

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

SOILS AND ENVIRONMENTAL QUALITY

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%	0%	0%	0%
102	Soil, Plant, Water, Nutrient Relationships	10%	0%	0%	0%
104	Protect Soil from Harmful Effects of Natural Elements	10%	0%	0%	0%
112	Watershed Protection and Management	10%	0%	0%	0%
133	Pollution Prevention and Mitigation	10%	0%	0%	0%
141	Air Resource Protection and Management	10%	0%	0%	0%
403	Waste Disposal, Recycling, and Reuse	10%	0%	0%	0%
903	Communication, Education, and Information Delivery	30%	0%	0%	0%
	Total	100%	0%	0%	0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	4.7	0.2	17.9	1.0
Actual	0.0	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
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

NOTE: ALL ACTIVITY PREVIOUSLY ASSOCIATED WITH THIS PLANNED PROGRAM IS NOW BEING REPORTED IN THE FOLLOWING PLANNED PROGRAMS.

PLANNED PROGRAM 1: GLOBAL FOOD SECURITY AND HUNGER

PLANNED PROGRAM 7: CLIMATE CHANGE

PLEASE DISREGARD ALL INFORMATION CONTAINED IN THE "SOILS AND ENVIRONMENTAL QUALITY" PLANNED PROGRAM.

2. Brief description of the target audience

Crop producers, poultry growers, state agencies (DDA, DNREC), federal agencies (USDA, USGS, EPA, NSF, DOE), environmental groups, peer scientists, industries with soil contamination problems, and commodity groups.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	2500	5000	400	800
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2010

Plan: 0

Actual: {No Data}

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	4	32	
Actual	4	32	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Competitive Grants Submitted

Year	Target	Actual
2010	28	0

Output #2

Output Measure

- Number of Competitive Grants Awarded

Year	Target	Actual
2010	9	0

Output #3

Output Measure

- Number of Research Projects Completed

Year	Target	Actual
2010	5	0

Output #4

Output Measure

- Number of Undergraduate Researchers

Year	Target	Actual
2010	10	0

Output #5

Output Measure

- Number of M.S. Graduate Students

Year	Target	Actual
2010	6	0

Output #6

Output Measure

- Number of Ph.D. Graduate Students

Year	Target	Actual
2010	18	0

Output #7

Output Measure

- Number of Post-doctoral Research Associates

Year	Target	Actual
2010	4	0

Output #8

Output Measure

- Number of Refereed Journal Articles

Year	Target	Actual
2010	36	0

Output #9

Output Measure

- Number of Books and Book Chapters

Year	Target	Actual
2010	6	0

Output #10

Output Measure

- Number of Technical Reports

Year	Target	Actual
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2010 20 0

Output #11

Output Measure

- Number of Extension Bulletins and Factsheets

Year	Target	Actual
2010	28	0

Output #12

Output Measure

- Number of Invited Presentations

Year	Target	Actual
2010	70	0

Output #13

Output Measure

- Number of Volunteered Presentations

Year	Target	Actual
2010	115	0

Output #14

Output Measure

- Number of Websites Established

Year	Target	Actual
2010	1	0

Output #15

Output Measure

- Number of Workshops Conducted

Year	Target	Actual
2010	45	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Soil management programs and best management practices for soil use in agricultural, natural, suburban/urban, and disturbed or contaminated settings will incorporate latest advances in research and be disseminated via extension programming to farmers and other land managers.
2	Educational programs for K-12 teachers and youth on soils as a critical natural resource vital to civilization, including the many functions of soils in agricultural and natural ecosystems, the importance of soil management to environmental quality, and the role of soils in sustaining aesthetically pleasing managed landscapes in suburban and urban settings.
3	Increased number of farmers and other land managers adopting advances in soil management practices that will build soil quality, increase plant productivity, enhance the beneficial re-use of agricultural, municipal, and industrial by-products (manures, biosolids, residuals) in a variety of land use settings, and prevent nonpoint nutrient pollution of ground and surface waters, particularly for phosphorus and nitrogen.
4	Increased number of farmers and others using soil testing to provide site-specific guidance to increase agricultural profitability, prevent soil loss by erosion, mitigate nonpoint pollution of surface and ground waters, and more efficiently use soils and nutrients in suburban settings.
5	Increased use of watershed scale modeling to predict changes in the functions and environmental impacts of soils in mixed-used watersheds (agriculture, suburban, urban, forests) as land use changes from agricultural to suburban and urban uses.
6	Soils and Environment: basic research will provide increased understanding of the physical, chemical, and biological factors influencing the fate and transport of nutrients, metals, organics, and pathogenic organisms in soils. Applied research will lead to the development of nutrient management strategies and recommendations that minimize nonpoint nutrient pollution from all land uses. Remediation practices for soils contaminated by metals, organics, and nutrients will use innovative, research-based measures to prioritize risk to the environment and human health based on the speciation, mobility, and bioavailability of contaminants in soils. Mitigation approaches for polluted soils will combine soil chemistry, physics, and soil/plant molecular biology to enhance removal (phytoremediation) or in-situ degradation or stabilization of pollutants in soils.
7	Environmental Quality: applied research and extension programming will provide guidance on profitable, environmentally sound management of soils at all spatial scales, from the individual field to the watershed. The emphasis will be on cost-effective strategies and management practices that can prevent nonpoint nutrient pollution, soil erosion, and contaminant transport (metals, organics, pathogens) from agriculture and suburbanized landscapes.

Outcome #1

1. Outcome Measures

Soil management programs and best management practices for soil use in agricultural, natural, suburban/urban, and disturbed or contaminated settings will incorporate latest advances in research and be disseminated via extension programming to farmers and other land managers.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Educational programs for K-12 teachers and youth on soils as a critical natural resource vital to civilization, including the many functions of soils in agricultural and natural ecosystems, the importance of soil management to environmental quality, and the role of soils in sustaining aesthetically pleasing managed landscapes in suburban and urban settings.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
112	Watershed Protection and Management
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Increased number of farmers and other land managers adopting advances in soil management practices that will build soil quality, increase plant productivity, enhance the beneficial re-use of agricultural, municipal, and industrial by-products (manures, biosolids, residuals) in a variety of land use settings, and prevent nonpoint nutrient pollution of ground and surface waters, particularly for phosphorus and nitrogen.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
903	Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

Increased number of farmers and others using soil testing to provide site-specific guidance to increase agricultural profitability, prevent soil loss by erosion, mitigate nonpoint pollution of surface and ground waters, and more efficiently use soils and nutrients in suburban settings.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
112	Watershed Protection and Management
903	Communication, Education, and Information Delivery

Outcome #5

1. Outcome Measures

Increased use of watershed scale modeling to predict changes in the functions and environmental impacts of soils in mixed-used watersheds (agriculture, suburban, urban, forests) as land use changes from agricultural to suburban and urban uses.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
903	Communication, Education, and Information Delivery

Outcome #6

1. Outcome Measures

Soils and Environment: basic research will provide increased understanding of the physical, chemical, and biological factors influencing the fate and transport of nutrients, metals, organics, and pathogenic organisms in soils. Applied research will lead to the development of nutrient management strategies and recommendations that minimize nonpoint nutrient pollution from all land uses. Remediation practices for soils contaminated by metals, organics, and nutrients will use innovative, research-based measures to prioritize risk to the environment and human health based on the speciation, mobility, and bioavailability of contaminants in soils. Mitigation approaches for polluted soils will combine soil chemistry, physics, and soil/plant molecular biology to enhance removal (phytoremediation) or in-situ degradation or stabilization of pollutants in soils.

2. Associated Institution Types

- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
903	Communication, Education, and Information Delivery

Outcome #7

1. Outcome Measures

Environmental Quality: applied research and extension programming will provide guidance on profitable, environmentally sound management of soils at all spatial scales, from the individual field to the watershed. The emphasis will be on cost-effective strategies and management practices that can prevent nonpoint nutrient pollution, soil erosion, and contaminant transport (metals, organics, pathogens) from agriculture and suburbanized landscapes.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
141	Air Resource Protection and Management

403	Waste Disposal, Recycling, and Reuse
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}