

2011 Oregon State University Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The Oregon State University Extension Service is one of the three statewide OSU public service units that help Oregonians tackle many of the state's highest priority economic, environmental, and social issues. Extension's mission is to engage the people of Oregon with research-based knowledge and education that focus on strengthening communities and economies, sustaining natural resources, and promoting healthy families and individuals.

Extension is the bridge linking OSU with the people of Oregon. Extension faculty provide problem-solving information and education from the OSU campus as well as the Extension units in all 36 Oregon counties. Because of the changing nature of Oregon's population, new Extension programs are being developed to reach out to diverse audiences in creative ways. New technologies allow Extension to create learning communities of people with common interests and to reach underserved audiences. Building on its 100 years of experience in Oregon, the OSU Extension Service is constantly evolving to meet the changing needs of the state and its people.

To carry out its challenging mission Extension is organized into five program areas in which faculty plan and develop educational outreach based on needs identified locally by Oregonians, and as a result of research carried out across the university. Interdisciplinary teams work within and across these program areas to ensure that the educational programs are effective and successful. The program areas are: agriculture and natural resources, family and community health, 4-H youth development, forestry and natural resources, and ocean and coastal resources (Sea Grant). Faculty are housed in county Extension offices, at Experiment Stations, on campus and with partner agencies such as the Oregon Food Bank, the Portland Public Schools, the Institute for Portland Metropolitan Studies, and Soil and Water Conservation Districts.

Now and then, we get the opportunity to celebrate our past as we move toward a new future. 2011 was that moment for Oregon State University. In 2011, the OSU Extension Service celebrated 100 years of educational outreach and opened 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 development, and sustainable businesses. A corps of several thousand Extension-trained, master-level volunteers reaches even farther, providing community service as Master Gardeners, Master Woodland Managers, Master Food Educators, Master Naturalists, Climate Masters at Home and more.

The future of Extension will see even greater outreach 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 "Community Engagement" designation. 2011 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 2011-15 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.
- Because 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.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	199.0	0.0	0.0	0.0
Actual	193.6	0.0	0.0	0.0

II. Merit Review Process

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

- Internal University Panel

2. Brief Explanation

The primary review for 2011 came from internal evaluation provided by University leadership, including the Provost and the deans of the four colleges that have active Extension programs. Several key decisions were made this year as a result:

1. 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.

- a. The regional administration is in place, saving the organization approximately \$650,000.
- b. With new sources of funding, \$1 million has been invested in technology and connectivity across the state.
- c. Two work groups have been established to begin the process of assisting faculty with business plan development and for improving needs assessment processes.
- d. The Program Council was formed to better address the core values and operating principles of the organization. The Council provides leadership for the development and delivery of strong and relevant

programs to meet needs and expectations of Oregon residents.

2. The 4-H Youth Development program's academic home transitioned from the College of Education to the College of Public Health and Human Science in 2010. The reorganization and restructuring was completed in 2011, with shared leadership for 4-H Youth Development and Family and Community Health programs put in place. This change better aligns the foundational disciplines of 4-H, human development, with its academic home and better aligns two Extension programs under joint leadership for efficiency, cost savings and potential for improved program impacts. This change places approximately 28% of OSU Extension's resources within the University's newly formed division of Healthy People, which includes the colleges of Public Health and Human Science, Pharmacy and Veterinary Medicine.

3. As reported in 2010, 18% of appropriated state dollars was reduced from the OSU Extension budget for the 2009-11 biennium. With the completion of the 2011-13 biennium budget process, another 11.5% of appropriated state funds was reduced from the OSU Extension budget. To date, we've been able to manage by attrition, identifying and securing new revenue sources, selective cost-saving actions like regionalization, and careful management of available resources. All who have met the fully satisfactory performance level and wish to continue to work for OSU Extension are currently employed. However, not being able to fill vacancies leaves undesirable holes and unmet needs throughout the state and on campus. The Program Council is in process of developing an organizational staffing plan that will balance our capacity to serve Oregon through the leadership of faculty and staff committed to the University's engagement mission. The staffing plan will be completed in September 2012.

III. Stakeholder Input

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from 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 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 and 2011. However, OSU Extension hosted 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 during the past year.

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
- Needs Assessments
- Other (Web searches of potential participants, Organizational Transformation faculty panel, 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 identify 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 member as they learn their role and their community as well as have increased the stakeholders' understanding of the faculty member's job expectations. Stakeholder input was widely used to set program priorities at all levels of the organization. In addition, with the 2001 implementation of SOARS, an on-line planning and reporting system, 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 individual 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
3666836	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	4490148	0	0	0
Actual Matching	4490148	0	0	0
Actual All Other	6115511	0	0	0
Total Actual Expended	15095807	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

S. No.	PROGRAM NAME
1	Forestry: Public Engagement for Planning Oregon's Future (including Climate Change)
2	Forestry: Enhancing the Competitiveness of Oregon's Forest Enterprises
3	Forestry: Sustaining Natural Resources
4	4-H Environmental Stewardship
5	4-H Nutrition, Health and Childhood Obesity Prevention
6	4-H Science, Technology, and Engineering
7	Global Food Security and Hunger: Small Farms and 'Natural' and Organic Production
8	Global Food Security and Hunger: Dryland Cropping Systems
9	Global Food Security and Hunger: Livestock Based Production Systems
10	Global Food Security and Hunger: High Rainfall and Irrigated Cropping Systems
11	Healthy People, Healthy Communities (including Food Safety and Childhood Obesity)
12	Healthy Aging
13	Financial Literacy
14	Sea Grant: Watersheds and Water Resources

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Forestry: Public Engagement for Planning Oregon's Future (including Climate Change)

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	6%			
902	Administration of Projects and Programs	4%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	1.5	0.0	0.0	0.0
Actual Paid Professional	4.0	0.0	0.0	0.0
Actual Volunteer	23.0	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
90343	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
90343	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
122312	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members in 40 of the 59 approved CoPs. OSU has 7 participants engaged in the Climate, Forests and Woodlands CoP and 3 in Wood Energy CoP, both with elements of public engagement and public policy.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty Master Gardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

Columnist Skip Nichols in the East Oregonian recently wrote:
 "...After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile?' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers....Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	18106	3220	925	215

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2011	183

Output #2

Output Measure

- Number of workshops

Year	Actual
2011	164

Output #3

Output Measure

- Number of demonstrations

Year	Actual
2011	228

Output #4

Output Measure

- Number of recurring newsletters published

Year	Actual
2011	157

Output #5

Output Measure

- Number of web sites maintained

Year	Actual
2011	11

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Households reporting improvements in behavior related to sustainable living and energy/climate related educational programming.
2	Organizations and individuals reporting improved public policies or policy statements as a result of Extension programs.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	139

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 resources 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 community 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.

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 following the course completion 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 participants adopted at least 2 behavior changes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #2

1. Outcome Measures

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations 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 interest and time during 2011. Additional FTE were added to this planned program because a number of 4-H youth development educators joined the Climate Masters at Home team. Several youth participants were actively involved in the program 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)

Evaluation Results

Climate Masters at Home increased the participants' knowledge and resulted in behavior change. In 2012 a follow up evaluation will be conducted to see if the Master volunteers are successful in the community outreach to help households gain knowledge and adopt new behaviors for lower household (GHG) emissions.

Key Items of Evaluation

The success of 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	17%			
511	New and Improved Non-Food Products and Processes	31%			
602	Business Management, Finance, and Taxation	25%			
604	Marketing and Distribution Practices	12%			
723	Hazards to Human Health and Safety	11%			
901	Program and Project Design, and Statistics	2%			
902	Administration of Projects and Programs	2%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.3	0.0	0.0	0.0
Actual Paid Professional	3.1	0.0	0.0	0.0
Actual Volunteer	17.0	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
72274	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
72274	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
97850	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 7 representatives on the Climate, Forest, Woodland CoP and 4 representatives on the Wildfire Information Network.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty Master Gardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

Columnist Skip Nichols in the East Oregonian recently wrote:
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Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	13760	2247	703	164

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2011	208

Output #2

Output Measure

- Number of workshops planned

Year	Actual
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2011 345

Output #3

Output Measure

- Number of demonstrations

Year	Actual
2011	128

Output #4

Output Measure

- Number of recurring newsletters published

Year	Actual
2011	79

Output #5

Output Measure

- Number of web sites maintained

Year	Actual
2011	3

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	Actual
2011	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A wooden puzzle manufacturer contacted the Oregon Wood Innovation Center (OWIC) requesting information on potential sources of supply for producing his product. Many technical details related to product performance were required - thickness, stiffness, machinability (via laser), and stability. One key ongoing challenge was related to burning during laser cutting.

What has been done

OWIC faculty contacted several Oregon hardwood plywood manufacturers to determine which products were best suited to this firm's needs. A key item in suitability related to the metal flake ('glitter') these companies add to their adhesive to serve as an identifier. For example, company A might use green glitter, company B red glitter, etc. The main lesson learned was that the glitter (being metal) was the main cause of the burning during laser cutting. Hence, the company needed to request 'glitter-free' panels.

Results

The puzzle manufacturer is now purchasing its materials from an Oregon hardwood plywood firm - a market worth \$100K per year.

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	Actual
2011	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 2011 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, materials 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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities

Brief Explanation

The forest products industry is increasingly dependent on technology for presentations, courses offered by distance education, and web-based information for advancing its product development and professional improvement. The Oregon Wood Innovation Center 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)

Evaluation Results

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

The 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	9%			
122	Management and Control of Forest and Range Fires	10%			
123	Management and Sustainability of Forest Resources	70%			
901	Program and Project Design, and Statistics	6%			
902	Administration of Projects and Programs	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	7.2	0.0	0.0	0.0
Actual Paid Professional	9.1	0.0	0.0	0.0
Actual Volunteer	56.0	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
212306	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
212306	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
287433	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 7 representatives on the Climate, Forest, Woodland CoP, 3 presentatives on the Wood Energy CoP and 4 representatives on the Wildfire Information Network.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty Master Gardener volunteers answering questions in their area of expertise.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	40556	7212	766	482

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

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational classes

Year	Actual
2011	196

Output #2

Output Measure

- Number of workshops planned

Year	Actual
2011	168

Output #3

Output Measure

- Number of recurring newsletters planned for publication

Year	Actual
2011	190

Output #4

Output Measure

- Number of web sites maintained

Year	Actual
2011	9

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of families engaging in succession planning for their forests and tree plantations.
2	Number of Christmas tree farms implementing best management practices.
3	Number of forest landowners reporting improved forest and natural resources management practices.

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	Actual
2011	201

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. 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.

What has been done

Ties to the Land, a workshop series for family forest landowners, was created to help slow this trend. Ties to the Land was developed and delivered by OSU Extension forestry faculty, the OSU Austin Family Business Program and the Oregon Forest Resources Institute to assist forest landowning families with succession planning and intergenerational transfer. The Ties to the Land program has produced an array of products for the landowner clientele, including:

- *The Ties to the Land pre-recorded workshop on DVD.
- *The Ties to the Land workbook (76 pages, with intro DVD).
- *Guidelines and other resources for workshop facilitators/educators (on the DVD and web).
- *The Ties to the Land Website.
- *Impacts Assessment tools.

Results

In 2011 the second wave of longitudinal impact assessment of Ties to the Land workshops were completed. This analysis showed that

- * 98% of attendees were very satisfied with the program and would recommend it to other landowners
- * 78% of participants reported they were more likely to develop a succession plan after attending the workshop (post workshop survey)

* 71% percent of respondents reported taking at least one succession planning action as a result their participation (1 year follow-up survey).

Since 2009, 67 workshops were attended by over 1,000 landowners increasing the likelihood that the 66,587 acres owned by these families will remain family forestlands.

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	Actual
2011	110

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Oregon is the nation's top producer of Christmas trees, garnering \$91 million in sales in 2010. Christmas trees became a little bit greener in 2011 with a new sustainability program that the Oregon State University Extension Service helped develop. Trees from certified farms have met standards for protecting land, water, wildlife and the people who work on the farm. The trees bear a tag identifying their origin as a Socially and Environmentally Responsible Farm (SERF).

What has been done

OSU Extension provided training and support to growers in developing their sustainability plans. To be certified, a farm must develop a plan for all its operations addressing five areas of social and environmental health: biodiversity, soil and water resources, integrated pest management, worker health and safety, and consumer and community relations. The Oregon Department of Agriculture conducts independent inspections of the farm, and the Pacific Northwest Christmas Tree Growers Association provides the final certification approval. In 2011, seventeen participants began a multi-month training in preparing a SERF sustainability plan.

Results

Five farms representing 4,090 acres of Christmas trees had completed a final sustainability plan and passed their qualifying inspection by the Oregon Department of Agriculture in time for the 2011 holiday season. Those five businesses received special identifying tags and brochures promoting and explaining the program for attaching to the trees.

The sales evaluation for the 2011 selling season is largely anecdotal and summarized below but provides some indication of anticipated impacts while the program is fresh and still in development.

*The SERF program provided an opportunity for new media coverage for both U-Cut farms (Portland, Eugene and Corvallis) and at retail lots in Los Angeles. (included 2 CBS radio interviews, internet talk radio and National Public Radio).

*For many of the buyers, this was their first exposure to SERF. Response was generally positive (as long as they don't need to pay more).

*U-Cut locations reported new and extra customers who indicated they had been using artificial trees as a sustainability solution.

*The SERF program reinforces the sale. Comments from some customers- "traveled a longer distance to purchase a SERF tree".

*The SERF program proved to be a good P.R. option for retailers to utilize at their lots, attracting more customers.

*There was an increase in responses from retailers at chain stores asking for certified trees

Additional outcome evaluation is planned for 2012 and will measure change in action among consumers and change in condition for the industry.

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	Actual
------	--------

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Private non-industrial forest lands owned by individuals, families and trusts are important in Oregon where forests cover nearly half the state's land area, over 30 million acres, and harvesting forest products is a primary industry, employing approximately 57,000 people with an annual payroll of \$2.1 billion. The 35 percent of Oregon's forest that is privately owned accounts for 76 percent of Oregon's timber harvest.

What has been done

Extension foresters are actively engaged in pioneering applied research providing useful, real-world forest management solutions and information. A 50-acre "Obie tract" case study in multi-age, multi-species management in mixed conifer forests was established in 2006. This study is providing much needed guidance for landowners seeking to produce complex forest structures and wildlife habitat while producing merchantable timber through use of small, planned disturbances with timber harvesting. In central Oregon, a 700-acre study, conducted in cooperation with the Deschutes National Forest, is evaluating various thinning methods with the goal of helping forestland managers better understand how to create diverse, resilient, and sustainable forest for the future.

Results

These studies have yielded research publications which forestland owners are today using to significantly increase the success of their management decisions, resulting in reduced costs and increased timber harvest yields. Follow-up surveys indicate Extension classes associated with the useful, real-world studies cited here lead directly to improved management practices, improved environmental conditions and a better understanding and appreciation of natural resource management issues.

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

Brief Explanation

After several years of operating the Extension Forestry and Natural Resource program with significant vacancies, the program was full staff during 2010 with bright, young talent providing new energy and new ideas for moving the program forward. In 2011, retirements and the move of key faculty to administrative roles has again forced the re-assignment and re-alignment of remaining faculty to new duties and/or larger geographic areas. It will take extra effort on the part of many to make resources available to keep the program relevant and responsive. There will need to be more dependence on grants and contacts, fees and contributions to fund the program.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

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

Extension education programs help keep Oregon Christmas trees a high-value, in-demand product while contributing to the state's sustainability goals.

Extension real-world research is changing the management practices and decisions of forestland owners, reducing costs and increasing timber yields while improving environmental conditions.

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	0.0	0.0
Actual Paid Professional	16.8	0.0	0.0	0.0
Actual Volunteer	127.0	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
392993	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
392993	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
532057	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

3. How was eXtension used?

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty Master Gardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

Columnist Skip Nichols in the East Oregonian recently wrote:
 "...After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile?' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers....Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	88974	70060	50966	42014

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	5	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
2011	11993

Output #2

Output Measure

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

Year	Actual
2011	104

Output #3

Output Measure

- Number of 4-H Wildlife Stewards partner schools.

Year	Actual
2011	25

Output #4

Output Measure

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

Year	Actual
2011	4640

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of youth gaining knowledge in science or natural resources.
2	Number of youth implenting practices to protect or improve the environment.

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	Actual
2011	11996

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 4-H program's 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 programs they learned about Oregon's natural resources and environment

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	Actual
2011	1810

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Oregon is a state of great socioeconomic and geographic diversity. This diversity results in strengths as well as challenges.

What has been done

In an effort to create a greater understanding and bridge the "urban-rural divide", a 4-H Youth Development program was implemented to provide a venue for rural and urban families to share their stories, lifestyles, beliefs and practices for managing the land for the next generation. Urban youth spend time in Eastern Oregon, helping ranchers with daily chores and learning about rurallife. Rural youth in turn visit Portland to learn about urban life, exploring issues relevant to the Metro region such as transportation, green spaces preservation, urban agriculture and water management.

Results

Since the first exchange in 2006, there have been 600 urban and rual participants involved in this program. Outcome evaluation indicate significant changes in attitude, knowledge and understanding of the socioeconomic and environmental issues from both sides fo the divide. In 2011, Oregon Public Broadcast produced a 30-minute feature about the program that has aired extensively, positively promoting the exchange program, 4-H and OSU Extension.

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
- Competing Programmatic Challenges

Brief Explanation

Hiring of new faculty and program assistants during the past four years has resulted in more individuals with a natural resource background conducting youth development programming. That new emphasis has greatly improved the quality and quantity of 4-H natural science enrichment and environmental literacy efforts.

V(I). Planned Program (Evaluation Studies)

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.

Outcome evaluation of the 4-H Urban-Rural Exchange program indicates significant changes in attitude, knowledge and understanding of the socioeconomic and environmental issues from both sides of the "urban-rural divide".

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

4-H Nutrition, Health and Childhood Obesity Prevention

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	9.8	0.0	0.0	0.0
Actual Paid Professional	10.2	0.0	0.0	0.0
Actual Volunteer	78.0	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
239409	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
239409	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
324127	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

3. How was eXtension used?

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	54753	43114	31363	25855

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth participating in Foods and Nutrition Projects.

Year	Actual
2011	1867

Output #2

Output Measure

- Number of youth participating in physical activity projects.

Year	Actual
2011	1016

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	Actual
2011	2998

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 healthy 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:

54% of students improved their knowledge about MyPyramid

55% of students improved their knowledge about healthy snack choices

67% 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	Actual
2011	1442

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.

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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):

31% of students reported improvement in eating vegetables every day.

34% of students reported improvement in eating 2 or more kinds of vegetables in a day

25% of students reported improvement in eating fruit every day

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

17% of students reported improvement in washing hands before touching or eating food.

24% of students reported improvement in doing things like running, riding a bike and playing sports every day.

29% 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
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

With cooperation from many local partners, Extension aims to reduce obesity among Oregon's youth population. The merging of the 4-H Youth Development program and the Family and Community Health program within the College of Public Health and Human Science is a first step in aligning resources and working in collaborative efforts to address the problem. Revisions for curricula used in Oregon and developed by other states were reviewed and amended to meet the dietary guidelines and incorporation of the MyPlate icon.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

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 and guiding their 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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	0.0	0.0
Actual Paid Professional	16.0	0.0	0.0	0.0
Actual Volunteer	120.0	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
347923	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
347923	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
507595	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

3. How was eXtension used?

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty Master Gardener volunteers answering questions in their area of expertise.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	84411	66467	48352	39859

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	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 science and technology projects and programs.

Year	Actual
2011	4674

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of youth gaining skills in science and technology.
2	Number of youth utilizing science and technology skills to improve their school or community.
3	Number of youth whose career choice was affected by participation in 4-H science and technology programs.

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	Actual
2011	4273

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 camp participants indicate a majority of the attendees: 1) gained science skills at the campus, and 2) increased their interest in science because of their camp experience.

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	Actual
2011	1081

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 the 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

Since its launch, the program has served thousands of students in Oregon and has expanded to about 100 sites nationally, including a growing number of military bases to serve families of service personnel. In Washington County where Tech Wizard originated, 95 percent of its participants go on to graduate from high school (compared to a 71% rate for Oregon's general Latino student population), with 70 percent going on to college. Tech Wizards has become so well recognized as a powerful program for youth achievement, participants were invited in 2011 to First Lady Michelle Obama's National Mentoring Conference at the Library of Congress.

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	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The National Academy of Science's 2007 Rising Above the Gathering Storm report stated that, "the United States presently faces a significant challenge - young people are not prepared with the necessary SET workforce skills to compete in the 21st century." In their 2011 review of America's position five years later, entitled Rising Above the Gather Storm, Revisited: Rapidly Approaching Category 5, the Academy's view is that our nation's outlook has worsened.

What has been done

As part of the National 4-H Science Mission Mandate, the fifth annual residential summer science camp was held on the OSU campus. 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 48 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 OSU's 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 was provided.

With guidance from their teacher/mentors in the College of Science's Science and Mathematics Education program, campers work in teams to plan a research project about Mars. They then develop a report to NASA explaining why the mission plan should receive funding. Each camper team gives an oral summary of their research accompanied by PowerPoint slides to over 200 parents, faculty and guests at the closing program. Science outcomes are documented with the

Science Process Skills Inventory.

Results

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:

- 88% increased interest in science
- 74% want to take more science at school
- 64% plan a career in science
- 88% developed science skills at camp
- 90% learned new things about science
- 86% feel like a better scientist

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

4-H education enhances science and math competitiveness for Oregon's future. 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. In 4-H where kids learn by doing, positive experiences in the sciences during the developmental years help open doors to science-related careers later in life.

V(I). Planned Program (Evaluation Studies)

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

Global Food Security and Hunger: 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	5%			
102	Soil, Plant, Water, Nutrient Relationships	10%			
112	Watershed Protection and Management	10%			
204	Plant Product Quality and Utility (Preharvest)	5%			
205	Plant Management Systems	10%			
216	Integrated Pest Management Systems	10%			
307	Animal Management Systems	10%			
308	Improved Animal Products (Before Harvest)	10%			
403	Waste Disposal, Recycling, and Reuse	10%			
604	Marketing and Distribution Practices	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	0.0	0.0
Actual Paid Professional	14.1	0.0	0.0	0.0
Actual Volunteer	15.0	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
329752	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
329752	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
446439	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

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 21 representatives on the eOrganic CoP as well as provides leadership for the group. Five representatives serve on the Pesticide Environmental Stewardship which has relevance to this planned program as well.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

Columnist Skip Nichols in the East Oregonian recently wrote:
 "...After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers...Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	16723	10543	864	171

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	14	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Delivered

Year	Actual
2011	188

Output #2

Output Measure

- Number of Workshops Delivered

Year	Actual
2011	144

Output #3

Output Measure

- Number of One-on-one Interventions

Year	Actual
2011	545

Output #4

Output Measure

- Number of Demonstrations

Year	Actual
2011	226

Output #5

Output Measure

- Number of Web Sites Maintained

Year	Actual
2011	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	% increase in gross value of non-traditional crops produced in Oregon
2	Increased number of farms successfully using business plans to improve farm/business profitability
3	Improvement in air, soil and water parameters resulting from application of enhanced management practices leading to reduced sediment and nutrient loading of surface water and soil erosion (number of farm using best practices).

Outcome #1

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	Actual
2011	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Growers in the sunny, fertile Snake River Valley of Idaho and Eastern Oregon produce more high-quality storage onions than any region in America, planting approximately 21,000 acres every year. This combination of climate and soil creates favorable growing conditions for third- and fourth-generation farmers who harvest more than 24,000 carlots (40,000 lbs. per carlot) annually.

Thrips-transmitting Iris Yellow Spot Virus (IYSV) has become a threat to production of bulb and seed onion crops. Disease outbreaks are believed to be due to thrips-borne virus inoculum originating from overlapping onion crops and possibly other weeds and crops that serve as alternate hosts. IYSV is transmitted by onion thrips (*Thrips tabaci* L.) and the virus replicates in its insect vector.

What has been done

Study was conducted at OSU's agricultural research and Extension centers and in grower's fields. The experimental design was a randomized complete-block with 4 replications. Populations of the onion thrips were evaluated weekly, and were used to determine spray schedules. During the sampling, leaf damage was recorded using 0-5 ratings. No damage was rated as 0 and damage = or > 80% was rated as 5. At least five plants per experimental unit were removed, bagged, and transferred to the entomology laboratory. Leaves were brushed using a mite brushing machine (Bio-quip), and thrips counted. Symptomatic onion plants were tested for IYSV by ELISA or PCR. SAS PROC GLM procedure was used to test variances and means were separated by Fisher's protected LSD test.

Based on the study's outcomes, thrips trials to determine efficacy of new insecticides and appropriate rotational strategies of existing insecticides were developed to help growers to maximize the tools they currently have. Data from the past two years was used to justify a

section 18 for the use of Movento for both Oregon and Idaho.

Results

As a direct result of Extension applied research and education, the Idaho-Eastern Oregon onion industry has grown from 6,200 acres in 1981 to nearly 21,000 acres in 2011, greatly minimizing financial and ecological costs and boosting profitability. In 2011, over \$116.8 million in sales was generated from onion production, with a multiplier of 7X that translates into \$818 million brought in the local economy.

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 #2

1. Outcome Measures

Increased number of farms successfully using business plans to improve farm/business profitability

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Improvement in air, soil and water parameters resulting from application of enhanced management practices leading to reduced sediment and nutrient loading of surface water and soil erosion (number of farm using best practices).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2305

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small acreage landowners can have a significant impact on water quality and other natural resources through their cumulative effect on the landscape. Manure runoff and sedimentation from small livestock operations, infestations of invasive weed species, degradation of riparian areas, and unreliable maintenance of private wells and septic systems are identified needs that can be significantly mitigated landowner awareness and adoption of appropriate practices. Oregon's Census of Agriculture reports that over 60% of all commercial farms in the state are smaller than 50 acres. The number of small farms is increasing; a continuing trend that began in the 1990s. The census data does not account for the thousands of non-commercial, "lifestyle" farms in Oregon.

What has been done

Living on the Land, a Western SARE Professional Development Project, was identified as a timely, relevant curriculum. Educational materials were adapted, locally, for small-acreage landowners in the Willamette River Basin. Funding received from the National Fish and Wildlife Foundation, Oregon Governor's Fund defrayed the cost of hosting workshop series for small acreage landowners. Four workshops and one field tour covering topics such as improving soil quality, pasture management, noxious weed control, protection of drinking water and septic system maintenance were offered in 6 watersheds, inviting neighbors to learn about management practices that improve land and water quality. Two hundred fifty three landowners participated in the workshop series.

Results

A questionnaire, approved by the Institutional Review Board was distributed to participants 7 to 11 months after finishing each workshop series. The questionnaire response rate was 69%. Landowners were asked if they had implemented any of the 10 management practices highlighted in the workshop series. Such practices included improved pasture management, testing soil before applying fertilizer, actively manage invasive weeds, and composting livestock manure.

*91% of the landowners implemented at least one new management practice on their farm as a result of the workshop series.

*61% implemented 3 or more new practices within 11 months of completing the workshop series.

*85% of the landowners still plan to implement one or more additional practices.

*89% of the participants told friends and neighbors about the practices they learned during the workshop series.

*As a result of attending the workshop series, 32% of the participants contacted their local Soil and Water Conservation District or Natural Resource Conservation Service for further technical assistance or funding opportunities to address concerns on their land.

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
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Government Regulations
- 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 commitment among faculty to working with the small farm operators. 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)

Evaluation Results

Landowners participating in Extension educational programs are adopting management practices that improve land and water quality.

New farmers and ranchers participating in Extension educational programs are better prepared to approach farming as a business and report improved management skills.

The long-term successful relationship between the onion industry, research and Extension has expanded the number of acres in onion production, greatly minimizing financial and ecological costs and boosting profitability.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Global Food Security and Hunger: 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	15%			
111	Conservation and Efficient Use of Water	15%			
112	Watershed Protection and Management	15%			
205	Plant Management Systems	15%			
216	Integrated Pest Management Systems	10%			
502	New and Improved Food Products	10%			
511	New and Improved Non-Food Products and Processes	5%			
601	Economics of Agricultural Production and Farm Management	10%			
604	Marketing and Distribution Practices	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	16.0	0.0	0.0	0.0
Actual Paid Professional	29.5	0.0	0.0	0.0
Actual Volunteer	30.0	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
691124	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
691124	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
935688	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 Idaho 3. State and federal agencies managing both regulatory and incentive based programs

3. How was eXtension used?

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	34732	21898	1795	355

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

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	30	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Delivered

Year	Actual
2011	296

Output #2

Output Measure

- Number of Workshops Delivered

Year	Actual
2011	244

Output #3

Output Measure

- Number of One-On-One Interventions

Year	Actual
------	--------

2011 1286

Output #4

Output Measure

- Number of Demonstrations

Year	Actual
2011	193

Output #5

Output Measure

- Number of Web Sites Maintained

Year	Actual
2011	37

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Acres of improved varieties and new or existing crops planted as a result of OSU research and Extension programs multiplied by the proven economic advantage above the industry norm (Million \$).
2	Established economic value from application of new or existing technologies or management techniques, processes, or reductions in production costs per acre multiplied by the number of acres affected (Million \$)
3	Value of new and existings products resulting from OSU Extension programming (Million \$).
4	Improvement in air, soil and water parameters resulting from application of new or existing technologies (%improvement)

Outcome #1

1. Outcome Measures

Acres of improved varieties and new or existing crops planted as a result of OSU research and Extension programs multiplied by 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	Actual
2011	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 viability 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 2011, 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
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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

Established economic value from application of new or existing technologies or management techniques, processes, or reductions in production costs per acre multiplied by the number of acres affected (Million \$)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	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 agricultural commodities to California and Canada quarantine requirements. CLB was first identified in Oregon in 1999 and 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 of crop damage impact, economic threshold level needed to make spray application decisions, and natural predators.

What has been done

In response to the CLB threat, the 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 stabilize the situation. Project results were related to clientele through grower meetings, research reviews, field days, Extension publications and journal publications.

Results

In NE Oregon, CLB numbers were low in 2011 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. As a result of the education efforts and communications, producers appropriately consider biological control and threshold level 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 #3

1. Outcome Measures

Value of new and existings products resulting from OSU Extension programming (Million \$).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	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) 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.

Research and outreach efforts led to a 98% rate of adoption. 'Norwest 553' is (now) the primary variety of hard red winter wheat grown on non-irrigated farms. Growers realize a 4.4-to-5.9 bushel per acre yield increase compared to older, traditionally-grown varieties. Adoption of this new-and-improved variety has increased on-farm revenue by \$253,000 to \$339,250 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
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

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Potatoes are a desirable crop with high production costs (\$3000/a). Klamath Basin potatoes require > 570,000 gallons of water/arce/year. Disease pressure in traditional potato areas is high. Allocation of limited water resources in the region is contentious; irrigation water has been reassigned to support ESA priorities.

What has been done

The Tri-State Potato Variety Development Program (USDA ARS, U of I, OSU, and WSU) developed Classic Russet, a variety with reduced input costs (10% reduction) and irrigation demands (7% reduction), that meets fresh market quality standards. Fourteen percent of Klamath Basin growers have adopted this variety; quite rapid compared to historic patterns. Classic Russet gives increased yields of 50-75 hundredweight (cwt) per acre over Russet Norkotah. Growers receive \$7.75 / cwt. It requires 40% less N and is more tolerant of verticillium wilt than other russets.

Results

Assuming 30% replacement of the 8,000 acres of Klamath fresh market potatoes, as a group, Klamath growers would save as much as \$6.5M in fertilizers, pesticides and similar inputs (\$285/a). They could expect income gains of as much as \$1.2M per year due to yield improvements (\$140/a). Water savings from the wide adoption of this variety would be enough to provision almost 7,000 households (indoor and outdoor water use) for a full year. Research continues on proper harvest and storage techniques. Growers are conducting on farm trials to prove the sustainability of this variety.

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

In 2011, retirements and the move of key faculty to administrative roles has again the re-assignment and re-alignment of remaining faculty to new duties and/or larger geographic areas. It will take extra effort on the part of many to make resources available to keep the program relevant and responsive. There will need to be more dependence on grants and contacts, fees and contributions to fund the program.

V(I). Planned Program (Evaluation Studies)

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, hard red winter wheat growers achieve increased income valuing approximately \$150,000/year (100,000 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.

Water savings from the wide adoption of the new Classic Russet potato, replacing 30% of the 8,000 acres of fresh market potatoes, would be enough to provision almost 7,000 households (indoor and outdoor water use) for a full year.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Global Food Security and Hunger: 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	10%			
112	Watershed Protection and Management	10%			
121	Management of Range Resources	20%			
205	Plant Management Systems	5%			
303	Genetic Improvement of Animals	5%			
307	Animal Management Systems	20%			
308	Improved Animal Products (Before Harvest)	5%			
311	Animal Diseases	10%			
315	Animal Welfare/Well-Being and Protection	5%			
501	New and Improved Food Processing Technologies	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	0.0	0.0
Actual Paid Professional	28.6	0.0	0.0	0.0
Actual Volunteer	29.0	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
668538	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
668538	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
905109	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 processors 2. Agricultural infrastructure, suppliers and service providers 3. State and federal agencies managing both regulatory and incentive based programs

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 6 representatives on the Rangelands CoP and 5 representatives on the Niche Meat Processor Assistance Network, as well as one each on the Beef Cattle CoP, the DAIReXNET CoP and Livestock and Poultry Environmental Learning Centers.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

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Columnist Skip Nichols in the East Oregonian recently wrote:

"..After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile?' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers....Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	33446	21087	1728	341

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	29	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Education Classes Planned

Year	Actual
2011	193

Output #2

Output Measure

- Number of Workshops Planned

Year	Actual
2011	199

Output #3

Output Measure

- Number of One-On-One Interventions Planned

Year	Actual
2011	1313

Output #4

Output Measure

- Number of Demonstrations Planned

Year	Actual
2011	181

Output #5

Output Measure

- Web Sites Maintained

Year	Actual
2011	23

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased market value (Million \$) created as a result of implementation of new or existing production processes, creation of animal products, or reduction in costs by increasing use of proven production practices.
2	Improvement in air, soil and water parameters resulting from application of new technologies (%improvement)

Outcome #1

1. Outcome Measures

Increased market value (Million \$) created as a result of implementation of new or existing production processes, creation of animal products, or reduction in costs by increasing use of proven production practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Pasture and other forages make up the backbone of livestock and dairy production in Western Oregon. Moderate temperatures and high rainfall in most months of the year, combined with irrigation in summer provide ideal conditions for grass growth. With escalating purchased feed prices, maximizing quantity and quality of home-grown forages is even more important. In order to accomplish this, producers need more detailed information about forage management.

What has been done

Extension faculty planned and conducted educational workshops throughout Western Oregon and Northern California using local and other relevant research-based information specifically designed to address the following three key concepts: forage quality, harvest height, and root growth and development. More than 200 producers attended pasture and forage production workshops in 2011. Detailed information on how grasses and legumes grow, growing points, growth rate, plant roots, forage quality, and forage quantity was presented.

Results

In a follow up survey the majority of respondents reported that they either learned or improved their understanding of key forage management concepts. Ninety-eight percent improved understanding of yield and persistence of plants. Ninety-one percent improved their understanding of recommended harvest heights. About 98% learned more about plant roots. Importance of forage management in fall was understood by 94%. Almost all participants, over 94%, learned more about nutritional value related to plant maturity. Ninety-four percent reported improved understanding of vegetative growth.

The majority of respondents reported that they changed management practices and improved production in response to the forage programs. Ninety-two percent changed their harvest

practices to reflect plant height and maturity recommendations. And 82% reported improved forage production yield and quality.

Forage yield was typically doubled through the use of improved management practices. Where forage management was typically at 2 to 4 tons per acre with poor to relaxed practices, improved practices are now estimated to yield 4 to 8 tons per acre. Average increase in forage yield is about 3 tons per acre. With good quality alfalfa hay currently valued at \$200 per ton, there is a \$600 per acre value of improved forage production. Average economic impact of \$60,000 per ranch participant per year was realized.

Forage quality was also improved and has led to improved animal performance. Calves that gained 0.5 to 1.5 lb per day with poor to average quality forage reported gains of 2.0 to 3.0 lb per day by program participants. Cow body condition score, an measurement that impacts production, improved from 4.5 to 5.0. Reproductive performance increased from 85% to 95%. Dairy cow feed costs were decreased by 10%.

The environmental impact of the forage programs was significant. Through improved forage management, producers' fields have increased amount of ground cover which protects the rivers and groundwater from excess fertilizers, manure, and sediment.

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

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	36

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 1993 the Oregon Department of Agriculture was charged with the enforcement of water quality standards as they related to agricultural activities by the Oregon Legislature. This legislation caused an evolution of agricultural water quality planning and enforcement that culminated in 2009.

What has been done

As a result, Oregon State University Extension Service worked in partnership with Soil and Water Conservation Districts to provide educational workshops, Cows and Creeks, to improve collaboration among stakeholders and reinforce scientific-based decision making to improve management and regulatory oversight of natural resources and water quality. These programs were delivered at 11 different locations across a seven year period of time. Annual topics changed based on needs and changing information and regulations

Results

Evaluation of the Cows and Creeks program was conducted in 2011 via printed, multiple-choice survey, mailed to 151 participants (33% return rate). The respondents (n=50) were livestock/land owner/manager (84%), governmental agency (30%) and non-profit (20%). Respondents (affiliation not a variable) stated relationships improved with government agencies (49%), land/livestock owners (45%), and non-profit organizations (38%). Forty-two percent of respondents indicated they utilized financial and/or technical aid from various agencies. The respondents secured more than \$1,000,000 in grant funding and personal contributions to enhance riparian function. Of 21 people that received funding, 70% believed the projects resulted in a return on investment as indicated by livestock performance, recreational opportunities, habitat for wildlife and fisheries, water quality standards and/or farm/hay production. Forty-eight percent of respondents implemented at least one restoration project or changed management to improve riparian function. As a result of these workshops, the respondents (n=50) observed improvement with the following; cow/calf performance (24%), riparian vegetation (42%), fish habitat (20%), bank stabilization (36%), and stream flow (18%).

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

In 2011, retirements and the move of key faculty to administrative roles have forced the re-assignment and re-alignment of remaining faculty to new duties and/or larger geographic areas. It will take extra effort on the part of many to make resources available to keep the program relevant and responsive. There will need to be more dependence on grants and contacts, fees and contributions to fund the program.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluation results of the Forage Management program indicat that producers increased understanding and application of progressive forage management practices. Economics were favorable to those who followed parogram recommendations and environmental impacts were also significant.

Cows and Creeks workshops lead to natural resource improvements through collaboratvie Extension programming in Eastern Oregon.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Global Food Security and Hunger: 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	10%			
111	Conservation and Efficient Use of Water	10%			
112	Watershed Protection and Management	10%			
204	Plant Product Quality and Utility (Preharvest)	10%			
205	Plant Management Systems	10%			
216	Integrated Pest Management Systems	10%			
403	Waste Disposal, Recycling, and Reuse	10%			
405	Drainage and Irrigation Systems and Facilities	10%			
502	New and Improved Food Products	10%			
603	Market Economics	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	56.0	0.0	0.0	0.0
Actual Paid Professional	38.2	0.0	0.0	0.0
Actual Volunteer	39.0	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
889878	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
889878	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1204773	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 Oregon 2. Agricultural infrastructure, suppliers and service providers 3. State and federal agencies managing both regulatory and incentive based programs

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 3 representatives on the Consumer Horticulture CoP, 2 representatives on the Grapes CoP and 3 representatives on the Plant Breeding and Genomics CoP.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	45023	28386	2326	460

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

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	39	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Planned

Year	Actual
2011	218

Output #2

Output Measure

- Number of Workshops Planned

Year	Actual
2011	210

Output #3

Output Measure

- Number of Demonstrations Planned

Year	Actual
------	--------

2011 167

Output #4

Output Measure

- Number of One-On-One Interventions Planned

Year	Actual
2011	1795

Output #5

Output Measure

- Web Sites Maintained (Planned)

Year	Actual
2011	46

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Acres of improved varieties and new or existing crops planted as a result of OSU research and Extension programs multiplied by the proven economic advantage above the industry norm (Million \$)
2	Improvement in air, soil and water parameters resulting from application of new or existing technologies (% Improvement)
3	Value of new or existing products resulting from OSU Extension programming(Million \$)
4	Established economic value from application of new or existing technologies or management techniques, processes, or reductions in production costs per acre multiplied by the number of acres affected (Million \$)

Outcome #1

1. Outcome Measures

Acres of improved varieties and new or existing crops planted as a result of OSU research and Extension programs multiplied by 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	Actual
2011	326

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 the land-grant 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 education 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 about \$505 million. In Oregon, farmers sold \$173 million of potatoes in 2011, 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

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	44

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Wasco County has some 12,000 acres planted to cherry trees, of which 5-6,000 acres are served by The Dalles Irrigation District. Fruit quality is directly linked to adequate irrigation water.

Growers have expressed concerns about potential pressures to reduce water withdrawals from the Columbia River, and would prefer to be pro-active rather than reactive to governmental or environmentalist pressures to reduce water consumption.

What has been done

Since the mid-1990s, Extension faculty have emphasized through programs and publications information that has helped growers better understand how to determine the need for first irrigation and how to properly schedule irrigation. Through these efforts, growers began to realize the need to adopt new scientific based irrigation scheduling techniques. Replacement equipment for out-moded, outworn equipment was identified and brought about the adoption of scientific irrigation scheduling, a technology that allows remote measurement and reporting of soil moisture levels so growers can schedule irrigation only when needed. A federal grant provided growers with funds to install two moisture sensors to monitor the moisture content of the soil in every 10 acre parcel. These sensors provide real time data on the water needs of the trees allowing

growers to make informed decisions about their moisture needs.

Results

With the use of these sensors sweet cherry producers can expect a 10-20% reduction in water use. In the 2011 irrigation season 3,110 acres benefitted from scientific irrigation management, saving 969,215 kWh in power and 610 acre-ft of water. At \$.0059 cents per kWh, the value of energy savings to the irrigation district was \$5,718. 610 acre-ft of water is approximately equal to 19.9 million gallons, enough to meet indoor water demands of 3160 US households. Additional benefits from avoidance of erosion, run-off, and fertilizers carried to ground water are noted but have not been assigned value here.

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 #3

1. Outcome Measures

Value of new or existing products resulting from OSU Extension programming(Million \$)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	16

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 speciality 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 2011. 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
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 #4

1. Outcome Measures

Established economic value from application of new or existing technologies or management techniques, processes, or reductions in production costs per acre multiplied by the number of acres affected (Million \$)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	318

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 2011. That's in addition to the 202 million cases that the state's 395 wineries sold. Oregon's total wine sales topped \$250 million last year.

4. Associated Knowledge Areas

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

In 2011, retirements and the move of key faculty to administrative roles have forced the re-assignment and re-alignment of remaining faculty to new duties and/or larger geographic areas. It will take extra effort on the part of many to make resources available

to keep the program relevant and responsive. There will need to be more dependence on grants and contacts, fees and contributions to fund the program.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In Oregon, farmers sold \$173 million of potatoes in 2011, making potatoes the state's sixth-largest crop and Oregon's leading vegetable crop in terms of gross farm gate sales.

With the use of scientific based irrigation scheduling techniques sweet cherry producers can expect a 10-20% reduction in water use. In the 2011 irrigation season 3,110 acres benefitted from scientific irrigation management, saving 610 acre-ft of water, enough water to meet indoor water demands of 3160 U.S. households.

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 2011.

For Oregon's 835 vineyards, the bottom line was nearly \$77 million in sales of grapes in 2011. That's in addition to the 202 million cases that the state's 395 wineries sold. Oregon's total wine sales topped \$250 million last year.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Healthy People, Healthy Communities (including Food Safety and Childhood Obesity)

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	50%			
704	Nutrition and Hunger in the Population	25%			
724	Healthy Lifestyle	25%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	12.3	0.0	0.0	0.0
Actual Paid Professional	16.2	0.0	0.0	0.0
Actual Volunteer	25.0	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
379440	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
379440	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
513710	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 3 representatives on the Creating Healthy Communities CoP and 6 representatives on the Families, Food and Fitness CoP.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

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 "...After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile?' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers....Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	263078	35402	181710	3247

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

Patent Applications Submitted

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	7	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational Events and Workshops to be Delivered

Year	Actual
2011	1105

Output #2

Output Measure

- Demonstrations to be Conducted

Year	Actual
2011	311

Output #3

Output Measure

- Newsletters to be Published

Year	Actual
2011	161

Output #4

Output Measure

- Web Sites to be Developed/Maintained

Year	Actual
2011	11

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	Actual
2011	82

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 all 36 Oregon counties and at the Warm Springs Indian Reservation, 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 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.

82% showed improvement in one or more nutrition practices (plans meals, makes healthy food choices, prepares foods without adding salt, reads nutrition labels or has children eat breakfast)

60% Use of "nutrition facts" on food labels to make food choices

- 38% Eat at least 2 kinds of fruit each day
- 40% Eat at least 2 kinds of vegetables each day
- 39% Eat whole grain foods like whole wheat bread
- 47% Choose low-fat milk/milk products each day

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	Actual
2011	77

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

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Results

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

77% 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)

26% Compare prices before buying food

40% Plan meals ahead of time

49% Shop with a grocery list

40% Think about healthy food choices when deciding what to feed family

32% Do 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	Actual
2011	61

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

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in health care expenditures and lost earnings over 10 years.

What has been done

The Oregon Nutrition Education Program, offered in all 36 Oregon counties and at the Warm Springs Indian Reservation, 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 class series. The survey checklist measures 19 key food-related practices; practices related to food safety included:

61% showed improvement in one or more food safety practices (i.e. thawing and refrigeration of perishable foods)

41% do not allow meat and dairy foods to sit out for more than 2 hours

50% do not thaw frozen foods at room temperature

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	Actual
2011	44

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 all 36 Oregon counties and at the Warm Springs Indian Reservation, 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 class series. The survey checklist measures 19 key food-related practices and/or physical activity practices. 44% parents reported their children are physically active for at least 30 minutes a day.

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
- 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 four 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)

Evaluation Results

82% 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).

77% of adult participants showed improvement in one or more food resource

management practices (plans meals, compares prices, uses grocery list and does not run out of food before the end of the month).

61% of adult participants showed improvement in one or more of the food safety practices (thawing and refrigeration of perishable foods).

44% of adult participants reported that their children are physically active for at least 30 minutes per 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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	2.5	0.0	0.0	0.0
Actual Paid Professional	2.0	0.0	0.0	0.0
Actual Volunteer	3.0	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
45171	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
45171	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
61156	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 2 representatives on the Family Caregiving CoP.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

Recently celebrating our first anniversary of OSU Ask an Expert, Oregon is already fifth in the nation with more than 3,000 questions answered about everything from sanitizing birdhouses to making compost. Popular topics include gardening, food safety, agriculture, forestry, coastal and watershed issues, parenting, nutrition, community development and 4-H youth programs.

Columnist Skip Nichols in the East Oregonian recently wrote:

"..After telling readers about the Ask an Expert program provided by Oregon State University's Extension Service, I decided to try it. 'Can I put old newspapers in my compost pile?' I asked on Wednesday, Dec. 28. That was around noon. Within a couple of hours, I had not one, but two answers....Now, that's service."

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	32885	4425	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	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
2011	113

Output #2

Output Measure

- Public Service Announcements to be Delivered

Year	Actual
2011	10

Output #3

Output Measure

- Newsletters to be Published

Year	Actual
2011	2

Output #4

Output Measure

- TV and Media Programs to be Delivered

Year	Actual
2011	11

Output #5

Output Measure

- Web Sites to be Developed and Maintained

Year	Actual
2011	2

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	Actual
2011	52

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The "Graying of America" is projected to place an unprecedented burden on community resources that support residents' ability to live and remain actively engaged in community life from 'cradle-to-cane.' Even more, during periods of economic challenge, communities are forced to look inward and consider the supports that are and should be in place, as well as the barriers that influence community livability or 'age-friendliness.' Communities are charged to consider that a livable, age-friendly community is a community for ALL ages!

What has been done

engAGE in Community has a vision of an 'age-friendly Clackamas County' comprised of livable communities that support all residents' ability to age actively and successfully in their home and/or community of choice. To this end, the key partners, OSU Extension Family and Community Health, Clackamas County Social Services, and AARP Oregon, have reached out to Clackamas County people and engaged local communities in assessing their community's resources for people to 'age-in-place,' identifying areas for improvement, and connecting results with resources that will improve the livability of the community for people regardless of age or ability. From the engAGE in Community Forum (May, 2010) through December 2011, including the engAGE in Community 'Results and Resource' EXPO (June, 2011), community-engaged participatory action research was conducted in 5 Clackamas County communities. Data collection methods included face-to-face interviews, telephone and online surveys, community photo mapping, focus groups, and community dialogues.

Results

*125 adults [67 women; 58 men] county residents and key decision-makers participated in the engAGE forum (May 2010); 38 volunteers [37 women; 1 man] assisted developing knowledge about the concept of 'age-friendly' communities

*53 volunteers [36 women and 17 men] have been recruited, trained and involved in over 200 hours of volunteer time devoted to creating age-friendly community environments

*185 community residents participated in local discussions to develop knowledge and skills to support actions directed at creating age-friendly communities

*203 attended the Expo assisted by 29 community volunteers to learn about resources and personal actions to support healthy and place-based aging

*Five communities of place (Wilsonville pop 20,408; Canby pop 15,370; Mount Hood Villages pop 3,473; Damascus pop 15,257; Oregon City pop 31,859) have completed asset audits; publically disseminated (via print & web media) reports have been published.

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	Actual
2011	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The burgeoning population of aging adults in Adult Foster/Family Homes underscores the need for staff training on eldercare issues. Many of the providers/owners have minimal experience with geriatric populations. These provider/owners are mandated to receive relevant annual training and acquire CEU credits--but state administrators have found training that is both well-received and well-utilized by these providers is a monumental challenge.

What has been done

At the request of the Rogue Valley Council of Governments' Adult Foster Home Licensing Agency (AFH), Extension provided basic nutrition classes ('Food as Medicine') to 60 Adult Foster Home providers (2 separate trainings) in 2010. Based on the success of the 2010 experience, the AFH Licensing Agency asked that the training be expanded to include Mastery of Aging Well modules during 2011 (Memory, Medication Jeopardy, Depression, and Physical Activity and Exercise), in addition to food safety and caregiving presentations. The five 90-minute trainings involved over 100 care providers who earned CEU credits.

Results

Evaluation conducted immediately following the training series indicated knowledge gains and intended behavior change. Telephone query six weeks following completion of the series indicated continued use of the information by 80% of the original registrants. In addition, over 70% of the individuals queried indicated they had initiated behavior changes, particularly in the areas of medication management and increased physical activity for those in their care.

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	Actual
2011	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Chronic disease conditions are inevitable companions to the aging process. Local and national data indicates over 80% of people over age sixty-five have one chronic health condition, and over 50% have two or more. In response to the challenges of 1) aging demographics, 2) chronic disease prevalence and 3) the compelling need for innovative approaches to address disease management, a collaboration of individuals and organizations in southern Oregon, (public and

private, university and community) have developed a system of disease self-management instruction.

What has been done

Funded by an Administration on Aging grant, a collaboration of individuals and organizations developed a system of disease self-management instruction called "Living Well" using the evidence-based Stanford University approaches. During the 3 year life of the grant, this project provided the 6-class instruction to close to 1,000 adults and trained 69 volunteer program leaders to deliver the classes on an on-going basis. Through program re-design and by using local sponsorship, the program is being sustained intact and expanded to a five-county region.

Results

Participants in the 6-week series of workshops documented improvements in self-efficacy (3.7 to 4.3 on a five point scale) and a pre-post indicated changes in health-related self-management behaviors (e.g. increased use of pain management approaches, increased physical activity/exercise). Periodic 6 month follow-ups of a random sample of participants indicate over 80% are continuing to use the approaches they learned in class.

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

Brief Explanation

Implementation of the Mastery of Aging Well, five-module, online program was launched early in 2010. A more robust evaluation of the program and its related outcomes is currently in process.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

As a result of engAGE in Community Forum, 53 volunteers [36 women and 17 men] have been recruited, trained and involved in over 200 hours of volunteer time devoted to creating age-friendly community environments .

Senior participants in the 6-week series of "Living Well" workshops documented improvements in self-efficacy (3.7 to 4.3 on a five point scale) and a pre-post test indicated changes in health-related self-management behaviors (increased use of pain management approaches, increased physical activity/exercise, etc.).

Over 70% of the individuals involved in the Adult Foster Care CEU workshop series indicated they had initiated behavior changes, particularly in the areas of medication management and increased physical activity for those in their care.

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	1.4	0.0	0.0	0.0
Actual Paid Professional	2.0	0.0	0.0	0.0
Actual Volunteer	3.0	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
45171	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
45171	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
61156	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.

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 3 representatives on the Financial Security for All CoP.

OSU has embraced eXtension's Ask an Expert system, with a unique program-based approach that has captured national attention. Since initiating the program in March of 2011, we've engaged heavily in infrastructure, training and marketing the program. As a result we now have over 130 Extension faculty and staff and some thirty MasterGardener volunteers answering questions in their area of expertise.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	56771	8545	45427	812

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

Patent Applications Submitted

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational Events and workshops to be Conducted

Year	Actual
2011	40

Output #2

Output Measure

- Newsletters to be Published

Year	Actual
2011	2

Output #3

Output Measure

- Number of websites

Year	Actual
2011	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	Actual
2011	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Oregon 4-H program helps young people prepare for real-life issues and challenges. One big challenge is financial literacy, reflected in statistics from the Federal Reserve that indicate that U.S. consumer debt stands at nearly \$2.5 trillion.

What has been done

Responding to a needs assessment, Extension faculty created a series of financial literacy classes geared to high-school students. Topics of interest include: needs vs. wants; money management skills; protecting your credit; career planning; and interview techniques.

Results

Outcome evaluations 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 individual credit;
- Basic banking and saving; and
- Careers and interview 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	Actual
2011	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With the continuing economic downturn in Oregon, family financial management skills and financial literacy continue to be areas of need. According to a study by FINRA Investor Education Foundation, 19% of Oregonians reported that their household spent more than their income. 64% of Oregonians, higher than the national average, do not have a rainy day fund to cover expenses for three months in case of sickness, job loss, or economic downturn. 62% of individuals surveyed in Oregon did not compare rates and fee information when applying for credit cards.

What has been done

Clients and staff members of local Head Start and Housing Authority organizations were identified as audiences who may need additional help in managing household expenses during tough economic times. The financial literacy curriculum developed assisted participants in learning ways to help their families with basic money management skills.

Results

An evaluation was conducted six weeks following the series completion. Results indicated:

69% respondents adopted at least one strategy to assist with their personal financial situation.

45% respondents indicated an interest in adopting a second strategy to assist with their personal financial situation.

43% respondents indicated they are using information gained in the series 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 Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

At the beginning of the economic downturn in Oregon and throughout the U.S., action was taken to shift 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 Governor's office and APLU.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

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

Oregon families associated with local Head Start and Housing Authority organizations are better prepared to manage the current economic crisis because of Extension financial literacy programs.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Sea Grant: Watersheds and Water 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	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	2.5	0.0	0.0	0.0
Actual Paid Professional	1.9	0.0	0.0	0.0
Actual Volunteer	6.0	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
85826	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
85826	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
116106	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Programming will: advance understanding of the roles of natural hydrology, riparian ecology, and safe and sustainable land use and development; provide training and capacity building that helps protect a safe and clean water supply; promote social progress and economic vitality by strengthening regional

partnerships and facilitating improved decision making with regard to watersheds and water resources; and, provide a better understanding of the economic impacts and effective management or prevention of aquatic invasive species.

2. Brief description of the target audience

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

3. How was eXtension used?

Oregon is represented by 104 eXtension members on 40 of the 59 approved CoPs. OSU has 3 representatives on the Freshwater Aquaculture CoP and 2 representatives on the Water Conservation for Lawn and Landscape CoP, as well as 1 representative each on the Drinking Water and Human Health CoP and the Invasive Species CoP.

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V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1105	4173	127	620

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

Patent Applications Submitted

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	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
2011	25

Output #2

Output Measure

- Number of Workshops to be Conducted

Year	Actual
2011	38

Output #3

Output Measure

- Number of Group Discussions to be Conducted

Year	Actual
2011	17

Output #4

Output Measure

- Number of Demonstrations to be Conducted

Year	Actual
2011	11

Output #5

Output Measure

- Number of Newsletters to be Published

Year	Actual
2011	36

Output #6

Output Measure

- Number of Web Sites to be Developed and Maintained

Year	Actual
2011	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of volunteer hours spent on watershed restoration efforts
2	Number of new "Master Watershed Stewards" certifications plus number of previously certified "Master Watershed Stewards" seeking education in advanced topics
3	Percentage of coastal communities that implement low impact development practices
4	Number of collaborative educational efforts that incorporate invasive species prevention, detection and/or response activities

Outcome #1

1. Outcome Measures

Number of volunteer hours spent on watershed restoration efforts

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	12357

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Various types of land uses and the installation of structures (culverts, tide gates, ditches, burms, etc.) that affect not only fish passage but watershed connectivity have progressively deteriorated the quality of fish habitat in many salmon bearing streams that drain into Coos Bay. In-stream barriers, poorly maintained logging roads, ditching, dredging, diking, and livestock management were some of the most salient factors affecting salmonid habitats in a negative manner in these coastal watersheds.

What has been done

OSU faculty and community partners were successful at securing funding from National Sea Grant for a project to develop a watershed restoration plan with heavy public input. A series of neighborhood "Coffee Klatch" meetings were carried out in each of the six watershed sub-basins. During the first series of meetings landowner concerns and objectives were incorporated into the assessment and considered as potential priorities for future restoration actions. A second series of meetings identified the priorities to be addressed. A third round of Coffee Klatches was completed and landowners were presented with the assessment results and prioritization they had helped inform. The process of prioritizing potential restoration actions was a unique development process associated with this assessment project but resulted in priority actions within sub-basins with strong community support.

Results

As a result of the initial assessment project funded by National Sea Grant and the guidance provided by OSU Extension, the Coos Watershed Association has completed restoration with direct public participation (over 74 landowners) in seven watersheds that include approximately 152,000 acres of the Coos Bay region.

4. Associated Knowledge Areas

KA Code **Knowledge Area**
112 Watershed Protection and Management

Outcome #2

1. Outcome Measures

Number of new "Master Watershed Stewards" certifications plus number of previously certified "Master Watershed Stewards" seeking education in advanced topics

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	81

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

OSU Extension is committed to helping Oregonians take care of local streams, rivers, wetlands and natural areas and restore and improve fish and wildlife habitat. Community members and landowners can make a difference when using scientific criteria to decide jointly what needs to be done to conserve and improve rivers and natural habitat in the places where they live.

What has been done

To accommodate varying watershed education and training needs around the state, OSU Extension began offering Oregon Water Schools in 2009. Oregon Water Schools are two day workshops, training content includes a mix of core watershed concepts (identified through the Master Watershed Stewardship certification requirements), sessions specific to local needs or emerging topics, and sessions or field experiences designed to motivate participants into volunteer action after the Water School. Water School participants can receive their Master Watershed Stewardship certification through their participation at Water Schools and by exhibiting an application of the concepts learned through Water School in their community.

In 2011 Extension put on two Water Schools in the Portland metro area for a total of 97 participants. Both Water Schools followed what has become the standard schedule, a two-day event with the first day consisting of concurrent classroom trainings and the second day focused on field trip offerings.

Results

Attendance at both Water Schools was slightly lower than anticipated, 46 participants at one and 51 participants at the other. Of the 97 participants, 5 individuals are currently working toward their Master Watershed Stewardship Certification. Eleven participants were previously certified Master Watershed Stewards seeking education in advanced topics.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #3

1. Outcome Measures

Percentage of coastal communities that implement low impact development practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	86

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Typical development clears the land of vegetation and covers it with hard surfaces such as roads, parking lots and rooftops. Construction compacts soils, so that even landscaped areas can generate unnaturally high runoff volumes. Storm drains are installed to get water out of the way by sending it into local streams or injecting it underground without treatment. Development dramatically increases runoff volumes which, even when controlled by detention basins, causes flooding, damages fish and wildlife habitat, and delivers urban pollutants such as oils and pesticides to local waterways. The decreased infiltration results in less cool, clean groundwater to recharge streams in the dry summer months.

What has been done

The term low-impact development (LID) means a combination of practices that conserve natural resource areas and use existing natural site features with distributed, small-scale stormwater management practices to capture and treat runoff with vegetation and soil similar to a well-vegetated undeveloped landscape. The Low Impact Development (LID) Academy is intended for small to medium sized communities. The LID Academy is designed to help growing small and medium sized cities prepare for anticipated municipal separate storm sewer systems (MS4s) requirements. LID Academy participants attend a series of trainings, and have access to free

technical assistance between trainings, to help them integrate LID into total maximum daily loads(TMDL) implementation plans, stormwater management plans, stormwater management guidance documents, etc. The LID Academy needs assessment and recruitment phase began in May of 2011, the full training series did not begin until November of 2011 and will not conclude until the end of 2012.

Results

At this stage, 7 small cities committed to the program, with 20 or more individuals regularly attending the workshops. These seven cities are from seven of the eight coastal counties (defined as communities for the purpose of this report).

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management

Outcome #4

1. Outcome Measures

Number of collaborative educational efforts that incorporate invasive species prevention, detection and/or response activities

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	155

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 faculty 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 the 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 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 the class project is completed and, where necessary, protocols for proper disposal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and 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

A change in program leadership, turnover in faculty members within the program and emerging local and national issues have re-focused the work of coastal resources faculty. Watershed management, ecosystems and habitats and coastal hazards remain high priority state identified issues; multiple uses and spatial planning, fisheries and seafood, and climate change adaptation remain as driving forces from the national perspective.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

As a result of the initial assessment project using community engagement processes, the Coos Watershed Association has now completed restoration efforts involving over 74 landowners in seven watersheds that include approximately 152,000 acres of the Coos Bay region.

Oregon residents take care of local streams, rivers, wetlands, and natural areas and restore and improve fish and wildlife habitat through the Master Watershed Stewardship program.

Seven small cities on the Oregon coast are preparing for growth and development and

learnig practices to mitigate stromwater impacts by engaging in OSU's Low Impact Development Academy.

OSU Extension worked with a major biological science supply house to increase awareness about potentially invasive species shipped to schools. The supply house changed their practices to help prevent the spread of invasive species.

Key Items of Evaluation