Environmental Science:

Rain Garden Project

Project Summary:

The Polk State College Science Department partners with the City of Winter Haven Natural Resource Management Division to involve students in hands-on, experiential community-based learning. Students enrolled in Introduction to Environmental Science participate in the rain garden project. City planners anticipate population growth during the coming decade and, with growth, an increased need for fresh water. The use of rain gardens to capture rainwater running off impermeable surfaces and enhance recharge of the local aquifer is central to the city's water resource management plan. Environmental Science students work with scientists from the Natural Resource Management Division to select appropriate sites for their rain gardens and plan the physical attributes of their garden such as the area needed to accommodate anticipated runoff. Horticulturalists from UF/IFAS help the students develop garden plans and select appropriate native plants for their gardens.

Students in Introduction to Environmental Science spent a Monday afternoon planting rain gardens around campus at Polk State Winter Haven. From left, Patrick Gustave, Pierre Milorme, Peter Valmont and Wislly Alexis work on a garden near the Administration Building.

Project Goals:
The overarching goal of the project is help students understand how scientists think and solve problems as well as to help students begin to appreciate the power of scientific literacy. This is supported by the following goals:

- Use experiential and place-based learning to engage students in an introductory science class. This is a local problem that will directly affect these student' quality of life.
- Work with local scientists who will model problem-solving skills in the field.
- Engage students in teamwork and conversations to help them internalize class concepts and learn to solve problems cooperatively.
- Use community-based learning to encourage students to understand the need for civic engagement as well as the need environmental ethics.

Students Andy Wooddell (L) and Frank Portlock were among two-dozen students who recently planted two rain gardens on Polk State's Winter Haven campus.

Outcomes:
Students' perception of the nature of science changed during the project. The local nature of the project promoted conversations about local issues and the utility of scientific literacy in solving local problems. Place-based, hands-on, and collaborative learning opportunities helped students internalized class concepts through application and conversations Students placed an emphasis upon the value of working with local scientists. Students said that working with "real-life scientists" who had experience with local resource management gave meaning to the project. They began to understand how scientists think about and approach problems. The students said that this encouraged them to think about the sustainability of water resources and how they could contribute to creating sustainable water resources. Students reported that the community-based learning focus of the project gave a purpose to the project. It made them feel good to give back to their community and it helped them to understand the importance of civic involvement. Community-based learning added an ethical dimension to the project. Students began to think about the power of a water ethic and the need for a water ethic.

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