the clam with her toe. She told us that she had walked a short distance up the channel that drains the marsh and there she had seen many clams at the bottom of the pools. The same pools where I had not seen any clams? We could not go back since our next stop was the Serpentine River in Surrey, so I made a point of going back the following morning.

I checked the pools in the channel the next morning and now I understand why I had not previously seen any clams. The sediment at the bottom of the pools has to be stirred up before the clams become visible. I took off my shoes and waded in the water like the woman had done, and I could feel the clams under my feet. With a long handled sieve I'd brought, and using it, and my hands, I scooped out 81 clams from an area approximately one square meter in one of the pools. The size of these clams made the ones we had found on the river bank look small in comparison.

The infestation of *C. fluminea* was not minimal nor was it recent, as I had first surmised, It is severe and has been present for quite some time. The marsh itself is a protected restoration area and entry into it is not permitted. I will have to wait for permission to enter before I can discover just how severe the clam infestation might be.

Also, a man who had seen me scooping the clams from the pool, came back to tell me that he had just seen more shells on the sand further upriver. This man also would have liked to have taken some clams home with him to put in a small pond he has on his property. I strongly discouraged him from doing so.