

CLASSROOM: Urban Tree Project engages students in surroundings



By Matt Perkins/Daily News staff
GateHouse News Service
Wed Jun 06, 2007, 12:19 PM EDT

Waltham -

The sun shone bright through the trees in front of Waltham High

School on a recent May morning, and ninth-graders Paula Le and Sudha Chigurupati stood around one with thin branches, measuring its height and trying to figure out its species.

For Le, it was easier to make that determination by looking at the tree's characteristics, rather than just make an assumption based on a picture and a guess along. "Usually, it's more helpful to go through all the details and decide on your own," she said.

The two girls eventually decided they were looking at a Trembling Aspen, named after its light-weight leaves that tremble in even a slight breeze, which they also determined was in generally good health, as its bark was not peeling and its leaves were a bright solid green.

"I'd say its in pretty fair condition," Le said. "It looks pretty healthy."

The examination was part of the Urban Street Tree Inventory Project, a current unit in the ninth-grade Real World Science class.

First implemented this year, the project is affiliated with the Urban Ecology Institute at Boston College, and is meant to engage the students at their environmental surroundings.

"Most kids are really out of touch with the world around them," said Mike Barnett, assistant professor of Science Education and Technology at BC's Lynch School of Education, who helped to organize the project, as well as the curriculum for Real World Science. "One of things we try to do is help the kids appreciate and come to understand the value of the world around them through an ecological lens."

During the project, students take the time in class to learn about the trees that surround the high school.

Then, at separate times, the students in all 17 classes examine pre-tagged trees for height, width, canopy size, shaded area, and surrounding intruders like telephone wires or pavement.

"We spent a good bit of time understanding the types of trees we'd be looking at," said Real World Science teacher Ernest Glynn. "Measuring trees is one thing, but why are we collecting this data?" he asked, "to do something proactive. It's a very good project."

The project, though, ultimately allows students to not only see what's already there, they can see what's not there. Using a software called City Green, students enter their data findings into the right fields on a computer, and are given an analysis that measure the ecological and monetary of the current trees coverage area.

The software, which Barnett says is commonly used by urban planners to design neighborhoods, projects a satellite image of the high school area, showing the students how much coverage the trees actually occupy. Once the students enter their measurements and data, they receive an analysis of how much money the trees may cost the environment by asking certain questions: Does this tree provide enough shade so that air conditioner use in the school could be limited?; Does the tree filter out enough air-pollutants, ultimately reducing the number of asthma-related visits to the hospital each year?

"It's much better than actually staying in class. I like the hands-on part of it," said Chigurupati on gathering

research outside of the school.

The software also produces an analysis of what would happen to the area if more trees were planted in certain areas. Would more trees remove more air pollutants or filter out storm water runoff through its roots and soil?

"Trees are very good filters of pollutants," Barnett added, "because they help keep the soil permeable so the water gets filtered through it, so the pollutants get removed before it gets off to sewer systems or whatever.

The kids get all of this information, then they can go back into here and ask, 'alright, where can we plant trees?' They can put the trees in(to the software), run the same analysis and see what the difference is."

While Waltham is now just starting to participate in this type of environmental research, several cities and communities nation-wide have already devised similar plans with strong goals in mind. Boston is planning to plant up to 100,000 trees within the next 13 years in hopes to increase the city's tree canopy from 29 to 35 percent.

New York City has plans to plant closer to 1 million trees within city limits by 2017, and Washington D.C. is also in the planning stages of a similar goal. Because Waltham is just starting out, though, the high school has yet to set a goal for its own tree-planting goals.

"This is not happening tomorrow," said Chuck Pirello, a former middle and high school science teacher who participated in the Urban Ecology Institute last summer, and helped organize the project. "I think that the current concrete plan is to at least have the kids get a great understanding of the environment that surrounds them."

Still, Pirello said the project could be a great way to spark students in the future to bring their ideas to city officials that may help allow students the opportunity to express any goals of planting their own trees around the school.

"Do you have a voice? Well, yea you have a voice, and it would be nice to get that voice into action," he said.

"Wouldn't that be an interesting concept and activity for the kids."

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