

Table 1. Summary of use by GVSU students and faculty of ravines, campus-wide BMP's, and potential future use of constructed wetlands.

Course Name	Instructor (Department affiliation)	Historic Use	Future Use	Approx # of students in last 10 years	Details
Plant Structure and Function	Dietrich (BIO)	X	X	140	Ravines visited each winter
Watershed and Wetland Management	MacDonald (NRM)	X	X	320	GVSU BMP's used as examples of both good and bad historic attempts to control stormwater.
Terrestrial Ecosystem Ecology; Principles of Soil Science; Environmental Pollution	Rueth (NRM)	X	X	400	Ravines and sites on campus used in each class as working examples.
Aquatic Plants; Plant Identification and Natural History; Plants in the World	Hollister (BIO)	X	X	280	Wetlands and ravines are used to collect specimens
Research	Ostrow (BIO)	X	X		Ravines used as habitat to collect southern flying squirrels.
Plant Ecology; Plants and Fungi, Plant Structure and Function	Greer (BIO)	X	X	160	Ravines and wetlands used for sample collection.
Wildlife Management; Field Zoology	Keenlance (NRM)	X	X	80	Ravines and wetlands used for collection of native taxa.
Great Lakes and Water Resources; Watershed and Wetland Management; Research	Rediske (AWRI)	X	X	110	Ravines and BMP's on campus used for both field trips and lectures. Interested in conducting pre- and post wetland monitoring.
Environmental Geology; Exploring the Earth; Sedimentation-Stratigraphy; <i>Middle school field trips</i>	Videtich (GEO)	X	X	300	Ravines are used for field trips and laboratories for calculating rates of erosion. <i>Middle school students from inner city locations explored the ravines and looked at mechanisms to reduce stormwater erosion and runoff.</i>
General Ecology; Animal Behavior; <i>K-8 field trips</i>	Hunt; Dunn; Schontz; Lombardo; Hollister; Woller-Skar (All BIO)	X	X	3000	Ravines and other locations on campus are used in General Ecology, a class which has been taught at GVSU since 1974 and is a required course for all majors. Presently, 300+ students visit the ravines multiple times per year. Total estimated student visits ca. 10,000.
Environmental Geology; Exploring the Earth; Geology and the Environment; Selected Topics in the Geological Sciences; Geomorphology; Research	Wampler (GEO)	X	X	600	Extensive research with students, 8 undergraduate students, 1 summer scholar. Initial research on campus runoff, sustainability, and ravine erosion began in 2006 with a Student Summer Scholar project. This work resulted in a more extensive research program funded by GVSU's Facilities. In December 2006, James Moyer, GVSU Facilities, approved a greatly expanded monitoring plan. The Facilities grant was approximately \$53,000 for additional monitoring sites; a www-based monitoring site; students employees; and release time for me, during fall 2007, to work on the project. At least eight undergraduate students have helped me collect stream flow data and geochemical data, providing them with valuable field experience. This experience has assisted several students in obtaining jobs in the environmental consulting industry. As part of my work with sustainability at GVSU, I also coordinate an adhoc committee called the Storm Water Advisory Group (SWAG) with faculty from several departments. Recommendations from this group have resulted in a storm water plan for campus and changes to the new construction taking place at GVSU.
Physical Geography, Landscape Analysis; Environmental Studies and Sustainability; Environmental Problem	Lioubimtseva (GPY)	X	X	330	Used in laboratory exercises to assess slope soils, water analyses, runoff, aesthetics, and landscape ecology.
Geological Field Methods + Research ; Geology and Environment	Webber (GEO)	X	X	49	Ravine geologic and geomorphic mapping projects presented at multiple meetings in multiple years as part of Geological Field Methods.
Great Lakes and Water Resources; Stream Ecology; Environmental Science; Aquatic Ecosystem Management; Research	Snyder (BIO)	X	X	719	Multiple classes examine issues in stormwater management and campus-wide BMP's. Additional laboratory exercises include quantification of nutrient uptake rates and transient storage zone size. Research was conducted to quantify the insect community and nutrient dynamics of the ravine streams in the summer of 2007 with 4 undergraduate students. Results were presented at national/international conferences.
32 classes	17 faculty (5 departments)			6488 (approximate) undergraduate students in the last 10 years	

Bold = undergraduate/graduate research

Italics = K-12 education

BIO = Biology, NRM = Natural Resources Management, AWRI = Annis Water Resources Institute, GEO = Geology, GPY = Geography and Planning