OREGON STATE UNIVERSITY
Extension Service

Annual Report of Accomplishments

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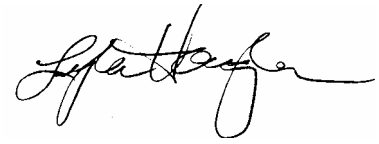

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Overview

Oregon State University Extension programs are conducted in 36 counties statewide. Faculty are housed in county extension offices, at experiment stations, 6n-campus, and with partner agencies such as the Oregon Food Bank and the Multnomah County Education Service District. Programming is conducted in five areas: Agriculture, 4-H Youth Development, Forestry, Family and Community Development, and Sea Grant. In addition, faculty perform multi-disciplinary activities such as the statewide watershed program.

During 2003, the OSU Extension Service experienced reduction in funding that resulted in restructuring of the organization. Approximately 30% of faculty FTE were eliminated. Though the full effect of these reductions will not be felt until 2004, some vacant positions were eliminated and existing faculty were moved to positions of highest priority during 2003. These transitions may have negative effects on some program areas.

This report documents the rationale for programming, activities conducted and impacts of programming during the past year.

Summary of Program Activities and Impacts

Goal 1: An agricultural system that is highly competitive in a global economy.

Title: An Intensive Extension Campaign to Improve Irrigation Management in Oregon

Issue: In 1999 there was a major shift in emphasis from conventional irrigation (to maximize yield) to one of optimizing grower net returns. This program strives to increase overall efficiency of Oregon irrigators through improved management. By reducing losses, profit margin of Oregon farms should improve substantially. The purpose of this program is to disseminate research findings to growers interested in adopting economically optimal irrigation strategies.

What has been done: The project delivers a series of presentations to individuals and organizations responsible for oversight and administration of irrigation projects. A series of three-day intensive courses, dealing with advanced topics in irrigation management were conducted in 1999 and 2000, and in 2003. The intended audience was experienced irrigation professionals with strong technical backgrounds who either have irrigation management responsibilities themselves or who serve as advisors or consultants for irrigators. For each course, several people made presentations in their respective areas of expertise. Topics include: soils, crop response to water, evapotranspiration, irrigation scheduling, measuring soil moisture, irrigation hardware considerations, measurement of flows, and the economics of irrigation and optimization of irrigation operations. The course was offered three times with a total attendance of about 80, mostly from Oregon, but also from Washington, Utah and other states. In addition, a series of workshops for individual farmers was held during the 2001 drought season at 13 Oregon locations. At the request of the USDA's National Resources Conservation Service, another workshop was held as a part of its training program for NRCS personnel in Oregon. The workshops dealt with (1) using Agrimet and other irrigation advisory services to plan water use, (2) scheduling irrigation on individual fields, and (3) economically optimum irrigation water use.

Impact: Studies indicate that without the benefit of scientific advice on irrigation management, irrigators may over-irrigate by 20 to 100% or under-irrigate by as much as 30%. Over-irrigation has significant environmental impacts due to resulting increases in (1) leaching of nitrates and pesticide residues, (2) erosion and sedimentation, and (3) phosphates, nitrates, and pesticides carried in surface water runoff. Understanding improved irrigation management will likely reduce such excess water use, and, correspondingly, lessen associated negative environmental impacts.

Funding: Oregon Department of Agriculture
Base Extension State Funds
Smith Lever Formula Funds

Title: Forage Information System on the World Wide Web

Issue: Application of appropriate inputs can reduce production costs, increase yield and quality, and reduce potential negative environmental impacts forage production. The Forage Information System contains considerable information about proper species selection and improved management techniques for fertilizing, irrigation, pest control, harvesting, quality testing, marketing, and utilization. When forage producers follow the recommendations appropriate for their locale, they realize greater yields of high quality forages, fewer seeding failures, and reduced use of external inputs like irrigation, fertilizers, and pesticides. This is a global forage information resource designed to become the premier comprehensive information system for all aspects of forage production. It links people and information in a work-sharing and access-on-demand environment. This effort vividly demonstrates how Extension, research, teaching, industry, and farming and ranching experts can work together to develop a knowledge base of value to all participants. The FIS is the most efficient way to disperse forage information to endless numbers of people around the world.

What has been done: The FIS website contains thousands of pages and various types of information and receives hundreds of "hits" per day from around the world, more than 50,000 per year. The Forage Information System World Wide Web project contributes positively to the environment by providing information on (1) reducing soil erosion (by use of cover cropping, converting highly sloped land to permanent pasture, and improving grazing management); (2) improving water quality (through recommendations about appropriate fertilizer levels and how to reduce silo runoff); (3) reducing water usage (through improved irrigation scheduling); (4) reducing pesticide usage (through systems approaches that include alternative techniques and recommendations about proper rates for application of needed pesticides); and (5) promoting sustainable farming and ranching practices .

Impact: Social benefits of the FIS website include enhanced availability of information to users worldwide; considerably more effective outreach (more than 50,000 contacts per year) than traditional Extension outlets; the possibility of global collaboration that creates a community of scientists and producers with a mutual interest; and, because of this close community that shares information, duplication of effort is reduced.

Funding: USDA Challenge Grant
Base Extension State Funds
Smith Lever Formula Funds

Title: Finding Optimal White Wheat Variety Combinations for a Given Situation

Issue: White wheat varieties have varying degrees of disease resistance, tolerance, and susceptibility to diseases and pests. Producers too often gamble by choosing a variety for its high yield, but that is also susceptible to a particular disease or weather pressure (e.g., cold intolerance).

What has been done: Trials that mix varieties of soft white wheat with differing weather, growth, and disease ratings, demonstrated production success and a new integrated pest

management approach. By finding the correct combination of varieties, or varieties and planting dates, improved yields are being realized due to a decrease in disease pressure and better survival of weather conditions. To illustrate just one success: Rod, a popular variety was found to be adversely affected when planted too early, but with optimal planting timing, Rod yields were 37 bu/acre greater. This helped to explain why some farmers had so much trouble with Rod, while their neighbors succeeded very well with it.

Impact: Using five-year wheat price and acreage averages (1997-2001) and assuming that 25% of the north central region's acreage exhibited even a 4 bu/acre increase, the economic benefit would be: 25% (699,130 • 4 bu/acre • $3.03/bu) = $2.1 million/year, not counting savings in chemical applications or the costs of reseeding in the spring. As more growers adopt the mixed variety approach, benefits could increase. Growers have found a relatively cost-free method of crop protection and insurance against adverse weather conditions.

Funding: Mid-Columbia producers and Pendleton Grain Growers
Base State Funds
Smith Lever Formula Funds
County Extension Funds

Title: Electronic Information Delivery for Potato Growers

Issue: Information about production methods and all other aspects of potato cropping is critical to farmers. Today, it is possible to transfer a large amount of information to producers via websites and email lists.

What has been done: The Potato Information Exchange (PIE) site offers information on cultural management, pest and disease control, market prices (terminal, shipping point, and futures), storage and processing, announcements of upcoming meetings, related websites, and a list of OSU potato experts in Crop and Soil Science, Entomology and Plant Pathology. The PIE website found at http://www.css.orst.edu/potatoes is the first such potato website and largest of its kind with more than 3500 external links. Although its main users have been academics and other professionals, growers are discovering the site and finding it a useful source of production information valuable for improving their bottom line, while minimizing any adverse environmental impacts. Certainly, the internet medium offers the most efficient use of Extension resources and the most effective information delivery system with potential to reach the broadest possible audience. Thus, while maintaining and improving the site, efforts are being directed to increasing grower awareness of its availability and its usefulness to them.

Impact: Information at the Potato Information Exchange website helps growers become aware of potentially adverse impacts of production practices on the environment and how to adjust operations to minimize these effects. As a result of this and other Extension efforts, potato growers are refining their pesticide, fertilizer, and water usage downward, while adjusting tillage practices to be more environmentally benign. The PIE website offers links to information pertinent to the environment, including endangered species protection, water quality issues, and prudent pesticide use. In addition, production recommendations presented in the body of the website, and in many linked sites, are designed to minimize environmental impacts of

production. Adoption of the fertilizer, irrigation, and pest control recommendations offered are particularly important for environmental protection.

Funding: The Oregon Potato Commission
Kettle Foods
USDA, Agricultural Research Service
State Base Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: OSU Foundation Potato Seed Program

Issue: Because the potato is asexually propagated, or cloned, diseases and pests are readily passed from generation to generation causing devastating yield losses in many instances and creating demand for high pesticide inputs.

What has been done: The OSU Foundation Potato Seed Program is fully described in the associated website and in regular reports to growers via the Oregon Potato Commission website at http://www.oregonspuds.com. The FPSP works closely with Oregon seed potato growers and other customers throughout the year in taking orders, delivering planting stocks, and monitoring performance of the materials. The staff describes the program and fields questions at grower meetings, on-farm visits, and by telephone and email.

Impact: The value of Oregon's $129 million potato crop (in 2001) is multiplied to more than $300 million by instate processing; at least two-thirds of the crop goes into frozen fries and other products. The potato payroll approaches $60 million, larger than all other agronomic crops combined. However, diseased seed potatoes can reduce yields and quality drastically, totally eroding growers' profits and adversely affecting the entire industry. Seedborne diseases also increase the need for expensive pesticides. For example, late blight was introduced to the Klamath Basin in the early 1990s. As a result, pesticide was necessary to control the infestation resulting in increased costs to producers of $100 acre. If disease-free seed were used on the 47,400 acres of potatoes harvested in 2001, savings would total over $4.7 million/year.

Funding: Oregon Potato Commission
Base State Funds
Smith Lever Formula Funds
County Extension Funds

Title: Educational Programs on Diseases of Field Crops in Eastern Oregon

Issue: Diseases of field crops are a continuing problem in north-central and northeastern Oregon.

What has been done: Educational programs provide growers and their advisors with up-to-date information regarding disease identification, the economic importance of diseases, and disease management options. These educational programs are presented through discussions at public

meetings or during one-on-one visits; identification of diseases on samples brought to the CBARC laboratory or observed in the field, along with related discussions; preparation of written materials; information-gathering visits with specialists in other regions or countries; and participation in field tours and meetings coordinated by Extension Service faculty and agribusiness.

Impact: This program is intended to assist growers maintain or increase profitability by reducing the risk from diseases. Over the past 60 years, research and technology have increased wheat yields by an average of 0.6 bushels/acre/year, with disease control contributing about 10% of this gain. Disease management practices can often be integrated to minimize the application of pesticides and to reduce the application of certain management practices that, while highly effective, are unacceptable to many members of society. As one example, Cephalosporium stripe is a serious disease of winter wheat. Acceptable control with minimal economic impact can be achieved by integrating several practices that are individually unacceptable.

Funding: Oregon Wheat Commission
STEEP (Solutions to Economic and Environmental Problems)
Agricultural Research Service
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Small Farms Program

Issue: Small-farm clientele range from "hobbyists" to serious farmer/entrepreneurs on small acreages. In numbers, they far exceed large-scale farmers. The small-farm owners need assistance in three areas: (1) Production information about what can successfully be grown on a specific site and more specialized cutting edge information. (2) Marketing information to help producers better compete in value-added and/or direct marketing channels. (3) Land stewardship information to empower small farmers to protect and improve water quality and plant and animal habitats including demonstration of new techniques leading to reduced runoff from small livestock operations.

What has been done: Outreach of the small farm program has been accomplished through (1) conferences and workshops held in northwest, southwest, and central Oregon; (2) publications specifically designed for the needs of small farmers; (3) the program's website, http://smallfarms.orst.edu; and (4) numerous contacts with individuals. The Oregon Small Farms web site that went online in November 1997 contains a newsletter, calendar of events, and hundreds of links to specific publications at universities and government agencies.

Impact: Most participants at small-farm workshops, farm visits, and focus groups indicate that they are gratified to have programs directed toward them. Their evaluations of the workshops indicate that they will be making better decisions by using the information received. The application of the information should lead to improved net income and/or quality of life.

Funding: Natural Resource Conservation Service (USDA)
State Base Extension Funds
Smith Lever Formula Funds
Western Sustainable Agriculture Research and Education (SARE)
OSU Agriculture Research Foundation
County Extension Funds

Title: Optimal Forage Species Selection and GIS-based Mapping

Issue: Understanding optimal sites for specific forage species is critical for efficient production and environmental sustainability. In addition, understanding potential production sites within other countries can help identify potential markets for Oregon-produced seed. GIS technologies are valuable tools in the analysis and cataloging of optimal production sites.

What has been done: The project functions on two different planes that are merged together to provide maps that reveal specific information that can be easily modified or restructured. The first plane of work is the development of the computer technologies that will allow many factors to be blended into maps. Maps that can show temperature, topography, soil type, and precipitation can lead growers to select a productive species that does not tax the environment.

This project also set out to determine which grass species would grow best in China so that Oregon farmers could market their products there more successfully. The project has the most comprehensive data collection for climate and soil in China to be found in the world. The data has been meshed together with grass species information to produce very detailed maps that will assist the growing of grass in the People's Republic of China. The following URL will house the information gained from this project: http://forages.oregonstate.edu/is/ssis/ (The overall goal of the Species Selection Information System (SSIS) is to improve agricultural productivity, natural resource management and environmental protection using advanced computer technologies.)

Impact: (1) Data on Chinese agriculture were collected, collated and organized for future use by the scientific community and industry. (2) Agricultural data were integrated with topology, climate, soil, and agricultural species information into a decision-making prototype that uses the latest in information technologies. (3) Chinese agricultural data were utilized to help domestic producers identify markets for seeds, agricultural chemicals, equipment, and services produced in the US. (4) The project provides opportunities for professional development of U.S. scientists, improvement of teaching, and improved international relations.

This project has also been of significant value to China including: (1) Collection and collation of topography, climate, soils, vegetation, land-use, and agricultural economics data for use in this and other projects for use by the Chinese scientific community and industry. (2) Introduction of new technologies to China supporting improved understanding of natural resource bases leading to more informed decision-making. (3) Training of Chinese faculty and students about these technologies. (4) Creation of cooperative linkages among Chinese and U.S. agencies and institutions.

Funding: USDA Foreign Agricultural Service Scientific Cooperation and Research Program
Oregon Economic Development Program
Oregon Seed Council
Oregon Tall Fescue Commission
Oregon Seed Trade Association
Field Seed Institute
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Goal 2: A safe and secure food and fiber system.

Title: Oregon Plant Diagnostic Clinic

Issue: Plant diseases are a major source of economic loss for commercial agriculture and home horticulture. Early identification of pathogens can lead to rapid response minimizing economic losses.

What has been done: Plant samples are examined to diagnose problems, determine their causes, and make appropriate control recommendations. The OSU Plant Diagnostic Clinic receives samples with problems that Extension field agents and specialists, field representatives for chemical/fertilizer companies, and other specialists cannot identify. There is no such thing as a routine sample. Many new diseases are discovered each year that have not previously been documented. In addition, the clinic offers special testing services in response to the needs of growers, such as examining water samples for presence of certain pathogens harmful to production of nursery crops, testing fungi for susceptibility to certain fungicides, testing for fungal pathogens in seed crops of importance to Oregon's agriculture, and assaying soils for a destructive soil-borne pathogen that affects many crops.

Impact: This clinic identified plant pathogens and also served as a regional resource for 10 western states for identification of certain pathogens. The clinic serves as a critical component of the national plant disease and pest detection work, constructed in response to the need to protect America's crops from intentional introductions of harmful pathogens. There are no private clinics in Oregon offering parallel services, so the OSU Plant Diagnostic Clinic, with its proper diagnosis of pests and other plant problems and appropriate recommendations for control, literally saves Oregon growers millions in lost crop revenues.

Funding: USDA, Floral and Nursery Crops Program
Cal-Florida
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: A Web-Based System of Phenology Models to Improve Crop and Pest Management

Issue: Overuse of pesticides is costly and potentially harmful to the environment. Phenology models are known to result in reduced pesticide use with corresponding positive environmental effects. This system provides a general agricultural and pest management toolset that is expected to promote better management decision making, facilitating improved planning, especially in timing of pesticide applications, cultural practices, pest management monitoring, and other scheduled activities in the field. In general, these models offer information that helps reduce chemical applications, optimize pest management practices, save energy, thereby reducing potential environmental damage. Thus, this system can be considered vital to implementing integrated pest management and sustainable crop production practices, both of which emphasize environmental protection.

What has been done: The project is developing models and a web delivery system to aid in crop disease and pest management decision making for five states in the U.S. Northwest—Oregon, Washington, Idaho, Montana, and Wyoming. The web-based system integrates near-real-time and real-time weather data with biological data into over 44 models. Consultants, Extension agents, growers, researchers, and others have free web access to these management tools.

Impact: The improved crop and pest management resulting from use of this and other such systems in turn results in significant reduction in farm chemical use. Instead of making decisions by the calendar, growers time chemical applications with precision, using chemicals only when needed. In addition, this system supports the needs and encourages further adoption of organic and sustainable production systems, which are more ecological sound, using fewer toxic chemicals than conventional agriculture. This overall reduction in toxic chemical use means less exposure for farm workers and less toxic residues in food and fiber products. The general public enjoys a safer food supply; correspondingly their perception of agriculture improves.

Funding: OSU Integrated Plant Protection Center
USDA Western Region IPM Grants Program
USDA Area-wide Codling Moth Project
Oregon Cherry Commission
Oregon Hazelnut Commission
Oregon Mint Commission
Pacific Biocontrol Corp.
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: 2003 Food Safety/Preservation Education in Oregon

Issue: Incidence of food-borne diseases remains high. Oregon experienced a large outbreak of E. coli O157:H7 infections associated with the Lane county fair in 2002. Additionally, regionally-grown sprouts caused food-borne illness in Oregon in 2003. Safe food handling (good sanitation, thorough cooking of meat products, and proper temperature control) can help consumers reduce their risk. Food-borne illness and food waste can be averted by preserving foods in ways that maximize both safety and quality.

What has been done: Safe food handling messages were integrated into food and nutrition education lessons taught by Family and Community Development faculty and staff in 2/3 of Oregon's counties. An interactive hand washing booth reached children and adults who visited the petting zoo at the Oregon State Fair. Another booth increased knowledge about thorough hand washing at the Marion county fair. Over 33,000 were reached at both events. Hand washing was also taught to 368 students who attended a Babysitting clinic, and students in an after-school program. A lesson on slow cookers was developed by Lane County Family and Community Development faculty to increase understanding of food safety risks when using a slow cooker. Food preservation/safety training was conducted in 2 counties for 36 new Family Food Education volunteers. Ninety-six advanced FFE volunteers (trained in prior years) supported

local programming in seven counties. For the sixth year, statewide and local Food Safety/Preservation Hotlines were operated by the Lane County Extension office. These were staffed by Family Food Education volunteers and Lane county Extension faculty and staff. Callers included county Extension offices without food safety expertise and the general public. Participants were educated about food safety at community events, often with the assistance of Family Food Education volunteers. Almost 5,700 individuals visited a "Surviving in Hard Times" booth at the Lane county fair. Family Food Education volunteers gave money saving tips on how to do it yourself to save money and how to provide a safe and plentiful food supply for your family.

Impact: Low income adults were 27% less likely to leave food items unrefrigerated for more than 2 hours, and in addition, 45% of participants demonstrated improved food thawing practices. Eighty-three percent of youth improved food preparation and safety practices.

Family Food Education volunteers contributed over 6,900 hours contacting almost 24,000 Oregonians educating them about safe food handling and preservation. The Food Safety/Preservation Hotline received 6,211 calls from 34 of Oregon's 36 counties in 2003. About 66% of calls received by the Food Safety/Preservation hotline were had food safety implications and 37% related to food quality. In 2002, the hotline's effectiveness was evaluated, and 96% of respondents indicated that they used the information they received. Seventy-six percent had shared the information with an average of three people. Seventy-eight percent had recommended the hotline to someone else.

Evaluations of the slow cooking lesson indicated that 80% reported increased knowledge/awareness about food safety substantially, 75% reported that they refrigerated leftovers promptly before the lesson, and 91% planned to do so regularly after the lesson.

Funding: Smith-Lever 3(d): EFNEP
Smith Lever Formula Funds
Base State Extension Funds
USDA Food Stamp Program
County Extension Funds

Goal 3: A healthy well-nourished population.

Title: Diabetes: Reaching the Hard-to-Reach

Issue: Since 1994 obesity among Oregonians has increased 50% and the prevalence of diabetes has increased 62%. Oregon data from 1999 found that one-third of Oregonians with diabetes reported they have never had meal preparation education, or if they had, were still confused.

What has been done: A complex set of social, environmental and behavioral factors influence self-care practices for people with diabetes. The Social Learning Theory suggests that intervention should involve relevant others who can help support positive behavior change. To address the need for social support, Extension Faculty developed a lesson, "Renewed Hope: Choosing a Better Life With Diabetes" to be used by study groups statewide. These study groups consist of members from the Family and Community Education (FCE) organization and are typically older women over the age of 60. Extension county faculty train FCE study group leaders to teach lessons; they in turn teach their local study groups, each lesson lasts under an hour. Lesson leaders were provided with a teacher guide, participant handouts, group activities including a Diabetes Bingo game and tools for personal risk assessment. The purpose of the lesson was to increase knowledge of diabetes, awareness of personal risk and understanding of how to help others cope with diabetes.

Extension faculty, in collaboration with the Oregon Diabetes Program, were involved in the development and review of a 4-part series called, "Meals Made Easy," for diabetes meal planning/self-management class for those with diabetes. The Oregon Diabetes Program is supporting sites that pilot MME with $750 grants.

One county delivered two community seminars on how to manage diabetes – one for the community and one for physicians and allied health professionals.

In other counties, 999 people with diabetes, at-risk of developing diabetes, and persons preparing meals for diabetics or treating those with diabetes were contacted via support groups, meal planning classes, or through diabetes bingo loteria game. Each method is used to teach basic diabetes concepts.

Collaborators have included local physicians, certified diabetes educators, local hospitals, a local housing authority, ESL, local schools, local diabetes coalition members.

Impact: Evaluations indicated participants had significantly changed perceived knowledge in areas of: general diabetes, personal risk for diabetes, lifestyle changes needed for prevention/management and how to support someone with diabetes ($p<.000$).

As a result of attendance, 91% of physicians planned to make changes and 92% of community members planned to change one or more of their self-care behaviors.

Results indicate that 93% of participants at community diabetes awareness events were able to identify at least one new item they learned; 42% were able to identify five or more new

information items. When asked what they would do in the future, 85% identified one action they would do to prevent or manage diabetes, 39% were able to identify five or more actions they would do to prevent or manage diabetes.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Better Health through Better Nutrition

Issue: Oregon's consistently high hunger rates and high unemployment indicate the need for intervention. The goal is to teach youth and adults to develop skills and behaviors to eat healthfully and be more active.

What has been done: NEP and other nutrition education programs offer a wide array of methods to deliver nutrition messages and skills to those that need it most. Methods of program delivery includes: classes (single events, a series of classes, day camps); short educational contacts, displays, newsletters, parent newsletters a kiosk in one county targeted to the working poor that provides nutrition information, recipes and referral to community programs, a computer based learning module that focuses on the Food Guide Pyramid, food safety and food budgeting. Youth reached were primarily grades 4-7 and 9-12. Both in-school and after-school programs were provided as well as family-centered programming (parents and children learning together).

Impact: With regard to dietary quality, 52% of adults use the Nutrition Facts label more often, 54% use the Food Guide Pyramid to plan and prepare meals and 63% prepare dishes from scratch. Eighty-nine percent made an improvement in at least one food group and 36% eat more than one kind of fruit each day. Ninety-nine percent of youth report they now eat a variety of foods, 83% now know more about nutrition, 86% are able to select low-cost nutritious foods and 83% improved food preparation and food safety practices. Food security increased; 36% didn't run out of food by the end of the month and 6% were linked with community food resources. Food resource management and shopping skills improved; 43% shop with a grocery list more often, 42% plan family meals more often and 34% compare prices more often. Safe food handling was also improved; 45% don't thaw foods at room temperature. A total of 614 volunteers were trained to provide nutrition messages and skills to others in the community.

After programs were delivered at elementary schools, one parent commented, "my little girl asks for water instead of soda now and she used her allowance money to buy a water bottle holder which she wears almost all the time." A 4 month follow-up evaluation of nutrition education classes provided to 4th graders in Tillamook County found that 77% reported they were eating/drinking more dairy foods, 76% were trying to choose more high fiber foods, and 79% were drinking more fluids each day. In addition, 87% reported preparing at least one recipe provided in class at home.

Funding: Smith-Lever 3 (d): EFNEP
Base State Extension Funds
Smith Lever Formula Funds

USDA Food Stamp Program
County Extension Funds

Goal 4: An agricultural system that protects natural resources and the environment.

Title: A Regional Pest Population Monitoring Network for Oregon's Processed Vegetable Industry

Issue: Overuse of pesticides is costly and potentially harmful to the environment. Information networks can provide information to vegetable growers allowing them to apply pesticides more accurately avoiding use when not necessary.

What has been done: VEGNET is a regional pest population monitoring and reporting network for Willamette Valley growers of vegetables for processing. The monitoring system accurately detects pest outbreak years and informs growers when to take timely action, while encouraging them to avoid spraying during years of low pest pressure.

Impact: In the looper outbreak years (1998 and 2001), broccoli growers suffered rejections at the processor amounting to $16,000 for each 5,000 tons of production in 1998. By 2001, aggressive field scouting and adjusted spray programs reduced losses from looper contamination to $7,312 for each 5,000 tons. Pesticides applied exactly when needed save costly rejection at the processing plant. The combined value of reduced pesticide application and reduced crop loss due to VEGNET is $100,000 per year. Routine application of soil insecticides to protect sweet corn at planting from black cutworm has been reduced by 5%. Meanwhile, the number of broccoli growers employing an independent pest management consultant has doubled, showing their increased awareness of the importance of precision in pesticide use.

Funding: Oregon Processed Vegetable Commission
USDA, Sustainable Agriculture Research and Extension Program
Base State Extension Funds
Smith Lever Formula Funds

Title: Master Gardener Program

Issue: Home gardening is a major pastime in Oregon, but improper use of chemicals and incorrect waste disposal can result in damage to the environment.

What has been done: There are currently 27 counties and county groups with Master Gardener programs. Volunteers benefit from the leadership training they receive and their immediate, direct experience in teaching others what they have learned. More than half of the volunteers are retired from other careers, bringing to the program their skills and talents, ideas and energy, and a sophistication of purpose to learn and help others. In almost every county with a Master Gardener program, MGs are working on some level with the local schools. The MGs interest in plants and joy in teaching is shared with students in elementary, middle, and high schools. Gardening therapy programs help the disadvantaged and assist seniors to garden more easily. In Lincoln, Columbia, Douglas, Deschutes, Clatsop, Jackson, Tillamook, Washington, and Yamhill counties, MGs have initiated community gardens, using available land to instruct and encourage local residents.

Impact: The MG program has a teacher-multiplier effect as volunteers who are trained, in turn, teach others. The value of the program can be seen in the number of new volunteers who are trained (778 in 2002) and the number who return to continue their volunteer work (2,524). Volunteers, who bring their own talents, ideas, and resources, stay with the program an average of 3.7 years. A full-time equivalent (FTE) monetary value can be estimated based on volunteer hours contributed to the program. The 136,083 hours contributed in 2002 amount to 68 FTEs which translates into a monetary value of about $2 million. Substantial, but indirect, economic benefits are also derived from leadership training, community beautification projects, horticulture therapy programs, and other outcomes of the MG program. Another economic benefit is the value of home-grown food.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Extension Water Quality

Issue: Besides being beneficial to the environment, water quality protection and stream restoration are also economically important throughout Oregon.

What has been done: A major activity of the Water Quality Program has been the training provided through the Watershed Stewardship Education Program. This program trained over 600 people in the functioning of watersheds. Of these, 400 became Master Watershed Stewards by following the training program with an independent project. They contributed 16,000 hours of volunteer time restoring watersheds. In addition, research is underway to harvest nutrients, nitrogen, and phosphorus, from animal wastes. This procedure will double economic benefits by (1) reducing the cost of land application and (2) allowing livestock producers to either sell nutrients or grow crops on remotely-owned fields without buying commercial fertilizer.

Impact: Bacterial concentrations have reduced in Tillamook Bay. Homeowners are working to protect their well water supplies. Water quality in the Tualatin River is better due to improved management of livestock. Malheur County irrigators are using less nitrogen and pesticides.

Funding: EPA Competitive Grants
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Western Integrated Nutrient Management Education Project

Issue: In order to effectively manage nutrients and pests to minimize environmental and economic impacts, agricultural producers need to take more holistic approaches. A team of nutrient and pest management specialists from Oregon, Washington, and Idaho uses workshops and other educational resources to train agricultural professionals. They, in turn, help agricultural producers to manage organic nutrient sources (e.g., manure) and pesticides in their farming

operations. Of particular concern is helping producers avoid nutrient and pesticide losses off the farm.

What has been done: The planning team, comprised of many nutrient management and integrated pest management specialists and agricultural professionals from Oregon, Idaho, and Washington, have developed workshops and various educational materials to train other agricultural professionals to work with agricultural producers and landowners. The professionals being trained include technical service providers, Extension agents and specialists, certified crop advisors, and personnel from various agencies involved with nutrient and pest management in agricultural operations, e.g., the National Resource Conservation Service and county soil and water conservation districts.

Impact: Direct beneficiaries of this program are those participating in it; first, the agricultural professionals (technical service providers, Extension agents and specialists, certified crop advisors, and various government agency personnel). They then train agricultural landowners and producers who also benefit directly. But outcomes of the program extend beyond these direct beneficiaries to the society in general, as the improved agricultural practices being learned significantly reduce adverse environmental externalities too often associated with agricultural production. For example, reduced nitrate levels in ground water, as a long-term result of this project, benefit all those depending on wells for their drinking water. Minimizing phosphorus and pesticides that enter surface waters benefits everyone in the respective watersheds.

Funding: National Integrated Water Quality Program (NIWQP)
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Wallowa County Nez Perce Tribe Salmon Habitat Recovery Plan and Multi-Species Habitat Strategy

Issue: The Wallowa County Nez Perce Tribe Salmon Habitat Plan and Multi-Species Habitat Strategy is a management strategy that considers all environmental aspects of each watershed, ridge top to ridge top, and analyzes each stream, reach-by-reach. The result is a large scale plan that does small scale analysis.

What has been done: Under this comprehensive plan, over 400 watershed enhancement projects have been completed over the last nine years, including, 205 miles of fencing; 10 miles of road closures; 220 miles of road improvements; 20 miles of in-stream work, with 330 in-stream structures; 140 spring developments; six irrigation diversion structures; and 35,000 acres of land treated. Wallowa County's experience with the salmon plan is being picked up by other areas that have anadromous fish listed as threatened or endangered. The work has expanded beyond Wallowa County. Twenty workshops focused on preparing county governments to respond to, and work with, federal agencies included participants from 58 counties in four states. Williams makes presentations and consults in Oregon, Washington, Idaho, and California.

Impact: The salmon plan brought together a wide variety of interested parties to focus on obtainable improvements of salmonid habitat, while allowing continued access to and use of the natural resources. Due in a large part to Extension's efforts, the salmon plan has become the way of doing business in Wallowa County. State and federal agencies comply with the plan. Private landowners are beginning to "do the right thing." Such a consensus about what are the right actions has social benefits far beyond solving the actual problems. The process used by Wallowa County is being adopted by other counties in the Pacific Northwest. Lessons learned from the implementation process include: (1) Protecting local custom, culture, and economic stability is critical to the economic welfare of rural America. (2) County governments must lead in this process. (3) County governments must enlist a broad range of local people to participate in the process. (4) These local people must be committed to follow through with outcomes and efficient communication.

Funding: The Nez Perce Tribe
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Statewide Extension Grass Seed Production

Issue: The grass seed industry is a major contributor to the economy of Oregon. However, as populations expand, production practices must be modified to make farming practices economically viable and compatible with the needs and wishes of society. In addition, growers need ready access to new and emerging markets for their products.

What has been done: Educational programming methods include:

1) An annual Seed Production Research report that includes research summaries from OSU and USDA-ARS scientists involved in seed crop research. This report is distributed to 1,350 seed growers in the state, plus county Extension offices and over 60 international seed researchers.

2) The Seed Production section of the CSS monthly newsletter, Crop and Soil News/Notes. This newsletter is distributed to over 350 Extension and industry people and is available on the department's web site.

3) Improvements to the Seed Crops Extension web page, making it more user-friendly, with links to useful scientific publications.

4) Participation in planning the annual meeting of the Oregon Seed Grower's League, a two-day educational program each December.

5) Work with the Oregon Seed Council committee in organizing the Oregon Seed Industry Conference, a biennial educational program focused on seed conditioning technologies.

6) Liaison with seed grower and seed industry organizations, including the Oregon Seed Council, the Oregon Seed Growers League, the Oregon Seed Trade Association and various seed commissions.

7) Service on the Oregon Seed Certification Board and its committees.

8) Work with the Oregon Foundation Seed Project and Oregon Seed Testing Laboratory to promote seed quality.

Impact: Reliable, research-based information provided through this program establishes a basis for better management decisions. Enterprise budgets and production guides allow growers to evaluate existing and potential crop production. Besides traditional Extension education routes, 24 hours/day access to timely information at the website further enhances the competitiveness and profitability of Oregon grass seed growers. This program contributed to significant reduction in agricultural smoke production by conveying information on alternatives to field burning. Both the acreage and the numbers of days of field burning in the Willamette Valley are less than 25 percent of the level in the late 1980s.

Funding: USDA-ARS Forage Seed Production Research Center
Jefferson County Seed Growers Association
Oregon Meadowfoam Growers Association
Oregon Ryegrass Growers Association, Oregon Seed Growers League
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Watershed Stewardship Education Program for the Portland Metro Area

Issue: The condition of watersheds has tremendous impact on fish and wildlife habitat and esthetics. Both result in significant economic benefits resulting from enhanced watershed condition. In urban areas, efforts to restore natural functions and aesthetic qualities to streams, riparian zones, and wetlands are directly related to real estate values.

What has been done: So far, 60 participants in the Portland metro watershed have invested over 2,000 volunteer hours in projects ranging from planting trees in riparian areas to training others about native fish surveys. All participants gain knowledge enough to make their environmental efforts productive and their accomplishments worthwhile. Then, through their work with, and information extended to, others, thousands of Portland metro residents have become more environmentally aware and better watershed stewards.

Impact: The Portland area watersheds directly benefit from this educational program, as do other Oregon watersheds from similar programs. As people from the population on a particular watershed become aware of the environmental threats to that watershed, they make others aware of these threats, and detrimental activities are gradually modified as activities beneficial to watershed health are put in place.

Funding: U.S. Forest Service
Natural Resources Conservation Service
Oregon Sea Grant
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Issue: Salmon are symbolic of the Pacific Northwest. Since the 1970s, populations of native salmon in the Pacific Northwest have dropped sharply, raising the specter of imminent extinction for many native populations. Overfishing, land development patterns, and a host of little-understood natural changes have turned the once-abundant fish into a symbol of scarcity. Oregon State University Extension Service through the units of Agriculture, Forestry and Sea Grant is working to reverse this trend. Extension faculty from around the state work together, individually, and partner with a variety of federal and state agencies, community leaders and private landowners to restore watersheds and salmon habitat back to healthy levels.

What has been done: Oregon State University Extension Service program leaders of the Colleges of Ag, Forestry and Sea Grant developed a flagship watershed program, the Watershed Stewardship Education Program (WSEP). An umbrella program for comprehensive watershed education, WSEP developed extensive curriculum to help local councils form effective partnerships, understand their watershed and develop strategies for enhancing or restoring them. The faculty team from the 3 colleges developed proposals and garnered grant funding to initiate, design, and maintain the program. This training program in its 3rd year is in demand throughout Oregon and "graduates" of the course can become Master Watershed Stewards by completing a 40-hour project.

Although initially targeting watershed councils, the program is in popular demand from agencies to farmers, landowners and citizens. In 2003, over 200 people participated in the trainings and about half completed on-the-ground projects to become Master Stewards putting over 400 hours into projects.

The WSEP teams grant writing continued into 2003 and despite shrinking state support and competition for grant funds, the program gained nearly $93,000 in grant funds to carryout the 2003-2004 program.

Impacts:

- In Tillamook, one graduate worked with a school, a private foundation and watershed groups in two counties to fund and build a water quality lab where students can be a part of monitoring local water quality. Another participant inspired both his upstream and downstream neighbors to improve their properties through streamside planting and five other graduates worked with their watershed councils to plant native trees and shrubs in the riparian areas on their own property.
- Two Master Watershed Stewards worked with a local landowner to halt erosion on a ½-mile stretch of Klamath River. They formed partnerships and obtained grant funding. As a result, erosion has stopped the threat of flooding there. The project sets an example for

restoration efforts for other landowners and had a great social impact because all of the collaborators made decisions and worked together.

- A formal survey showed significant increase in awareness, knowledge, confidence and skills, including an increase in acceptance of people with different values. One participant stated, "*WSEP brought a diverse group of community members together that wouldn't have normally been together, creating better understanding of issues and communication styles. Thank you OSU Extension*." Another stated, "…*WSEP helped me obtain my current job*."
- WSEP has inspired the implementation of watershed stewardship education in Texas, Louisiana, Nevada, Oklahoma, India, Pakistan, and Mexico.

Funding: Oregon Forest Resources Institute
Oregon Sea Grant
Oregon Watershed Enhancement Board
USDA Forest Service
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

What has been done: The cadre of OSU Extension Forestry, Agriculture and Sea Grant agents and specialists bring together their expertise in diverse subject areas such as stream processes, hydrology, riparian area management, water quality monitoring, forest road management, group processes, and conflict resolution to solve on-the-ground problems in their communities. They provide technical assistance, lead on-the-ground restoration projects, and deliver watershed education to technical specialists, agency and university researchers, as well as farmers, school teachers, and youth.

Impacts:

- In Curry County, riparian tree-planting in 1995 resulted in a reduction of summer stream temperature by 10 degrees Fahrenheit in 2003. This decrease means the stream now meets state water quality standards and is no longer "water quality limited."
- One mid-coast agent helped watershed councils write proposals to fund on-the-ground projects resulting in $48,000 in new funds in 2003 and $200,000 in 2003. Watershed council members are increasingly taking on bigger portions of the grant writing as they improve their writing skills under her lead.
- On the South Coast, an agent designed and constructed a wetland project with a local grower to keep pollutants resulting from cranberry production from impacting water quality. This same agent was asked by a local teacher to help a local student with her science fair project, which has blossomed into a full-scale study to determine the effectiveness of using tree bark to absorb unwanted nutrients in cranberry effluent water – initial results are impressive.
- A fisheries specialist edited a chapter on stream assessment and habitat restoration in the USDA Natural Resources Conservation Service's technical field guide, which will be

adapted nation-wide. This agent also is collaborating with Oregon Sea Grant to publish work based on extensive work on tide gates along the Oregon coast. "*The Effects of Tide Gates on Estuarine Habitats and Migratory Fish"*, and *"The Effects of Tide Gates on Tidal Marshes and Fish Passage*", both by Guillermo R. Giannico and Jon A. Souder, will be released soon.

- *Art About Water* was developed by a north coast agent—a gathering of Tillamook County artists to help the community celebrate local watersheds and raise awareness of the diversity and complexity of water resource issues. For the 2nd year, artwork was exhibited locally and hosted by OSU Extension Service, the Bay City Arts Center, and local artists.
- An agent and a local watershed coordinator teamed as mentors for a high school student's senior project, a riparian planting to address the counties significant water quality issues. As a result, the father of the student who owns a significant length of slough just north of the site wants to have the rest of it planted and fenced also.

Funding: Oregon Watershed Enhancement Board
Watershed Councils
Title 3 Funds
Oregon Sea Grant
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Oregon 4-H Focus on Environmental Stewardship Education for Youth and Adults

Issue: Oregonians face many critical environmental issues in agriculture, forestry, energy and marine resources. In attempting to address these pressing environmental concerns Oregonians quickly discover two underlying difficulties which hamper issue resolution. First, factual, unbiased information is hard to find, analyze and understand. Second, public policy process are not positive experience for citizens who wish to be involved.

Many 4-H faculty need training in broad-based natural science content and leader education to support an expanded Environmental Stewardship program effort. New publications, workshops, materials kits and funding sources were needed to increase county staff capacity to deliver Environmental Stewardship programs.

What has been done: Twenty-four of Oregon's 36 counties have some type of Environmental Stewardship support plan. The demographics in these counties represent Oregon's population as a whole. Extension staff have succeeded in providing informal educational opportunities, where youth and adults have increased their appreciation for, and their knowledge of our natural world, leading to educated choices in the stewardship of natural resources.

County Environmental Stewardship delivery modes reported in 2003 include camps (resident and day camps), partnerships/collaborations, school enrichment, outdoor education/outdoor schools. Three programs experiencing significant growth in 2003 were Ag in the Classroom,

4-H Wildlife Stewards and the forestry-focused programs supported by Title III funds to Oregon timber based communities. State workshops focusing on program coordination, plants, wildlife, pond study and water quality supported these efforts.

In 2003, the Oregon 4-H program became a sponsor, in partnership with the Oregon Department of Fish and Wildlife, of the national wildlife education program Project WILD. Thirty facilitators participated in a three-day train-the-trainer workshop. Seven workshops have trained over 200 teachers to use Project WILD materials with youth.

Impact: At the beginning of the first Environmental Stewardship Plan (1997-2000) there were 4,966 youth enrolled in the natural science project areas in the 1995-96 year. In year one of the 2001-2004 Environmental Stewardship Plan seventeen 4-H faculty and staff reported 524 days of activity in this area. In the fourth year of this plan twenty-three faculty and staff reported 800 days planned to be worked in Environmental Stewardship. The 2002-2003 4-H natural science project enrollment grew to 50,868, or approximately 25% of Oregon's overall 4-H project enrollment.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds
Oregon 4-H Foundation
Title III of Rural Security Funds
National Science Foundation

Title: Seeing the Forest: Art About Forests & Forestry

Issue: Oregon State University Extension foresters have a long history of effective communication with established clientele in the forestry community. However, we lack a similar relationship with the general public – a public both increasingly urbanized and involved in natural resource policy decision-making. Recent ballot initiatives underscore the necessity for Extension foresters to engage the public in a constructive and ongoing dialogue – a dialogue in which we *listen* rather than tell the public what we think they should know.

What has been done: Art is immediate, emotional, and can transcend cultures and values. To re-establish a process of informed public discourse, a group of OSU Extension foresters launched a traveling exhibit of provocative art images to communicate with a broader public audience, and encourage non-forestry audiences to communicate with us. Our objectives include:

- Reach new general public audiences
- Increase viewers' awareness of the complexity of forest issues
- Provide a conducive environment for dialogue
- Challenge existing beliefs and perspectives, stimulate consideration of other viewpoints, and gain insight into the general public's understanding about forestry
- Ultimate long-term outcome: Improve the public's ability to make informed natural resource policy decisions.

Impact: We have offered three different traveling exhibits, with our steering committee each time systematically designing a content plan, an evaluations process, and an implementation model which integrates multiple channels of communication between artists, viewers and Extension foresters. We have exhibited 88 pieces of art from 37 Northwest artists, depicting a variety of artistic media (oils, watercolor, photography, ceramic bas relief, Native American-style carvings, quilts, paper, furniture, and folk art.) Outcomes:

- 133,000 people in 10 Oregon communities have viewed the show. Approximately 1,000 viewers have interacted with us through questionnaires and comment boards.
- 86% of the respondents indicated that the show succeeded in illustrating the diversity of forest issues in Oregon. 75% indicated it increased their understanding of the complexity of forestry issues. Over 50% accurately identified the forestry issues illustrated in the show.
- The project received an OSU Extension Innovative Grant; the OSU Education Association *Search for Excellence* award; the OSU College of Forestry Dean's Award for Outstanding Achievement; the Association of Natural Resource Extension Professionals Innovation award; and the Natural Resources and Environmental Management national Flagship Award.
- Articles about the art show were published in the *Journal of Forestry* and *Women in Natural Resources*, as well as numerous presentations at national and international conferences. Several spin-off programs are being developed, including one in Australia. Colleagues have made serious inquiries about touring the show in other regions.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: International Forestry Study Tours: Global Education for Pacific Northwest (PNW) Forestry Producers

Issue: During the past 30 years the Pacific Northwest has been faced with a shift from family owned, local and regional wood buying companies, to a rapidly globalizing forest products market. Forest landowners, managers and wood producers are encountering these changes through emerging technologies, global competition for wood product markets, and growth of multi-national conglomerates. Industrial foresters and Pacific Northwest companies are faced with increasing competition from imported woods from Asia, the southern hemisphere and elsewhere; particularly wood products from high yield plantations. Those who understand these changes and apply innovative solutions are better able to meet their management goals and sustain their forest operations. In addition, better cross-cultural understanding reduces tensions between countries and opens new possibilities for learning.

What has been done: We responded to these challenges by conducting a series of international forestry study tours. Tours are set strategically to visit areas where PNW producers can benefit by viewing technology innovations, market development or other techniques that may be adapted and used in the Pacific Northwest. They are also designed to make new connections between forestry people in the different nations.

Impact: There have been 8 tours offered, with more than 225 total participants. Tours have been to Europe, South America, Australia, and New Zealand. The most recent tour visited wood markets and forests in Japan. In addition to the direct participants, several thousand other clients throughout the PNW have attended presentations about forestry in the various countries visited. After each tour participants are surveyed to gather their input and comments about the event. Questions about most important lessons, thoughts, and observations are asked. Participants provide their thoughts about how the information they learned will be useful to them back in the U.S.A. Numerous changes by landowners in their practices and management strategies have been observed. Examples include: application of New Zealand-style tree pruning methods in the Pacific Northwest (including the importation of specialized equipment); implementation of uneven-age silvicultural methods and mixed-species plantings; understanding about environmental certification; use of small-scale forestry equipment technologies; and, improved business connections for international forest product marketing opportunities.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Backyard Woodland Program

Issue: An increasing number of people are purchasing and living on small, forested parcels in Oregon and across the Pacific Northwest. In Oregon alone, there are some 115,000 landowners who own 10 acres or less, with many in the wildland-urban interface. Most of these landowners have little background or experience in land stewardship and often do not know where to turn for assistance. To reach this new and growing audience, we designed and delivered a new educational offering called the Backyard Woodland Program (BWP). Program objectives included 1) making landowners aware of the benefits of active stewardship; 2) making landowners aware of who they can go to for assistance; and 3) providing resources materials to help them better manage their land.

What has been done: The overall educational design included designing and delivering a series of 3 pilot BWP workshops across the State and the design, writing, and printing of a 13-chapter notebook, *Backyard Woodlands: A Landowner Resource Notebook (EM 8745)*.

Collaboration among extension forestry and agriculture agents, and extension specialists from Oregon State University, was used to conceive and develop the BWP resource notebook and workshops. Extension faculty from Washington State University, Utah State University, and University of Minnesota's Cloquet Forestry Center were involved in developing and co-authoring chapters in the resource notebook. Other state and federal agencies provided publications, which were inserted in the plastic sleeves of the notebooks. Three 7-hour pilot Backyard Woodland workshops were delivered. Over 60 landowners participated in these 1-day workshops. Each participant received the 13-chapter notebook.

Impact: All survey participants (100%) said the notebook provided a good overview of the various woodland topics. Most chapters received a useful or very useful rating. One respondent wrote, "I have attended enough schools, classes, courses to obtain two graduate degrees and I

don’t believe I have had any “notebook” or text book to compare with this. I’ve recycled all my others. I would never part with this!” Since the workshops, 59% have contacted a neighbor, 50% have contacted a resource professional (by phone), and 44% have had a professional visit their property. Surprisingly, 45% have taken steps to create a stewardship plan. Lastly, as a result of the BWP workshops, 82% have taken on-the-ground action including, thinning, clearing fuel, pruning, tree planting, and wildlife enhancement. BWP workshops and notebooks were evaluated using a Lichert type (0-4) teaching evaluation form, with 4 being the highest rating. Ratings for in-class instruction, notebook content, fieldtrip and field exercises, and overall workshop quality were 3.90, 3.89, 3.73 and 3.71, respectively. At the conclusion of each workshop we asked participants what aspects of the workshop would they change or delete. This information was used to immediately modify the next 2 workshops. A paper was presented at the Association of Natural Resource Extension Professionals (ANREP) annual meeting. The BWP notebook received national recognition by ANREP, receiving a “Bronze” educational award in their long publication category. Following this national recognition, Extension professionals in other states (Alaska, Maryland, and Minnesota) requested the BWP notebook and other materials as they are developing similar programs.

Funding: Oregon Forest Resources Institute
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Goal 5: Enhanced economic opportunity and quality of life for Americans.

Title: 4-H Leader Mentors/Coaches/Buddy System

Issue: A critical element in the 4-H Youth Development Program is a cadre of trained volunteers who have the ability to provide educational programs in a safe environment. By developing a mentor/coach system the knowledge of the experienced leader is shared with new leaders. New 4-H leaders gained additional support form experienced leaders to help them understand the complex 4-H system, wisdom of how to deal with concern or problems and develop a support system for knowledge and information. As a result new leaders feel more confident as a leader, which in turn strengthens the total 4-H program.

What has been done: Several counties developed mentor type programs. In one case this involved matching first year leaders with experienced leaders for one-on-one interaction. An introduction meeting was held for the mentors in which expectations were outlined and a reference book was provided. The mentors were asked to contact the new leader at least once per month.

In another situation a buddy system was developed with both new and experienced leaders coming together at an orientation meeting. Time was spent in project area groups so new and experienced leaders could learn from each other. Experienced leaders were then encouraged to invite new leaders to additional meetings and events.

Impact: Oregon 4-H is supported by 5915 volunteer adult leaders. When some counties lose as much as 50% of their first year leaders it is a challenge to maintain the program, so any increase in the retention of adult 4-H volunteers is very helpful. One county reported having sixteen new leaders, of the new leaders, 88% completed their first year as a leader, and 75% have indicated that they will return as a leader for a second year. The mentor/coaches felt it was a valuable program and many have agreed to serve again. All new leaders for the current 4-H year have requested mentor/coaches. The agent reported "one new leader probably would not have made it through the first year without the support of her mentor/coach; while she is a great leader she lacked the confidence. As a second year leader she is ready to take the leadership required."

Another county reported that 90% of all new leaders participated in at least one other meeting or event besides their club meetings. This was one of the goals of the new leader buddy system.

Funding: County 4-H Leader Associations
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Episodic Volunteers Impact Communities

Issue: Providing opportunities for development of life skills for all youth continues to be a goal of the 4-H Program. Involvement of episodic (short-term) volunteers is one way to expand the

4-H program to reach additional youth. Not only are additional youth benefiting from this approach, but many adults, who might not otherwise be involved, are contributing their expertise to the program.

What has been done: Several counties have developed opportunities specifically for the episodic volunteer. Seniors as episodic volunteers has been a target audience in one Oregon county. This county has the largest number per capita of seniors in the state. Many of the seniors go south for part of the year, so long-term volunteer opportunities really don't fit their schedule. 4-H has been able to recruit, train and match senior volunteers with appropriate grade levels in the local schools. The program was developed for in-school delivery in the areas of horticulture and forestry.

In another county youth from underserved audiences were the targeted population. A series of different 4-H related projects were developed for after-school delivery by episodic volunteers and 4-H junior leaders. A paid coordinator helped to recruit, train and organize the volunteers.

Impact: It has been increasingly difficult to engage volunteers in long-term commitments. Time is cited as one of the biggest factors related to adults not taking on long-term commitments. Adapting the 4-H program to make use of volunteerism in shorter time periods has produced renewed interest in helping youth. Involving seniors as volunteers brings the richness and expertise of this audience to untapped youth.

One county reported that 100% of the 4-H junior leaders involved in delivering short-term programs said they would repeat their experience. Parents of the children involved rated the experience 4.5 on a 5 point scale. In addition, volunteer satisfaction was measured, with all of those participating opting to teach again if invited.

Funding: Master Gardner Association
County 4-H Leaders Associations
School Districts
Educational Service Districts
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Youth as Partners Programming: Developing Life Skills in Older 4-H Youth

Issue: A key concern among 4-H programs is how to keep older youth involved. As youth enter middle and high school, there is a significant drop in 4-H participation. One key issue is that 4-H programming for older youth needs to focus on more than just content-based project areas. As youth reach high school, they are ready and eager to be involved in 4-H in more adult-like ways.

What as been done: Recognizing the need for different programming for older youth, the Oregon 4-H program made a concerted effort to provided programming and other opportunities where youth can serve as partners with adults in planning, implementing and evaluating 4-H programs. Across Oregon older youth are invited and trained to participate as Junior or Teen

Leaders and to teach or co-teach programs for other 4-H members. Older youth are trained and encouraged to be members of development committees at the local and state level, serve as ambassadors for the 4-H program, serve on boards and councils, and speak to legislative and other political bodies about the benefits of 4-H participation. In addition, youth plan and manage significant portions of the county and state fair through the fair superintendent program.

Impact: In 2003, over 29,000 youth in grades 7-12 participated in the 4-H program in Oregon. An evaluation study was conducted in the fall of 2003 to measure the benefits of participation in the various components of youth as partners programming. Specifically, the study looked at the differences in life skill and other developmental outcomes between those who participated in youth as partner activities and those who did not. The study was conducted in 6 Oregon counties that represent a cross-section of Oregon's economic and geographic diversity. The results of the study revealed that youth who participate in youth as partners programming have significantly greater levels of positive youth development outcomes than 4-H youth who do not participate in youth as partner activities. Specifically:

- Older youth who participated as teachers and co-teachers in 4-H have significantly higher levels of self-esteem and positive coping skills. They were also significantly more likely to contribute to others, care about others and possess a strong character.
- Older youth who participated on development and event planning committees had significantly higher levels of self-esteem and coping skills. They were also more likely to contribute to, and care about others.
- Older youth who serve as Junior or Teen leaders posses significantly greater levels of self-esteem and coping skills. They were also more likely to contribute to, and care about others.

Funding: Oregon 4-H Foundation
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Oregon Outreach: Engaging Latino(a) Youth and Families in Community-Based Educational Programs

Issue: Oregon, like many other states, has experienced a dramatic increase in its Latino(a) youth population during the last decade. Unlike Anglo youth, Latino(a) youth are far less likely to participate in community-based activities and programs that support positive youth development. As a result, many Latino(a) youth miss important opportunities that foster learning and the development of skills, values, and ties with the community.

What has been done: Since 1997, the Oregon 4-H program has conducted targeted efforts to engage Latino(a) youth and families in 4-H. Beginning in just three counties, the outreach effort grew in 2003 to include 14 of Oregon's 36 counties. Local outreach programs are designed in collaboration with community members to meet the needs and interests of Latino(a) youth in culturally responsive ways. Programs range from technology-focused clubs and classes and mother-daughter programs to clubs centered on youth leadership, soccer, and traditional arts. Anglo and Latino(a) adults serve as youth mentors/club leaders. In addition, several counties

have developed programs to increase cross-cultural understanding and communication among all 4-H members.

Impact: During 2003, several thousand additional Latino(a) parents learned about the 4-H program and the potential it holds for their children. As a result, Latino(a) youth participation increased by 43%, and the number of Latino(a) adult volunteers increased by 30%. Additional bilingual/bicultural staff members were hired to work with Latino(a) audiences, and 4-H materials were developed in Spanish to facilitate communication with Latino(a) adults. Technology-related programs have been a focus of outreach efforts and continued to attract much interest in 2003. Program offerings included video, computers, Lego robotics, and GIS-GPS. Approximately 400 Latinos participated in these programs. Research shows that Latino youth significantly lag behind other youth in home and school access to computer technology. 4-H is helping Latino youth catch up. In the words of one high school participant, "Knowing about this technology is like opening a door to more opportunities."

Funding: CYFAR New Communities Project
Local Community Businesses and Agencies
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Soil Science Training for DEQ Onsite Wastewater Disposal Program Personnel

Issue: Failing septic systems are a threat to water quality. Inadequately treated wastewater can find its way through ditches and ephemeral waterways to perennial streams and lakes. Inadequately treated wastewater also can move directly into groundwater where it degrades water quality to the point of becoming a public health hazard. On-site waste disposal is required for all single-family homes not served by central sewer systems. Because on-site waste disposal depends entirely on the soil to accept, treat, and dispose of wastewater, Oregon DEQ rules are based primarily on soil and landscape properties that influence soil behavior for wastewater disposal. DEQ has mandated that both DEQ and county contract staff receive adequate training in soil science to do their job effectively and well.

What has been done: OSU Extension has responded to this training need by offering a variety of short courses, workshops, and annual training sessions on topics mutually agreed upon by DEQ staff and Extension trainers.

Impact: The economic benefit to the construction industry alone is in the millions of dollars. There is also considerable economic benefit of preventing contamination of both surface and groundwater supplies. OSU Extension soils training yields an important environmental benefit by ensuring that water quality in Oregon is not compromised by improperly sited or poorly designed septic tank systems. Anecdotal evidence suggests that the failure rate of on-site waste disposal systems in Oregon is one of the lowest in the entire nation.

Many people in Oregon want to live in the country on small acreages. The DEQ on-site program makes that possible in a way that maximizes the protection of environmental quality.

Funding: Oregon Department of Environmental Quality
Oregon On-site Wastewater Association
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Economic Development Efforts of the OSU Small Farms Program

Issue: Agriculture-based tourism and direct marketing represent opportunities for enhanced income on small farms. Producers need accurate information to assist them in creating value-added marketing strategies, in developing tourism on farms and ranches, and in modifying product to fit into higher value markets.

What has been done: To date, programs, grants, and consulting have focused on (1) strengthening farmers' markets to enhance small farm profitability, (2) agri-tourism, (3) alternative and niche market products, and (4) processing and other farm business development.

Impact: Post-program surveys indicate that participants are applying information received to develop new income streams as tourists visit farms and their on-farm markets. Additionally, ranchers are recognizing the potential for additional income from hunting and fishing east of the Cascades. There is unrealized opportunity to expand this concept elsewhere. Finally, alternative and niche markets are being developed to allow farmers to receive higher prices for special products.

Funding: Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Inmate Transition Simulation Program

A top priority of correctional institutions is public safety, and that includes assisting newly released inmates prepare to be successful members of communities. Successful transition from confinement back to the community is a very tough task for many inmates. They face many economic and social barriers as they adjust to life in society. The rate of recidivism – the percentage of inmates convicted of a new felony within three years of release from prison – is 30% in Oregon.

What has been done: A new educational simulation tool was developed jointly by the Oregon State University Extension Service and Oregon Department of Corrections to help correctional staff better understand how to assist inmates released from confinement make smoother transitions to life in society. The Inmate Transition Simulation is modeled after the poverty simulation, which is used to raise public awareness of poverty and its costs to families.

The Inmate Transition Simulation is now a standard part of all in-service training programs for the Oregon Department of Corrections and was delivered to all 3,500 department staff working in Oregon's 12 adult prisons in 2003.

Impact: Evaluation data from 1,265 Corrections staff comparing their understanding of transition as a result of the workshop demonstrated significant gains in understanding the financial pressures, emotional stresses, and frustrations faced by recently released inmates, and the positive and negative impacts of community members on recent parolees.

Participants reported both cognitive and affective gains. Many mentioned that the simulation was a real eye-opener. Other comments included:

- "I think it says a lot about the struggle of people at the bottom of the socio-economic ladder, whether or not they are offenders."
- "The level of frustration I felt was great. It is a wonder any parolee makes it outside."
- "Very impressive exercise—should be used for all staff and inmates. We do our job as correctional staff in a more knowledgeable/empathetic way. Great tool for quality staff education as well as inmates."
- "I think it opened a lot of people's eyes as to what the difficulties are of parolees, and that it really does take everybody, throughout an inmate's incarceration, to work towards getting that inmate ready for successful re-entry into society."

One of the staff trainers reported:

"We had just a very small number of staff who asked, "Why should I have to play the part of an inmate to see what they go through?" My response to them basically said that through Correctional staff's participation, we are all better able to understand just how it is that we influence those offenders that are under our supervision. As Correctional staff, part of our objective is to empower and enable those offenders into making better choices. Through our role-modeling of appropriate pro-social behavior, reinforcing of positive behavior and the redirecting of anti-social behavior, staff contributes to the long-term success of offenders in the community. Wouldn't you want that recently released offender standing next to you and your family in the Fred Meyer's line to be equipped with all the tools necessary for them to be successful?"

Funding: Oregon Department of Corrections
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Title: Healthy Aging

Issue: The proportion of older adults in many rural Oregon counties exceeds 20%. About 23% of Oregon's older residents live in federally-designated Health Profession Shortage Areas or Medically Underserved Areas of the state. In order to improve health outcomes for rural elders, training of health professionals in these rural areas is of paramount importance. In addition, the

vast majority of health behaviors occur in the context of family life, not in the doctor's office, so educating family members about health promotion and disease management is essential to improving health outcomes.

What has been done: OSU Extension Service provided statewide and regional conferences, trainings, and workshops to a variety of professionals who work with older adults in their occupations.
Three professional conferences were sponsored in 2003, reaching about 425 health and human service professionals. A 3-hour video conference on depression, dementia and caregiving was transmitted to 15 sites via Iowa State University. One Extension Service site was approved as a preceptor site for a senior level pharmacy student, and workshops on medication management were taught in multiple locations around the state.

The OSU Extension Service produced two major educational curricula to address health and caregiving issues. The first, developed with a USDA Higher Education Challenge Grant, is a set of educational materials on aging and mental health, including CD-ROM modules (20 hours of viewing) and two accompanying texts of 125-150 pages each. These materials on depression and dementia in later life were designed for multiple uses: as a university level course delivered on-campus or via distance learning, tailored to trainings in health care settings, or bundled in a wide variety of ways and published on demand to suit the needs of the instructor. They represent an effective link between residential and Extension faculty, research and efforts to extend university knowledge to benefit Oregon communities. This curriculum was the core of the video conference supported through Iowa State University.

The second product began as a series of 8 workshops, supported in part through the Northwest Health Foundation, targeting volunteers who deliver meals to place-bound older adults. After it was taught and implemented successfully in local communities, it is being produced as a curriculum, called "Maximizing Brief Encounters, Realizing Measurable Gains". It focuses on the practical approaches useful to volunteers who can help identify, make referrals, and respond to problems expressed homebound elders.

Impact: Conferences, trainings and workshops reached 1,450 professionals and older adults in 2003. Evaluations produced responses such as: "I have never attended a class that helped me so much"; "You helped me stop worrying about my memory"; "I never knew that drinking grapefruit juice with my medications could be a problem." We expect that the educational curricula that were produced in 2003 will extend the reach of these educational offerings to other states and localities.

Funding: USDA Higher Education Challenge Grant
Northwest Health Foundation
DHHS - Health Resources and Services Administration
Base State Extension Funds
Smith Lever Formula Funds
County Extension Funds

Stakeholder Input Processes

The Oregon State University Extension Service utilizes numerous approaches to garner input from stakeholders statewide. To accomplish this, several mechanisms are utilized. These include:

- The Extension Citizen Advisory Network is made up of clientele from each county in the state, representatives with specific program foci, and representatives from county government. The Network meets twice annually with Extension leadership (Dean and Director, Assistant Director, and Program Leaders) to provide input on programming. In addition, this group provides important political and policy advice to Extension leadership.

- Each college that houses Extension faculty also maintains an advisory structure. These generally provide input to college leadership regarding teaching, research, and outreach (including Extension).

- Counties maintain advisory functions. These vary from very structured advisory councils that meet at regular intervals to more informal systems. In addition, each county office is closely tied to county government and receives significant input on programs through local political processes. Finally, individual faculty maintain advisory structures (formal and informal) supporting specific programming activities. These systems provide input directly to faculty regarding the effectiveness of programming and opportunities for new efforts.

Program Review Process

There have been no significant changes in the program review process submitted in the 5-Year Plan of Work.

Multi-state Extension Activities

The Oregon State University Extension Service has numerous interactive programs with surrounding states. These include joint appointments, informal agreements, and formal multi-state activities.

The long-standing Pacific Northwest Publications (PNWPubs) program facilitates joint publication of materials that are relevant to all three states (Oregon, Washington, and Idaho). These publications are jointly written and reviewed, are published by the lead state, and distributed by all three participating states.

Each Extension program area and every Extension faculty member is expected to develop a professional network that includes peers in other states. These networks, whether formal or informal, involve information sharing, opportunities for professional development, curriculum and educational material development, and joint program development and delivery. Notable formal networks include PNW STEEP, small grain variety testing, potato variety testing, reduced field burning with grass seed production, the NW Center for Small Fruits, Tree fruit production along the Columbia, SARE Extension, Ornamental seminars, Cow-calf Management Guide, Intermountain Cow Symposium, Western Dairy Management, Small Acreage programs, grazing of riparian areas working group, Mid-Columbia Valley Forestry Extension, Continuing Education programs in Forestry, and Situation and Outlook. 4-H Youth Development faculty work with Extension professionals in Washington and Idaho on curriculum development, leader forum, professional development, regional 4-H marketing, and impact assessment. PNW Extension faculty also collaborate on the Family and Consumer Science programs of high school financial planning, gerontology, parenting, welfare reform, and community food systems.

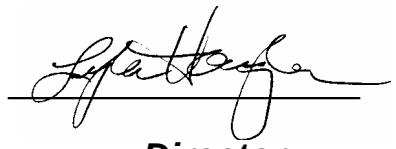
Multistate programming and collaboration are essential tools in leveraging Extension's resources for maximum efficiency and impact. **Multistate activities make it possible for states to mount extension programs of much greater scope than could otherwise be supported by their corresponding research programs.** Multistate, regional, and nationwide activities give definition to the Extension "System."

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution **Oregon State University**
State **Oregon**

Check one: __X_ Multistate Extension Activities
____ Integrated Activities (Hatch Act Funds)
____ Integrated Activities (Smith-Lever Act Funds)

	Actual Expenditures				
Title of Planned Program/Activity	**FY 2000**	**FY 2001**	**FY 2002**	**FY 2003**	**FY 2004**
Pacific Northwest Publications	**__0____**	**$69,329**	**_$79,395_**	**$104,520**	
NW Berry & Grape INFONET	**__0____**	**$5,392 _**	**0__**	**-0-**	
Ornamentals NW Seminars	**__0____**	**$9,690 __**	**$13,002**	**$10,768**	
Total	**___0___**	**$84,411**	**_$92,397**	**$115,288**	



3/14/04

Director ***Date***

Form CSREES-REPT (2/00)

Integrated Research and Extension Activities

In 1993 Oregon State University integrated the land-grant functions by:

- elevating *Extended Education* (now *OSU Statewide)*, including the OSU Extension Service (OSUES), to University-wide status;
- integrating OSUES field- and campus-based faculty into academic departments across the University;
- charging academic Deans with leadership responsibility for Extension programs;
- developing P&T guidelines that recognize and reward all three mission areas of the university -- teaching, research, and extension -- through one process;
- defining scholarship to include the integration and application of knowledge as creative intellectual work; and
- creating a unique position description for every OSU faculty member by the joint effort of the faculty member and his/her supervisor and department head.

During 2001 OSUES commissioned a study of the impacts of the above changes on extension programs and faculty. The study revealed that extension faculty, both campus- and field-based, believe there has been significant advances in integration in terms of the:

- closeness of the working relationship between on- and off-campus faculty,
- degree of integration of research and extension,
- degree to which academic units are implementing extension as part of the fundamental missions,
- degree to which research, instruction, and extension have equal status and importance, and
- extent to which scholarship activities carried out by extension faculty are enhancing extension programs.

The results of the study are now on the web at:
http://extension.oregonstate.edu/mission3/ex_summ.html

The Oregon State University Extension Service spends approximately **$4 million** annually for the extension portion of the salary and OPE expenses of faculty with integrated assignments. Joint appointments in extension and research are the norm in the departments of the College of Agricultural Sciences. Twelve faculty located at research and extension centers and branch research stations have partial or full extension appointments. All multidisciplinary working teams include both extension and research faculty. Many of the Oregon representatives to Regional Research and Coordinating Committees have joint appointments with extension.

The impacts of integrated programs in the western region are highlighted in the “Best of the West” website http://www.ag.unr.edu/wri/index.html

OSUES has established an audit trail for some integrated activities tied to Smith Lever 3b&c funds.

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Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution__Oregon State University
State_____Oregon

Check one: ____ Multistate Extension Activities
____ Integrated Activities (Hatch Act Funds)
__X_ Integrated Activities (Smith-Lever Act Funds)

	Actual Expenditures				
Title of Planned Program/Activity	**FY 2000**	**FY 2001**	**FY 2002**	**FY 2003**	**FY 2004**
IR4-Pesticide Registration for Minor Crops	**___0___**	**$58,006**	**__77,690**	**$81,845**	
IPM for Nursery & Berry Crops_____	**___0___**	**$38,760**	**__52,008**	**$43,073**	
New Landscape Plant Introduction_____	**___0___**	**$54,9646**	**__73,967**	**$77,394**	
Berry Production Systems_____	**___0___**	**$49,246**	**__65,931_**	**$69,586**	
Greenhouse Systems_____	**___0___**	**$ 16,476**	**___0___**	**-0-**	
_____	_____	_____	_____		
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Total	**___0___**	**$217,434**	**__269,596**	**$271,898**	

Director 3/14/04 **Date**

Form CSREES-REPT (2/00)

Appendix A

2003 OSU Extension Service Annual Faculty Contact Report

Clientele Contacts:

	White	Black	Hispanic	American Indian	Asian	Total	Total by Gender Male Female		Staff Contacts w/ Support Volunteer*	Staff Contacts w/ Program Volunteer*	Clientele Contacts by Program Volunteers
Agriculture	449,084	4,826	18,234	3,934	3,787	479,865	348,242	131,623	7,809	17,515	105,441
4-H Youth	280,170	1,460	13,088	7,550	2,027	304,295	113,200	191,095	20,413	61,363	1,692,344
Forestry	66,063	412	1,532	700	1,183	69,890	46,468	23,422	3,007	1,311	4,172
Home Economics	87,665	1,477	19,169	1,936	949	111,196	27,690	83,506	3,891	668	43,553
Sea Grant	5,870	55	132	126	111	6,294	3,611	2,683	103	231	535
Other Programs	12,302	14	84	510	129	13,039	5,409	7,630	805	1,161	79,763
Administration	24,959	177	568	947	111	26,762	15,244	11,518	4,679	8,026	15,802
Totals	926,113	8,421	52,807	15,703	8,297	1,011,341	559,864	451,477	40,707	90,275	1,941,610

Uses of Mass Media:

Number of satellite downlinks hosted	Number of news releases	Number of radio programs	Number of television programs
28	3,571	603	265

Individual Contacts Through:

Number of newsletters distributed (circulation)	Number of website hits
2,753,519	7,448,111

Only direct contacts are recorded for race, gender and volunteers. Those include face to face, telephone, email, fax and personal letters. Each contact is listed under the most appropriate program area. Contacts with Extension Faculty are not included. To avoid duplicate counts when more than one Extension Faculty member teaches at an event, only the event host reports the contacts.

* Report your direct contacts with volunteers. Program Volunteers are volunteers who have been trained to give an educational program or certified to provide educational information (e.g., master program volunteers, 4-H leaders, FCE leader-teachers). Support Volunteers include all other Extension volunteers (e.g., advisory groups, committee members, program development committees, office volunteers, field plot volunteers).