

**V(A). Planned Program (Summary)**

**Program # 3**

**1. Name of the Planned Program**

Global Food Security and Hunger

Reporting on this Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	8%			
111	Conservation and Efficient Use of Water	6%			
121	Management of Range Resources	16%			
205	Plant Management Systems	11%			
211	Insects, Mites, and Other Arthropods Affecting Plants	2%			
212	Pathogens and Nematodes Affecting Plants	3%			
213	Weeds Affecting Plants	7%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	2%			
215	Biological Control of Pests Affecting Plants	4%			
216	Integrated Pest Management Systems	13%			
307	Animal Management Systems	11%			
311	Animal Diseases	5%			
901	Program and Project Design, and Statistics	5%			
902	Administration of Projects and Programs	3%			
903	Communication, Education, and Information Delivery	4%			
	<b>Total</b>	100%			

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	63.0	0.0	0.0	0.0
Actual Paid Professional	72.9	0.0	0.0	0.0
Actual Volunteer	794.0	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
1940588	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1940588	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
6298406	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Organic, value-added, and technological approaches complement conventional agriculture. By utilizing contemporary tools in agronomy, animal or soil science, plant nutrition, pest management, and pesticide safety, this program will disseminate improved practices and enhance the potential use of alternative crops, reduce soil erosion, reduce the economic, social, and environmental costs of crop pests, and maintain or increase soil health. Animal systems will reduce wastes and discharges while improving productivity and management techniques.

Extension agriculture also will look at key areas of various social changes in the marketplace impacting producers, retailers and consumers. We aim to disseminate information on (1) how technology impacts the market place, with a special emphasis on rural markets in Oregon; (2) improving the well-being of consumers; and (3) development of economic linkages at every level of the supply chain for community development.

**2. Brief description of the target audience**

- Professional peers and scientific communities, Extension faculty, veterinarians, vaccine producers;
- State commodity commissions, grower groups, packers, crop consultants;
- Wholesale and retail suppliers to the agricultural sector, seed producers and distributors
- Natural resource industry clientele - growers, farm workers, field representatives, grower co-ops and partnerships;
  - Processors and handlers, export - import sectors;
  - County, state and federal agencies - USDA-ARS, Oregon Department of Agriculture, Natural Resources, others;
  - Conservation Service, Bureau of Indian Affairs, Confederated Tribes of the Umatilla Indian Reservation, US Forest Service; and Bureau of Land Management;
  - Policy makers, public health officials, and community leaders;
  - Teachers and students, Extension personnel and other educators;
  - Genetic companies;
  - Nutritional consultants;

- Nonprofit conservation groups and ecologists;
- Food system participants, the general public and consumers.

**3. How was eXtension used?**

In 2013, Oregon's use of Ask an Expert continued to grow across the 36 counties, with 3032 questions answered in the system. Oregon remains among the top five participants in the nation for Ask an Expert activity. Question response time remains the best of any state at 38 hours, well below the 48 hour target suggested nationally. Over 200 Extension faculty and staff and some thirty Master Gardener volunteers are actively answering questions from Oregon and beyond.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	26807	62297	6992	14449

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

**Patent Applications Submitted**

Year: 2013  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2013	Extension	Research	Total
<b>Actual</b>	69	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of Educational Classes Delivered

<b>Year</b>	<b>Actual</b>
2013	31

**Output #2**

**Output Measure**

- Number of Workshops Delivered

<b>Year</b>	<b>Actual</b>
2013	543

**Output #3**

**Output Measure**

- Number of One-on-one Interventions

<b>Year</b>	<b>Actual</b>
2013	616

**Output #4**

**Output Measure**

- Number of Demonstrations

<b>Year</b>	<b>Actual</b>
2013	150

**Output #5**

**Output Measure**

- Number of Web Sites Maintained

<b>Year</b>	<b>Actual</b>
2013	80

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
2	Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.
3	Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
4	Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.
5	Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

## **Outcome #1**

### **1. Outcome Measures**

Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	2322

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Increasing vineyard production efficiency and decreasing inputs (labor and chemical inputs) is an important goal for Oregon wine grape producers. They have the highest production costs per acre in the nation due to small production size and a premium-tier production market. It is critical for growers to have a sustainable and efficient vineyard system while also keeping their production goals in mind. The reduction in chemical inputs (fertilizers, pesticides, and fuel) is both economically and environmentally beneficial.

#### **What has been done**

A research trial was conducted from 2009 to 2012 in a commercial vineyard in the Willamette Valley of Oregon. A winter annual cover crop of cereal rye and crimson clover was grown between the vine rows of a young vineyard. The cover crop was allowed to grow through the winter to provide protection from soil erosion and increased water infiltration during the wet winter. In spring, the cover crop was mowed and managed in different ways during spring to provide soil moisture retention and allow for organic amendments (nutrition) addition to the soil. The treatments included using the biomass as a mulch in the vine row at two different rates, removing the cover crop biomass, or tilling the biomass into the area between the vine row. All cover cropped treatments were compared to a treatment where no cover crop was grown for the duration of the 4-year study.

With use of the cover crop mulch, there was a significant reduction in weeds present compared to other treatments. Even having the residue from the cover crop in the alleys between vine rows

resulted in reduced weed development. The mulch layer also helped to conserve soil moisture. No irrigation was used for the duration of the study, and vines were not found to be stressed for water, indicating that irrigation was not required. The combined effect of the mulch in providing soil moisture conservation, reduced weeds, and increased nutrition availability resulted in vines being larger and having more fruit within the first few years of the study. This has great implications for the effectiveness of these alternative practices to enhance development of vineyards with both economic and environmental considerations. This study indicates that cover crops can be grown and managed in different ways to reduce inputs of herbicide, fertilizers and irrigation.

**Results**

We estimate a potential cost savings of \$3,180 per acre during the establishment years for those vineyards that use these mulching methods. One of the biggest savings was in water; no irrigation was required during establishment. Most growers in the Willamette Valley install drip irrigation systems into vineyards for only the establishment years, and this is a considerable cost to the grower that is not utilized during production years. Water resources can be conserved using these management practices, an important consideration for those who may have limited or no water rights. Based on the amount of new acreage going in over the last 4 years, we estimate that this method could save Oregon grape growers \$5.4 million in inputs and establishment costs.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

**Outcome #2**

**1. Outcome Measures**

Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	2530

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Many small farms and ranches struggle to stay viable. One way to manage economic risk is to diversify marketing channels by initiating new revenue streams. An emerging enterprise that is generating interest from livestock and specialty crop producers is agritourism. Agritourism is linked to economic and cultural trends: local food sales are on the rise and nearly 44 million travelers visit Oregon each year, bringing an estimated 8.3 billion dollars to the economy through tourism. Agritourism offers an opportunity for farmers and ranchers to capture tourism dollars and contribute to rural economic vitality. Creative agriculture entrepreneurs can produce considerable revenue by encouraging visitors to their farms and ranches to purchase vegetables, meat, flower bulbs, fruit and value added products grown and raised locally.

**What has been done**

To address the educational needs of farmers interested in establishing an agritourism enterprise, the OSU Extension Service Small Farms Program convened two statewide summits. The Oregon Agritourism Summit was offered in two parts. Part 1: Getting to YES for Agritourism Business Development was intended for farmers and agri-business owners who were currently operating or interested in agritourism opportunities to diversify economic stability. Goals of the summit included strengthening businesses through education, providing inspiration and networking opportunities, and collaboratively developing a path for the future of agritourism in Oregon.

The Oregon Agritourism Summit Part 2 focused specifically on public policy and regulatory issues. This summit was intended to reach policy makers, economic development and community organizations, and agri-business owners who are interested in working together around issues of agritourism as it relates to current interpretation of laws and farm sustainability. Goals of the summit included exploring regulatory issues affecting agritourism opportunities, collaborative problem solving, and identifying stakeholders interested in providing leadership for Oregon agritourism.

**Results**

As a result of the OSU Extension Service Small Farms Program efforts in agritourism education, there has been movement in Oregon policy. In 2104 a working group has been assigned under the Senate Judiciary Committee to review SB 815. This bill provides that an agri-tourism provider is not liable for injury to or death of an agritourism participant arising out of inherent risks of agri-tourism activities if the agri-tourism provider posts certain notices, eliminating one of the many risks and a significant barrier, fear of being sued, for agritourism owners.

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
311	Animal Diseases
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

#### Outcome #3

##### 1. Outcome Measures

Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

<b>Year</b>	<b>Actual</b>
2013	4205

##### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

Oregon has an incredibly high number of families who are food insecure, and Linn and Benton counties are no exception. Food insecurity refers to individuals who experience a reduced quality, variety, or desirability of diet, disrupted eating patterns or reduced food intake. When money is scarce due to other household costs (rent, childcare, transportation, health care, utilities), the food budget is often trimmed to free up dollars needed for these other costs. According to FeedingAmerica.org, in 2010 Benton County had a food insecurity rate of 14.8%, which equates to 12,480 individuals. Furthermore, the Linus Pauling Institute at Oregon State University estimates that every month over 230 families visit the South Corvallis Food Bank to receive a six-day food box; these 230 food boxes provide food for over 1,000 people.

#### **What has been done**

The national Plant a Row for the Hungry effort started in 1995 by the Garden Writers Association and the OSU Benton and Linn County Master Gardeners became a member in 2008. Plant a Row for the Hungry (PAR) is currently a committee of enthusiastic Master Gardeners representing both Linn and Benton counties. PAR is an effort that encourages those who grow vegetables, fruit and nuts in excess of their own needs to donate that excess to food distribution centers or soup kitchens. Gardeners are encouraged to plant an extra row of produce in their gardens for the purpose of donation. Volunteers with PAR also staff booths at farmers' markets and other festival events to educate people about food insecurity and encourage them to become involved in efforts to help mitigate it.

#### **Results**

PAR has created an impressive network of gardeners and organizations that work together to bring garden fresh produce to those in need. There are now twenty established produce drop off sites in Linn and Benton counties. In 2013, PAR recorded 5667 pounds of produce donated through the program. PAR has pledged for over 300 gardeners in Linn and Benton counties for the 2014 growing season. Through these activities and educational booths, PAR has increased food insecurity awareness in Linn and Benton counties while distributing much needed fresh and healthy food.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

## **Outcome #4**

### **1. Outcome Measures**

Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	619

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

One of the fundamental challenges to sustaining rangeland health and productivity is broad scale vegetation change resulting from the expansion of invasive plant species. Major concerns in Eastern Oregon include western juniper expansion, invasive forbs (e.g.; perennial pepperweed, Canada thistle, Russian knapweed, African rue), and exotic annual grasses (e.g., medusahead, ventenata, and cheatgrass). An increase in these invaders degrades the productivity, biodiversity, and watershed function of rangelands. These negative impacts threaten the sustainability of the cow/calf industry, which is heavily reliant on the ability of rangelands to produce forage.

#### **What has been done**

Two medusahead control and revegetation research/demonstration projects were implemented in eastern Harney County and western Malheur County. Both projects investigated and demonstrated novel approaches to restoring medusahead-invaded sagebrush rangeland.

#### **Results**

Preliminary results of these projects have important implications for private landowners and public land managers who implement medusahead control and revegetation projects on rangeland. Results of the projects have been incorporated into a medusahead management guide for the Intermountain West that is currently being used by the Natural Resources Conservation Service to guide their medusahead control and revegetation projects in Harney County. In addition, the integrated control and revegetation strategies revealed in the study were adopted by the Harney County Cooperative Weed Management Area to secure a \$152k Oregon Watershed

Enhancement Board Grant to restore 20,000-acre area of medusahead-invaded rangeland in western Harney County. In addition, results of the study have also been adopted by the Baker County Soil and Water Conservation District in a major sage-grouse habitat restoration project aimed at controlling and revegetating medusahead-invaded sagebrush rangeland.

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
121	Management of Range Resources
205	Plant Management Systems
213	Weeds Affecting Plants
307	Animal Management Systems
311	Animal Diseases
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

#### Outcome #5

##### 1. Outcome Measures

Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

<b>Year</b>	<b>Actual</b>
2013	3291

##### 3c. Qualitative Outcome or Impact Statement

###### **Issue (Who cares and Why)**

Asthma is the #1 reason for school absenteeism in the nation. The house mouse is the most successful mammal on the planet second only to humans. A protein content of mouse urine is an asthma trigger. Like rats, mice are vectors for many diseases. Anaphylactic shock is rare from

flying insect stings, but it does happen making pests like yellow jackets a concern. In a 2010 online survey by the School IPM Program, Integrated Plant Protection Center at Oregon State University, to which 93% of Oregon school districts responded, one of the top reported indoor pest problems was mice (53% of respondents) while the top outdoor pest problem was yellow jackets (73%). Since 2008, concerns about pesticide use in schools have grown. Activist and advocacy groups have brought the issue into the national spotlight. Pesticides, especially aerosol sprays used indoors, can trigger asthma and have long-term unknown health effects. Pest control companies that do routine monthly applications scheduled by the calendar rather than by the need for services often increase long-term costs for school districts. Applications by non-licensed applicators can lead to exposure and injury.

#### **What has been done**

Building on the OSU School IPM Program's past efforts which led to passage of ORS 634.700 - 750 (requiring IPM in all private and public K-12 schools, community colleges, and federal Head Start programs), development of model IPM plans by the OSU School IPM Program, grants for pilot projects in schools, statewide school IPM coalition building, and curriculum development for school IPM coordinator training, the OSU School IPM Program provided extensive training and support throughout Oregon in 2012 and 2013. The Program provided full-day, hands-on intensive training at 14 different locations around the state in 2012, and 10 in 2013. The IPM Coordinators from 189 school districts (representing over 98% of K-12 students), 14 Head Start Programs, 53 private schools, and all 17 of Oregon's Community Colleges were trained.

#### **Results**

Full impacts on human health and the environments within and around Oregon's public schools cannot be known at this time, but impacts to date are reflected in the results of a 2010 (93% response rate) and 2013 (84% response rate) online survey of all 197 of Oregon school districts.

75% reported using IPM plans and materials created by the OSU School IPM Program

90% reported using non-chemical methods in 2013 compared with 67% in 2010

65% reported having a monitoring schedule and action thresholds in 2013, 36% in 2010

71% reported having a low-impact pesticides list in 2013, 38% in 2010

The model IPM plans were also used as templates by EPA region 9 in their work with tribal schools, and by the Boise, Idaho school district.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
121	Management of Range Resources
205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
311	Animal Diseases
903	Communication, Education, and Information Delivery

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

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

### **Brief Explanation**

Oregon's economic recovery is slow and the demands are great. The impact of too few faculty is felt greatest in the Global Food Security and Hunger program work area because of the number of highly experienced and long-tenured faculty working in this planned program at the start of the recession have now retired. Because of subject matter gaps across the state where faculty retired we have identified priority staffing needs in order to fill key positions. We are moving to a regional program model, higher level of expertise (PhD preferred) with a larger geographic assignment, to better address some of the pressing issues. In 2013, we began the turn around with new positions and new resources. Staffing numbers have improved and impact will follow. Stay tuned.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

Based on the amount of new vineyard acreage going in over the last 4 years, Oregon grape growers will save an estimated \$5.4 million in inputs and establishment costs by applying OSU-tested mulching methods during the vineyards' establishment years.

As a result of the OSU Extension Service Small Farms Program efforts in agritourism education, a working group was assigned under the Oregon Senate Judiciary Committee to review SB 815. This bill provides that an agri-tourism provider is not liable for injury to or death of an agritourism participant arising out of inherent risks of agri-tourism activities if the agri-tourism provider posts certain notices. At the time of this report SB 815 is still in review.

A two-county, Extension Master Gardener effort to feed the hungry recorded 5667 pounds of fresh produce was donated last year to assist the Linn-Benton Food Share, with pledges from over 300 gardeners to support Plant a Row for the Hungry in 2014

As a result of OSU Extension efforts to halt invasive plant expansion and to sustain rangeland health and productivity in Eastern Oregon, private landowners and public land managers are adopting integrated control and revegetation practices.

Building on the OSU School IPM Program's past efforts which led to passage of ORS

634.700 - 750 (requiring IPM in all private and public K-12 schools, community colleges, and federal Head Start programs), Oregon school districts report Extension's educational effort resulted in:

\*90% using non-chemical methods in 2013 compared with 67% in 2010

\*65% having a monitoring schedule and action thresholds in 2013, 36% in 2010

\*71% having a low-impact pesticides list in 2013, 38% in 2010

### **Key Items of Evaluation**