2010 Oregon State University Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 07/05/2011

I. Report Overview

1. Executive Summary

Now and then, we get the opportunity to celebrate our past as we move toward a new future. This is the moment for Oregon State University. In 2011, the OSU Extensin Service celebrates 100 years of educational outreach and opens a new century of engagement with the people of Oregon. For 100 years, the OSU Extension Service has helped communities envision a better future and given them the tools to create it.

Today, OSU Extension reaches people with on-site workshops and online access to address issues such as community well-being, secure food systems, youth devleoment, and sustainable businesses. A corps of several thousand Extension-trained, master-level volutneers reaches even farther, providing community service as Master Gardeners, Master Woodland Managers, Master Food Educators, Climate Masters at Home and more.

The future of Extension will see even greater outeach and engagement with Oregon communities as OSU Extension joins OSU Extended Campus in leading OSU's Division of Outreach and Engagement. OSU's century of collaboration with communities beyond the borders of its campuses has been recognized by the Carnegie Foundation for the Advancement of Teaching with its 2010 "Community Engagement" designation. 2010 was a pivotal year in many ways and hopefully this report of accomplishments reflects our renewed commitment to the people of Oregon.

A few points you may wish to note within this report:

- In the 2010-14 plan of work, we anticipated greater state budget cuts than we actually received. To date we've been able to manage cuts through increased grants and contracts, reduced support and services, and attrition. This has forced us to shift some of our FTEs to cover priority issues, so in many cases planned FTE and actual FTE are greatly different; however, even with the shifts, many of the output and outcome targets were met or exceeded.
- Becasue OSU Extension is not a unit within the College of Agricultural Science, previous reports did not adequately show the close working relationship between the Agriculture Experiment Stations and Extension. In this report, greater effort has been made to show the seamless process from discovery to engagement for achieving outcomes that are the result of the partnership.
- Websites are on the increase. Many more faculty are reporting the use of websites for delivering information and providing access to Oregon residents. We anticipate this number growing even more in the months ahead.
- Please note that in the 2010-14 plan of work, an error was made. The planned number of peer reviewed publications was entered as planned patent application submissions. Without knowing how to fix this error, please check Outputs #2 for information needed in Outputs #3. The good news is that the number of peer reviewed publications have increased since 2009; however, the numbers don't align with the projections very well.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	219.0	0.0	0.0	0.0
Actual	210.0	0.0	0.0	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External University Panel

2. Brief Explanation

The primary review for 2010 came from internal evaluation provided by University leadership, including the Provost and the deans of the five colleges that have active Extension programs. Several key decisions were made this year as a result:

1. The 4-H Youth Development program's academic home transitioned from the College of Education to the College of Health and Human Science. This change was to better align the foundational discipline of 4-H, human development, with its academic home. The change also aligns 4-H Youth Development with the University's newly formed division for Healthy People, which includes the colleges of Health and Human Science, Pharmacy and Veterinary Medicine.
2. As reported in 2009, all program areas received a 15% decrease in state funding allocations for the first year of the biennium. The first 10% was dictated by reduced state funding. The additional 5% was set aside as a reserve to cover any future funding reductions. During 2010 the 5% was returned to the state plus an additional 3%. A total of 18% of state dollars has been reduced from the OSU Extension budget for the current biennium.
3. The organization transformation process resulted in recommendations to improve and systemize needs assessment, to increase use of technology to engage the public, to revise our business model for greater resource, grant and fee development, and to reduce our administrative footprint for proficiency and cost savings. Implementation of the recommendations will begin July 1, 2011

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Targeted invitation to traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Other (focus groups with stakeholders and general public)

Brief explanation.

Input was solicited through a statewide advisory network that directly advises the Vice Provost

for Outreach and Engagement and the Director of Extension. The advisory committee is made up of individuals representing production agriculture and forestry, environmental groups, county government, youth and family serving organizations, organizations representing coastal issues, and business and industry, as well as Extension's volunteer corps. The committee met twice during the past year; once in person on the OSU campus and once from regional sites via PolyCom. The committee was actively engaged in reviewing and updating program priorities for the current biennial state plan of work and the federal five-year plan of work. The advisory network also played a pivotal role in advocating state legislative support for Extension and contributed in meaningful ways to the organization's transformation process. In addition, every county in the state utilized an advisory structure to identify and set local program priorities for the plan of work processes and contributed to the organizational transformation process.

Surveys were used intensively in 2009 as part of the organizational transformation work. Limited resources restricted our use of surveys during 2010. However, OSU Extension hosted for one set of the national 2010 marketing focus groups in Portland and have used that valuable information to help shape our program and communication efforts.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Needs Assessments
- Other (Web searches of potential participants, Extension Director's Blog, New Extension Demographer, Visioning Project and Strategic Planning)

Brief explanation.

Various mechanisms were used to identify individuals, groups and organizations that are Extension stakeholders, including:

- Conducted internet searches to identify organizations with stakes in Extension programs
- Conferred with partnering organizations to indentify and engage appropriate stakeholders
- Conferred with existing advisors about other groups and individuals that could provide input
- Solicited internal input about appropriate stakeholders to add to advisory structures
- Utilized demographic data to ensure that all segments of society are adequately represented

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Other (Focus groups of stakeholders and general public)

Brief explanation.

Both formal and informal methods were used. Focus groups were the primary method for gathering data from both current stakeholders and the general public. Informal methods engaged advisory committee members in discussion and group priority setting activities.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- In the Staff Hiring Process
- To Set Priorities

Brief explanation.

Stakeholder input was broadly used throughout the organization. The input influenced budgetary outlays for various programs and subsequently had impact on program delivery and outcomes. Stakeholders served on all faculty search committees and had considerable influence on hiring decisions. This practice has proven over time to better support newly hired faculty members for success and productivity. Involved stakeholders take on greater responsibility for guiding and protecting the faculty members as they learn their role and their community as well as have increased the stakeholders' understanding of the faculty members' job expectations. Stakeholder input was widely used to set program priorities at all levels of the organization. In addition, with the implementation of SOARS in 2007, each Extension program area is required to develop an annual plan of work which includes a description of how stakeholder input was gathered and used to determine the priority work areas and the associated resource allocations to programs.

Brief Explanation of what you learned from your Stakeholders

The overall plan of work is based on current priorities identified by stakeholders through both formal and informal data collection methods. Three overarching educational themes emerged:

1. Strengthen communities and economies . . . by enhancing economic well-being for individuals, families, businesses, and communities; by helping build leadership skills of Oregonians who desire greater community involvement.
2. Sustain natural resources . . . by helping individuals and groups manage resources wisely; by enabling Oregonians to make responsible public policy choices.
3. Promote healthy families and individuals . . . by helping individuals and families reach their potential; by improving the well-being of Oregon's diverse population.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
3693805	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	2820481	0	0	0
Actual Matching	2820481	0	0	0
Actual All Other	9200622	0	0	0
Total Actual Expended	14841584	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	0	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Forestry: Public Engagement for Planning Oregon's Future

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
610	Domestic Policy Analysis	30%			
801	Individual and Family Resource Management	20%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	30%			
806	Youth Development	10%			
901	Program and Project Design, and Statistics	5%			
902	Administration of Projects and Programs	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	1.7	0.0	0.0	0.0
Actual	3.2	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
42307	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
42307	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
138009	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Programs will be developed and delivered to the general public (including youth), civic leaders, and policy makers to increase knowledge and understanding about Oregon's complex forestry sector and its importance to the state's and region's economies.

2. Brief description of the target audience

General public (including youth), civic leaders, environmental groups, policy makers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4465	16185	6429	1270

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2010	21

Output #2

Output Measure

- Number of workshops

Year	Actual
2010	5

Output #3

Output Measure

- Number of demonstrations

Year	Actual
2010	11

Output #4

Output Measure

- Number of recurring newsletters published

Year	Actual
2010	18

Output #5

Output Measure

- Number of web sites maintained

Year	Actual
2010	15

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Households reporting improvements in behavior related to sustainable living and energy/climte related educational programming.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	150	166

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Long-term stewardship of Oregon's resources will lead to strengthening communities and economies, sustaining natural resources, and promoting healthy families and individuals. Needs assessment data indicates a priority for providing science-based information to the community on sustainable living and coordinating applicable information and university resoucres to address the issue of climate change on an individual scale.

What has been done
Climate Masters at Home is an 11-week curriculum for reducing household greenhouse gas (GHG) emissions. The goal of this pilot effort is to increase understanding among individuals and households about the causes of and solutions to climate change and to encourage and achieve reductions of personal and household greenhouse gas (GHG) emissions. The target audience is a wide range of interested communtiy members.

The training topics include identifying and reducing embodied emissions as well as emission reduction in transportation and food choices, home energy use, and yard, consumption, and waste practices.

In exchange for the training, Climate Master participants volunteer 30 hours of service within one year, primarily by sharing the information they learned and supporting behaviors that reduce GHG emissions.

Results
Members from 166 different households took part in this initial Climate Masters at Home program. A pre-test completed via Survey Monkey asked each participant about existing energy bills and usage, transportation patterns, size of home and yard, and current conservation practices. A

post-test completed on Survey Monkey six months after the course finished asked parallel questions to the pre-test. Comparing reported behaviors from the post-test to the pre-test, Extension educators learned that 50% of the participants adopted 4 or greater behavior changes learned in the Climate Masters at Home program; 69% of the participants adopted at least 3 behavior changes; 82% of the adopted at least 2 behavior changes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development
901	Program and Project Design, and Statistics

Outcome #2

1. Outcome Measures

Organizations and individuals reporting improved public policies or policy statements as a result of Extension programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	265	225

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forest landowners are put at a disadvantage when they are taxed more than they should be due to their land being classified under the wrong assessment.

What has been done
Two-hour workshops were offered explaining the property tax structure and how to determine which assessment forested land should be under to most benefit the landowners. All participants were contacted for a telephone survey six months following the workshop, with 64% responding to the request.

Results
100% of those surveyed reported "having a better understanding of the county's property tax system"

64% reported "reviewing their tax records to determine if you could benefit from a change in your assessment or land use designation"

29% reported "making changes to reduce the tax assessment"

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Public Policy changes
- Competing Programmatic Challenges

Brief Explanation

The opportunity to partner with the University of Oregon to deliver and evaluate a new sustainability curriculum caused those working on public policy issues to shift their interests and time during 2010. Additional FTE were added to this planned program because a number of 4-H youth development educators joined the Climate Masters at Home pilot. Several youth participants were actively involved in the pilot with their parents. There is an interest in redesigning the curriculum to have more youth focus, perhaps delivered through the school setting with youth serving as "master" educators in their communities.

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

Evaluation Results

The pilot program, Climate Masters at Homes, increases the participant's knowledge and results in behavior change. In 2011 follow up will be conducted to see if the Master volunteers are successful in their community outreach to help households gain knowledge and adopt new behaviors for lower household (GHG) emissions.

Key Items of Evaluation

The success of the pilot program, Climate Masters at Home, has resulted in a

partnership with city government and a $90,000 grant for promoting and expanding the program.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Forestry: Enhancing the Competitiveness of Oregon's Forest Enterprises

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment	10%			
511	New and Improved Non-Food Products and Processes	30%			
602	Business Management, Finance, and Taxation	20%			
604	Marketing and Distribution Practices	20%			
723	Hazards to Human Health and Safety	10%			
901	Program and Project Design, and Statistics	5%			
902	Administration of Projects and Programs	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	3.6	0.0	0.0	0.0
Actual	5.2	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
70512	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
70512	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
230016	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Programs will be developed and delivered to increase the knowledge of the public and policy makers leading to improved policy development and implementation. Additionally, programs will teach business owners and forest landowners how to become more efficient and successful in meeting their objectives leading to enhanced sustainability, profitability, and quality of life by providing training and information leading to creation, maintenance, and retention of profitable value-added forest products industries. Productivity and safety of forestry and forest products company employees will be increased through appropriate training leading to retention of family wage jobs in the forestry sector. Forest health will be enhanced by discovering new uses for underutilized and poor quality fiber from the forest leading to more cost effective thinning and forest management practices.

2. Brief description of the target audience

Public and private forest landowners, primary and value-added forest products companies, and to a lesser extent the public.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1831	16185	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	11	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2010	84

Output #2

Output Measure

- Number of workshops planned

Year	Actual
2010	23

Output #3

Output Measure

- Number of demonstrations

Year	Actual
2010	30

Output #4

Output Measure

- Number of recurring newsletters published

Year	Actual
2010	13

Output #5

Output Measure

- Number of web sites maintained

Year	Actual
2010	18

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Change in company behavior based on interaction with the Oregon Wood Innovation Center.
2	Increase in sales or employment attributed to new products/markets developed as a result of assistance from the Oregon Wood Innovation Center.

Outcome #1

1. Outcome Measures

Change in company behavior based on interaction with the Oregon Wood Innovation Center.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	38

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Buyers and sellers of non-timber forest products (e.g., boughs, berries, mushrooms, etc.) have a difficult time finding one another. For example, a landowner may wish to sell non-timber (a.k.a. "special forest products") from their land, but often does not know where to begin - who buys such products? And what are their specifications for quality? How and when should product be harvested and transported? Similarly, buyers of such products often have a difficult time sourcing materials and have to call numerous individual landowners to find what they need.

What has been done
In 2010, the Oregon Wood Innovation Center partnered with the Institute for Culture and Ecology (IFCAE) to upgrade the existing Oregon Forest Industry Directory to include a wide range of non-timber forest products. The main search page of the directory was revamped to add sections for buyers and sellers of non-timber products and separate search listings for over 40 new products were added. IFCAE hosted a series of workshops to introduce buyers and sellers in this industry to the new web-based directory.

Results
At the end of 2010, 38 firms were listed in the directory as buyers of non-timber forest products; 17 of these firms signed up in response to IFCAE's workshops and promotional efforts. In addition, there are 152 individuals and companies listed that sell non-timer forest products; the majority of these listings were already listed, but updated their existing information to include non-timber forest products.

Webstats show that products were among the top 10 product-based pages that users visited; the non-timber products page was visited over 1,800 times in 2010. By contrast, the number one product page was "log buyers" at just over 3,400 hits. However the best testimony is what users are saying. One non-timber forest products firm stated:

"We have gotten so much business through OFID. This is the most successful directory we have worked with. We're getting about 2-3 calls a week, mostly from suppliers."

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
511	New and Improved Non-Food Products and Processes
604	Marketing and Distribution Practices
901	Program and Project Design, and Statistics

Outcome #2

1. Outcome Measures

Increase in sales or employment attributed to new products/markets developed as a result of assistance from the Oregon Wood Innovation Center.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The rapid growth of the green building industry throughout the U.S. in recent years is shaping up as an important new market for Oregon producers of wood building materials. The Extension-led Oregon Wood Innovation Center (OWIC) is working with the building industry to highlight the green advantages of wood. Green building is defined as construction with sustainable materials in buildings designed to be resource-efficient throughout the life-cycle of the structure.

What has been done
OWIC is partnering with several state agencies, including BEST (Built Environment and Sustainable Technologies) and OFRI (Oregon Forest Resources Institute) to generate and distribute OSU information and research to materials producers as well as building design and construction professionals about the sustainable attributes of wood for green building. OWIC conducted a study of Oregon building construction professionals early in 2010 to help Oregon-based materials producers better understand the needs of designers regarding green materials. The study reported strong potential for wood materials to expand market share in green building applications.

Results
As a result of the information gained from the study and the increased understanding of building construction needs, material producers changed their marketing strategy and reported that the sales of green building materials experienced a growth rate of 19.5 percent over the next three quarters.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
604	Marketing and Distribution Practices

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 Programmatic Challenges

Brief Explanation

The forest products industry is increasingly dependent on technology for presentations, courses offered by distance educatoin, and web-based information for advancing its product development and professional improvement. The Oregon Wood Innovation Centern continues to be on the cutting edge for meeting the industry's needs and contributing to the economic stability of Oregon.

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

Evaluation Results

Oregon Wood Innovation Center supports firms in changing their practices to increase business.

Oregon Wood Innovation Center helps producers market green building materials and highlight green advantages of wood.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Forestry: Sustaining Natural Resources

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	8%			
122	Management and Control of Forest and Range Fires	10%			
123	Management and Sustainability of Forest Resources	67%			
901	Program and Project Design, and Statistics	10%			
902	Administration of Projects and Programs	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	0.0	0.0
Actual	10.6	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
141024	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
141024	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
460030	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Programs will be developed and delivered to increase the knowledge of forest landowners to become better stewards of their properties. They will be given the knowledge necessary to make informed choices to match their management objectives. Landowners will receive knowledge necessary for them to manage not only for timber production but also for an array of non-timber forest uses, many of the uses benefiting society as a whole - examples are water quality and improved aquatic habitat.

2. Brief description of the target audience

Family-owned forest owners are the main audience. Public forest owners and Oregonians living in the rural-urban interface are secondary audiences.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7758	38250	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2010	303

Output #2

Output Measure

- Number of workshops planned

Year	Actual
2010	38

Output #3

Output Measure

- Number of recurring newsletters planned for publication

Year	Actual
2010	14

Output #4

Output Measure

- Number of web sites maintained

Year	Actual
2010	18

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Number of families engaging in succession planning for their forests and tree plantations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	150	252

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Loss of forestland to commercial development is considered by many to be a major problem in the U.S. today. Loss of forestland means not only loss of forests and their ecological benefits, but also loss of the land's economic productivity including associated jobs and payroll generation.

What has been done
Ties to the Land, a succession planning education program for family forest landowners, was created to help slow this trend. Ties to the Land was developed by OSU Extension forestry faculty, the Austin Family Business Program and the Oregon Forest Resources Institute to assist forest landowning families with succession planning and intergenerational transfer. This is critically important now because death is one of the major driving forces behind loss of forestland to other uses, and at present 50 percent of Oregon's family forest owners are over the age of 65. Passing forestland on to the next generation is a process with financial, legal, and emotional dimensions. Successful transfer requires attention to detail, timely information and willingness to communicate. The Ties to the Land educational program is designed to help learners achieve these objectives, and their ultimate goal of passing treasured forestland on to their children.

Results
In 2010, a total of 33 workshops were presented in nine states (including Oregon), to 460 attendees owning about 30,851 acres of woodlands. An additional 62 volunteer facilitators were trained. In early 2011, an impact evaluation of this multi-year project will be completed with results reported in the 2011 ROA.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #2

1. Outcome Measures

Number of Christmas tree farms implementing best management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Oregon has long been known as a premier producer of excellent quality Christmas trees. In fact Oregon is the number one Christmas tree producing state in the U.S. with 2009 sales of 7.5 million trees for a return of more than $100 million.

What has been done
Extension is working to help Oregon Christmas tree growers keep their number one ranking through an ongoing research/outreach education program keyed to grower needs and concerns. Currently Extension's Christmas tree specialist is evaluating new tree species brought to Oregon from the mountains of Turkey.

The new varieties are being tested for resistance to diseases and insect pests. Douglas-fir and noble fir now almost totally dominate the Pacific Northwest Christmas tree industry, comprising about 97 percent of the market. It takes 5-9 years to grow these types of trees to the required height for a marketable Christmas tree. Extension specialists, working closely with growers, hope the new varieties, Turkish fir, Trojan fir and Nordmann fir, will not only be more disease- and pest-resistant, but also just as good looking as the native trees Oregon growers have produced for years.

Results

Although this is early in the evaluation process for the new varieties, Extension collaborated with the Pacific Northwest Christmas Tree Association to provide research updates for 110 growers attending the 2010 Pacific Northwest summer tour. In addition, an article was published in the Northwest Lookout, which reaches more than 800 Christmas tree growers in the Pacific Northwest, to inform them of the study and early findings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #3

1. Outcome Measures

Number of forest landowners reporting improved forest and natural resources management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	500	577

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forest pest damage, from insects, disease and animals, are among the greatest risks facing family forest ownerships in many parts of the U.S. (US Forest Service 2010). Recent forest landowner and manager surveys conducted in Oregon have shown pests and forest health concerns as one of the highest educational and management priorities (Bailey 2006).

What has been done
To improve woodland owner knowledge regarding local insect and disease and ultimately increase management that mitigate these risks on family forestlands, a forest health education program coined "Pest Scene Investigators" (PSI) was developed targeting current Master Woodland Manager volunteers. A grant of $34,000 from the Oregon Forest Resources Institute provided startup funding. The goal of the PSI program is to provide a peer learning platform from which MWM's apply this new training to helping neighbors and other landowners in the community, working with their local Extension forester to identify pest issues on private forestland

and offer management advice. Included in the educational effort was completion of a publication, Managing Insects and Diseases of Oregon Conifers (EM 8980). A mail survey was completed in 2010 to evaluate program impacts.

Results

66% of the participants conducted management on their property due to PSI training. Over 50 of the 79 respondents gave written statements described thinning stands or removing patches of trees infected with root rot or beetles. Eight respondents said they planted alternative species of trees and five said they were "just keeping an eye on things".

Of the 79 responding, 43% used EM 8980, and of these 46% used it to make management decisions and 29% used it to help their neighbors solve forest health problems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources

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

Brief Explanation

After several years of operating the Extension Forestry and Natural Resouce program with significant vacancies, the program was fully staffed during 2010 with bright, young talent providing new energy and new ideas for moving the program forward. In light of the current fiscal challenges facing the state buldget, it will take extra effort on the part of many to make resources available for keeping this bright, young talent employed. There will need to be more dependence on grants and contracts, fees and contributions to fund the program.

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

Evaluation Results

Ties to the Land, a succession planning education porgram, helps keep forestland in the forest and in the family.

Extension research/education helps keep Oregon Christmas trees on top.

Volunteer Master Woodland Managers help Extension deliver infomation and education to small woodland owners.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

4-H Environmental Stewardship

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual	15.6	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
197434	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
197434	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
644044	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•4-H natural science clubs •4-H residential camps •4-H in-school science programming (non-Wildlife Stewards) •4-H Wildlife Stewards programming •4-H After-school science programs •Curriculum and material development

2. Brief description of the target audience

Youth ages 9-18; Extension educators

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1174	1912	4233	44649

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth participating in 4-H environment and natural resource projects.

Year	Actual
2010	16891

Output #2

Output Measure

- Number of youth exhibiting natural science projects at the state fair.

Year	Actual
2010	134

Output #3

Output Measure

- Number of 4-H Wildlife Stewards partner schools.

Year	Actual
2010	22

Output #4

Output Measure

- Number of youth participating in the 4-H Wildlife Stewards program.

Year	Actual
2010	5397

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Number of youth gaining knowledge in science or natural resources.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10000	11957

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Opportunities for hands-on natural science are becoming increasingly scarce in the traditional classroom setting. Many school districts have significantly reduced the amount of class time spent on science. The 4-H natural science enrichment and environmental literacy programs help bridge this gap by providing students with continued exposure to interactive natural science curriculum.

What has been done
Students ranging from rural to urban areas, kindergarten through 12th grade, including minority populations and economically disadvantaged youth, have been involved in the programs' summer camps, after school programming, one-day events and through educational kits available for check-out. An evaluation determined that Extension-led teacher inservice motivated and developed teacher capacity to teach more natural science and environmental literacy in the classroom.

Results
A pre-/post self report assessment of knowledge gained by the youth participants resulted in the following outcomes:

64% reported that through the natural science enrichment and environment literacy porgrams they learned about Oregon's natural resources and enviroment

63% reported that because of the programs they better enjoy Oregon's environment

74% learned to take better care of the environment

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of youth implenting practices to protect or improve the environment.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1000	1353

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Opportunities for hands-on natural science are becoming increasingly scarce in the traditional classroom setting. Many school districts have significantly reduced the amount of class time spent on science. The 4-H natural science enrichment and environmental literacy programs help to bridge this gap by providing students with continued exposure to interactive natural science curriculum.

What has been done
OSU Extension's 4-H Youth Development program with a strong natural science flavor is flourishig in the Portland Metro area, where one featured program is the Inner City Youth Institute that connects Portland youth to natural resource educational opportunities.

Results
The Inner City Youth Institute (ICYI) is impacting youth in profound ways. For example, one young woman, now enrolled in the OSU College of Forestry, particpated in ICYI during her middle and high school years. She credits ICYI for sparking and nuturing her interest in natural resource education, which she plans to pursue as a career. This student was so inspired by ICYI that she returns each summer to serve as a mentor to younger particpants, illustrating how the 4-H program porvides positive experiences to youth, while promoting and encouraging a lifelong value of commuity engagement and protecting the enviroment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

Hiring of new faculty and program assistants during the past three years has resulted in more individuals with a natural resource background conducting youth development programming. That new empasis has greatly improved the quality and quantity of 4-H natural science enrichment and environmental literacy efforts. With this new influsion of talent, new program ideas have been tested and less emphasis has been placed on the Wildlife Stewards program; therefore, participation and outcomes in environmental literacy in general is on the increase but participation and outcomes for the Wildlife Stewards programs is leveling off.

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

Evaluation Results

Youth participants in the 4-H natural science enrichment and environment literacy programs report they learned about Oregon's natural resources and environment and aspire to be good stewards of the environment.

Surveyed educators indicate that participating students self-reported implementing practices to protect or improve the environment because of what they learned in the 4-H natural science enrichment and environment literacy porgrams.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

4-H Nutrition and Health

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	10.8	0.0	0.0	0.0
Actual	16.0	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
225638	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
225638	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
736050	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•4-H foods and nutrition projects •4-H foods and nutrition contests •4-H curriculum development •Special 4-H projects related to foods and nutrition

2. Brief description of the target audience

Youth ages 9-18, Extension educators

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	332	3162	22443	55990

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth participating in Foods and Nutrition Projects.

Year	Actual
2010	61256

Output #2

Output Measure

- Number of youth participating in physical activity projects.

Year	Actual
2010	2800

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of youth gaining knowledge required to select or prepare healthy food.
2	Number of youth making behavioral changes which improving health.

Outcome #1

1. Outcome Measures

Number of youth gaining knowledge required to select or prepare healthy food.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3000	4126

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done
The Professor Popcorn curriculum helps youth participants develop skills and knowledge to select a balanced, nutritious diet. By increasing knowledge of MyPyramid, and the importance of food safety and physical activity, youth will develop a positive attitude about nutrition and health, and adopt healthy eating behaviors.

Third, fourth and fifth grade students participated once a month in the Professor Popcorn curriculum series. Matched pre/post tests were collected by staff. The evaluation assessed both knowledge and behavior change. Statewide assessment combined all units' data into one report and also into individual unit reports

Results
Knowledge assessment: Five questions measured knowledge about MyPyramid, healthy snack choices, and recommended length of hand-washing.

58% of students improved their knowledge about MyPyramid.

78% of students improved their knowledge about healthy snack choices.

44% of students improved their knowledge about hand-washing

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of youth making behavioral changes which improving health.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1500	1438

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done
The Professor Popcorn curriculum helps youth participants develop skills and knowledge to select a balanced, nutritious diet. By increasing knowledge of MyPyramid, and the importance of food safety and physical activity, youth will develop a positive attitude about nutrition and health, and adopt healthy eating behaviors.

Third, fourth and fifth grade students participated once a month in the Professor Popcorn curriculum series. Matched pre/post tests were collected by staff. The evaluation assessed both

knowledge and behavior change. Statewide assessment combined all units' data into one report and also into individual unit reports

Results

Behavior assessment: Seven questions measured food and activity behavior on a 5 point scale (5 always, 4 almost always, 3 sometimes, 2 not very often, and 1 never):

72% of students reported improvement in eating vegetables every day.

32% of students reported improvement in eating 2 or more kinds of vegetables in a day.

72% of students reported improvement in eating fruit every day.

29% of students reported improvement in eating 2 or more different kinds of fruit in a day.

41% of students reported improvement in washing hands before touching or eating food.

71% of the students reported improvement in doing things like running, riding a bike, and playing sports every day.

57% of students reported improvement in eating or drinking milk group foods at least 3 times a day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

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

Evaluation Results

Related to childhood obesity:

A series of school-based nutrition education lessons improve the knowledge of

participating students, setting the stage for science-based decisions about their health and well-being.

Youth participating in the nutrition lessons reported specific actions and behavior changes that contribute to improving their health and guiding decisions for physical well-being.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

4-H Science, Technology, and Engineering

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	8.8	0.0	0.0	0.0
Actual	13.8	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
186152	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
186152	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
607241	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•4-H science clubs/programs (animal science, horticulture) •4-H technology clubs/programs (Tech Wizards, Lego Robotics) •4-H engineering clubs/programs/camps (Technology Camp) •National 4-H Technology Conference •After school science programs (not-environmental science) •Curriculum and material development

2. Brief description of the target audience

Youth ages 9-18; 4-H Volunteer leaders; Extension educators

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2131	3255	42330	44694

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

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	3	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth participating in 4-H science and technology projects and programs.

Year	Actual
2010	12815

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Number of youth gaining skills in science and technology.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5000	5599

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
America faces a future of intense global competition with a startling shortage of scientists. National education statistics indicate only 18 percent of U.S. high school seniors are proficient in science, which is a strong indication that young people are not prepared with the necessary science skills to compete in the 21st century workforce.

What has been done
In response, the OSU Extension Service 4-H program is emphasizing science, technology, engineering, and math (STEM) in 4-H learning activities for youth throughout the state. Positive experiences in the sciences during the developmental years help open doors to science-related careers later in life. One especially effective 4-H delivery format for STEM 4-H activities is the summer science camp. Extension 4-H program field faculty organized and launched Super Science Camps. The five-day residential summer science camps provide a variety of hands-on experiences designed to inspire and engage youth as they participate in a range of activities exploring topics such as wildlife habitat, astronomy, GIS technology, Lego robotics and more.

Results
Recent surveys of Oregon 4-H summer camps indicate a majority of camp participants: 1) gained science skills at the camps, and 2) increased their interest in science because of attending the camp.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of youth utilizing science and technology skills to improve their school or community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1000	1794

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to national higher education statistics, a meager 5 percent of U.S. college graduates earn science, engineering, or technology degrees compared to 66 percent in Japan and 59 percent in China. Getting more young people interested in science and technology early in their school years is one way to reverse this trend.

What has been done
The Oregon 4-H program is doing just that through a program called Tech Wizards. Over 30 community organizations collaborate with OSU Extension to deliver the 4-H Tech Wizards project, a program that helps under-represented and Latino youth learn more about information technologies. Youth in grades 3-12 participate in several ways including after-school activities and summer capstone camps, service learning projects, and conferences.

Results
Graduation rates for Tech Wizards are 95 percent; well over the graduation rate of 71 percent for the general Latino student population in Oregon.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Number of youth whose career choice was affected by participation in 4-H science and technology programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	300	252

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The United States presently faces a significant challenge - young people are not prepared with the necessary STEM workforce skills to compete in the 21st century (Rising Above the Gathering Storm, 2007). The International Association for Evaluation of Education Achievement (IES) released the most recent Trends in International Mathematics and Science Study (TIMMS) in December 2008. TIMMS data reveal achievement gaps between African America, Hispanic and white students in both fourth and eighth grades in the U.S.

What has been done
As part of the 4-H STEM initiative, the fourth annual residential summer science camp was held on the OSU campus during summer 2010. Campers spent two full weeks living and learning together in university facilities. An $80,000 grant was received from the ExxonMobil Bernard Harris Foundation to support full scholarships for 50 Oregon middle school students who were members of populations traditionally underrepresented in science and technology fields or who lived in underserved areas.

The OSU 4-H Youth Development Program collaborated with the Science Math Investigative Learning Experiences (SMILE) program, and the Colleges of Engineering and Science to deliver a two-week resident science, technology, engineering and mathematics (STEM) camp on the OSU campus. The camp curriculum included classroom and field activities with pre-service teachers, mechanical and chemical engineering delivered by our partners in Engineering, and field trips to science centers and the beach. A total of 60 educational contact hours is provided.

With guidance from their teacher/mentors in the pre-service teacher program, campers work in teams to plan a Mission to Mars. They then develop a report to NASA explaining why the mission plan should receive funding and why. Each camper team produces a poster on their projects and a scale model of their crewed mission space module. Each team gives an oral summary of their

research accompanied by PowerPoint slides to parents, faculty and guests at the closing program. Science outcomes are documented with the Science Process Skills Inventory.

Results

Interest, Future Intentions, and Growth in Science: Questions on the post-test asked campers about their interest, future intentions, and learning related to science specifically as a result of attending the camp. Campers were asked to rate their agreement with each item on a one to five scale: 1) strongly disagree; 2) disagree; 3) not sure; 4) agree; 5) strongly agree.

The percentage of campers "agreeing" or "strongly agreeing" with each item were:
increased interest in science (88%);
want to take more science at school (74%);
plan a career in science (64%);
developed science skills at camp (88%);
learned new things about science (90%);
and feeling like a better scientist (86%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

Special 4-H summer camps introduce young people to science, engineering and technology, increasing their interest, knowledge and skills.

4-H STEM programs are preparing youth for careers in science, engineering and technology, expanding their interests, raising their grades and helping them plan for college.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Ag: Small Farms and 'Natural' and Organic Production Systems

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%			
102	Soil, Plant, Water, Nutrient Relationships	10%			
112	Watershed Protection and Management	10%			
204	Plant Product Quality and Utility (Preharvest)	2%			
205	Plant Management Systems	3%			
216	Integrated Pest Management Systems	20%			
307	Animal Management Systems	30%			
308	Improved Animal Products (Before Harvest)	3%			
403	Waste Disposal, Recycling, and Reuse	2%			
604	Marketing and Distribution Practices	10%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual	24.6	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**
338458	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
338458	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1104075	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A combination of activities (methods listed below) that are designed to meet the needs and opportunities of the communities of interest will be built upon the research base of the university. These activities will be specifically designed to elicit learning, application of learning, and social, economic and environmental impacts on target populations.

2. Brief description of the target audience

1) Producers of naturally or organically produced crops and livestock products and/or small farms for either life-style, hobby, or commercial purposes. 2) Agricultural infrastructure, suppliers and service providers 3) State and federal agencies overseeing regulatory and incentive based programs

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	26390	100042	818	1066

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total

Actual	13	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Delivered

Year	Actual
2010	324

Output #2

Output Measure

- Number of Workshops Delivered

Year	Actual
2010	114

Output #3

Output Measure

- Number of Group Discussions

Year	Actual
2010	25

Output #4

Output Measure

- Number of One-on-one Interventions

Year	Actual
2010	1227

Output #5

Output Measure

- Number of Demonstrations

Year	Actual
2010	42

Output #6

Output Measure

- Number of Web Sites Maintained

Year	Actual
2010	7

Output #7

Output Measure

- Number of Newspaper Articles Published

Year	Actual
2010	37

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase in number of farms that are using best management practices leading to reduced nutrient loading of surface water and soil erosion.
2	Increase in number of farmer's markets statewide.
3	% increase in gross sales at farmers' markets statewide.
4	% increase in gross value of non-traditional crops produced in Oregon
5	Number of farmers (x 1000) using OSU Extension Service information.
6	Economic value derived from application of new information and production methods by participating farmers (Million $).

Outcome #1

1. Outcome Measures

Increase in number of farms that are using best management practices leading to reduced nutrient loading of surface water and soil erosion.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	87

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Wheat has become a common rotation in Willamette Valley cropping systems. In many cases, wheat is direct seeded into fields where the preceding crop was perennial grass grown for seed. Perennial grass seed crops generally remain in a field for 2-5 years and after establishment are grown in the absence of tillage. Nitrogen is a critical nutrient in grass seed production which generally requires top-dressed N applications of ammonium based N fertilizers to be applied at a rate of 100-170 lbs/N/year. N fertilizer acidifies the soil at a rate of 0.1 pH units/100 lbs N/acre. A combination of topdressed N applications and natural acidification causes soil pH in the surface 2 inches of the soil to be lowered by 0.1-0.2 units/year.

A soil pH of 5.4 or higher is required to achieve optimum yields in wheat production. If pH is lower than 5.4 then a lime application is recommended. However, lime is not mobile in the soil. Thus, tillage is required to mix lime below the soil surface. If a grower intends to no-till plant wheat into a field where the soil pH is low at the surface and tillage is absent, yield is substantially reduced. A standard soil sample taken to the recommended depth of 6-8 inches does not reveal the low surface pH due to mixing of the surface and below surface soils.

What has been done
Adoption of no-till planting has been challenging in the Willamette Valley due to heavy slug pressure and "unknown" soil fertility problems. Taking stratified soil samples from no-till wheat fields where plant growth was poor helped identify the problem. Soil pH was measured in the top 2 inches separately from the remainder of the soil sample and confirmed a pH problem in 100% of the fields that showed symptoms.

The topic was presented to 300+ Willamette Valley wheat growers at the OSU Wheat Production

meetings at three locations. Individual consultations were held with 15 field representatives and 10 no-till wheat producers to discuss the topic in detail and to explain how to take the newly recommended stratified soil sample.

OSU Extension Publication EM 9014 titled "Evaluation of Soil Nutrients and pH by depth in situations of limited or no tillage" was published. This paper describes the problem in detail, explains why it occurs and describes how to test for it. This publication has been sent to field representatives, crop consultants and no-till growers. The publication is also being hosted on the Willamette Valley Field Crops website (oregonstate.edu/valleyfieldcrops) and will be distributed to 300+ wheat growers at the upcoming 2011 OSU Wheat Production meetings.

Results
A brief survey conducted with those who participated in the individual consultation (N=25 with a 32% return rate) indicated the following:

I had not thought about this problem before OSU began showing data - 100%

I have started taking a stratified soil sample before I (or my customers) no-till plant wheat - 88%

I have identified fields where the surface soil pH is too low for me (or my customers) to plant wheat without tillage - 63%

I have saved money by utilizing the stratified soil sampling procedure - 88%

Knowing this information, I am more confident that I can make no-till planting more successful on my farm (or with my clients) - 88%

On how many acres did you take a stratified soil sample - range of 200-1000 acres

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
216	Integrated Pest Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

Increase in number of farmer's markets statewide.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Awareness about healthy eating habits has consumers looking for the freshest, ripest, high-quality foods they can find, and many farmers and fishermen are stepping up to fill the demand at farmers' markets, roadside stands and U-pick operations.

What has been done
OSU Extension provided marketing advice directly to consumers, bulk buyers and producers to succeed. Statewide and in many local markets, OSU has helped develop publications and websites to connect people and businesses popularly now known as food hubs. Workshops on alternative marketing channels for agricultural professionals and studies of consumer needs and expectations helped establish new market venues.

Results
The focus on matching the farmer with the appropriate market for his/her products and needs has benefited the producer, the consumer and the community. Farmer's markets and related outlets are building in strength and availablity across the state. The number of farmers' markets has increased tenfold since 2000.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

% increase in gross sales at farmers' markets statewide.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	144

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Direct farm marketing is becoming a big part of Oregon agriculture; small farms see bigger profits by selling direct to consumers.
It's a trend that OSU Extension is supporting with direct marketing research and education.

What has been done
The OSU Extension small farms program conducts direct marketing research and deliver outreach education to help Oregon farmers learn how to market directly to consumers more effectively.

Results
According to the USDA Census of Agricultural, 6,274 Oregon farms sold products directly to consumers, with total sales of $56 million. This is a 144 percent increase over the $21 million in farm direct sales reported in the 2002 Census. Farmers' markets are a great success story for Oregon agriculture. They create a direct way that communities can support agriculture in the local area, which contributes to the vitality of communities and Oregon agriculture.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #4

1. Outcome Measures

% increase in gross value of non-traditional crops produced in Oregon

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Artisan cheese is produced largely by hand in small batches, with particular attention paid to the cheese-maker's art, using as little mechanization as possible. In the past most artisan cheeses consumed in the U.S. have been imported. Establishment of an artisan cheese industry gives dairy producers the opportunity to earn greater returns for specialty products they make on their farms.

What has been done
Extension educators provide training for all levels of artisan cheese makers including, assistance with improvements in product quality, shelf-life, and safety. Extension specialists consult closely with individual cheese makers to solve specific challenges, and serve as technical advisors for the Oregon Department of Agriculture's Food Safety Division.

Results
Extension food technology educators helped launch and sustain the development of an Oregon artisan cheese industry that has grown from just two operations in 1999 to 21 artisan cheese producing outlets in 2010. In 2009 Oregon artisan cheese producers earned $16 million in farm gate sales for their products.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)

216	Integrated Pest Management Systems
308	Improved Animal Products (Before Harvest)
604	Marketing and Distribution Practices

Outcome #5

1. Outcome Measures

Number of farmers (x 1000) using OSU Extension Service information.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Economic value derived from application of new information and production methods by participating farmers (Million $).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Oregon farmers sold nearly $1 million of organic blackberries in 2009 and that number is expected to increase. However, there's little research-based information to assist growers.

What has been done
OSU scientists are looking at the fertilizer and irrigation requirements of the plants, the best way to organically manage weeds without reducing yield and quality, and harvesting by machine without insect contaminants. Additionally, they're examining how the cultivar, harvest methods, storage and processing conditions affect nutritional properties. Although focused on organic production, findings from the study will also benefit conventional growers. OSU Extension disseminates the latest findings to producers throughout the state to increase the economic value of the products.

Results

OSU research on organic blueberries has concluded that plants grown on raised beds have higher yields than those on flat ground and that replacing sawdust mulch with plastic weed mats would save growers nearly $2,300 per acre in three years. As a result, growers have switched to weed mats on more than 80 percent of the blueberry acreage planted in 2010.

OSU researchers have also developed an online calculator to help small farmers and gardeners use organic fertilizers efficiently and save money. More than 1,300 registered users - of which more than 300 were from Oregon - managing more than 45,000 acres in at least 60 countries have downloaded it more than 4,800 times. If farmers saved $50 per acre through reduced fertilizer costs or increased yields on just a quarter of the 45,000 acres, then they would have saved more than $500,000.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
403	Waste Disposal, Recycling, and Reuse
604	Marketing and Distribution Practices

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

Over the past five years there has been a shift in attitude and commentment among faculty to working with the small farm operator. Many of our faculty members who have traditionally worked with large, commercial operations have seen the value in helping all

producers/growers, regardless of the size of their operations, to better achieve Extension's overall educational objectives for a more sustainable and economic approach to farming/ranching.

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

Evaluation Results

Small farms see bigger profits by selling direct to consumers.

Market demand is increasing for organic berries and vegetables; research and Extension helps organic production be effective and efficient.

The number of farmers' markets and related enterprises have increaed tenfold since 2000.

Extension leads efforts to expand Oregon artisan cheese industry; the number of producers and their profits are growing.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Ag: Dryland Cropping Systems

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	17%			
111	Conservation and Efficient Use of Water	27%			
112	Watershed Protection and Management	7%			
205	Plant Management Systems	6%			
216	Integrated Pest Management Systems	10%			
502	New and Improved Food Products	10%			
511	New and Improved Non-Food Products and Processes	10%			
601	Economics of Agricultural Production and Farm Management	8%			
604	Marketing and Distribution Practices	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	18.3	0.0	0.0	0.0
Actual	31.0	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**
423072	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
423072	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1380093	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A combination of activities (methods listed below) that are designed to meet the needs and opportunities of the communities of interest will be built upon the research base of the university.

2. Brief description of the target audience

1. Crop producers primarily in the Columbia Basin of Oregon and Washington and Western Idaho.2. Agricultural infrastructure and service providers in Oregon, Washington and Idaho3. State and federal agencies managing both regulatory and incentive based programs

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	37529	111155	990	1357

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	13	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Delivered

Year	Actual
2010	114

Output #2

Output Measure

- Number of Workshops Delivered

Year	Actual
2010	117

Output #3

Output Measure

- Number of Group Discussions

Year	Actual
2010	55

Output #4

Output Measure

- Number of One-On-One Interventions

Year	Actual
2010	473

Output #5

Output Measure

- Number of Demonstrations

Year	Actual
2010	32

Output #6

Output Measure

- Number of Web Sites Maintained

Year	Actual
2010	7

Output #7

Output Measure

- Number of Newspaper Articles Published

Year	Actual
2010	39

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Acres of improved wheat varieties planted times the proven economic advantage above the industry norm (Million $).
2	Acres planted to new crops as a result of OSU research and Extension programs times the proven economic advantage over the norm (Million $)
3	Established value of application of new technologies per acre time the number of acres affected (Million $)
4	% reduction in soil erosion when new technologies are employed.
5	Percentage of farmers using Extension information.
6	Value of new processes and products applied because of OSU Extension programming (Million $).

Outcome #1

1. Outcome Measures

Acres of improved wheat varieties planted times the proven economic advantage above the industry norm (Million $).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Variety selection is the most important management decision made by growers. Selecting adapted varieties that combine high yield potential and a high level of pest resistance are essential for the economic viabliity of wheat production in Oregon.

What has been done
OSU's wheat breeding program has been at work for more than a century, and its researchers have developed dozens of varieties adapted to Oregon's diverse growing conditions. Fruits of their labor include Goetze, a variety well-suited for the Willamette Valley; high-yielding Tubbs and Tubbs 06; and ORCF 101 and ORCF 102, which were bred to resist a particular herbicide. ORCF 101 is the most widely planted wheat variety in Oregon, accounting for almost 20 percent of the state's wheat acreage.

The OSU Extension Service has educated wheat producers around the state on the advantages of the new varieties, resulting in farmers' planting about a million acres of wheat in 2010, more than half of which was blanketed by varieties developed by OSU.

Results
OSU's winter wheat varieties have increased Oregon yields by at least two bushels per acre in recent years. At $6 per bushel, this means an additional $10 million for Oregon wheat growers each year. Last year, Oregon's farmers sold more than $260 million of wheat, making it the state's fourth-largest agricultural commodity.

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
205	Plant Management Systems
216	Integrated Pest Management Systems
502	New and Improved Food Products
511	New and Improved Non-Food Products and Processes
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Acres planted to new crops as a result of OSU research and Extension programs times the proven economic advantage over the norm (Million $)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Oregon wheat growers are interested in producing hard red winter wheat due to its higher market value. Over the last ten years the price of hard red winter wheat averaged $0.50 higher than soft white winter wheat (the traditional wheat class grown in Oregon). However, to realize these economic benefits growers must meet market expectations for grain protein and quality while meeting their expectations for yield. Management issues with hard red winter wheat are complex and involve the three way interaction between the environment, variety, and nitrogen management.

What has been done
An applied research study on the management of nitrogen in hard red winter wheat was implemented. The study was conducted at multiple sites across the low (10-12 inch) and

intermediate (14-16 inch) rainfall zones to capture a range of environments, yield potentials, and tillage systems in Oregon. Three hard red winter wheat varieties along with a soft white winter wheat control were evaluated across a range of fall and spring nitrogen fertilizer rates. Project results were related to clientele through grower meetings, research reviews, field days, Extension publications, and journal publications.

Results

If study results are implemented as recommended, current hard red winter wheat growers will achieve yield and protein goals more consistently. This could result in approximately a $150,000/year (~10,000 acres, 30 bu/ac, and a $0.50/bu premium for hard red winter wheat) increase in income for Oregon producers. In addition, hard red winter wheat acres may increase in Oregon as growers in the intermediate rainfall zone choose to produce this class over the traditionally grown soft white winter wheat. Even at a modest increase of 5000 acres this would result in a $250,000/year (5000 acres, 100 bu/ac, and a $0.50/bu premium for hard red winter wheat) increase in income for Oregon producers.

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
205	Plant Management Systems
216	Integrated Pest Management Systems
502	New and Improved Food Products
511	New and Improved Non-Food Products and Processes
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

Established value of application of new technologies per acre time the number of acres affected (Million $)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Cereal leaf beetle (CLB) is an invasive new pest of economic concern to cereal grains and grass forage/seed crops in Oregon and the Pacific Northwest (PNW) region. The pest can significantly damage crop yield/quality and subjects Oregon ag commodities to California and Canada quarantine requirements. CLB was first identified in Oregon in 1999 and has rapidly spread to 22 Oregon counties due to the absence of natural predators. Thus, insecticide application has provided the only effective means of control available to the growers. Upon CLB arrival, the PNW region lacked region-specific information for crop damage impact, economic threshold levels needed to make spray application decisions, and natural predators.

What has been done
In response to the CLB threat, OSU Extension Service engaged in a series of research, outreach, and biological control projects to develop pest biology and management information pertinent to the PNW, provided educational outreach to the agriculture industry, and provided necessary assistance to partner agencies in the introduction and establishment of biological control agents (parasitoid wasps). Continuing active participation in the Oregon CLB Biological Control program and the Western States CLB Workgroup (includes Canada)helps to monitor and stablize the situation.

Results
In NE Oregon, CLB numbers were low in 2010 with less than 1000 acres treated with insecticide for CLB control in the area. Overall, parasitoid wasps continue to hold CLB numbers in check except for a few hot spots. Union and Baker Counties continue to serve as parasitoid collection sites for re-distribution in CLB infested areas of Oregon. Producers consider biological control and threshold levels when making spray application decisions in fields when CLB are located during field scouting activities.

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
205	Plant Management Systems
216	Integrated Pest Management Systems
502	New and Improved Food Products
511	New and Improved Non-Food Products and Processes

601 Economics of Agricultural Production and Farm Management
604 Marketing and Distribution Practices

Outcome #4

1. Outcome Measures

% reduction in soil erosion when new technologies are employed.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers have long used tillage before planting a crop. Tillage aerates the soil, facilitating easier root penetration for the new crop; it helps with fertilization by stimulating the growth of microorganisms, and mixes organic matter throughout the soil. Probably the most important benefit is its help with weed control. However, tillage also makes the soil susceptible to wind and water erosion. Under reduced tillage, stubble and other plant residue remain on top of the soil rather than being plowed or disked into the soil. The new crop is either planted into the stubble using a drill or into narrow strips of tilled soil using a strip-till implement.

What has been done
In 2010, a comparison between conventional tillage and the strip-till method was made on a Malhuer County farm, in corn planted after wheat. Comparisons between the two tillage methods were made on three center-pivot irrigated fields. One sprinkler tower in each pivot was treated with conventional tillage; the rest of the towers were strip-tilled. Yields between the two methods were not significantly different, with strip-tillage at 256.1 bu/acre; conventional, 257.8 bu/acre.

Results
Before 2009, there was no strip-tilling nor drilling on fields in Malheur County. Due to this applied research program and the resulting education by the local Extension faculty member, the county now has seven no-till or strip-till producers on a total of 2,100 acres. The estimated reduction in soil erosion, where no-till or reduced till systems have been implemented, is 2.5 tons per acre per year. The value of this reduction in Malheur County in 2010, calculated at $6.00 per ton, is $12,600.

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
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Percentage of farmers using Extension information.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Value of new processes and products applied because of OSU Extension programming (Million $).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Local interest in renewable energy crops has increased significantly to grow oilseed crops and, in some cases, produce bio-fuels from locally grown crops. The region currently produces high-value certified seed crops such as canola and sunflower which require well-defined isolation zones to prevent cross-pollination. Commercial production of rapeseed for crushing purposes could impede isolation zones needed by high value seed crops. Alternatives to rapeseed/canola crops need to be identified in order to lessen possible conflicts with isolation needs of high-value specialty seed crops.

What has been done
Field research and demonstration projects have been conducted to evaluate camelina and soybean agronomic performance in local cropping systems. An on-farm soybean variety trial demonstration project was conducted to evaluate agronomic performance of 5 Roundup Ready soybean varieties and 1 conventional variety representing 5 different relative maturity rating groups. Camelina trails were conducted with available varieties. Results were disseminated via various educational outreach efforts.

Results
Soybean yields averaged 35 to 45 bu/acre. Gross income was $460.89/acre at $11.32/bu. Soybean could be a potential rotational crop in irrigated grass seed cropping systems when wheat prices are not competitive.

The oilseed crop camelina works within dryland/irrigated cropping systems in NE Oregon as demonstrated by research and limited commercial production. However, yields are limited due to lack of adapted varieties and economic value remains too low even with available tax credit incentives. Development of adapted varieties and improved price structure is needed to increase commercial production.

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
205	Plant Management Systems
216	Integrated Pest Management Systems
502	New and Improved Food Products
511	New and Improved Non-Food Products and Processes
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

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

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

Evaluation Results

OSU's winter wheat varieties have increased Oregon yields by at least two bushels per acre in recent years. At $6 per bushel, this means an additional $10 million for Oregon wheat growers each year.

Following recommendations resulting from a recent study, current hard red winter wheat growers achieve increased income valuing approximately $150,000/year (~10,000 acres, 30 bu/ac, and a $0.50/bu premium for hard red winter wheat).

In NE Oregon, Cereal Leaf Beetle (CLB) numbers were low in 2010 with less than 1000 acres treated with insecticide for CLB control. Overall, parasitoid wasps continue to hold CLB numbers in check except for a few hot spots.

The estimated reduction in soil erosion, where no-till or reduced till systems have been implemented, is 2.5 tons per acre per year. The value of this reduction in Malheur County during 2010, calculated at $6.00 per ton, is $12,600.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Ag: Livestock Based Production Systems

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	8%			
112	Watershed Protection and Management	8%			
121	Management of Range Resources	8%			
205	Plant Management Systems	20%			
303	Genetic Improvement of Animals	20%			
307	Animal Management Systems	20%			
308	Improved Animal Products (Before Harvest)	3%			
311	Animal Diseases	4%			
315	Animal Welfare/Well-Being and Protection	4%			
501	New and Improved Food Processing Technologies	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	22.3	0.0	0.0	0.0
Actual	28.5	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**
383585	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
383585	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1251285	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A combination of activities (methods listed below) that are designed to meet the needs and opportunities of the communities of interest will be built upon the research base of the university.

2. Brief description of the target audience

1.Ranchers, dairy producers and animal product processors2.Agricultural infrastructure, suppliers and service providers3.State and federal agencies managing both regulatory and incentive based programs

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	78031	114664	954	1735

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	32	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Education Classes Planned

Year	Actual
2010	293

Output #2

Output Measure

- Number of Workshops Planned

Year	Actual
2010	284

Output #3

Output Measure

- Number of Group Discussions Planned

Year	Actual
2010	156

Output #4

Output Measure

- Number of One-On-One Interventions Planned

Year	Actual
2010	1256

Output #5

Output Measure

- Number of Demonstrations Planned

Year	Actual
2010	73

Output #6

Output Measure

- Web Sites Maintained

Year	Actual
2010	6

Output #7

Output Measure

- Newspaper Articles Planned

Year	Actual
2010	98

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Increased market value (Million $) created by application of new processes and animal products.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Milk is Oregon's official state beverage and its third-largest agricultural commodity, with dairy farmers grossing $404 million in sales in 2009. The state's dairy industry contributes more than $1 billion to Oregon's economy each year thanks to its approximately 350 dairy farms and 120,000 dairy cows.

What has been done
To help dairy farmers maximize their milk production, OSU is studying the factors that influence dairy cows' comfort level, which is measured by how much time they lie down. When a cow lies down, the blood flow to her udder increases, which produces more milk. More time on the ground equals more milk.

Extension faculty assist the dairy farmers with correlations between management practices, like assuring comfort level of the herd, and the amount of milk produced, developing recommendations for keeping dairy cows healthy while optimizing income and the quality of the milk.

Results
For each additional hour a dairy cow lies down, there's a gain of 3.7 pounds of milk. Those extra pounds mean extra cash for dairies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
121	Management of Range Resources
205	Plant Management Systems
303	Genetic Improvement of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
501	New and Improved Food Processing Technologies

Outcome #2

1. Outcome Measures

Economic value of assistance from OSU Extension Service professionals as reported by producers (Million $).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Does production practices of clientele who use OSU Extension program information to properly test soil change? Do clientele follow OSU guidelines for fertilizing pastures? The goal of this evaluation is to determine whether pasture fertilization programs lead to improved fertilizer application practices; thereby saving producers money by decreasing the amount of fertilizer applied, increasing forage production with increased type and amount of fertilizer, improving timing of application, and/or using the information to make environmentally prudent decisions in their fertilization program.

What has been done
Educational information provided to producers included numerous classes and workshops,

consultations with producers, applied research projects, and publishing and sharing of fact sheets on proper soil testing and fertilizing. The information covered topics such as how to take a soil sample, interpreting soil test results, understanding fertilizer materials, using the OSU fertilizer guide, strategic fertilization, grazing impact on fertility, legume components and fertilizing, and much more (T-Sum 200, Se fertilization of pastures, Pasture Calendar, Oregon Beef Library publications, poster presentations, etc.).

Results

Survey responses were returned by 42 western Oregon producers who had worked with OSU on pasture fertilization issues. The majority of them (79%) have taken soil samples to evaluate their soil fertility. Of these, 93% used the soil test results to guide their fertilizer applications. About half plan to take soil samples within 2 to 3 years to recheck their status. A large majority of the producers reported that they followed these practices or changed their practices because of OSU information.

Over half of the producers said they saved money by fertilizing according to OSU recommendations. The savings reported in the survey calculates out to be an estimated $30.25/acre of pasture. With an estimated 1.8 million acres of pasture in western Oregon, forage producers have the potential to save over 54 million dollars by following OSU pasture fertilizer guidelines.

80% of producers surveyed believe that their fertilizer practices are more environmentally sound by following OSU guidelines. It is a well-documented fact that fertilizing judiciously protects the groundwater from being contaminated by improper fertilization practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
121	Management of Range Resources
205	Plant Management Systems
303	Genetic Improvement of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
501	New and Improved Food Processing Technologies

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)

Evaluation Results

For each additional hour a dairy cow lies down, there's a gain of 3.7 pounds of milk. Those extra pounds mean extra cash for dairies.

Producers in western Oregon are taking soil samples to evaluate their soil fertilitiy and using soil test results to guide their fertilizer applications. The savings from reduced fertilizer use reported by the producers calculates to $30.25/acre of pasture. Producers also report that their fertilizer practices are more environmentally sound by following OSU guidelines.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Ag: High Rainfall and Irrigated Cropping Systems

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	16%			
111	Conservation and Efficient Use of Water	6%			
112	Watershed Protection and Management	5%			
204	Plant Product Quality and Utility (Preharvest)	15%			
205	Plant Management Systems	20%			
216	Integrated Pest Management Systems	20%			
403	Waste Disposal, Recycling, and Reuse	3%			
405	Drainage and Irrigation Systems and Facilities	6%			
502	New and Improved Food Products	4%			
603	Market Economics	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	61.8	0.0	0.0	0.0
Actual	35.9	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**
479482	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
479482	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1564106	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A combination of activities (methods listed below) that are designed to meet the needs and opportunities of the communities of interest will be built upon the research base of the university.

2. Brief description of the target audience

1. Crop producers in this group of crops generally produced in the high rain fall or irrigated production system in Oregon2. Agricultural infrastructure, suppliers and service providers3. State and federal agencies managing both regulatory and incentive based programs

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	122720	375293	1042	2093

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	47	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Planned

Year	Actual
2010	537

Output #2

Output Measure

- Number of Workshops Planned

Year	Actual
2010	570

Output #3

Output Measure

- Number of Group Discussions Planned

Year	Actual
2010	284

Output #4

Output Measure

- Number of Demonstrations Planned

Year	Actual
2010	155

Output #5

Output Measure

- Number of One-On-One Interventions Planned

Year	Actual
2010	2284

Output #6

Output Measure

- Web Sites Maintained (Planned)

Year	Actual
2010	12

Output #7

Output Measure

- Number of Newspaper Articles Planned

Year	Actual
2010	173

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Thousands of acres of improved varieties planted
2	Thousands of acres of new crops planted
3	Economic impact of new varieties planted (Million $)
4	Economic value of new crops planted (Million $)
5	Improvement in air, soil and water parameters resulting from application of new technologies (% Improvement)
6	Sales value (Million $) of new value added products
7	Value of information received by growers (Million $; reported value based on survey results)

Outcome #1

1. Outcome Measures

Thousands of acres of improved varieties planted

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	6	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Potatoes are the third-most-consumed food crop in the world after rice and wheat, and the #1 vegetable in the U.S.

What has been done
In partnership with the USDA and universities in Idaho and Washington, OSU is developing new varieties of potatoes that meet the needs of growers, processors, retailers and consumers. The program aims to produce potatoes that resist pests and diseases, are attractive, have higher yields, are more nutritious, and handle processing better. So far that effort has resulted in the release of more than 30 new varieties. With the help of Extension faculty's educational efforts, about a third of Oregon's potato acreage is planted with varieties jointly developed by OSU and its collaborators.

Results
Varieties recently released by the tri-state program are produced on more than 140,000 acres in the Northwest, with value to growers estimated at about $505 million. In Oregon, farmers sold $173 million of potatoes in 2010, making them the state's sixth-largest crop and Oregon's leading vegetable crop in terms of gross farm gate sales. Sales of processed potatoes from the tri-state program total at least $300 million a year in Oregon.

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
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

Outcome #2

1. Outcome Measures

Thousands of acres of new crops planted

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The alternative crops program is an effort to identify profitable alternative crops that can be successfully integrated into traditional wheat/fallow production. In 2005, an organic wheat production study was initiated. The organic wheat market continues to experience growth and premium prices. The market premiums paid for organic wheat make it an attractive alternative to conventional production if certain obstacles such as fertility requirements and effective weed control can be determined.

What has been done
Research looking at organic wheat as an alternative crop began in 2005. The current study is being conducted as a cooperative effort with Extension and Ag Reserach Center in Pendleton. The research is studying in-crop weed control options, green manure cover crops, in combination with a 3 year rotational study. The current study was completed in 2010. The research trial's preliminary results were presented during the Weed and Crop Tour. Additional results were also presented at the Columbia Basin Cereal Seminar. In 2010, the study also added Washington State University as a partner, and incorporated the Nelson site into a two state organic cropping systems research study. Farm visits and regular communication is helping early adopters

overcome some significant challenges.

Results
Adoption of organic wheat production still faces many challenges; however, growers rely on and use information from the organic research trials, resulting in a production of about 3,500 acres within the region.

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
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

Outcome #3

1. Outcome Measures

Economic impact of new varieties planted (Million $)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Oregon hazelnuts are one of Oregon's top agricultural commodities and a crop that OSU Extension specialists and OSU College of Agricultural Science plant breeders have supported for

many years via a series of research and outreach education programs. Oregon grows 99 percent of the U.S. hazelnut crop.

What has been done
Over the past three decades Extension specialists and field faculty, working closely with growers, have concentrated research and education efforts on helping the Oregon hazelnut industry cope with the fungal disease eastern filbert blight (EFB), which is deadly to trees lacking EFB resistance.

OSU CAS plant breeders introduced the first EFB resistant hazelnut tree varieties in 2005 and additional resistant varieties were released in 2008-09. As Oregon hazelnut growers begin planting the new varieties now available, Extension educators continue to work alongside researchers doing field testing of new crop management strategies, reporting results and making recommendations to growers. In addition to assisting with introduction of new EFB resistant hazelnut trees, Extension specialists and researchers have also helped growers reduce reliance on chemical sprays for pest control.

Results
In 2010 the state's hazelnuts production climbed to 47,000 tons, 47 percent larger than the previous year. The value of the crop was $74.7 million, increasing 44 percent from 2009.

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
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

Outcome #4

1. Outcome Measures

Economic value of new crops planted (Million $)

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Improvement in air, soil and water parameters resulting from application of new technologies (% Improvement)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	8	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Current irrigation management in containerized nursery production results in the over-application of water. This increases the leaching fraction resulting in increased leaching of nutrients and pesticides. These practices result in water misuse and threaten water quality.

What has been done
Growers were educated on current irrigation scheduling research and practices through workshops, seminars, and an article published in the industry press. In addition, research was conducted to determine impact of irrigation schedules on crop growth and water use efficiency. A technique was also developed to monitor water use and schedule irrigation on a gravimetric basis. This method had the added benefit of providing insight into diurnal water use throughout the season.

Results
Irrigation scheduling by leaching fraction in container nurseries in the Willamette Valley and in the Midwest has reduced water use by >30%. Although still being evaluated for full impact, the gravimetric approach could decrease water use by a minimum of 100,000 gal per growing acre per year.

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
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities

Outcome #6

1. Outcome Measures

Sales value (Million $) of new value added products

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The process of making wine is complex and OSU is helping improve the process from field to market. The Oregon Wine Research Institute focuses industry collaboration in research and Extension.

What has been done
OSU vine experts have found that using a cover crop in a mature vineyard produces higher-quality grapes and a better bottom line. Grapes from vines with grass alleyways scored the highest in terms of phenolics, which affect how wine feels in the mouth, and anthocyanins, which are pigments that produce a more intense red - a desirable trait in Oregon's famous Pinot noir. That increased quality translates into higher prices for Oregon grapes and for the wine made from them.

Results
For Oregon's 835 vineyards, that bottom line was nearly $77 million in sales of grapes in 2010. That's in addition to the $202 million in cases that the state's 395 wineries sold.

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
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
502	New and Improved Food Products
603	Market Economics

Outcome #7

1. Outcome Measures

Value of information received by growers (Million $; reported value based on survey results)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	31

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Spotted wing drosophila (SWD), a potentially devastating threat to Oregon's $100 million berry crop industry, was detected for the first time in the Willamette Valley in 2009. The small fly is native to southeast Asia and capable of despoiling tons of unharvested fruit in a short time. The majority of U.S. small fruits production occurs in the Pacific Coast states.

What has been done
CAS researchers and Extension specialists responded quickly, organizing a Pacific Northwest region-wide team of entomologists and berry crops specialists to battle the problem. In 2010, the team tested alternative methods for effective control of SWD and conducted grower education programs to help producers identify the pest in fruit, berry, and grape crops.

Results
In the absence of spotted wing drosophila detection and control measures, economists project a potential loss of $31.4 million per year to Oregon small and tree fruit producers.

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
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

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)

Evaluation Results

Potato varieties recently released by the tri-state research and Extension program are produced on more than 140,000 acres in the Northwest, with value to growers estimated at about $505 million.

In 2010 Oregon's hazelnuts production climbed to 47,000 tons, 47 percent larger than the previous year. The value of the crop was $74.7 million, increasing 44 percent from 2009.

Irrigation scheduling by leaching fraction in container nurseries in the Willamette Valley has reduced water use by >30%.

Adoption of organic wheat production still faces many challenges; however, growers rely on and use information from the organic research trials, resulting in a production of about 3,500 acres within the region.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Healthy People, Healthy Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	80%			
704	Nutrition and Hunger in the Population	10%			
724	Healthy Lifestyle	10%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	15.3	0.0	0.0	0.0
Actual	18.6	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**
248202	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
248202	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
809655	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Stakeholder input will be acquired from numerous sources, including state government agencies, the Oregon Food Bank, local funders, consumers, food policy councils, health care provider organizations, and other organizations and consortia. Programs will be delivered based on several factors, including the

identification of critical audiences at local levels, working organizational partnerships, and input from OSU researchers. Target audiences will be identified and the most effective programming options will be identified and implemented.

2. Brief description of the target audience

The target audience will consist of low-income and high-risk families, including parents, children, and seniors.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	12091	85049	52542	63579

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational Events and Workshops to be Delivered

Year	Actual
2010	339

Output #2

Output Measure

- Demonstrations to be Conducted

Year	Actual
2010	349

Output #3

Output Measure

- Newsletters to be Published

Year	Actual
2010	103

Output #4

Output Measure

- Web Sites to be Developed/Maintained

Year	Actual
2010	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of participants that will indicate positive change related to nutritional content of food purchases for their family.
2	Percentage of participants that report improved food resource management (meal planning and food budgeting).
3	Percentage of participants that report improved food safety practices such as preparation, thawing and storing procedures.
4	Percentage of participating families that will report increased physical activity among their children.

Outcome #1

1. Outcome Measures

Percentage of participants that will indicate positive change related to nutritional content of food purchases for their family.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	60	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Delivering nutrition education for limited-income Oregonians is a high priority for OSU Extension. Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done
The Oregon Nutrition Education Program, offered in 34 Oregon counties, provides education to help limited-income Oregonians make healthy food choices, handle food safely, manage their food budgets, and choose active lifestyles. OSU Extension Service faculty and staff deliver the community-based program to adults via nutrition education classes, and through indirect means such as displays, newsletters and direct mail.

Results
For adult participants 24-hour diet recalls and adult survey checklists were collected at entry into and upon completion of the class series. The survey checklist measures 19 key food-related practices; practices related to healthy eating to improve health, reduce obesity, and reduce risk of chronic diseases included:

62% Follow My Pyramid advice to plan and prepare family meals
58% Use "nutrition facts" on food labels to make food choices

38% Serve at least 2 kinds of fruit each day
40% Serve at least 2 kinds of vegetables each day
42% Serve whole grain foods like whole wheat bread
42% Purchase low-fat milk/milk products
34% Prepare foods without adding salt

84% of adult participants showed improvement in one or more nutrition practices (plans meals, makes healthy food choices, prepares foods without adding salt, or reads nutrition labels

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Percentage of participants that report improved food resource management (meal planning and food budgeting).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	70	76

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Delivering nutrition education for limited-income Oregonians is a high priority for OSU Extension. Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done

The Oregon Nutrition Education Program, offered in 34 Oregon counties, provides education to help limited-income Oregonians make healthy food choices, handle food safely, manage their food budgets, and choose active lifestyles. OSU Extension Service faculty and staff deliver the community-based program to adults via nutrition education classes, and through indirect means such as displays, newsletters and direct mail.

Results
For adult participants 24-hour diet recalls and adult survey checklists were collected at entry into and upon completion of the class series. The survey checklist measures 19 key food-related practices; practices related to food resource management included:

41% Compare prices before buying food
36% Plan meals ahead of time
42% Shop using a grocery list
36% Think about healthy food choices when planning meals
35% Plan in order not to run out of food before the end of the month

76% of adult participants showed improvement in one or more food resource management practices (i.e. plan meals, compare prices, uses grocery list and does not run out of food before the end of the month)

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population

Outcome #3

1. Outcome Measures

Percentage of participants that report improved food safety practices such as preparation, thawing and storing procedures.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	60	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Delivering nutrition education for limited-income Oregonians is a high priority for OSU Extension. Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done
The Oregon Nutrition Education Program, offered in 34 Oregon counties, provides education to help limited-income Oregonians make healthy food choices, handle food safely, manage their food budgets, and choose active lifestyles. OSU Extension Service faculty and staff deliver the community-based program to adults via nutrition education classes, and through indirect means such as displays, newsletters and direct mail.

Results
For adult participants 24-hour diet recalls and adult survey checklists were collected at entry into and upon completion of the class series. The survey checklist measures 19 key food-related practices; practices related to food safety included:

38% Do not allow meat and dairy foods to sit out for more than 2 hours
41% Do not thaw frozen foods at room temperature
31% Cook ground meat or meat loaf until it is no longer pink

58% of adult participants showed improvement in one or more of the food safety practices (i.e. thawing and refrigeration of perishable foods)

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Percentage of participating families that will report increased physical activity among their children.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Delivering nutrition education for limited-income Oregonians is a high priority for OSU Extension. Poor diet and lack of physical activity significantly contribute to four of the ten leading causes of death in the United States - heart disease, cancer, stroke and diabetes - and adversely influences disorders such as obesity, hypertension and osteoporosis. A national study by the USDA concluded that large educational interventions to encourage Americans to improve their diets may prevent tens of thousands of cases of heart disease and save between $4 billion and $12 billion in health care expenditures and lost earnings over 10 years.

What has been done
The Oregon Nutrition Education Program, offered in 34 Oregon counties, provides education to help limited-income Oregonians make healthy food choices, handle food safely, manage their food budgets, and choose active lifestyles. OSU Extension Service faculty and staff deliver the community-based program to adults via nutrition education classes, and through indirect means such as displays, newsletters and direct mail.

Results
For adult participants 24-hour diet recalls and adult survey checklists were collected at entry into and upon completion of the class series. The survey checklist measures 19 key food-related and/or physical activity practices. Parents reported that their children are physically active for at least 30 minutes a day; this represents a 40% increase from the the beginning of the program to its completion.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Changes in practices related to dietary quality, food resource management and food safety show significant improvement, the behavior change around increased physical activity for children appears to be stuck at about 40% for the past three years. Perhaps a review of the curricula would point to areas for improving the behavior change around physical activity.

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

Evaluation Results

84% of adult participants showed improvement in one or more nutrition practices (plans meals, makes healthy food choices, prepares foods without adding salt, or reads nutrition labels

76% of adult participants showed improvement in one or more food resource management practices (i.e. plan meals, compare prices, uses grocery list and does not run out of food before the end of the month)

58% of adult participants showed improvement in one or more of the food safety practices (i.e. thawing and refrigeration of perishable foods)

40% of adult participants reported that their children are physically active for at least 30 minutes a day

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Healthy Aging

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	50%			
802	Human Development and Family Well-Being	50%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	2.9	0.0	0.0	0.0
Actual	2.2	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
28205	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
28205	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
92006	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Stakeholder input will be acquired from agency partners including Oregon Senior and Disabled Services in the Dept. of Human Services, the regional Area Agencies on Aging, Oregon AARP, and others. Programs will be delivered based on the identification of critical audiences at local levels, working organizational partnerships, and input from OSU researchers. Target audiences will be identified and the

most effective programming options will be identified and implemented. Extension activities will be coordinated with the recently established Center for Healthy Aging Research on the OSU campus.

2. Brief description of the target audience

The target audience will consist of older adults living in Oregon (particularly those at some risk with regard to their health and well-being), family caregivers, and professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1301	0	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational Events, Workshops, and Demonstrations to be Conducted

Year	Actual
2010	65

Output #2

Output Measure

- Public Service Announcements to be Delivered

Year	Actual
2010	5

Output #3

Output Measure

- Newsletters to be Published

Year	Actual
2010	16

Output #4

Output Measure

- TV and Media Programs to be Delivered

Year	Actual
2010	3

Output #5

Output Measure

- Web Sites to be Developed and Maintained

Year	Actual
2010	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of participants that indicate increased knowledge about healthy aging practices including diet, activity, medication management, health monitoring, and family relationships.
2	Percentage of participating family health care providers that report informed decision-making related to older adults in their care.
3	Percentage of participants reporting improvement in their overall (age-adjusted) health status as a result of the program.

Outcome #1

1. Outcome Measures

Percentage of participants that indicate increased knowledge about healthy aging practices including diet, activity, medication management, health monitoring, and family relationships.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	60	49

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
U.S. health care costs have increased dramatically over the past decade, exceeding $2.3 trillion in 2008. Americans who are 65 and older account for a significant share of these costs due to the onset of health concerns that come with life in later years.

What has been done
Extension is spearheading efforts to deliver online educational programs designed to help older Oregonians successfully manage chronic health problems and live healthier. The course includes five units: 1) Memory Difficulties: Should I be Worried?, 2) Depression in Later Life, 3) Medication Jeopardy, 4) Food As Medicine? and 5) Physical Activity and Exercise in Later Life. The course material is provided as a series of self-paced modules, as an interactive, fee-based online course, and as an enhanced DVD presentation.

Results
Information obtained from initial survey evaluation identified "Memory" and "Depression" as the two most-helpful modules, with 48% and 50% respectfully reporting a significant increase in knowledge. All individuals indicated that there was "information learned that changed behavior in some way." The information ranged from "I will watch my medications more closely" to " I need to seek out a diagnosis for depression".

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

802 Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

Percentage of participating family health care providers that report informed decision-making related to older adults in their care.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Lifespan concept recognizes all caregivers need occasional breaks, whether caring for a child with a disability or a spouse with dementia. Caring for someone who requires intensive or round the clock care can leave a caregiver stressed out and exhausted. Even with an infrastructure of respite care providers and a referral system in place, many families cannot afford the cost of respite care.

What has been done
Family Care Connection, part of OSU Extension Service on Oregon's Northern Coast, serves as the central point of contact for respite care services in the three-county area:
*Providing respite-related information to the community,
*Recruiting and training paid and volunteer respite providers,
*Connecting individual and/or families with respite care providers and,
*Linking individual and/or families with respite care payment resources.

Results
The primary purpose of respite care is to give relief to families and caregivers from the extraordinary demands of providing ongoing care. Respite is a wellness concept. Program outcome evaluations show that respite strengthens the ability of families and primary caregivers to continue to provide care in the home. Occasional relief supports family stability and well-being. The health and wellness benefits for both caregiver and care recipient, plus the financial savings due to a family's increased ability to continue to provide care in the home, are proven in the impact studies conducted. The stability of community based Family Community Connection program provides both economic and social benefits for the participating counties.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

Percentage of participants reporting improvement in their overall (age-adjusted) health status as a result of the program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	67

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Chronic conditions like diabetes, fibromyalgia, arthritis and high blood pressure require medical attention for the life of the patient. Studies have found that teaching self care management to those with chronic conditions helps them stay healthier longer and reduces health care costs over their lifetimes.

What has been done
Living Well is an evidence-based program which suggests 'fidelity' to the original Stanford University curriculum should generate similar impact (reduced ER visits, reduced doctor visits, etc). The target audience is older adults (60-90 years) who seek help on how to more effectively manage disease conditions.

The level of overall participative gain was assessed using the computer-based monitoring approaches that the Oregon Department of Human Services established (statewide) in 2005. A quarterly profile of participant demographics and attendance at each class is generated. The information is possible because registrants in the series are required to fill out identification profiles at the beginning of the first session and complete a pre-assessment of their perceived level of disease self-management, including the identification of self-efficacy. The same post evaluation is completed at the end of the final session. In addition, a random sample of 10-12 individuals who completed at least 4 of the 6 sessions is called six months after their last session ends and, using a scripted query, asked a series of questions about their continuing use of the self-management tools learned in the series.

Results

1. 66% of participants attended 4 of 6 sessions, exceeding the Standford expectation by 6%

2. Self-efficacy improved to 4.2 on a 1-5 scale in classes led by Extension faculty

3. Participants continued to use the self-management tools learned in the classes after the end of the series. A telephone follow-up found that over 80% of those queried six months after the end of the final session were still using tools learned in the classes i.e relaxation and pain management techniques, action planning and problem solving.

4. 67% of participants reported improved healthy status (by their own assessmetn as well as the assessment of their health providers).

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Implementation of the Mastery of Aging Well, five-module, online porgram was launched early in 2010. A more robust evaluation of the program and its related outcomes will be completed in time for the 2011 ROA.

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

Evaluation Results

Senior participants in the 6-week series of "Living Well" workshops documented improvemetns in self-efficacy (3.7 to 4.2 on a five point scale) and a pre-post test indicated changes in health-related self-management behaviors (increased use of pain management approaches, incresased physical activity/exercise). Evaluation studies demonstrated that particpants in the disease self-management training porgram developed improved self-efficacy, improved health status (by their own assessment as well as the assessment of their health providers), and reduced emergncy room use/doctor visits.

Program outcome evlaution shows that respite strengthens the ability of families and primary caregivers to continue to provide care in the home, supporting family stability and well-being. The health and wellness benefits for both caregivers and care recipients, plus the finaincial savings due to a family's increased ability to contiune to provide care in the home, speak to both the economic and social benefits of the community based respite program.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Financial Literacy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	100%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	1.6	0.0	0.0	0.0
Actual	2.4	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
28205	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
28205	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
92006	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Stakeholder input will be acquired from various sources including agency partners, local housing authorities, and coalitions related to financial management such as county-level consumer credit counseling bureaus. Programs will be delivered based on the identification of critical audiences at local levels, working organizational partnerships, and input from OSU researchers. Target audiences will be identified and the most effective programming options will be identified and implemented.

2. Brief description of the target audience

The target audience will consist of low-income and high-risk families, including parents, children, and seniors.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	309	0	474	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational Events and workshops to be Conducted

Year	Actual
2010	29

Output #2

Output Measure

- Newsletters to be Published

Year	Actual

2010	7

Output #3

Output Measure

- educational displays

Year	Actual
2010	2

Output #4

Output Measure

- website

Year	Actual
2010	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of participants indicating increased knowledge and skill in financial planning.
2	Percentage of participants indicating application of acquired financial management practices.

Outcome #1

1. Outcome Measures

Percentage of participants indicating increased knowledge and skill in financial planning.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	75	318

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Oregon 4-H program provides practical development opportunities that help young people prepare for real-life issues and challenges. One big challenge is financial literacy, according to a survey conducted by Extension 4-H faculty. This is not surprising. The latest statistics from the Federal Reserve indicate that consumer debt in the United States stands at nearly $2.5 trillion, and based on the latest Census statistics, that works out to be nearly $8,100 in debt for every man, woman and child living in the U.S.

What has been done
The 4-H program continues efforts to increase financial literacy among current 4-H members and in communities not yet served by 4-H. Responding to the needs assessment, Extension faculty designed a series of financial literacy classes for local families. The 4-H Family Finance Workshop Series was introduced in April 2010, in honor of financial literacy month. The program, designed for either adults or youth learners, can be modified for delivery in a number of settings.

Results
Outcome evaluation conducted at the completion of the classes documented significant increases among the high-school aged participants in the following knowledge domains:
Increased understanding of needs-versus-wants;
Basic budgeting;
Development of personal money goals;
Understanding and protecting an individual's credit;
Basic banking and savings; and

Careers and interviewing techniques.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Percentage of participants indicating application of acquired financial management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	558

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Money and work are two of the top sources of stress for almost 75 percent of Americans, according to the American Psychological Association's 2007 Stress in America survey. With rising consumer debt, falling housing prices, rising costs of living, and declining retail sales, many people are worried about how they will get through this recession.

What has been done
In tough times, managing individual household expenses can be a great concern. For some people, wading through pages of long words to find help can be overwhelming. In response, OSU Extension developed an easy to access and easy to navigate website to help individuals and families find help and support through the current economic crisis. In its first month the OSU Tough Times website received 3,063 page views.

Results
An on-site invitation asked users to complete a web-based outcome survey:
69% of respondents indicated adopting at least one Tough Times strategy learned on the website to assist with their personal financial situation.
45% of respondents indicated an interest in adopting a second Tough Times strategy learned on

the website to assist with their personal financial situration.
43% of respondents indicated they are currently using information available on the Tough Times website to help manage through the current tough economic times.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

The current economic situation in Oregon and throughout the US called for a shift of resources to address the emerging needs of individuals and families. The fast response to the crisis earned acknowledgement and recognition from National Public Radio, the Oregon Human Resources department, the Governernor's office, and APLU.

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

Evaluation Results

Oregon 4-H teaches financial literacy to prepare youth for money management challenges later in life.

Managing in Tough Times, an OSU based website, was picked up and promoted by National Public Radio as one of the most useful resources available to help people manage through the economic crisis.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Sea Grant: Water Protection and Management

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	100%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	2.8	0.0	0.0	0.0
Actual	2.4	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
28205	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
28205	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
92006	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

We will work with officials and residents on programs and policies that lead to: a) more effective watershed management, b) stormwater and non-point source pollution mitigation, c) enhancement of local basins, d) sustainability of fish and wildlife populations and the ecosystems they reside in and e) awareness, prevention and control of aquatic invasive species. Activities will promote adoption of watershed-friendly management practices by individuals, watershed councils, governments and non-governmental organizations. A dedicate effort will involve youth in educational programs leading to change

in behavior and application of appropriate practices. Work with the Invasive Species Council will be used to assess the effectiveness of programming in increasing awareness, preventing, controlling and eliminating invasive species.

2. Brief description of the target audience

Watershed council members, educators, watershed-affiliated agencies, landowners, watershed recreationists, and other interested groups or individuals through leadership development, community involvement

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	828	1106	642	2880

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes to be Conducted

Year	Actual
2010	28

Output #2

Output Measure

- Number of Workshops to be Conducted

Year	Actual
2010	15

Output #3

Output Measure

- Number of Group Discussions to be Conducted

Year	Actual
2010	18

Output #4

Output Measure

- Number of Demonstrations to be Conducted

Year	Actual
2010	14

Output #5

Output Measure

- Number of Newsletters to be Published

Year	Actual
2010	6

Output #6

Output Measure

- Number of Web Sites to be Developed and Maintained

Year	Actual
2010	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of local program/policy changes leading to improved watershed health, invasive species management, or enhancement of local basins.
2	Watershed-friendly practices employed by individuals, watershed councils, governments and NGOs adopted as a result of OSU programming.
3	Number of youth participating in educational programming and watershed-friendly projects.
4	% increase in reporting of invasive species as a result of OSU programming.

Outcome #1

1. Outcome Measures

Number of local program/policy changes leading to improved watershed health, invasive species management, or enhancement of local basins.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Biological science supply houses are major suppliers of live organisms for classroom use. Many of the live organisms shipped for use in classrooms are non-native and some can become invasive. Teachers and students release the live organisms after the classroom activities are completed without knowledge that some of the species can become invasive

What has been done
As part of a bi-national USA and Canadian project, OSU Extension's Watershed Health and Aquatic Invasive Species specialist worked with a major biological science supply house in the Pacific Northwest to increase awareness about potentially invasive species shipped to schools and convinced the supply house to change practices that help prevent the spread of invasive species. The biological supply house is an important supplier of science kits and live organisms to school districts in Oregon, the Pacific Northwest and Western Canada.

Results
After learning about invasive species and concerns over their release, the science supply house stopped shipping potentially invasive crayfish into classrooms as part of a popular national science kit that was used in up to 25% of all the school districts in the nation. OSU Extension worked with the biological supply company to find suppliers for native crayfish as alternatives to non-native species. With guidance from OSU, the company also modified a guidebook for teachers that now includes invasive species prevention protocols and clear instructions to teachers on alternatives to releasing live organisms after class project is completed and, where necessary, protocols for proper disposal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #2

1. Outcome Measures

Watershed-friendly practices employed by individuals, watershed councils, governments and NGOs adopted as a result of OSU programming.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	28

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In recent years Oregon's coast and waterways have come under siege by nonnative aquatic plants and animals that degrade habitats, displace native species and damage native ecosystems. These invasive, species can quickly become serious threats to the economic and environmental value of the state's coastal areas. Costs related to damage and control of invasive species cost nearly $400 million annually in Oregon just to control invasive species.

What has been done
Oregon Sea Grant Extension led efforts with other federal and state agencies to 1) develop Early Detection and Rapid Response guidelines, and 2) provide ongoing training for managers and leaders responsible for monitoring watersheds.

Results
The detection/response tools have been adopted as operational guidelines for interagency watershed monitoring activities from northwest Washington into northern California. This is the first formalized interagency adoption of aquatic invasive species detection and control guidelines.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #3

1. Outcome Measures

Number of youth participating in educational programming and watershed-friendly projects.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	200	3512

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In recent years Oregon's coast and waterways have come under siege by nonnative aquatic plants and animals that degrade habitats, displace native species and damage native ecosystems. These invasive species can quickly become serious threats to the economic and environmental value of the state's coastal areas. Costs related to damage and control of invasive species cost nearly $400 million annually in Oregon just to control invasive species.

What has been done
The Watershed and Ivasive Species Education (WISE) program, which aims to increase awareness of invasive species through K-12 classroom and field-based experiences, trains teachers to integrate invasive species into the curriculum. WISE also provides a small stipend to conduct a stewardship project in the local watershed related to invasive species. In 2010, the WISE program trained 12 teachers on integrating invasive species and watershed learning into the classroom, bringing the total number of teachers trained through the WISE program to 48 since the program started in 2007. 20 new classroom stewardship projects ranged from developing outreach material to science inquiry to engaging members of the local community including watershed councils, local government, and newspapers in steam clean up projects.

Results
WISE is working: Students show increased knowledge of watershed values and invasive species! During the 2009-2010 school year, teachers piloted an online pre-post knowledge assessment of students (in grades 4-12) engaged in the WISE program. During this pilot program students reported a 116% increase in awareness of watershed values and services, and a 17% increase in knowledge of invasive species.

Students indicated that because of their increased knowledge of watersheds and invasive species, they were ready to take action in their community to help prevent the establishment of invasive species. In a post program survey of 47 students, 74% indicated they would never release live plants and animals, 60% said they would always clean their shoes to prevent spread, 66% said they were likely to keep an eye out for new invaders and report them, and 65% plan to tell their friends and family about invasive species.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #4

1. Outcome Measures

% increase in reporting of invasive species as a result of OSU programming.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In recent years Oregon's coast and waterways have come under siege by nonnative aquatic plants and animals that degrade habitats, displace native species and damage native ecosystems. These invasive species can quickly become serious threats to the economic and environmental value of the state's coastal areas. Costs related to damage and control of invasive species cost nearly $400 million annually in Oregon just to control invasive species.

What has been done
OSU Extension is involved in developing, promoting, managing, and maintaining the Oregon Invasive Species Reporting Hotline. In 2010 over 2000 adult volunteer citizens, agency staff and managers were trained on Early Detection and Rapid Reponses to invasive species. In addition, Extensin trained USFS summer crews (Aquatic and Riparian Effectiveness Monitoring Program) to actively search for and report aquatic invasive species.

Results

As a result of the trainings, 179 reports were received by the Oregon Invasive Species Hotline, which is a 6% increase from 2009. OSU Extension was directly involved in responding to 43 of the reports.

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

Brief Explanation

{No Data Entered}

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

Evaluation Results

After learning about invasive species and concerns over their release, the science supply house, which served sserveserser25% of all the school districts in the nation, stopped shipping potentially invasive crayfish into classrooms as part of a popular national science kit.

The Early Detection and Rapid Response tools for invasive species have been adopted as operational guidelines for interagency watershed monitoring activities from northwest Washington into northern California.

The Watershed and Invasive Species Education (WISE) program is working: Students show increased knowledge of watershed values and invasive species!.

Key Items of Evaluation