

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Climate Change

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%		40%	
111	Conservation and Efficient Use of Water	20%		20%	
112	Watershed Protection and Management	20%		20%	
124	Urban Forestry	25%		0%	
141	Air Resource Protection and Management	5%		0%	
806	Youth Development	10%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	7.2	0.0	1.0	0.0
Actual Paid Professional	2.4	0.0	1.8	0.0
Actual Volunteer	22.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
86805	0	38426	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
86805	0	140125	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
86631	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. Developed and distributed informational materials such as fact sheets and brochures regarding changes in natural resources and environmental issues in the District of Columbia.
2. Developed STEM program to engage 4-H youth in science, technology, mathematics, and environmental studies activities.
3. Soil testing in environmental laboratory.
4. Conducted environmental workshops and seminars on the effect of environmental degradation and water quality issues.
5. Hosted 175 DC Public School teachers and students for an Urban Agricultural Fair at Muirkirk Research Farm for demonstrations, mini-lectures and hands-on experiences in water quality; sustainable agriculture; weather technology; marine science; urban gardening; urban forestry; and environmental sustainability.

2. Brief description of the target audience

- 1) District of Columbia residents
- 2) DC Public School Teachers
- 3) Youth, Grades K-12
- 4) Urban gardeners
- 5) Storm and waste water operators
- 6) Landscapers
- 7) Nursery Owners

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1334	2222	835	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of articles published

Year	Actual
2012	36

Output #2

Output Measure

- Number of fact sheets published

Year	Actual
2012	9

Output #3

Output Measure

- Number of newsletter published

Year	Actual
2012	11

Output #4

Output Measure

- Number of workshops, demonstrations and technical assistance implemented.

Year	Actual
2012	106

Output #5

Output Measure

- Number of research projects completed

Year	Actual
2012	0

Output #6

Output Measure

- Number of soil, air and water samples test results

Year	Actual
2012	9

Output #7

Output Measure

- Number of informational materials distributed

Year	Actual
2012	5691

Output #8

Output Measure

- Number of conference presentations

Year	Actual
2012	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of program participants that will become more environmentally aware due to new knowledge from informational materials provided and workshop presentations
2	Percent of program participants that will implement new environmental skills to improve natural resources and the environment
3	Percent of soil, air, and water samples meeting EPA standards after implementation of research project.

Outcome #1

1. Outcome Measures

Percent of program participants that will become more environmentally aware due to new knowledge from informational materials provided and workshop presentations

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	94

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Urban Gardening and Forestry Outreach program provides District residents with information and technical assistance for raising vegetable gardens with special consideration given to the challenges of food production in an urban environment. The forestry program's primary focus is on outreach and education about invasive plants and their effects on the ecosystem. Residents are educated about the concept of invasive species, the invasive plants that are established in the District as well as those incoming invasives that are not yet established, effective abatement techniques, and native plants that can be used in lieu of invasive plants. There is also a public demand for unbiased horticultural and IPM education for sustainable landscapes and gardens and conservation of natural resources.

What has been done

Activities for fiscal year 2012 include offering workshops/classes/trainings; invasive abatement events; site visits; demonstrations; development of curriculum, outreach, and educational materials; and providing technical assistance to District residents through phone, email, and in-person consultations.

-Conducted 77 site visits reaching all eight wards of the District

-Launched a web-based mapping application with invasive plant information on the UDC website (invasive.udc.edu)

-Held 19 classes/workshops/trainings

a. Taught invasive plant classes for the DC Master Gardeners, City Year Volunteers, Dumbarton Oak Park/Rock Creek Park Weed Warriors, and Casey Trees? Citizen Foresters

b. Co-taught six cohorts of top ten invasives to National Park Service Employees and volunteers at a DC Cooperative Weed Management Area Training

c. Taught Introduction to Common Garden Pests and Organic Pest Control at Rooting DC (an

- d. Taught Let's Get Growing to the Library of Congress, to three groups at the Washington Senior Wellness Center, and to Matthew Memorial teachers
- e. Hosted two workshops on campus, a soils workshop and a Backyard Habitats workshop, the latter of which culminated in the installation of two native plant demonstration gardens along Van Ness Street
- Co-led five invasive removal events
- Sat on the steering committee for the newly formed DC Cooperative Weed Management Area (DC-CWMA)
- Nine samples collected (wards 1, 2, 3, 4, 5 and 8)
- Maintained three demonstration gardens, including the installation of a new demonstration garden at Matthew Memorial Baptist Church

Results

- Mary Farrah presented with the Association of Natural Resource Extension Professionals' Silver Award for Long Publications for Plant Invaders in the District of Columbia
 - Disseminated over 21,753 copies of the Plant Invader booklets to all eight wards in the District
 - Reached 1,278 direct contacts, including 284 youths
 - Invasive removal events resulted in:
 - a. 95 people volunteering over 285 hours
 - b. Volunteer hours valued at a total of \$9,579 (www.independentsector.org)
 - c. Mitigated invasive weeds on 10.79 acres of land
 - d. Volunteers represented DC Master Gardeners, City Year, Student Conservation Alliance, Casey Trees Citizen Foresters, and incoming freshman from George Washington University learned experientially about invasive plants, changing their knowledge, behavior, and the condition on the lands they worked on.
- Evaluation results
- For the invasive plant program, a survey was developed to assess change in knowledge and predict change in behavior and condition as a result of the class. Of the 108 people surveyed:
- 13% reported that they learned about invasive species for the first time during the class
 - 100% felt the class was successful in explaining what makes a species invasive, and that they had a better understanding of invasive species as a result of the class
 - 85% learned that a species they were already familiar with was actually an invasive species
 - 99% reported that they were going to share the information they learned about invasive species with others
 - 94% said they would not purposefully install an invasive plant into their landscape
 - 95% said if given the opportunity that they would spend time removing invasive plants
 - Class participants were asked to list the invasive species they'd learned about as a result of attending the class. On average, participants learned about five new invasive plants. In total, thirty-nine different invasive species were learned as a result of the class.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
124	Urban Forestry

141 Air Resource Protection and Management
806 Youth Development

Outcome #2

1. Outcome Measures

Percent of program participants that will implement new environmental skills to improve natural resources and the environment

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Invasive plants are recognized as one of the greatest threats to wildlife and natural ecosystems in North America. In the last several centuries many non-native plants have been introduced to the DC area, a city with large forested parks. Invasive plant species successfully compete with native plants for limited natural resources such as water, sunlight, nutrients, and habitat. They crowd out and displace desirable native vegetation, thereby reducing biodiversity and establishing monocultures. This upset to the ecological balance is felt throughout the ecosystem as those species whose diet and habitat consist of native vegetation can no longer survive in that locale. Some of the long-term implications of altering the ecosystem on such a large scale are forests that aren't able to regenerate, pollution of waterways, and the listing of species as endangered or threatened.

From consuming produce that is tastier and higher in nutritional value to decreasing CO2 emissions by harvesting as locally as your backyard, District residents are all "a buzz" about the many benefits of local food production. Urban agriculture has caught on, and unlike large-scale intensive agriculture operations, urban agriculture utilizes comparatively smaller spaces and focuses on diversified, edible crops. Many residents already subsidize what they buy at the grocery store through community garden plots and by growing in their backyards, but are in need of technical assistance with issues ranging from cultivar selection and planting dates to fertilizing, soil contamination, and integrated pest management. Yet, other District residents don't even have access to a grocery store, let alone yard space or a community garden. The Cooperative Extension Service works with District residents on both ends of the spectrum. We provide technical assistance the established gardeners, and also help the up and coming gardeners start their own gardens by providing free consultation, connecting them with available resources,

providing technical assistance, and when called for by helping them dig in?

What has been done

Activities for fiscal year 2012 include offering workshops/classes/trainings; invasive abatement events; site visits; demonstrations; development of curriculum, outreach, and educational materials; and providing technical assistance to District residents through phone, email, and in-person consultations.

- Conducted 77 site visits reaching all eight wards of the District
- Launched a web-based mapping application with invasive plant information on the UDC website (invasive.udc.edu)
- Held 19 classes/workshops/trainings
 - a. Taught invasive plant classes for the DC Master Gardeners, City Year Volunteers, Dumbarton Oak Park/Rock Creek Park Weed Warriors, and Casey Trees Citizen Foresters
 - b. Co-taught six cohorts of top ten invasives to National Park Service Employees and volunteers at a DC Cooperative Weed Management Area Training
 - c. Taught Introduction to Common Garden Pests and Organic Pest Control at Rooting DC (an urban gardening forum) and to a UDC Professional Science Master's communications class
 - d. Taught Let's Get Growing to the Library of Congress, to three groups at the Washington Senior Wellness Center, and to Matthew Memorial teachers
 - e. Hosted two workshops on campus, a soils workshop and a Backyard Habitats workshop, the latter of which culminated in the installation of two native plant demonstration gardens along Van Ness Street
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Evaluation results

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806	Youth Development

Outcome #3

1. Outcome Measures

Percent of soil, air, and water samples meeting EPA standards after implementation of research project.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Currently, the Station is seeking research proposals from faculty to support climate change initiatives. With the recent hire of an Assistant to the Dean, who will also be responsible for assisting with climate change initiatives for our land-grant programs in research and extension, we expect that we will be able to begin work in the next fiscal year.

The Extension Agent who was responsible for Water Quality Education Programs is no longer with the Cooperative Extension Service. The employee's position was abolished as the result of mandatory right-sizing which affected all units across the University.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This program requires further strengthening and development. We were able to accomplish some of our goals; however, there is still much work to be done via continuous improvement. The strongest element of this program has been our outreach efforts as follows:

1. Developed and distributed informational materials such as fact sheets and brochures regarding changes in natural resources and environmental issues in the District of Columbia.
2. Developed STEM program to engage 4-H youth in science, technology, mathematics, and environmental studies activities.
3. Soil testing in environmental laboratory.
4. Conducted environmental workshops and seminars on the effect of environmental degradation and water quality issues.
5. Hosted 175 DC Public School teachers and students for an Urban Agricultural Fair at Muirkirk Research Farm for demonstrations, mini-lectures and hands-on experiences in water quality; sustainable agriculture; weather technology; marine science; urban gardening; urban forestry; and environmental sustainability.

Key Items of Evaluation