

South Delta Le

Rain gardens help restore nature to urban Delta

[Adrian MacNair](#) / South Delta Leader

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Delta's urban environmental designer of streetscapes and natural areas, Sarah Howie, looks over rain garden plans with foreman Bryan Zabolotniuk at Brooke Elementary in North Delta. The garden will be the 18th installed by the municipality since 2004. Photograph By Adrian MacNair

Workers broke ground at Brooke Elementary in North Delta on Tuesday morning in preparation for the 18th rain garden in the municipality.

The existing rain gardens are scattered throughout North Delta, more than half of which are in front of public schools.

Delta's manager on the project, Sarah Howie, the Corp's urban environmental designer in streetscapes and natural areas, says the gardens are important for proper drainage of storm water.

"In a natural condition you have a forest and the whole ground is pervious and water can just go in anywhere," says Howie. "But then you come in and put roads and houses and suburbs and streets and all of a sudden 50 to 60 per cent of the area is impervious, so water can't get into the ground."

Creating rain gardens or green space or planting trees is about trying to increase the amount of water the environment is able to use, explains Howie.

A rain garden will collect storm water from the street or parking lot, cool and clean it, and allow it to run to the underground streams naturally.

"It's a lot better for fish habitat than dirty water going into a pipe and then straight into a stream," says Howie.

In urban areas where there are only storm sewers and no rain gardens, all that water has to go somewhere, and it's usually into local streams and creeks.



Jocelyn Lo, 12, and Carissa Logan, 12, plant berberis at Sunshine Hills Elementary school's rain garden in 2012. Photograph by Jacob Zinn/The Now

Gardens: A natural water filter

Deborah Jones of the Cougar Creek Streamkeepers says she was working on a streamside restoration site in 2004 when she noticed that after a rainfall the water level in the creek would go from a few centimetres to a raging torrent of polluted water.

"So, we realized this is a really serious problem for the creek," recalls Jones, who began reading up on the science of storm water.

She learned that untreated storm water is one of the most serious issues for urban and suburban creeks. Jones says it's not just about toxic chemicals being dumped down a drain. It's everything that gets washed into the sewers, from oil slicks and cigarette butts, to tire and brake dust. That can be problematic, particularly in Cougar Creek, which is fish bearing.

That filth eventually finds its way into the watershed. Jones says that even if people think they live far away from a water source, all of the rain water will eventually flow downhill, and likely reach a creek.

"The soils and the plants are filtering out the pollutants. They're making use of the water, instead of wasting it immediately, but also any excess water is going underground into the water table, and depending on how far that ground water is away from the creek, excess water could reach it in a few hours or days."

With a healthy number of green spaces or rain gardens, in the summer when there's a hot, dry streak, there's still an underground supply of water to keep the creek flowing.

A decade ago, Jones approached Delta with the concept of creating rain gardens throughout the community. Hugh Fraser, deputy director of engineering, had studied infiltration drainage when he was a university student, and decided to tackle the project.

The first garden was built at Cougar Canyon Elementary in 2006, and since that time there have been 16 added to North Delta.



Rain gardens could come to South Delta

"The Streamkeepers are great," says Howie. "They're actually kind of the instigators of the rain gardens and they've done a really good job of keeping us on track and getting us to build these things."

The rain gardens have been such a success that principals from schools in South Delta have asked about getting their own gardens installed. But while Howie says the idea is not out of the question, the streams in North Delta are salmon bearing and benefit more from the projects.

"We're trying to get the biggest bang for our buck and really focus on how can we benefit the most habitat."

Howie says rain gardens in Ladner could be tricky because of the high water table, while some of Tsawwassen's soils are quite hard.

Students in North Delta get an opportunity to learn about the rain gardens in an assembly, before having fun getting dirty by planting flowers and spreading wood chips for mulch.

"The mulch, not only does it keep the roots warm in winter and cool in summer and it keeps moisture in the garden, it also improves the infiltration rate because it keeps the soil from getting hard packed by rainfall," says Jones.

Where the gardens grow

1. Cougar Canyon Elementary, 11664 Lyon Rd (2006)
2. Chalmers Elementary, 11315 75th Ave (2009)
3. Annieville Elementary, 9240 112th St (2010)
4. Westview Drive at Cougar Creek (2010)
5. North Delta Evangelical Free Church, 11300 84th Ave (2010)
6. Seaquam Secondary, 11584 Lyon Rd (2011)
7. Burnsvie Secondary, 7658 112th St (2011)
8. Gibson Elementary, 11451 90th Ave (2011)
9. Heath Elementary, 11364 72nd Ave (2011)
10. Richardson School, 11339 83rd Ave (2011)
11. Delview Secondary, 9111 116th St (2012)
12. Fraser Falls, Delta Nature Reserve (2012)
13. Sunshine Hills, 11285 Bond Boulevard (2012)
14. Hellings Elementary, 11655 86th Ave (2013)
15. Jarvis Elementary, 7670 118th St (2013)
16. North Delta Secondary, 11447 82nd St (2013)
17. Tidewaters, River Road at Alex Fraser (2013)
18. Brooke Elementary, 8718 Delwood Dr (under construction 2014)