

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Urban Non Point Source Pollution

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
112	Watershed Protection and Management	94%		100%	
135	Aquatic and Terrestrial Wildlife	6%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.4	0.0
Actual Paid Professional	0.0	0.0	1.0	0.0
Actual Volunteer	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	49011	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	54320	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
139805	0	2667	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- **Urban Watershed and Water Quality:** work with towns, municipalities, community organizations with consultations, demonstrations, workshops, newsprint, presentation, youth camps
- **Watershed & Water Quality Programs:** Watershed education for educators and students, and community members with consultation, train the trainer, demonstration, field site visits
- **Design, testing and implementation** of materials and technologies for the removal of phosphorus from agricultural run-off and suburban wastewater non-point sources

2. Brief description of the target audience

- Youth
- Adult
- Agriculture/Natural Resources: Watershed Based Organizations
- Agriculture: Fish Farmers
- Communities: Cities and Towns
- Communities: Local Officials/Leaders
- Communities: Non-Governmental Organizations
- Communities: Schools
- Environmental Professionals: Environmental Managers
- Public: fishing and boating groups

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	939	5400	1405	0

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	4	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Consultation

Year	Actual
2013	4

Output #2

Output Measure

- Demonstration

Year	Actual
2013	1

Output #3

Output Measure

- Field day/Fair

Year	Actual
2013	4

Output #4

Output Measure

- Presentation

Year	Actual
2013	2

Output #5

Output Measure

- Fact Sheet

Year	Actual
2013	7

Output #6

Output Measure

- Tour

Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Train the Trainer

Year	Actual
2013	10

Output #8

Output Measure

- Web page updating

Year	Actual
2013	4

Output #9

Output Measure

- Workshop series

Year	Actual
2013	29

Output #10

Output Measure

- Workshop - single session

Year	Actual
2013	36

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of feet of shoreline/bank vegetation planted or native vegetation maintained
2	Number of municipalities who apply BMP for climate change related shoreline erosion and bank stabilization
3	Number of research outcomes used for planning climate change adaptation
4	Fish culture facilities in NY and VT are using NRAC recommended biosecurity BMP practices
5	Number of schools using Watershed Alliance curriculum equal to or above long term (5 year) average
6	Number of LC bass tournament organizers that have adopted aquatic invasive species (AIS) spread prevention BMP?HACCP tournament protocols
7	Number participating Adirondack lake associations in the Champlain drainage apply for Adirondack Park Agency general permits for management of aquatic invasive plants
8	Number of high school, undergraduate students involved in watershed/lake restoration
9	Number of municipalities with new or updated shoreline/riparian vegetation ordinances
10	Number of non-students involved in watershed/lake restoration
11	Number of volunteer days annually reported by local organizations engaged in habitat restoration programs
12	Number of commercial properties using low input grounds care
13	Number of municipalities implementing green infrastructure and Low Impact Development (LID) strategies
14	Number of gallons of storm water prevented from reaching local water bodies
15	Number of marinas participating in Clean Marinas and/or Clean Boating programs

Outcome #1

1. Outcome Measures

Number of feet of shoreline/bank vegetation planted or native vegetation maintained

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of municipalities who apply BMP for climate change related shoreline erosion and bank stabilization

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of research outcomes used for planning climate change adaptation

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To reduce community vulnerability, a flood assessment assists communities to better plan for changing flood conditions driven by climate change. The Geomorphic Stream Assessment (GSA), a vulnerability assessment is a compilation of existing and often disconnected information on a town's water resources. Through this process, developed in collaboration with towns and the planning commission, gaps in information and vulnerabilities are highlighted. and towns are provided with recommendations and resources for future planning.

What has been done

Working with a local partner (PMNRCD) we evaluated how well GSA predicted stream changes and how recommended actions performed under Tropical Storm Irene conditions. Overall, projects based on GSA data and recommendations withstood Tropical Storm Irene flood waters. Structural failures were high where GSA mitigations were not implemented.

Results

For Gully Brook, near Poultney VT, GSA recommended berm removal for channel restoration and access to floodplain, and removal of accumulated sediment from the Castleton River confluence was done. This was done prior to Tropical Storm Irene, and prevented property flooding and bridge washout. Nearby areas receiving similar recommendations that were not implemented suffered severe flooding and road washout.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #4

1. Outcome Measures

Fish culture facilities in NY and VT are using NRAC recommended biosecurity BMP practices

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Number of schools using Watershed Alliance curriculum equal to or above long term (5 year) average

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #6

1. Outcome Measures

Number of LC bass tournament organizers that have adopted aquatic invasive species (AIS) spread prevention BMP/HACCP tournament protocols

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The costs associated with invasive species invasions are substantial. According to the NY Invasive Species Task Force, the calculated economic impact to the United States as a whole exceeds \$120 billion. An act to amend the Environmental Conservation Law, in relation to creating the New York Invasive Species Council became a law August 28, 2007 with the approval of the Governor. Four outlined tasks led to 4 teams which formed the basis of an invasive species bill made into law on July 24, 2012.

What has been done

LCSG staff conducted aquatic invasive species spread prevention training at 3 major bass tournaments in Plattsburgh during June-July 2012, reaching 2 major tournament organizers and nearly 600 hundred tournament anglers. Anglers received updates on invasive species impacts, and spread prevention practices. FLW Outdoors asked staff to visit the company's headquarters and laid out some "pro-active" steps that tournament organizers are taking in the Midwest.

Results

Forty two nationally known tournament anglers signed pledges to demonstrate their commitment to ?Clean, Drain, Dry? invasive species spread prevention best management practices developed

by the Stop Aquatic Hitchhikers campaign and the Great Lakes Sea Grant network. FLW Outdoors Inc., the nation's largest fishing tournament-fishing organization, staging hundreds of tournaments annually, including several in Plattsburgh, NY has instituted a new cleaning protocol for their weigh-in equipment which travels across the country. Vermont and New York each border Lake Champlain. New York and Vermont Sea Grant work collaboratively to protect our waters.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #7

1. Outcome Measures

Number participating Adirondack lake associations in the Champlain drainage apply for Adirondack Park Agency general permits for management of aquatic invasive plants

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Number of high school, undergraduate students involved in watershed/lake restoration

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #9

1. Outcome Measures

Number of municipalities with new or updated shoreline/riparian vegetation ordinances

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of non-students involved in watershed/lake restoration

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	52

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #11

1. Outcome Measures

Number of volunteer days annually reported by local organizations engaged in habitat restoration programs

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

Number of commercial properties using low input grounds care

Not Reporting on this Outcome Measure

Outcome #13

1. Outcome Measures

Number of municipalities implementing green infrastructure and Low Impact Development (LID) strategies

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
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{No Data} null

Outcome #14

1. Outcome Measures

Number of gallons of storm water prevented from reaching local water bodies

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

Number of marinas participating in Clean Marinas and/or Clean Boating programs

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

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
- Other (technology limitations in areas)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Watershed signs are ubiquitous nationwide. The most cited rationale for using signs is to increase knowledge, attitude and or behavior, usually area residents, to better protect watersheds and water quality. However, questions have been raised about the efficacy and cost of sign projects.

Part of a 15 sign watershed sign project on the Burlington -S. Burlington Englesby Brook watershed included interviews of ~ 180 pedestrians/bicyclists pre-project and a similar number post-project in 5 locations around the watershed boundary where signs were put in place. A brief series of questions (4 pre-, 5 post-) provided a rapid estimate of pre- and post- project knowledge, attitude and behavior related to the local watershed and water quality.

To evaluate the impact of watershed signs on resident knowledge, attitude and behavior, we surveyed over 400 pedestrians in a small (0.9 sq. mi) impaired urban watershed in Burlington, VT. Using a brief a pre-/post- questionnaire, we found watershed signs had two statistically significant effects: a) awareness of watersheds in general and the target watershed in particular increased, and b) respondent behavior (defined as actively seeking additional information) increased, but more modestly. Respondent's attitude (importance of local water quality protection) did not differ significantly, perhaps because pre-sign attitude levels were already elevated.

Key Items of Evaluation