V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Commercial and Consumer Horticulture

☑ 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	15%		0%	
111	Conservation and Efficient Use of Water	15%		25%	
202	Plant Genetic Resources	8%		25%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		0%	
204	Plant Product Quality and Utility (Preharvest)	10%		25%	
205	Plant Management Systems	25%		25%	
216	Integrated Pest Management Systems	20%		0%	
805	Community Institutions, Health, and Social Services	2%		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	10.2	0.0	1.0	0.0
Actual Paid Professional	8.5	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**
265347	0	28178	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
265347	0	28178	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
338453	0	321900	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Beginning Master Gardener classes were delivered serving 14 counties plus a mens work camp. Advanced Master Gardener classes and projects were delivered in six counties. Shorter, more accessible gardening class series' were also delivered by educators in 12 counties.

Outreach for commercial producers included collaborations with the Idaho Nursery and Landscape Association at the HortExpo, the Idaho Green Collar College, the Certified Nursery Professional course, a professional diagnostics course, wholesale ornamentals workshop, several IPM workshops for commercial growers, table grape management workshop, a golf course xeriscaping project, and through collaborations with local nursery retailers, including on-site training.

Supervised Master Gardeners and Advanced Master Gardeners delivered more than 100 presentations for local gardening groups and interested publics, served hundreds of residents who sought assistance in our plant clinics, and contributed to dozens of community projects including school gardens and community gardens, and water conservation and FireWise demonstrations. In one county alone, Master Gardeners contributed more than 1,200 hours of community service, much of that in association with community gardens that combined to contribute more than 50,000 pounds of produce to low income residents in 2013.

Media outreach is conducted through regular contributions to seven local newspapers, local TV and radio interviews, and through targeted newsletters and trade publications.

2. Brief description of the target audience

Master Gardener Volunteer Development Education:

From a wide perspective, the audience for the Master Gardener Education project is any Idaho citizen with an interest in advancing their horticultural knowledge and contributing to their community. Master Gardener training is designed to develop a pool of expert volunteer leaders capable of having an impact on resource management and quality of life within communities and counties. Beginning Master Gardeners are required to participate in 30 to 70 hours of basic training in horticultural topics that include

botany, basic soils, plant development, fertility, irrigation, plant problem diagnosis, pest control, etc., followed by 30-70 hours of volunteer service to the public. After completion of the training course and initial volunteer hours, Master Gardeners may re-certify annually or choose to become Advanced Master Gardeners. In this role, they will continue training under UI horticulturists in advanced topics using a hands-on approach. More importantly, with respect to team objectives, Advanced Master Gardeners become volunteer instructors and are expected answer horticultural questions from the general public, assist in organizing workshops, conferences, and other education opportunities, develop public demonstration projects, and assist communities with plant-based improvement projects.

Consumer Horticulture Education:

The potential target audience for this project is very large, consisting of virtually all Idaho citizens of any age or background with an interest in home horticulture at any and all levels of expertise. This broad audience will seek opportunities to learn sustainable horticultural principles from numerous sources, including web sites, publications, popular press articles, presentations, workshops, conferences, demonstrations, short courses, Master Gardener Volunteers and other teaching forums. Organized groups from this target audience, including community public works departments, garden clubs, civic groups, public libraries, church groups, and other interested organizations assist by sponsoring educational events.

Green Industry Education:

The target audience consists of all owners, managers, and employees of green industry companies. The audience takes an active role in recommending curriculum, organizing teaching opportunities, and actively working to become competent horticulturists.

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	31146	821087	10159	9273

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	20	3	23

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Advanced MG Workshops/Tours: faculty contribution to Advanced MG Training (Does not include beginning MGs). O: Number of faculty presentations at Advanced MG training events.

Year	Actual
2013	113

Output #2

Output Measure

- Beginning MG Courses Organized/Supervised: Number of MG courses (not classes within a course) organized/supervised by educators. O: Number of whole courses delivered during the past year.

Year	Actual
2013	11

Output #3

Output Measure

- Consumer Education-Public Outreach Pubs/Products: Number of faculty-authored press and Extension media products developed for consumers. Includes magazine articles, newspaper columns, newsletters or newsletter articles, radio or television spots. I: The number of products developed/published during the past year.

Year	Actual
2013	256

Output #4

Output Measure

- Consumer Education-Websites: Statewide and county websites (faculty-authored) containing current, relevant consumer-based horticultural information. O: The number of actual websites developed or actively improved during the year.

Year	Actual
2013	14

Output #5

Output Measure

- Consumer Education-Workshops, Seminars, Demonstrations, Field Days: Faculty contributions

to consumer-based education events (exclude MG classes, reported elsewhere). I: Number of specific faculty presentations at Extension consumer education events.

Year	Actual
2013	241

Output #6

Output Measure

- Green Industry Education-Workshops, Seminars, Clinics: Faculty presentations associated with green industry educational events. O: Number green industry education events and presentations.

Year	Actual
2013	57

Output #7

Output Measure

- Master Gardener-Volunteer Hours: Total number of hours contributed by all volunteers over the past year.

Year	Actual
2013	8374

Output #8

Output Measure

- Green Industry Education-Websites: Number of statewide or county web sites with green industry-targeted content developed or actively improved during the year. O: The number of current, relevant, active sites.

Year	Actual
2013	4

Output #9

Output Measure

- Direct Contacts with Stakeholders Made by Certified MGs: . Number of direct contacts during the past year by volunteers.

Year	Actual
2013	19398

Output #10

Output Measure

- Faculty presentations to Beginning MG classes: Number of presentations.

Year	Actual
2013	180

Output #11

Output Measure

- Master Gardener-Volunteer-Authored Pubs/Products: Number of products developed during the past year by supervised MGs or other volunteers (exclude those with faculty authors): bulletins, fact sheets, web content, PowerPoint, media productions for radio or television.

Year	Actual
2013	23

Output #12

Output Measure

- Master Gardener-Volunteer MG Contributions to Workshops, Seminars, and Demonstrations: Number of volunteers who organized or presented at educational events.

Year	Actual
2013	255

Output #13

Output Measure

- Consumer Education-Scholarly Pubs/Products: Number of research-based, peer-reviewed scholarly products published by team faculty. Examples: journal papers, bulletins, CISs, or peer-reviewed web content or video productions.

Year	Actual
2013	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Master Gardener- Training Courses: The desired outcome is a measurable increase in knowledge among new Master Gardener trainees in key topics covered by the Idaho Master Gardener curriculum. Indicator: The average number of key topic areas (out of 25 in the Master Gardener certification exam) in which learners? knowledge increased.
2	Consumer Education-Information: sound horticultural information is current, research-based, and widely available to increasing numbers of Idaho consumers to inform and influence their horticultural practices. Indicator: The number of visitors to the comprehensive Idaho Landscapes and Gardens Website each year. hits.
3	Green Industry Education - Information Availability. The Green Industry workforce has access to useful research-based pest control and production information. Indicator: Combined numbers of personal contacts and hits on the green industry website.
4	A statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality that delivers quality education and service to the public. Indicator: The number of Master Gardener programs statewide that operate according to written policy.
5	Green Industry Education-Certification Training: Idaho's Green industry workforce is capable to provide environmentally and economically appropriate services. Indicator: The number of participants passing the exams after Extension training.
6	Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain efforts in home horticulture outreach, and to donate their time and expertise to their community. Indicator: Number of new Master Gardeners certified during the past year.
7	Master Gardener-Retention of MG Volunteers: The desired outcome is a pool of returning trained, qualified, certified Master Gardener volunteers available for service within communities and counties statewide. Indicator: Number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in counties.

Outcome #1

1. Outcome Measures

Master Gardener- Training Courses: The desired outcome is a measurable increase in knowledge among new Master Gardener trainees in key topics covered by the Idaho Master Gardener curriculum. Indicator: The average number of key topic areas (out of 25 in the Master Gardener certification exam) in which learners? knowledge increased.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One of the goals of the Idaho Master Gardener Program is to develop skilled amateur horticulturists who are encouraged to adopt sustainable landscape and garden practices and to teach and encourage others in the general public to do so.

What has been done
Fifteen beginner Master Gardener courses and several abbreviated gardening courses were offered in 2013. Pre- and post- tests are taken to MG students to test their knowledge and skills before the course begins and after the course ends to note not only the knowledge and skill level changes but also the adoption of best management practices.

Results
MG student scores on post tests were substantially higher than pretest scores as expected but most rewarding was the adoption of BMPs. By the time of the final class, 74% claimed that they were already trying some of the techniques learned in the course.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Consumer Education-Information: sound horticultural information is current, research-based, and widely available to increasing numbers of Idaho consumers to inform and influence their horticultural practices. Indicator: The number of visitors to the comprehensive Idaho Landscapes and Gardens Website each year. hits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	109180

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Need for consumer-based horticulture information is increasing in Idaho as the state becomes more urban and agricultural expertise wanes. Consumers are becoming more interested in sustainable landscape practices and backyard food production.

What has been done
A consumer horticulture website called Idaho Landscapes and Gardens was created several years ago. In 2013, the site was modernized, updated, and maintained.

Results
The site was utilized by Idaho citizens and others as a resource for leaning about gardening principles, as evidenced by more than 71,000 visits to this site alone.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Green Industry Education - Information Availability. The Green Industry workforce has access to useful research-based pest control and production information. Indicator: Combined numbers of personal contacts and hits on the green industry website.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	18921

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Green Industry professionals depend on the Extension offices for unbiased research based information to solve their and their customers' horticultural problems.

What has been done
A technical web site was developed that lists many types of information from potting mixes to pruning to plant pest problems. Specific publications were designed and printed as the standard literature handed out at events. All publications are now digital so we can email copies at any time.

Results
Over 18,878 people visited the web site from November 1, 2012 to September 30, 2013. The most downloaded articles were bacterial canker of stone fruit trees, deer antler rubbing, aspen leaf spot, using bark and sawdust for mulches, and substrate CEC and C:N ratio. People from across the USA and around the world have written to me asking additional questions about several articles.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems

216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

A statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality that delivers quality education and service to the public. Indicator: The number of Master Gardener programs statewide that operate according to written policy.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Green Industry Education-Certification Training: Idaho's Green industry workforce is capable to provide environmentally and economically appropriate services. Indicator: The number of participants passing the exams after Extension training.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #6

1. Outcome Measures

Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain efforts in home horticulture outreach, and to donate their time and expertise to their community. Indicator: Number of new Master Gardeners certified during the past year.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	145

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
805	Community Institutions, Health, and Social Services

Outcome #7

1. Outcome Measures

Master Gardener-Retention of MG Volunteers: The desired outcome is a pool of returning trained, qualified, certified Master Gardener volunteers available for service within communities and counties statewide. Indicator: Number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in counties.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	272

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As the demand for Master Gardener's expertise and service increases, having well trained volunteers can add significantly to the outreach capacity of each office.

What has been done
In most counties with active Master Gardener programs, the Advanced MG Program meets 12 times. During these meetings, faculty members cover advanced educational topics and also discuss upcoming volunteer opportunities. Faculty members have started a webpage, a quarterly newsletter, and communicate via Facebook and Twitter social network systems. Master Gardener marketing tools are updated and used for booths and demonstrations.

Results
Retention of active Master Gardeners was 83% in 2013. Advanced Master Gardeners lead community based projects, mentor new volunteers, and create dynamic programs in our schools and neighborhoods.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
805	Community Institutions, Health, and Social Services

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Master Gardener Education: This program is going through a comprehensive evaluation of inputs, outputs, outcomes, and impacts. Evaluation tools involve surveys of groups with varying levels of exposure to MG training. Respondents are being asked to supply information that will allow assessment of changes is attitudes as well as in application of sustainable practices. Many MG program leaders also use pre- and post-test evaluations to determine the effectiveness of training programs on improving basic horticultural knowledge.

Consumer Education: Written participant evaluations are used to evaluate the effectiveness of teaching and intent for change of behavior.

Green Industry Education: Written participant evaluations are used to evaluate the effectiveness of teaching and intent for change of behavior.

We are processing this data as a team, in order to use it as a comparison study, needs assessment, as well as use it to identify and communicate impacts to stakeholders and clientele.

Key Items of Evaluation

In 2013, Extension worked with Idaho Departments of Agriculture and Education to develop a new program to train, certify, and supervise active Idaho Master Gardener Volunteers as School Garden Mentors. Similar Extension programs in California and Rhode Island that have fostered long-term school garden success provided inspiration and best practices.

Master Gardener Volunteers in good standing were recruited from the counties where each school or childcare center was located in early May. Ten of the 12 schools were paired

with a mentor. Mentors received training via webinar on school garden basics, 4-H garden curricula and child protection. Each passed background screening. Mentors were provided with 4-H Junior Master Gardener Curriculum handbooks, including Health and Nutrition from the Garden, which had been approved for classroom instruction by the Idaho State Education Department's Child Nutrition Services.

Master Gardener Mentors conducted an average of three phone conversations, five email consultations and three on-site visitations with their school throughout the growing season. They assisted garden teams with garden planning, variety selection, season extension, pest management, soil health, irrigation design, seed starting, fruit production, problem solving, youth activities and parent outreach.

Youth who participate in school gardens experience a number of benefits, including an increased interest in science and healthier lifestyle choices. At least 1000 youth ranging from toddlers to high school students were involved in the school gardens where our mentors served.

Three mentors were invited to deliver additional youth gardening activities at their assigned school using 4-H Junior Master Gardener curriculum. Over 164 youth were engaged in these learning opportunities.

One expectation was that school garden teams assigned a Master Gardener Mentor would establish productive vegetable gardens and successfully harvest at least six of the fruits and vegetables emphasized by the USDA in their nutrition programs.

On average, ten crops were grown, harvested and consumed by children at each school; including salad greens, tomatoes, carrots, green beans, melons, zucchini, cabbage, winter squash, potatoes, corn, beets, peppers, pumpkins, spinach, peas and strawberries.

One of the final goals for this program was for school garden teams who received Master Gardener School Garden Mentors to establish sustainable gardens with staying power. All ten schools plan to continue to grow gardens into the next season and beyond.