

ANNUAL REPORT OF ACCOMPLISHMENTS AND RESULTS

FY05 (October 2004 – September 30, 2005)

WASHINGTON STATE UNIVERSITY EXTENSION

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A. PLANNED PROGRAMS

1. NATIONAL GOALS

Goal 1: An Agricultural System that is Highly Competitive in the Global Economy.

Washington State University (WSU) Extension has once again opted to include all our agricultural programming under **Goal 4: Greater Harmony Between Agriculture and the Environment**. This does not suggest a lack of concern for production agriculture, but a change in perspective. Indeed it is because we realize the challenges facing the agricultural community that we do not separate out these two important goals. For agriculture in the state of Washington, competitiveness in the global economy requires that the agricultural community address environmental issues to be accepted by Pacific Rim nations as well as regional constituents.

We recognize that some of our programmatic impact fit Key Themes identified under Goal 1. Those reports are included in Goal 4 and identified as Key Theme “Other” with the Goal 1 Key Theme identifier in parentheses.

Goal 2: A Safe and Secure Food and Fiber System. To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.

Overview

The goal of WSU Extension food safety education is to ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education. We also help Washington residents to obtain knowledge and adopt behaviors that reduce risks of illness from foodborne pathogens. We continue to focus on food safety education from farm to table by convening food safety educators, researchers, and regulatory officials from the Pacific Northwest at the annual Northwest Food Sanitation Workshop.

Through USDA funded research, WSU Extension educators have developed key food safety messages for consumers. Educational programs are directed to address the following four major control factors that enable consumers to reduce their risk of foodborne illness:

- Cook foods adequately
- Avoid cross-contamination
- Keep foods at a safe temperature
- Avoid food from unsafe sources

In 2005, consumer food safety programs reached 23,168 people. County extension faculty estimate that one-half of contacts concerned issues of food quality and half were food safety issues. Previous research estimates that 15 percent of consumer inquiries involve life threatening foodborne pathogens. Using this standard, Extension’s food safety programs may have prevented serious illness or death for up to 3,500 people in the state.

In addition, over fifty volunteers with intensive training in food safety and preservation contributed 1,500 hours of outreach to families on both safe food preservation and food handling topics in 2005. Outreach methods included telephone hotlines, booths at farmer’s markets and fairs, workshops, pressure canner gauge testing, and queso fresco classes for the Latino community. If volunteer time is valued at \$17.00 per hour, their contributions totaled \$25,500.

Other Extension educators focus much of their time on food safety education for food producers and processors. These educators receive certification as Hazard Analysis Critical Control Point (HACCP) instructors and conduct numerous HACCP and sanitation workshops for food processors of seafood, meat, canned foods, and fresh produce. In 2005, Extension educators had contacts with 846 commercial and industry training participants.

In summary, 21 Extension educators served 19,566 participants statewide in food safety programming through food safety activities.

Sources of Funding and FTE for Goal 2

FTE Smith-Lever 3b and 3c	=	3.74 FTE
FTE Smith-Lever 3d	=	0.00 FTE
Federal Extension	=	\$94,777
Non-Federal	=	\$552,027
Other Federal	=	\$180,590
TOTAL	=	\$827,394

Key Theme - Food Handling

Key Theme – Foodborne Illness

- a. The Germ City: Clean Hands, Healthy People Program is an interactive Extension, education, and research program that focuses on effective hand washing behavior, leading to improvements in hand hygiene, food safety, and public health. The focal point of the program is a large lightproof tunnel equipped with black lights. Participants traverse the tunnel seeing a germ simulation on their hands. After washing, participants self-assess their hand washing effectiveness and receive additional educational information. Curricula and evaluation programs have now been developed for fairs and festivals, as well as classroom lessons for K-8. The objectives of Germ City are to enhance awareness of the importance of hand washing using science based education, improve effectiveness and frequency of hand washing, facilitate cognitive-behavioral change, and generate a database for future study and evaluation of hand washing education programs. The program has reached over 400,000 participants since its inception in 1998.

In 2005, the program was conducted and evaluated by Extension in Washington State and in the partner states of Alaska, Hawaii, Idaho and West Virginia. The program continued to expand to other states, and now has 68 Germ City units placed in 13 states. In addition to Extension in 12 states, the program was conducted by Western Illinois University, the FDA in Buffalo NY, and state/county fairs in Florida and Oregon.

- b. Impact: Evaluation was conducted on the school component of Germ City in 2005. Fourth and eighth grade students in Washington, Alaska, Hawaii, West Virginia and Idaho at ten sites (n=351) participated. Effectiveness was assessed through cleanliness ratings by students and educator/researcher observers. Germ City had a significant impact on children’s hand washing skills. Four to six weeks after the initial assessment, with no new instruction, significantly improved hand washing effectiveness was documented with confirmation by independent observations of educators/researchers and students in a post-test.
- c. Source of Federal Funds: Food Safety Initiative Integrated Research, Education and Extension Competitive Grants Program, Smith-Lever 3b and c, State matching
- d. Scope of Impact: Multistate Extension—AL, AZ, CA, HI, ID, IL, IA, OR, TN, VT, WA, and WV

Key Theme – Food Safety

Key Theme – Hazard Analysis Critical Control Point (HACCP)

- a. Poor quality products cost the Washington seafood industry over \$5 million annually in lost sales and wastage. Seafood safety issues and quality continues to be an impediment to increased per capita seafood consumption in the Northwest. Improper seafood handling and storage by fishermen, processors, retailers, and consumers cause loss of quality, reduced economic value, wastage, reduced sales, and potential safety problems. Improved temperature control, handling, and sanitation are

needed at all levels of harvesting, processing, and distribution to maximize the economic value of the catch, reduce contamination, increase product safety, and improve the marketability and consumer acceptance of Washington's seafood products. Changes in U.S. Food and Drug Administration HACCP regulations for seafood processors require cost-effective shellfish waste disposal alternatives for crab and shrimp processors. A cost-effective disposal method for local crab and shrimp waste was pilot-tested, then implemented. Cost and compliance with regulatory requirements were the most critical issues in this process. Improvements in sanitation techniques and temperature control were reported by fisherman, processors and retailers.

- b. **Impact:** Extension educators and volunteers provided technical assistance and training in the areas of seafood quality control, safety, handling, and utilization techniques to over 446 consumers, commercial fishermen, and seafood processors and retailers. 375 volunteers and consumers participating in the training sessions changed their knowledge and skills in seafood safety, quality control, and utilization techniques. 55 participants increased their adoption of recommended food selection and handling practices, decreased their use of foods likely to be contaminated with pathogens, and increased their understanding of food-related risks and the policy and scientific bases for risk management decisions. Improvements in sanitation techniques and temperature control were reported by fishermen, processors, and retailers.
- c. **Source of Federal Funds:** Smith-Lever 3b and c, State matching, County
- d. **Scope of Impact:** Multistate Extension—AK, OR, and WA

Key Theme – Foodborne Illness

Key Theme – HACCP

- a. Although the United States food supply is among the safest in the world, an estimated seven million illnesses, 3,000 deaths, and billions of dollars in losses are caused by foodborne diseases each year. Educating the food industry and its regulators through food safety training programs is an effective means of reducing food borne illnesses.
- b. **Impact:** More than 775 people participated in food safety training directed toward food processors and regulators. HACCP was implemented in more than 250 operations and 97 people attended and successfully passed the Better Process Control Schools (BPCS) examinations. In addition, 85 percent of the successful BPCS participants implemented course principles in their operations. More than 330 people attended a Food Sanitation Workshop, which delivered selected workshops in Spanish for the first time. 68 attended the Food Safety Farm to Table conference. The Safe Quality Food (SQF) program continues to grow, especially among fruit packers and growers, with 89 people attending the training programs. 26 facilities and more than 500 fruit growers are now operating under the SQF codes.
- c. **Source of Federal Funds:** Smith-Lever 3b and c, State matching
- d. **Scope of Impact:** Multistate Extension—ID, MT, OR, and WA

Key Theme – HACCP

Key Theme – Other (Goal 1: Animal Production Efficiency)

- a. There are no United States Department of Agriculture (USDA), Washington State Department of Agriculture (WSDA), or Department of Natural Resources (DNR) offices in San Juan County, and few local resources exist for agricultural and forest producers to access technical or management information other than WSU. Local and regional markets for farm products as opposed to commodity markets are a key factor for profitable agriculture. Limited value added processing and no USDA inspected slaughter facilities existed in the county, accessibility to USDA inspected facilities on the

mainland was not cost effective for small producers, and no alternatives existed for transporting livestock to and from the mainland other than Washington State Ferries. Long waits for ferry transportation between the islands and the mainland jeopardized the health and marketability of valuable livestock and impacted the livelihoods of producers. Extension educators provided educational services in marketing, food processing and safety training that supported the development and expansion of Mobile Processing Units (MPU).

- b. **Impact:** There are now MPUs in California, Hawaii, and Wyoming in addition to Washington that are based on WSU Extension's model. The San Juan County project, written about in local, regional, and national publications, continues to generate information and presentation requests, needs assessments and feasibility studies from interested parties around the United States and Canada. Retail cuts of locally produced USDA inspected meat are now readily available at island thereby increasing livestock sales profits for producers. The gross farm gate of the MPU was \$400K in 2004 and is projected to be near \$1 million in 2005.
- c. Source of Federal Funds: Smith-Lever 3b and c, State matching
- d. Scope of Impact: Multistate—CA, HI, WA, and WY

Goal 3: A Healthy, Well-nourished Population. Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.

Overview

According to 2004 data, Washington State ranks fifth in the United States for the percentage of people experiencing severe hunger. Rates of hunger are particularly high for female-headed families with children, in which USDA research documents food insecurity rates exceeding 30 percent. In addition, poor women have higher rates of low birth weight infants and higher rates of chronic diseases linked to diet. Nutrition education with low-income families with children can have lifetime impact, making it possible for participants to live healthier lives and be productive members of society. In consideration of the needs and potential Impact, the target audience for nutrition education in Washington is low-income families, including people receiving or eligible for food stamps and children receiving free or reduced price lunches at school.

At WSU Extension, both the Expanded Food and Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) are branded under the name *Food Sense*. In 2005, thirty EFNEP paraprofessional educators worked in 5 counties with leadership, training, and supervision from 5 professional faculty/staff. A total of 276 volunteers contributed 2.1 FTEs to EFNEP. A total of 2,689 parents were enrolled in the 5 counties, impacting 10,472 family members. In two-thirds of these families, income was less than or equal to 100 percent of the poverty level. Forty-three percent of the children in these families were ages 5 and younger. In addition, a total of 5,571 youths were enrolled in EFNEP, with 3,600 in school enrichment programs.

The *Food Sense* program engaged 94,463 participants directly in one or more educational activities in 2005, operating in about two-thirds of the state's counties and with three tribes. Of that number, 56 percent were adults and 44 percent youth. 88 percent of adults were food-stamp eligible and 48 percent of those reached were persons of color. Of the 53,513 adults enrolled in the program in 2005, 62 percent were enrolled in a series class and received an average of 4.6 lessons. The remainder were reached through newsletters. Numbers of adults reached nearly doubled between 2004 and 2005. The majority (74 percent) of the 39,950 youth were reached through school enrichment programs that averaged 7.2 classroom visits. The remaining youth were taught through organized clubs, community events and after-school programs. Over 704 local partners collaborated with Extension in program planning and delivery, and provided in-kind contributions of staff time, space and equipment to Food Sense. In addition to the

direct educational contacts, an additional 2.6 million (estimated) people were reached indirectly by the program through newsletters, media features and community fairs.

WSU Extension educators also addressed priority health issues in their programming. Diabetes education was a primary state focus in the health arena. Approximately 400,000 Washingtonians (6 percent) have been diagnosed with diabetes—one of the leading causes of heart disease, stroke, kidney failure and lower limb amputations. Of people over age 40, approximately 12 percent of whites, 25 percent of African Americans, 50 percent of Native Americans, and 30 percent of Latinos in Washington State have diabetes. In Washington State, the percentage of people diagnosed with diabetes increased 39 percent between 1990 and 2000. The American Diabetes Association projects that diabetes will grow 165 percent by the year 2050.

The Living Well with Diabetes project is designed to reduce the risk of diabetic complications and to help people learn how to better manage the disease. The target audiences are people most at risk of complications, e.g., those who have diabetes, but are not currently seeking regular medical care for the disease. In 2005, 281 people in 14 counties were enrolled in Diabetes Awareness Education classes. Of these participants, 62 percent were white, 7 percent African American, 7 percent Latino, 13 percent Native American, 2 percent Asian, and 17 percent Slavic. The average education level was 12 years or more for all groups except Latinos, whose education averaged 8 years. The average age was 61 years. 46 percent of participants had incomes of \$15,000 or less and another 12 percent had incomes between \$15,000 and \$19,000. At the time of enrollment, 37 percent had A1c readings over 7.0. The Living Well with Diabetes program is one effort included in WSU Extension's Partnership for Diabetes Awareness and Education. External partners include the Joslin Diabetes Center at Harvard University, University of Hawaii, New Mexico State University, Pennsylvania State University, University of West Virginia, USDA/CSREES, Northwest Kidney Center and the American Heart Association. Internal WSU partners include the Colleges of Nursing and Pharmacy.

Sources of Funding and FTE for Goal 3

FTE Smith-Lever 3b and 3c	=	0.39 FTE
FTE Smith-Lever 3d	=	12.45 FTE
Federal Extension	=	\$1,408,119
Non-Federal	=	\$8,201,541
Other Federal	=	\$138,959
TOTAL	=	\$9,748,619

Key Theme – Human Health

Key Theme – Human Nutrition

- a. The Diabetes Awareness Education project began in 1999 in collaboration with Joslin Diabetes Center at Harvard University in Boston Massachusetts. The long-term goal of this project is to reduce the incidence of complications from diabetes. In its fourth year of implementation, the Living Well with Diabetes program operated in 14 counties, including an inner city urban area with a high percentage of African American residents, communities with majority Latino residents, and a tribal reservation setting. The 1.5-hour initial program includes screening for A1c, blood pressure and cholesterol. Participants learn about the screening tests and what actions they can take to reduce the risk of complications. The initial class is followed by four weekly sessions on food, nutrition and physical activity. A follow-up evaluation is conducted three months after participation.
- b. Impact: In 2004, the post-program evaluation results demonstrated that for white and Slavic participants, there were significant improvements in A1c, systolic blood pressure, level of physical activity, and fruit and vegetable consumption. In addition, a significant number of participants from all groups indicated that because of the class, they now know exactly what to do to take care of their diabetes, which increased both their confidence and knowledge about managing their disease. Changes were most significant in the group with highest levels of education. Participants showed

significant changes on all dietary questions. Use of the food pyramid, increased consumption of fruits and vegetables, and selecting different types of fat were the items most likely to change.

- c. Source of Federal Funds: Congressional appropriation through USDA CSREES
- d. Scope of Impact: Multistate Extension—NM, WV, HI, and WA

Key Theme – Human Health

Key Theme – Other (Goal 1: Animal Health)

Key Theme – Other (Goal 1: Emerging Infectious Diseases)

Key Theme – Human Nutrition

CSREES Focus Area – Nutrition with emphasis on Obesity and Behavioral Issues

- a. The WSU Extension *Food Sense* Program provides food and nutrition education for food stamp recipients in partnership with a variety of community-based organizations. In 2005, 26 counties supported projects promoting good nutrition and physical activity, food safety, and improved utilization of food resources.
- b. Impact: In 2005, 280,051 direct and 2.6 million indirect contacts were made. A total of 93,463 individuals were reached directly. Of the adults who were evaluated after a single-event educational program: 86 percent (of 1737) were motivated to improve food safety practices; 80 percent (of 1728) were motivated to select more nutritious low-cost foods; and 85 percent (of 1737) intended to improve the nutritional quality of their diets. Of the adults who graduated from a series of classes and completed follow-up evaluations: 64 percent improved two or more nutrition practices; 53 percent improved one or more food resource practices; 54 percent improved one or more practices in food safety; and 30 percent reported that they ran out of food less often. Among youth Food Sense participants evaluated: 85 percent reported increasing levels of physical activity to 60 minutes per day; 83 percent reported improvement in eating breakfasts that included 3 food groups; and 75 percent began following food safety and preparation guidelines. A pilot evaluation was also conducted on the parent newsletters developed to support the Food Sense youth curriculum. Evaluation feedback forms were received from 2,700 families (21 percent return rate). The families reported that as a result of reading the newsletters, 46 percent now buy healthier snacks for their children, 91 percent wash their hands more frequently before food preparation and eating, 78 percent eat more meals together as a family, 50 percent eat more fruits and vegetables, and 42 percent use the Food Pyramid to select snacks and meals.
- c. Source of Federal Funds: Smith-Lever 3b and c, County, City
- d. Scope of Impact: State specific

Goal 4: *Greater Harmony Between Agriculture and the Environment.* Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air and biotic resources.

Overview

Washington State University (WSU) Extension provides research-based education that has increased agricultural profitability and competitiveness while preserving or enhancing natural resources and the rural environment. Multistate programs continue with partnerships in Alaska, Idaho, Oregon, and other states that have yielded significant improvements to Extension programming in risk management, forestry, water quality, and in potato production.

WSU has built interdisciplinary research and Extension teams to address Integrated Pest Management (IPM) and potato production as well as Extension, research, and teaching partnerships through our Center

for Sustaining Agriculture and Natural Resources (CSANR). The CSANR works closely with the small farms program and has added a “Farmers Market” educator and a pest management educator for small farms. In potato production, Extension educators work with researchers in California, Colorado, Idaho, Texas, and Washington to test the adaptability of new cultivars and extend that knowledge to Washington potato growers.

In sustainable agriculture, 1,995 producers adopted decision support systems that recognize and evaluate the economic, environmental, and social implications of alternative plant and animal production systems. Producers managed approximately 729,401 acres under improved sustainable stewardship practices. Natural resource owners and managers attended 338 programs reaching 73,847 people. Over 65,300 people increased their knowledge and skills in sustaining natural resource systems such as forests, windbreaks, range, and wetlands resulting in practice changes that sustained benefits on over 63 million acres.

Washington's producers continued to build upon past successes in IPM. This year, there were 520 demonstrations that advanced IPM practices. 4,170 production units used 40 different prevention-based pest management practices for use on targeted cropping systems that may reduce the pesticide load in the environment to safeguard human health and the environmental health of Washington State. Approximately 29 public forums involving joint sponsorship or collaboration enhanced multi-party collaborations and the exchange of information among public, private, and non-profit stakeholders in order to foster the development and adoption of IPM strategies and systems among selected audiences. Educational programs to improve the use of IPM strategies and systems increased the range of benefits and opportunities achieved by enterprises and individuals.

Extension is making a difference in the establishment of local food systems that are relevant to communities and enhance the economic, environmental, and social well-being of those communities. We have improved our understanding of the value and characteristics of the major components of Washington's existing and emerging agriculture and food systems. WSU Extension programming assisted in the creation of 86 new vendors at farmers markets. Last year, 20,000 people visited 120 farms in harvest celebrations that connect consumers with food producers on their farms.

Extension continues to provide education for the protection and improvement of Washington's water resources, including flora and fauna water quality and quantity. Extension provided technical expertise and educational programs in pollution prevention to reduce water resource degradation from contaminants such as failing onsite sewage systems, household hazardous waste, manure pathogens, nutrients, pesticides, and soil erosion. Subsequently, 44,846 Washington residents now have a greater understanding of the interdependence of water resources, human health, and the ecology of their region and 11,889 program participants made changes in practices to protect water resources and aquatic life.

Pioneered by WSU Extension faculty in King and Pierce counties in Washington State over 30 years ago, the WSU Master Gardeners: The Original Master Gardeners since 1973™ has active programs in 36 of our 39 counties. The WSU Master Gardener Program includes 144 “Plant Clinics” operating in 105 communities that offer plant, insect, and disease diagnosis to the public. There were 3,667 active volunteers working on behalf of WSU Extension in 2005, contributing 204,593 hours of volunteer effort toward WSU Extension projects. In addition, the Master Gardener volunteer concept has spread to every state, Canada and other countries.

Sources of Funding and FTE for Goal 4

FTE Smith-Lever 3b and 3c	=	17.47 FTE
FTE Smith-Lever 3d	=	2.36 FTE
Federal Extension	=	\$1,849,911
Non-Federal	=	\$10,774,745
Other Federal	=	\$5,246,661
TOTAL	=	\$17,871,317

Key Theme – Endangered Species
Key Theme – Natural Resources Management
Key Theme – Water Quality
Key Theme – Wetlands Restoration and Protection

- a. Development practices and landscape modification play significant roles in determining the long-term health of our aquatic systems. The health of Washington citizens and the state's economy is jeopardized by urban development, which affects water resources and aquatic species through nonpoint source pollution, groundwater contamination, and decline of aquatic habitats and wetlands. Poor land-use practices in urbanized areas because failing onsite sewage systems, soil erosion, pet waste pathogens, and storm water runoff carrying household hazardous waste, excess nutrients, and pesticides. These in turn threaten more than 60 percent of Washington's drinking water that comes from groundwater, endangered salmonid species, and the more than \$70 million in shellfish harvest sales as well as contributing to a greater flooding risk. Real estate professionals influence these land-use practices by their role as an intermediary between a buyer or seller and a piece of property. Yet they tend to have poor knowledge of environmental issues. A local needs assessment identified real estate professionals and developers as an underserved, high priority audience for water resources education. WSU Extension developed and implemented a Water Resource Education Program for Real Estate Professionals with courses that cover the science, policy, and regulations of water resource related issues such as onsite sewage systems, wetlands, shorelines, salmon and streams, and low-impact development so real estate professionals can make environmentally suitable decisions regarding development and land-use practices, as well as educate their clientele about land stewardship, water quality, and aquatic habitat.
- b. Impact: Real estate professional attendees received continuing education credit towards their biennial professional license recertification. The long-term goal of the program is to protect and improve the health and well-being of Washington's citizens, and protect natural resources that add value to the state's economy. The real estate community acts as the "medium" toward this goal by transferring knowledge gained to clients who will consequently modify their land-use behaviors. Attendance in 59 courses over eight years totals 1,526 with 780 actual individual attendees. In 2005, a total of 190 individuals took nine classes. Findings from post-course evaluation responses include 97 percent of respondents said they would recommend the program to colleagues, nearly 88 percent are now more knowledgeable of possible land use problems, 59 percent were able to relay specific information from the course to clients, 52 percent were able to give resource information to clients, 61 percent were better able to value a property; and 34 percent said that the course helped in dealing with local development requirements.
- c. Source of Funding: Smith-Lever Act, State matching
- d. Scope of Impact: State Specific Integrated Research and Extension--WA

Key Theme – Forest Resource Management
Key Theme – Natural Resources Management
Key Theme – Wildfire Management
Key Theme – Other– (Goal 1: GIS/GPS)

- a. Skamania County sets entirely within a fire-based forest ecosystem. The populated southern edge of the county lies within the Columbia River Gorge, which is known for rapid and catastrophic wildfires. As with many other rural western counties, increased rural home development has increased chances of loss of human lives and property from wildfires. The Skamania County Title III Firewise Program educates Skamania County wildland urban interface (wui) residents in firewise principles, directs local rural fire districts to grant sources, and keeps a geographical information system (GIS) database of wui structures using the NFPA299 protocol. The NFPA299 wildfire survey protocol measures

about 25 attributes of a structure including roof composition, driveway characteristics, fuel loads, and other information useful in responding to wildfire or in planning mitigation efforts.

- b. Impact: NFPA299 surveys were completed for Hood River, Wasco, and Skamania Counties largely under the auspices of Title III funding. Accurate and updated Skamania County maps showing individual dwellings (with photographs) now allow for more accurate planning and response on over 60,000 acres. Class evaluations and discussion with more than 100 participants indicated that participants will use the useful knowledge and skills taught to increase their homes' wildfire survivability. The GIS and education components of this project: transferred technology to end users; demonstrated technology feasibility to local decision makers; created partnerships with communities, organizations, business/industry, and schools including Skamania County (Title III), US Fish and Wildlife Service and local fire districts; prepared communities for a new economy by enhancing digital infrastructure; reduced preventable economic losses in agriculture and natural resources; and resulted in enhanced environmental quality and enhanced job skill development of local workforce in GIS technology.
- c. Source of Funding: Smith-Lever Act, US Fish and Wildlife, US Forest Service Title III, State matching
- d. Scope of Impact: State Specific Integrated Research and Extension--WA

Key Theme – Endangered Species

Key Theme – Forest Resource Management

Key Theme – Natural Resources Management

Key Theme – Other – (Goal 1: Niche Market)

- a. Once considered a weed, alder is now recognized as a premium commercial species and an important ecological component of Pacific Northwest forests. Western Alder thrives in the low moist conditions typical of the West Coast Range from southern British Columbia to northern California. This abundant, prolific, fast-growing species western hardwood can provide saw timber size trees in 25 to 30 years. Its fine-grained hardwood has a density or hardness comparable to Appalachian soft maple. Western Alder is ideally suited for cabinets, fine furniture, furniture frames, pallets, plywood, veneer, specialty items, and paper products. Through proven forest management techniques that include planting hardwoods, ending harmful spraying, and offering hardwood and small mixed stands for sale, 2 billion cubic feet of merchantable hardwood could easily increase to 10 billion cubic feet in just 25 years, adding billions of dollars to the Pacific Northwest's annual economy. Alder is not only used for numerous commercial products, but also plays a unique ecological role in creating biodiversity of northwest forests. This appropriate management helps protect endangered salmon as red alder is commonly found in riparian areas and in lower elevation forests. Alder is also the most desired species favored by Native Americans for the open-air cooking of salmon. Yet changes that are affecting red alder management and utilization, including advances in our understanding of biology and silviculture, market and non-market values, and the regulatory climate may not be broadly understood.
- b. Impact: Over 200 professionals representing all aspects of alder culture, management, ecology, and silviculture from the U.S. and Canada attended the International Symposium for Red Alder: A State of Knowledge conference to increase their knowledge of this unique species. Small forest landowners, forestry consultants, industrial land managers, government agency personnel, tribal land managers are now better prepared to manage red alder for sustained biological and commercial products. Alder is no longer considered a weed species, bringing the landowner stumpage fees now exceeding Douglas-fir on a board-foot basis. A DVD is available that provides an electronic symposium proceeding containing the complete set of speaker presentations and slide images. In addition, the presentations are also available via interactive streaming video from the Rural Technology Initiative website <http://www.ruraltech.org/>.

- c. Source of Funding: Smith-Lever Act, US Forest Service, State matching, Private and Public Industry, British Columbia Ministry of Forests
- d. Scope of Impact: Multistate Integrated Research and Extension--OR, WA, BC

Key Theme – Endangered Species

Key Theme – Natural Resources Management

Key Theme – Other – (Goal 5: Supplemental Income Strategies)

- a. In Washington State, commercial fishing continues to be a very large, diverse, and significant industry, with nearly 3 billion pounds of fish and shellfish harvested annually worth more than \$1.5 billion at the wholesale level. To maintain economic viability, fishermen must move into already exploited fisheries, increase the value of their catch, or reduce their operating costs. Foreign import competition in the salmon market has reduced prices and returns to fishermen. Technical training is needed to help fishermen reduce their operating costs through improved vessel and gear maintenance and operation, and to improve profitability through better marketing and processing. National and local forces have caused dramatic changes in the lives of fishermen and their families, and in the economic and social fabric of coastal communities. Increased competition for limited fisheries resources, restrictive management decisions, new federal laws, changing markets, and unusual ocean conditions have combined to create a particularly stressful and uncertain climate in the commercial fishing industry. Regional programming is needed to assist fishermen and their families in managing this transition in their lives. The federal Trade Assistance Act of 2002 included a Trade Adjustment Assistance (TAA) program for farmers. Administered by USDA, TAA makes producers eligible for compensation if their commodity price and income have been adversely affected by international trade. Producers of eligible commodities could receive up to \$10,000 and job retraining provided through the Department of Labor.
- b. Impact: Commercial salmon fishermen were added as eligible applicants again in 2005 and were required to receive technical assistance through Extension or the Sea Grant Marine Advisory Program staff in order to qualify for payment. Over 100 commercial fishermen received technical assistance on vessel stability, electrolysis, diesel engine maintenance, hydraulics, trolling, corrosion control, electronics, navigation, and reducing operating costs, thereby improving profitability. As a component of the TAA program, WSU Extension continued collaboration with Oregon State University Extension and the Fishing Dependent Families project to improve the ability of fishermen and their families to recognize and cope with individual and regional change, and to learn strategies to move toward workable and long-term improvements in their lives. Special workshops were also provided to tribal audiences. Applicants were then eligible for cash benefits and/or retraining and educational support. Post-session evaluations indicated that participants had improved their knowledge and skills in marketing and business analysis. Improvements in dealing with operations and maintenance problems were again reported by commercial fishermen, including a more effective response to small oil spills from vessels. The new electronic version of the topline charts in Nobeltec, P-Windplot, and Maptech, has greatly simplified the process of entering the data into electronic navigation equipment, making the process more reliable and faster. The expansion of fishing area by nearly 50 square miles gave fishermen additional area to set gear, enhancing their harvests, and the new summer lane date change has allowed tug and barge traffic to use the inside lanes earlier in the year, saving them thousands of dollars in fuel and operations costs. Copies of the charts have been distributed more widely to the fishing fleet and shipping industry. This project is valued at over a million dollars in savings to these industries each year.
- c. Source of Funding: Smith-Lever Act, State matching
- d. Scope of Impact: Multistate Integrated Research and Extension--AK, OR, WA

Key Theme – Natural Resources Management

Key Theme – Water Quality

Key Theme – Other – (Goal 1: Invasive Species)

- a. State and federal agencies spend over \$3 million dollars each year controlling invasive aquatic and riparian weed species in Washington. These weed species specifically, Spartina, milfoil, and knotweed lack cost-effective control options; therefore, alternative control strategies are needed.
- b. Impact: Research was conducted to develop new effective and safe control tools, and outreach of recommendations and findings was provided to over 2,000 people at international symposiums, workshops, training sessions, tours, papers, and talks. Over 13,000 acres of Spartina have been controlled in Willapa Bay, Grays Harbor, Puget Sound and San Francisco Bay as a direct result of this program. This project has been in development for over 12 years and impacts are just now being realized and implemented on a global basis. Eradication of Spartina from several of these sites will occur within the next 6 years. Similar success in developing new controls for other aquatic weeds will be forthcoming. Benefits are estimated to be the tens of millions of dollars per year in terms of direct and indirect impact. The real value in terms of saving priceless ecosystems like Willapa Bay and San Francisco Bay is impossible to estimate.
- c. Source of Funding: Smith-Lever Act, Hatch, State matching, private industry
- d. Scope of Impact: Multistate Integrated Research and Extension--CA, WA, BC

Key Theme – Integrated Pest Management (IPM)

Key Theme – Soil Quality

Key Theme – Other – (Goal 1: Plant Production Efficiency)

- a. Since 1999, the acres of mustard green manures in Washington have grown by over 1,000 percent (collected seed sales data). Farmers using these green manures want both soilborne pest control (fungi, nematodes, and weeds) and improved soil quality (tilth, wind erosion control, nutrient management; 2002 survey). There is the potential for green manures to improve profits by reducing the need for expensive soil fumigants and by improving crop yield and quality, and to improve the environment through improved soils and reduced runoff and erosion.
- b. Impact: The use of mustard green manures has moved from research to commercial application, although the mechanisms behind the practice are still undetermined. The acres where the practice is used increased from 1,800 acres in 1999 to 17,000 acres in 2005. A majority of these acres will be planted to potatoes in 2006. Several large potato growers are moving ahead in replacing the use of the fumigant metam sodium with the mustard green manures on their best fields. If farmers replaced the fumigant metam sodium on all of these acres, farmers would save over \$1.3 million (~\$66 per acre) while improving the quality of their soil. The growers using green manures on these acres should begin to see improvements in their soil quality, their ability to manage soil-borne pests, and eventually increased profits. This work has gained recognition worldwide for being one of the largest examples of this kind of biocontrol of pests. As a result of this recognition and similar work going on in Idaho, the next International Symposium on biofumigation will take place in Moscow, Idaho, in June 2006.
- c. Source of Funding: Smith-Lever Act, USDA SARE Western Region, State matching
- d. Scope of Impact: Multistate Integrated Research and Extension--CA, ID, OR, WA

Key Theme – Integrated Pest Management

Key Theme – Other (Goal 1: Plant Production Efficiency)

Key Theme – Other (Goal 1: Organic Agriculture)

- a. Washington is the nation's leading producer of sweet cherries in the United States. Thirty percent of the state's crop is exported. The key quarantine pest of sweet cherries is the cherry fruit fly (CFF) and there is a zero tolerance for this pest in Washington sweet cherries. Six years ago, all products registered for control of this pest were either organo-phosphate or carbamate insecticides. Organic growers had lost the use of all effective products or management tools for this pest and were quickly losing control. Many of the most effective insecticides were strictly limited or completely banned near fish-bearing streams. WSU Extension educators initiated 74 trials in eight counties in central Washington starting in the late 1990s to screen new methods and materials for use by both conventional and organic cherry growers. The trials included a control method never before used on any tree fruit in the Pacific Northwest—application of bait that speckles the tree with an edible substance laced with a biologically derived ingredient that kills the fly if it is consumed. The product was developed to replace helicopter application of malathion to control the medfly and Mexican fruit fly in large metropolitan areas in southern California. Results have been published in several popular press articles (for growers) and have been submitted to a refereed journal for publication.
- b. **Impact:** In 2001, the Environmental Protection Agency (EPA) granted the registration of a limited-risk pesticide (spinosad). The registration was based solely on WSU results. By 2004, this active ingredient was approved for use in organic orchards as well because spinosad has a very low level of toxicity. Trials showed extremely high levels of efficacy against the pest. The application of the product in this manner has no impact on the natural enemies of other cherry pests, a fact not lost on growers or the EPA. The product is so safe, it is considered safe to spray the crop only four hours before harvest, posing no hazard to employees or the applicator. Spinosad was proven as an effective CFF control active ingredient during earlier work by the agent and others. Entrust, an organically acceptable formula of sprayable spinosad, was shown effective during this project. The GF-120 NF bait was first shown to be an option as a cherry fruit fly control material and method through this project. As application of insecticidal bait is a new practice to Pacific Northwest tree fruit producers, research and educational efforts were closely linked. Use of the product increased by 360 percent in 2005 compared to 2004, and the use in the first two years of registration has saved Washington cherry growers over \$1.16 million in labor, machinery and material costs, and the economic benefits will continue at about \$1 million per season at current use levels.
- c. **Source of Federal Funds:** Smith-Lever Act, State matching, Private companies
- d. **Scope of Impact:** Multistate Integrated Research and Extension--OR, WA, BC

Key Theme – Endangered Species

Key Theme – Natural Resources Systems Management

- a. Marine mammals are protected species in the United States. Their habitat is being challenged daily by the rapid growth within the Puget Sound Region. More information is required to understand what is happening to their populations. The Marine Mammal Stranding Network is a joint venture between the National Marine Fisheries Service (NMFS), Orca Network and WSU Beach Watchers to collect data on stranded marine mammals. A team of volunteers respond throughout the year to calls from the public on marine mammals washed up or found alive on the beach. All this data is recorded and reported to NMFS and held locally.
- b. **Impact:** The Central Puget Sound Marine Mammal Stranding Network received 211 calls reporting dead or stranded marine mammals from January 1 through December 31, 2005. This was 2.5 times the number of calls logged in 2004 (84). The increase in calls is due in part to our continuous efforts to increase public awareness through education (conversations, classes and brochures) and to the fact

that our Letter of Agreement (LOA) with the National Marine Fisheries Service, Northwest Region, expanded our response area to include the shoreline areas of Island County and portions of Snohomish and Skagit Counties. The majority of the calls (89 percent) were for harbor seals, and 8 percent for adult male California sea lions. The remaining 3 percent of calls included four gray whales, and one elephant seal, humpback whale, Dall's porpoise, and harbor porpoise. Of the 187 harbor seal calls, 83 percent were for pups, with many replicated calls on the same animal. In addition to the stranded marine mammals, calls were also received on other species including an abandoned duck, several other birds, an octopus, several dogfish, and a couple of river otters. In addition to the Puget Sound, stranding calls were received from La Push, Ocean Shores and Southern California. All out of area calls were referred to appropriate parties in those locales.

- c. Source of Federal Funds: Smith-Lever Act, State matching
- d. Scope of Impact: Multistate Extension--CA, WA

Key Theme – Sustainable Agriculture

Key Theme – Other (Goal 1: Rangeland/pasture Management)

Key Theme – Other (Goal 1: Animal Production Efficiency)

- a. The need for educational programming exists among the approximately 2000 cattle producers in Yakima County. According to cattle advisory group, irrigated pasture production, riparian buffer research, lengthening the grazing season, variety trials of forages, storm water, livestock identification, and critical area ordinances rank as top concerns. Historical highs in most areas of the cattle markets have led to the need of education in marketing. Cattle, calves and their products gate value for this county is approximately \$400 million annually. One of the largest uses of water for irrigation within Yakima County is irrigated pasture. Irrigated pasture, as a crop, represents over 120,000 acres as recorded by assessor's office personnel. The acreage magnitude makes irrigated pasture one of, if not the largest, crop in Yakima County. Irrigated pasture, when managed correctly, is one of the finest biological filters available. Silt, fecal coliforms, nitrates and nitrogen, phosphorus and many other pollutants are eliminated from water and used by the normal plant population of irrigated pasture. Agricultural economists agree that irrigated pastures, when managed correctly, is an economically feasible crop in Washington State. Over the past decade managed intensive grazing net income is positive and the most secure of all agricultural crops. Approximately 30,000 taxpayers have small-irrigated farm acreages (2 to 20 acres) in Yakima County. The county assessor estimates 85 percent or 25,500 of these small farms raise irrigated pasture and some form of livestock or horses. High percentages of these individuals plant their acreage to pastures, overgraze, overstock, grow noxious weeds, misuse pesticides and herbicides, cause siltation, nitrate and fecal contamination of surface and ground waters. Small acreage producer education ranks at the top of USDA/NRCS educational efforts, but educators do not exist on their staff. Irrigated pasture management and managed intensive grazing (MIG) represents one of the highest need areas for educational programming according to Natural Resource Conservation Districts (NRCS), conservation districts, USDA and Department of Ecology (DOE). Advisory groups at the national, state and local levels list intensive grazing and the use of annuals to extend the grazing season as priority management issues for research and education.
- b. Impact: Five hundred people learned skills pertaining to the management of irrigated pastures through individual contact or attendance at seminars, field days and/or reading bulletins and newsletters. They have made changes in existing operations and reduced their cost of production. These producers with irrigated pasture decreased overstocking, and overgrazing, increased forage, decreased pesticide and herbicide use, better utilize irrigation water and change their management of fertilizers. In addition, they were able to increase production and decrease costs of their existing operations. Siltation, nitrate, phosphorus, E-coli, and pesticide and herbicide levels decreased within the Granger drain and the Yakima River because of increased use of BMPs from educational programming. Environmental quality was enhanced by cleaning or elimination of the runoff from many of the regions irrigated

pastures. In addition, surface and ground water within Yakima County became cleaner because of irrigated pasture management educational programming. Granger Drain data shows a continual decrease in pollution directly due to programming in the region. Extension of the grazing season studies has shown producers how to decrease the winter feeding costs of their existing operations. Cost savings for a 50 day increase in the grazing season length can lower costs by \$100 per cow. If cattlemen adopt these practices cost savings will rapidly approach \$5 million in this county.

- c. Source of Funding: Smith-Lever Act, State matching
- d. Scope of Impact: State Specific Integrated Research and Extension--WA

Key Theme – Endangered Species

Key Theme – Recycling

- a. The health of Puget Sound continues to suffer damaging effects from the results of population growth and human activities and behaviors. Continued problems include the poor or declining condition of a wide variety of marine organisms, including the listing of two species of salmon under the Endangered Species Act. Litter or garbage that people toss on the beach pollutes the water and land, thereby affecting the health of both the upland area and the marine waters. Beach Watchers are dedicated environmental educators who lead their communities in the protection and preservation of the natural world through science and educational outreach. Beach Watchers learn how to protect and preserve our beaches and the impact development has on our natural resources. Beach Watchers partner with the WSU Waste Wise program to clean beaches of this waste as they troll the shorelines for trash and noxious weeds.
- b. Impact: The WSU Beach Watchers Program had 185 hours of volunteer time dedicated to litter or marine debris removal along the beaches in Island County. WSU Beach Watchers obtained money to expand the Island County Beach Watcher program to all of the seven counties that have Marine Resource Committees. By regionalizing the Beach Watcher Program, coordinators and members can share ideas, energy, projects, and increase the involvement of citizens in research and education. In addition, the Tire Recycling project turns a major waste problem into a solution by becoming a fund raiser for the WSU Waste Wise program. Tire recyclers pay to have tires collected and loaded onto their trucks. This keeps an apparently worthless and hazardous consumable in the system as a useable product when it gets converted and supports existing environmental efforts through education.
- c. Source of Funding: Smith-Lever Act, State matching
- d. Scope of Impact: State Specific Integrated Research and Extension--WA

Key Theme – Forest Resource Management

- a. Forest, range, wetlands cover about three-quarters of Washington State. Sustainable stewardship of natural resources systems on these lands is essential to the state's and region's economic vitality and quality of life. Approximately 51 percent or 21.8 million acres in Washington is classified as forest land. The percentage breakdown of forest is: national forest 29 percent, state and other public lands 15 percent, forest industry 29 percent, and non-industrial private 27 percent. Total employment in the state's forest products industries was 52,800 in 1995. The 1995 gross business income for the Washington forestry and forest products sector was over \$100 million. Forest products account for over 10 percent of the employment in 18 of the state's 39 counties. It is estimated that there are over 45,000 non-industrial private forest owners (NIPF) with 20 or more acres in the state of Washington. Most own their land for non-timber purposes, particularly on smaller acreage. These owners are educated in stewardship management. Of those interested in commercial production, most have limited knowledge for proper management and marketing, and in many instances, even awareness of need for management and marketing information is lacking. Our challenge is to educate those

interested in intensive management to use proper stewardship techniques. Since the knowledge and abilities of NIPF owners vary greatly, the role of public and private forest advisors, such as county agents, state farm foresters, and private forestry consultants, is very important in helping ensure proper sustainable forest stewardship. Because forest advisors play a vital role in providing advice and technical assistance to NIPF owners, it is critical that their knowledge is up-to-date.

- b. **Impact:** Renewable Resource Education Act (RREA) dollars are leveraged with state and local funds to teach Forest Stewardship Coached Planning classes empowering over 385 ownerships to write forest management plans encompassing over 39,300 acres, provide logger continuing education classes to over 2,500 forest operators, design and develop a 150-acre demonstration forest accessed by over 5000 publics and legislators to date, and work with cooperating agencies on design and delivery of regional and state forestry contests for over 1,500 youth. Collaboration with the University of Idaho Extension allowed the organization and hosting of the First Annual Northwest Wildland Urban Interface Conference. The conference was attended by over 116 land planners, foresters and fire professionals who expressed a significant increase in knowledge in insurance issues, land use planning and WUI demographic trends, which can be used in planning and management strategies. The demonstration forest engages the public in viewing various forest management activities ranging from cutting practices to wildlife and riparian management issues. Youth involved in competitions ranging from Tree Disorders, Cruising and Dendrology to Management Issues are more likely to pursue a career in natural resources. Landowners completing the Forest Stewardship Coached Planning course expressed that they were now better able to understand forest terminology and issues, clarify their objectives and make informed management decisions. Over 900 loggers have now been educated in Ecology and Silviculture throughout the state. Without Accredited Logging Professional (ALP) certification, loggers can not market logs to purchasers participating in the national Sustainable Forest Initiative. Having this marketing ability helps small logging companies in rural areas survive economically and helps ensure that woodland owners can choose from loggers educated in forest ecology principles.
- c. **Source of Funding:** Smith-Lever Act, USDA RREA, USDA Natural Resource Conservation Service; USDA Forest Service; State matching
- d. **Scope of Impact:** Multistate Integrated Research and Extension--ID, WA

Key Theme -- Other (Goal 1: Animal Production Efficiency)

Key Theme -- Integrated Pest Management

- a. There is a need to develop honey bees that are resistant and tolerant to parasitic mites and diseases and that exhibit desirable apicultural traits for beekeeping in Washington and the Pacific Northwest. WSU Extension continued the selection and breeding in a multi-line germplasm resource during 2005. Close cooperation with the Washington State Beekeeping Association (WSBA) and individual beekeepers to establish cooperative apiaries.
- b. **Impact:** WSU colonies in 2005 with selected stocks were determined to have mite levels below thresholds; therefore, no chemical treatments for mites were made. This is the first time since the arrival of Varroa mites in Washington State that no chemical treatments were required. Faculty coordinated the distribution of mite-resistant WSU queens for testing by WSBA and the establishment of eight beekeeping collaborators to assist in maintenance of genetic lines in the breeding program. Two sustainable indicators were reported. These were 1) the selection and breeding program and 2) the development and implementation of IPM
- c. **Source of Funding:** Smith-Lever Act, USDA IFAFS, State matching.
- d. **Scope of Impact:** Multistate Integrated Research and Extension--National

Key Theme -- Natural Resources Management

Key Theme -- Endangered Species

- a. A direct congressional appropriation in 2000 and subsequent appropriations through the USDA Forest Service Cooperative Programs made funding possible to establish the Rural Technology Initiative, (RTI) as a pilot project to accelerate the implementation of new technologies in rural forest resource-based communities. Increasing complexity from changing environmental regulations, such as the new Forest and Fish Agreement in Washington State and the recognition that new research findings were well ahead of implementation, suggested the need for more rapid technology transfer. Efforts to mitigate the substantial widening gap between urban and rural incomes depend upon more successful technology transfer. WSU Extension and the University of Washington (UW) developed RTI as a cooperative program with the support of a Rural Advisory Board. For additional information, please refer to the RTI web site: www.ruraltech.org. More than half of Washington is forested with forest ownership: 55 percent government, 6 percent Native American, and 39 percent private. Approximately 100,000 family forest owners, also known as non-industrial private landowners (NIPF) in Washington State control 1.2 million hectares, or 19 percent, of the commercial forestland in the state. Recent harvest restrictions on federal forestlands intended to protect endangered species and to increase late-successional reserves have impacted rural communities. Since 1987, timber harvests have declined 95 percent on federal lands and 57 percent on state lands in Washington. Nearly 9.2 million cubic meters were harvested off family-owned forests in 1999, accounting for 31.5 percent of the timber harvest in the state on a volume basis. The disparity in personal income between rural Washington timber communities and urban areas has increased greatly over recent years and can be expected to widen further with new requirements to protect salmon habitat.
- b. Impact: RTI provided research and technology transfer that links and adds value to the state economy by providing new businesses and job skill enhancement to over 3,000 individuals impacting over 500,000 acres. Since its beginning in January 2000, RTI has trained over 500 consultants, Extension educators, tribal foresters, rural schoolteachers, and family forest owners in the use of forestry software products. An interdisciplinary team comprised of more than 30 biologists, engineers, programmers, silviculturists, GIS specialists, mensurationists, and economists from faculty, staff, and graduate students at the RTI centers created by this unique partnership of Washington's premier resource science universities contribute to the rapid development of RTI programs. Scholarships and research assistantships have been provided to worthy students creating double benefit. Research findings have been used by the state legislature to understand the complexities of rural forestry challenges and to support subsequent beneficial policy adjustments. RTI personnel have become frequent presenters at association meetings, community get-togethers, and symposia throughout the Pacific Northwest. RTI analyzed and interpreted data from two NIPF landowner surveys in Washington State preparatory to the development of a habitat conservation planning approach. Training topics considered important to very important were regulatory interpretation (95 percent), riparian protection (85 percent), tax and estate planning (83 percent), GIS (75 percent), GPS (68 percent), unstable slopes (63 percent), road layout (63 percent), Landscape Management System (60 percent), spreadsheets and data management (60 percent), growth and yield (56 percent). The vast majority of respondents feel that new technology can lower costs and more efficiently meet regulatory requirements.
- c. Source of Funding: Smith-Lever Act, US Forest Service; State matching
- d. Scope of Impact: Multistate Integrated Research and Extension--AK, ID, MI, MT, OR, PS, VI, WA

Key Theme -- Sustainable Agriculture

- a. The newest research in rural community and economic development adopted by the recent Kellogg Foundation funding initiative documents that the number one strategy for rural economic development is energizing local entrepreneurs who are credited with two-thirds of all new job

creation in rural areas in the last twenty years. Jefferson County has had a fairly stagnant job creation for the past ten years; its median wage has dropped from 33 percent of state median five years ago to 25 percent this past year. Only 50 percent of our high school students graduate and the average hourly rate is less than \$12.50 an hour.

- b. Impact: 24 people completed the Sustainable Agriculture Overview course class and 87 percent completed farm plans. The county now has 42 new food growers or value added businesses, and the course was cited as a big reason for the 32 percent growth from \$60,000 (4 years ago) to over \$500,000 in the farmers market this year. 6 people from the class are selling regularly at the local food coop. All of the students reported that they rated the course in the top 10 percent they've ever taken and 23 of them plan to take the Tilling the Soil of Success business planning class. Jefferson County will have its first cheese production starting in 2006 as a result of their last class. The local Economic Development Council cited the growing food economy as the #1 county business successes of 2005. County commissioners unanimously voted that supporting small agriculture was a priority.
- c. Source of Funding: Smith-Lever Act, State matching
- d. Scope of Impact: State Specific Integrated Research and Extension--WA

Key Theme – Sustainable Agriculture

Key Theme – Plant Production Efficiency

- a. The production potential and profitability of an alfalfa field can be strongly influenced by planting dates. Seedling development, stand density and forage yield can be negatively affected. The risk of late-summer planting occurs when fields are planted too late for proper plant development. Planting should be completed at least 30 to 45 days prior to the first killing frost. Harsh winter conditions can weaken immature seedlings and result in a poorly established lower yielding field. Large plants with a developing crown are able to withstand harsher conditions. Both photoperiod and temperature affect the growth and development of seedling alfalfa. Photoperiod may have a larger effect than temperature for dormant alfalfa in the Columbia Basin because of its northern location. Insufficient information on optimum planting dates for alfalfa development is available for the Columbia Basin. There is no information on the best dates for planting for optimizing the yield for the following year. Producers of forage crops are faced with marginal returns. Growers must acquire information and knowledge that will enable them to more efficiently produce higher yields of quality products while holding input costs to a minimum. Alfalfa hay is grown on about 68,000 acres in Benton and Franklin Counties. Another 146,000 acres are grown in Grant and Adams Counties. 45 percent of the alfalfa acres and 60 percent of the alfalfa hay produced in the state is from these four counties. Growers need information on production, varieties, diseases, insects, irrigation, harvesting, farm business analysis, marketing, and export. Research is also needed on alfalfa variety yields and adaptation in Central Washington. To provide some of the needed information, variety trials continue to be run near Othello and Pasco.
- b. Impact: Average Grant County alfalfa hay yields rose from 5.2 tons per acre in 1988 to 6.3 tons per acre in 2001. Each additional 0.1 tons per acre yield increase improves per acre returns by \$10 acre. For the Grant/Adams area, the increase results in additional \$1.5 million per year revenue. 86 percent of growers are better at controlling weeds that reduce the value of their hay. Weedy hay usually takes a value reduction of 20 percent or about \$20 tons current value; thus less weedy hay has potentially increased revenue in the Grant/Adams area by \$19 million per year. Grower's use of new alfalfa varieties has provided an increase in value of \$139.5 million to the Washington hay producers from 2001-2005. Franklin and Benton County growers realized \$11.6 million between 2001 and 2004. From 2001 to 2004 Benton County yield per acre for alfalfa went from an average of 6.7 to 7 tons per acre or a \$30 an acre increase in value. From 2001 to 2003 Franklin County yield per acre for alfalfa went from an average of 7 to 7.5 tons per acre or a \$50 an acre increase in value. From 2001 to 2004 average yield for alfalfa in the state went from 4.8 tons per acre to 5.0 or a \$20 per acre increase in

value. This means the 500,000 acres of alfalfa in the state provides a value of \$10 million to the states growers.

c. Source of Funding: Smith-Lever Act, State matching

d. Scope of Impact: Multistate Integrated Research and Extension--CA, ID, NM, OR, WA

Goal 5: *Enhanced Economic Opportunity and Quality of Life for Americans.* Empower people and communities, through research-based information and education, to address economic and social challenges facing youth, families, and communities.

Overview

Washington State University (WSU) Extension offers a wide array of youth, family and community development programs that impact economic opportunity and quality of life for the people of Washington State. WSU Extension recognizes economic development as an investment in Washington's communities. The WSU system seeks to maximize this investment through building the knowledge and capacity of private, public and non-profit leaders to undertake actions which improve the economic well-being and quality of life within our diverse local communities.

Included are programs in the state Plan of Action that address 1) *strengthening life skills for youth and adults*, 2) *workforce preparation*, 3) *character education*, 4) *child care and parenting education*, 5) *building strong communities*, 6) *leadership for public decision making*, and 7) *responding to economic and social change*, and 8) *energy efficiency*. In addition, Extension maintains its commitment to ongoing youth and family programs that are both volunteer-based and directly delivered by Extension educators and we have a strong Extension Energy Program.

1) *Strengthening life skills* is a common goal of both 4-H Youth Development and Family Programs in WSU Extension. A variety of delivery mechanisms are used to reach youth and adult audiences with life skills education, including 4-H club activities and events, school enrichment, and volunteer outreach programs for adults. The primary audience for adult life skills programs is low-income families, and 4-H outreach that includes at-risk youth (see **Key Theme- Life Skills**).

Continuing through 2005, the Washington State 4-H Strategic Plan served as the operational blueprint for program priority setting, funding allocations and management structures. As an offspring of the 4-H Strategic Plan, the Teen Task Force Report began implementation in 2005 for a total updating and revision of 4-H teen leadership programs across the state of Washington.

2) *Workforce preparation* and community development efforts are closely linked. The WSU Center to Bridge the Digital Divide (CBDD), with participation from a host of multidisciplinary WSU faculty and staff, moved forward with its mission to assist rural and urban underserved areas to overcome barriers to gaining the economic and social benefits of participating in the telecommunications revolution. Information communication technologies (ICT) including modern telecommunications, computers, software and digital applications represent a powerful tool to improve teaching and learning; economic opportunity, health care access and effective governance. Log on to <http://cbdd.wsu.edu> to learn about the 4-H youth tech corps and the E-safety, e-work and high-tech high school programs of the CBDD (see **Key Themes – Jobs/Employment, and Workforce Preparation – Youth and Adult**).

2005 saw the creation of the Center for Youth Workforce Preparation. This unique Center, created on our WSU Vancouver campus is a unique collaboration of 4-H Youth Development with the College of Engineering to attract secondary school youth to careers in science and technology and to prepare them for academic success in college. (See **Key Themes – Jobs/Employment, and Workforce Preparation – Youth and Adult**).

3) *Ethics* refers to standards of conduct, standards that indicate how one should behave based on moral duties and virtues, which themselves are derived from principles of right and wrong. The Aspen Declaration on *Character Education* concludes that because the character and conduct of our youth reflect the character and conduct of society, “Every adult has the responsibility to teach and model the core ethical values and every social institution has the responsibility to promote the development of good character. Although the responsibility for developing the character of youth is first an obligation of families, it is also an important obligation of faith communities, schools, and youth and of other human service organizations.” Character development is best achieved when these groups work in concert in entire communities. In order to satisfy the 4-H goal of developing youth to their greatest potential, we cannot overlook the importance of thinking, talking and modeling ethical behavior. Youth leaders are in an ideal position to help develop and nurture ethical character in young people (see **Key Theme – Character/Ethics Education**).

4) *Parenting education and childcare* programs in Washington State focus not only on parents as a direct audience, but also on caregivers and parent educators from a variety of systems. WSU Extension 4-H continued as a contractor for the State of Washington Department of Social and Health Services to provide professional development and certification to identified state standard credits for childcare providers. WSU Extension 4-H in 2005 provided to over 2,300 school age care providers training, information and technical support services. Three statewide conferences were conducted with attendance of over 400 childcare providers. Providers of childcare in Washington State are increasing their skills and knowledge of positive youth development through the efforts of 4-H professional outreach. WSU Extension also sponsored the eleventh Northwest Regional Parenting Conference in 2005 and marked the fourth year for a multi-state planning effort with Oregon State University and University of Idaho. One hundred ninety people attended, with 48 percent of participants being first time attendees. In addition, the Parenting Team continues to give leadership to expanding the Strengthening Families Program. (See **Key Themes - Parenting**).

5) In the broader arena of *building strong communities*, Extension educators worked with hundreds of community leaders and organizations across the State on a myriad of projects. Examples included: conducting an electronic survey of various rural small businesses regarding business assistance and training needs; leading community education programs; developing cross cultural training and enrichment programs; and providing leadership development workshops to citizens, volunteers, and board members (see **Key Theme – Community Development**).

6) *Leadership for public decision making* is enhanced through WSU Extension’s Certified Public Officials program (CPO), The Policy Consensus Center, and the Partnership for Rural Improvement. The CPO continued to work with elected and appointed local government officials to provide required and elective training leading to a CPO certificate (see **Key Themes – Community Development, Leadership Training and Development, and Impact of Change on Rural Communities**).

7) In *Responding to Economic and Social Change*, WSU Extension educators delivered educational programs, conducted applied research and provided technical assistance across the spectrum of local, state and regional community/economic development. Although local, state, and regional leaders may be aware of the need for better information and analysis of trends and developments in order to diagnose and establish a sound understanding of their economy, how they work, how they are changing, and how they can be changed, they frequently lack the resources or staff trained to know how to access, organize, synthesize, analyze and interpret the pertinent data. Smaller rural and mid-size areas are especially limited in their capacity to initiate and undertake the applied research needed to establish a sound baseline of information and analysis from which to build a broad collective understanding of where they’ve been, where they are, and where they may likely be going.

To help address these realities, Extension educators conducted 7,200 social, economic and demographic analyses on behalf of community groups, social service organizations, state agencies, local/regional economic development organizations and private businesses. 1,600 organizations and individuals reported

direct benefits for their work from these analyses. These analyses lead to enhanced and improved applied regional economic research and to more informed local and regional economic development planning. The majority of the analyses are provided through Northwest Income Indicator Project's website <http://niip.wsu.edu>.

WSU Extension provided businesses with technical assistance that helped create 11 new enterprises and assisted in the retention and/or expansion of 16 businesses. In one notable area, the Extension food processing assistance program continued its work with the State's Washington Manufacturing Service (WMS) the state's manufacturing extension program. In partnership with WMS, our food processing specialist worked with 96 different businesses in the Northwest to provide assistance in market analysis and development, solving quality problems, regulatory compliance, and resolving food safety issues.

8) The WSU *Extension Energy Program* worked to help coordinate the U.S. Department of Energy's effort to facilitate participation of land grant universities in Efficiency Energy and Renewable Energy programs in 2005.

Sources of Funding and FTE for Goal 5

FTE Smith-Lever 3b and 3c	=	10.08 FTE
FTE Smith-Lever 3d	=	0.0 FTE
Federal Extension	=	\$1,661,861
Non-Federal	=	\$9,679,454
Other Federal	=	\$2,499,463
TOTAL	=	\$13,840,778

Key Theme – Communications Skills

Key Theme – Leadership Training and Development

Key Theme – Life Skills

Key Theme – Youth Development/4-H

- a. The Life Skills Evaluation System (<http://ext.wsu.edu/lifeskills>) is a web-based accountability tool used by Extension educators to document the changes in knowledge and skills that result from participation in life skills education. Extension educators use the system to create standardized evaluation forms online. It allows local programs to evaluate all of the major (Forum and Know Your Government) 4-H statewide events as well as individual county youth and family programs. The data are then aggregated on a statewide basis to report changes in life skills that result from WSU Extension programs. Significant participant progress is indicated in all eight-focus life-skill areas. By using a consistent evaluation format, Washington State is better able to compile impact data across county and specific event barriers. In 2005, over 900 participants from various programs completed evaluations.

- b. Impact: Strengthening Life Skills in the Washington State University Extension 4-H Youth Development Program takes on many facets and program initiatives including: a positive relationship with a caring adult; a safe physical and emotional environment; opportunity for skill mastery and content; opportunity to be of service to others; opportunity for goal setting self-determination and decision-making; a positive connection to the future; and the creation of an inclusive atmosphere. These programs reached over 68,000 Washington State youth with exciting, engaged programs of skill enhancement. Typical results from the Life-Skills evaluation data indicate an 88 percent increase in positive gain from pre-program to post-program Impact. The buffet table of programs includes outdoor recreation/leadership and longboat adventure education, and subject matter including plant and animal sciences, family living, citizenship and local government engagement, and technology. About 84 percent reported gains in life skills as a result of program participation. The life skill area in which the largest changes were reported was *leadership*, where respondents scored .68 higher after participating in an Extension program (on a 4 point scale). The specific indicator with the largest gain was *getting others to share in leadership* (.72 on same scale). The general life skill area with the next

highest level of positive change was *decision making* (.62 gain on a 4 point scale). The indicator with the most dramatic change in this category was *listing my options before making a decision*, with an increase of .73. Other indicators for which large positive changes were reported were *keeping accurate and useful records* in the useful/marketable skills category (1.34), and *making a presentation* (1.03) in the communication category of life skills.

- c. Source of Federal Funds: Smith-Lever 3b and c, State matching
- d. Scope of Impact: State specific

Key Theme – Workforce Preparation – Youth and Adult

Key Theme – Other (Goal 4: Forest Resource Management)

- a. Research indicates that children who attend high quality after school programs have better peer relations, emotional adjustment, conflict resolution skills, grades and conduct in school compared to their peers who are not involved in after school programs (National Institute on Out-of-School Time Center for Research 2002). Many local youth are not involved in after school sports or other extra curricular activities, and may be spending unsupervised time in high-risk settings. They may not have had the opportunity to spend time in a forest setting to learn about forest ecosystems, our local forest economy, and to develop an appreciation for the environment in which we live. WSU provides 4-H youth leadership programs in 16 counties through the Secure Rural Schools and Community Self-Determination Act of 2000. Those after school programs teach job skills to youth as part of forestry education.
- b. Impact: Results have been dramatic. The Forest Service has given the 4-H project a regional award for “Caring for the Land and its People.” They are so impressed with the program that they are advocating in Washington, D.C. for a national model in partnership with the U.S. Fish and Wildlife Service. Over 90 percent of participants indicate significant gain in self-confidence, problem solving, and other life skills. Gang members have turned themselves around and left their gangs to be involved in the 4-H forestry education after school program. Parents and teachers indicate dramatic changes in students with regards to their interest in school, respect for authority, and having a sense of direction again. Several students have gone from being failing students and not attending school with any regularity to being model students with GPAs of 3.0 and above. Some students have expressed an interest in natural resource education and taken jobs with the Forest Service, and a couple more have graduated from high school and are now attending WSU. Youth participants have increased their knowledge of forest ecosystems, local forest economy, forest stewardship, and management practices; developed an enhancement of critical thinking skills; discovered a sense of pride in a “job well done”; expressed a desire for higher education; acquired an appreciation of the unique environment in which they live and a sense of community; gained global perspectives by having opportunities to act on a local level; and gained productive and wholesome use of time both in and out of school.
- c. Source of Federal Funds: Smith-Lever 3b and c, State, Secure Rural Schools and Community Self-Determination Act of 2000
- d. Scope of Impact: State specific

Key Theme – Leadership Training and Development

- a. The Washington State 4-H Strategic Plan was the foundation of the Volunteer Development Action Team (VDAT). The Washington 4-H Program boasts 9,677 adult volunteers and 970 youth volunteers. In order to effectively serve as leaders of enrolled youth, these volunteers need orientation, leadership training, and basic knowledge and understanding of the 4-H youth development program in addition to the core competencies that exist at the national level for 4-H professionals. Limited budgets necessitate consideration of alternative distance delivery methods for

training 4-H professionals and volunteers. Employing appropriate distance delivery methods for 4-H volunteer training can reduce the duplication of efforts by individual counties and allow county 4-H professionals time to pursue other tasks.

- b. **Impact:** To increase the effectiveness of volunteer training, the VDAT made seven training modules available online. Statewide training events have been conducted for professional faculty and staff and a uniform training methodology is being implemented across Washington. In 2004, 2,703 adult volunteers participated in training at the county, district, and state levels and were direct recipients of the VDAT work. Better-trained volunteers are better prepared to meet the needs of an increasingly diverse and challenged youth population.
- c. **Source of Federal Funds:** Smith-Lever 3b and c, State matching, County, Private Donors
- d. **Scope of Impact:** State specific

Key Theme – Children, Youth and Families at Risk

- a. Agencies serving youth grades five through twelve are in agreement that their students/clients present a set of needs significantly different than those of previous decades. A survey of school counselors, agency staff, and ministers attribute the following issues as causes for lack of success in school: problems related to alcohol and drug abuse, teen pregnancy, low self-esteem, poor skill levels in communication and decision making, as well as a deterioration of family bonds. The Washington 4-H adventure education program, 4-H Challenge, is a complex system of 11 site-based challenge courses, many portable challenge programs, two active rock climbing programs, a pilot long boating program, flat water canoeing, and backpacking.
- b. **Impact:** In 2005, 5,874 Washington youth participated in Challenge activities. Typical outcomes included safer schools, more positive and cooperative school climates, youth that felt stronger positive connections to classmates and their schools, improved teamwork and collaboration, and improved experiential education skills of professional school teachers.
- c. **Source of Federal Funds:** Smith-Lever 3b and c, Private Donation
- d. **Scope of Impact:** State specific

Key Theme – Jobs/Employment

Key Theme – Other (Management Goal: Information Technologies)

- a. The WSU Center to Bridge the Digital Divide (CBDD) helps people, communities, and institutions successfully access and apply information communication technologies to achieve these and other learning and development objectives. Specifically, CBDD facilitates collaborative partnerships; provides educational outreach, research, and policy guidance resulting in the development of rural telework content for distance delivery to business and community leaders.
- b. **Impact:** The CBDD's e-work program facilitated productive collaboration among business and economic development leaders within a seven-county region resulting in the creation of a research-based regional strategy to encourage development of new local job opportunities through e-work. This program secured funding to continue training and technical assistance with a target of creating an additional 100 living wage jobs in seven underserved Washington State locations over the next three years. This project has been successful in assisting four employers establish 150 living wage jobs in rural Washington and has provided information assistance to more than 200 employers regarding telework implementation and assisted several other states in developing telework assistance programs.

- c. Source of Federal Funds: Smith-Lever 3b and c, USDA CSREES Rural Telework Project, US Department of Commerce
- d. Scope of Impact: State specific

Key Theme – Workforce Preparation - Youth and Adult

- a. A new workforce preparation initiative was instituted in 2004. This initiative was formalized in 2005 with the creation of the Center for Youth Workforce Preparation. This effort engages middle and high school age students and the greater community in informal technology education opportunities utilizing 4-H programs through WSU Extension. Existing 4-H programs are being expanded in the areas of science, mathematics, and technology through projects, activities, and events that engage children at an early age and develop community support by involving people outside formal channels of education. The 4-H program is preparing students to become technology professionals by providing high quality undergraduate and graduate education in electrical and mechanical engineering, computing and the sciences. The ultimate goal is to graduate 1,033 students in engineering and science fields by the year 2010.
- b. Impact: The foundational work of 2004 produced solid results in 2005. Middle school and high school specific training has been conducted for 126 young people in collaboration with local community partners. These partners include State Of Washington Employment Security, Educational Services Districts, and local science and engineering firms. The training has also included “first-job” skills training and has resulted in increased employment rates for teens seeking part-time employment. The WSU Vancouver Teen Works Program works in collaboration with the Clark County 4-H Program. To date this association has resulted in the re-starting of the Clark County 4-H Teen Leadership Program (Ambassadors).
- c. Source of Federal Funds: Smith-Lever 3b and c, State matching
- d. Scope of impact: State specific

Key Theme – Workforce Preparation – Youth and Adult

- a. The Bill and Melinda Gates Foundation funded the development of six computer labs across the state and a mobile computer lab in 2002. In December 2004, the Gates Foundation donated another 38 used computers, which were placed in four additional labs across the state. The ten computer labs are Internet connected and currently offering technology related educational learning opportunities to senior citizens, youth, and interested community members. Each lab has taken on a different specialty. For example, the Lincoln County lab is not only offering introduction to e-mail and word processing classes, but they are also introducing the public to Digital Arts computerized embroidery, digitizing and scanning, and agricultural Farm Bill education. The Thurston County lab is focusing on digital photography and editing videos. The grant also created the foundation for the Washington 4-H Technology Team. This group of Extension educators, volunteer adults, and teens identified service learning activities to take part in teaching people how to use and put together computers, become resources for everyone, provide computer classes to English as a Second Language (ESL) students, and repair computers for senior citizens.
- b. Impact: The Washington 4-H Technology Team identified teamwork, critical thinking, creativity, accepting differences, empathy, resiliency, character, and imagination as the most important life skills developed through their technology work. The Teens Teaching Technology Together—the leadership team for the Washington 4-H technology effort—indicated significant increases in their abilities to clearly state thoughts, feelings, and ideas to others organize a group to reach its goals; use different leadership styles; get others to share in leadership; and work out problems that are presented. Additionally, youth participants in the 4-H Teen Technology program indicate significant increases in

their abilities to list options before making a decision, think about what might happen as a result of decisions made, work out problems that are presented, follow instructions as they are given, accept responsibility for doing a job, and admit to making mistakes. In 2005 another “computer build” weekend was conducted where numbers of the 4-H Teen Teaching Technology Together (4T) team-taught other youth how to build fully functioning computers from component parts. The result was an additional 52 computers being build and maintained by the youth and now placed in the 10 computer labs across Washington State.

- c. Source of Federal Funds: Smith-Lever 3b and c, USDA CSREES Rural Telework Project, State, County, Private Donation
- d. Scope of Impact: State specific

Key Theme – Workforce Preparation – Youth and Adult

- a. The Eastern Washington Area Health Education Center (AHEC) has now sponsored two “Sleepover for Science” events. The first one in 2005 attracted 38 fourth, fifth, and sixth graders who spent a Friday evening and night at WSU Spokane’s Health Science Building. Students from the health professions programs at Washington State University (WSU) and Eastern Washington University (EWU) acted as chaperones, staffing activity tables and presenting short programs in their individual departments (Dental Hygiene, Occupational Therapy, Physical Therapy, Sleep Disorders, Nursing, Speech and Hearing). AHEC staff registered students upon arrival and provided a pancake breakfast for them on Saturday morning. The second Sleepover in January of 2006 saw 68 students participating with ten of them coming from the Spokane Tribe of Indians Reservation School.
- b. Impact: Focus interviews and health career work with high school students has made us realize the importance of getting children excited about health careers at a much earlier age. As the young students participated in activities with graduate students they heard repeatedly how important math and science courses were to their ability to pursue one of the fascinating careers they were hearing about. Evaluations from participants showed both an increased awareness of the variety of careers in health care as well as an appreciation of the importance of science.
- c. Source of Federal Funds: Area Health Education Center
- d. Scope of Impact: State specific

Key Theme – Work Force Preparation Youth and Adults

Key Theme – Management Goal: Diversity

- a. A major objective for WSU Extension is to assist Latino youth in developing stronger linkages with WSU and education. This is accomplished by providing mentors and leaders that not only conduct learning experiences for these youth, but also facilitate discussions about career opportunities and personal educational motivation. Volunteer mentors and leaders from the local community and WSU faculty provide ample opportunity for conversation about personal interest, education, and the necessity of being a life long learner. As part of a recruitment trip, 12 Latina/Latino students from Pasco High School traveled to WSU’s Pullman campus and toured the Apparel Merchandising, Design and Textile Department. Students learned about post high school options, and became aware that Washington State has the third largest apparel industry in the United States, behind New York and California.
- b. Impact: Comments received from the Latina/Latino youth participant’s expressed strengthened capacities to think more about the future, career planning, and what to do after graduation. They also learned that they don’t have to be economically wealthy to go to college if they really want to go it is a matter of willingness and ambition. They learned that loans and scholarships are available to attend

college. Students received information that explained financial aid procedures, how to apply for college, and admission requirements. By talking with departmental personnel they learned the importance of classes, how classes work, and got a feeling for the college atmosphere, college life and fashion design. Using our Life Skills evaluation system all 21 participants reported increases in those life skills which directly support success in the world of work including: wise use of resources, self-control, and empathy for others. Pasco High School requires a Senior Project for graduation. This project entails a yearlong program effort. Community mentors are required for each student. WSU Extension has become the first place Pasco High Senior Project Coordinators call when students are looking at a design or fashion project. This year, three students completed and passed the requirement with Extension's help. They learned about fabrics, quilting techniques, machines, and the apparel industry in Washington.

- c. Source of federal Funds: Smith-Lever 3b and c, State matching, County, Private Donation
- d. Scope of Impact: State specific

Key Theme – Conflict Management

Key Theme – Management Goal: Diversity

Key Theme – Workforce Safety

- a. For many years, tribal crab fishermen on the coast were affected by marine transportation activities north of the Columbia River. Conflicts between ocean going tugs and crab gear caused severe problems in the late 1970's. Crab pots were fouling tugs and barges as they moved between coastal ports and the loss of crab gear was a severe economic problem for fishermen. Through efforts by Extension programs on the west coast, an agreement was reached between fishermen and tug operators on areas where crab gear would not be set providing lanes for tug and barge traffic. Tribal crab fishermen are heavily dependent on designated towlanes through this process to minimize gear loss. Through a series of meetings, including the annual west coast negotiation meeting in Astoria Oregon between towboat representatives and commercial crab fishermen, including tribal representatives, the current lane agreements were reviewed and approaches for dealing with problem areas along with possible changes were discussed. Representatives from west coast towing companies were present along with commercial crab fishermen from California, Oregon, and Washington. New charts for the Columbia River area and points southward along the Oregon coast were produced and distributed before the start of the upcoming crab season to west coast towboat companies and their skippers, along with commercial fishermen in both the tribal and non-tribal fishery industry.
- b. Impact: The agreement provides tug operators with a clear place to operate and gives commercial tribal crabbers fishing areas free of barge and tug traffic. Costs of the agreement process are shared by both industries, and this industry support allowed for the production of the last set of charts in 1996. This general agreement is modified by 16USC Sec. 1857 and upheld by the U.S. Supreme Court under 95-1462. Charts now have more detailed information and have been distributed more widely to the fishing fleet. Gear loss for tribal fishermen has been reduced, with an estimated cost savings annually of nearly \$190,000 for the Quinault, Quileute, and Shoalwater Tribes.
- c. Source of Funding: Smith-Lever Act, USDA, State Matching
- d. Scope of Impact: Multistate Extension—OR, CA, WA

Key Theme – Character/Ethics Education

Key Theme – Other (Goal 1: Animal Production Efficiency)

- a. Through observation, experience, and youth interviews, it has been found that teens from a variety of socio-economic backgrounds have difficulty with decisions when faced with character/ethics related situations both in and out of school relationships with others. This is especially true when facing

decisions in circumstances related to role modeling and in following rules when friends are involved. Washington State has used the Character Counts curriculum as a training base. Animal science projects continue to attract the largest single segment of 4-H membership. In 2005, 48,870 4-H members were enrolled in one or more animal science projects equine (16,188), dairy, goat, beef, sheep, llama, swine, poultry, rabbit, dog, cat, cavy, and assorted other small pets. Producer quality assurance educational programs are becoming even more important as meat packing plants are being held accountable for physical, chemical, and antimicrobial hazards found in carcasses. Many of these hazards are a result of management and care given to animals before they reach the packing plant. Therefore, meat packing plants and consumers are holding producers (both youth and adults) responsible for supplying humane produced animals that are free of drug or chemical residues and physical hazards. To achieve this goal, producers must practice proper animal care throughout production. Youth producers must learn that there are economic incentives, as well as moral and ethical responsibilities to humanely produce wholesome high quality food products for consumers. Because youth project show animals sometimes receive less than optimal care, they may have higher incidence of disease and may be more likely to contain illegal residues than other meat animals. Therefore, it is important to educate both youth and adult volunteers about proper care and management and its impact on product quality as youth raised animals enter the meat supply.

- b. Impact: A uniform Animal Quality Assurance program and reporting system first implemented in 2003 continued to be used in 2005 across Washington State for all 4-H youth producing livestock that will enter the meat system. This program includes signing the Exhibitor Code of Ethics. One hundred percent of 4-H youth who exhibit market animals at fairs in Washington state signed an Exhibitor Code of Ethics. This document requires members, parents, and leaders to sign-off that the members have taken responsibility for the proper care and treatment of their animals, the production of wholesome food, and the development of sound ethical behavior in themselves and others. 4-H youth demonstrated their skills in raising a market animal project that meets or exceeds consumer expectations for high quality safe food products. As a result of close review of Market Animal Health Records in 2005, only one pig was prevented from show and sale because the medication withdrawal time had not been completed prior to a market stock sale, thus preventing a possible USDA fine for violation of drug residue. With 4-H youth producing 20 percent of the entire hog market consumed in Washington State, this is a remarkable level of compliance with industry standards.
- c. Source of Federal funds: Smith-Lever 3b and c, State matching, Private Donation
- d. Scope of Impact: State specific

Key Theme – Leadership Training and Development

- a. WSU Extension 4-H youth development throughout 2005 redirected limited resources to enhance its commitment to ongoing youth programs that are both volunteer-based and directly delivered by Extension educators. In 2005, 2,703 adult volunteers received one or more 4-H training experiences. That figure represents fully 30 percent of the adult volunteer base participating in training opportunities. To improve both the quality and quantity of training opportunities the WSU Extension 4-H initiated a strengthening professional development system for Extension educators in 2003. In 2004, the second year of the three-year training cycle, professional offerings included: Programming with Schools and using the Essential Competencies; Partnerships; Basic 4-H Orientation Competency: Organizational Systems, Learning Strategies, and Adult and Youth Development; Logic Model Training (via technology) Competency: Learning Strategies; Program Days: Delegation, Competency: Adult Development; “Volunteer Training Modules” Competency: Volunteerism; “Risk Management”; Competency: Organizational Systems; “Working with Children with Special Needs”; and Competency: Youth Development. These professional development opportunities continued in 2005. The Washington State 4-H faculty and staff were the hosts of the National Association of Extension 4-H Association Annual (NAE4HA) meeting. This was a remarkable undertaking for the small sized staff and faculty of WSU requiring support of 55 of the 56 4-H faculty and staff members.

- b. Impact: New faculty and staff have reported that the 4-H orientation increased their knowledge of the 4-H program nationally and statewide, improved their skills in teaching techniques, enhanced their understanding of experiential education, and clarified their risk management responsibilities. The Welcome Packets and Points of Contact Systems have facilitated the new personnel in increasing their capacity to seek out knowledge and feel a part of the state 4-H program. Other long-term outcomes will be forthcoming as this project continues. Short-term and long-term evaluations are planned for the professional development trainings and the committees managing the 4-H program. Over 1,200 youth development professionals improved their skills and abilities by hosting the NAE4HA Conference using a shared leadership model. Everyone had tasks, assignments, and responsibilities for the conference. Another significant outcome was the development of a new relationship with the Pike Place Market in Seattle. This is venue that can promote WSU Extension programs to a large audience. The “Market” would like to continue this relationship throughout the year with 4-H and other WSU Extension programs.
- c. Source of Federal Funds: Smith-Lever 3b and c, State matching, County, Private Donors
- d. Scope of Impact: State specific

Key Theme – Children, Youth, and Families at Risk

Key Theme – Parenting

- a. A report conducted by the Washington State Superintendents of Public Instruction’s office recommends engaging parents and families in the late elementary and middle school years to reduce risks of a variety of risk behaviors. Studies have documented that program models that include both parents and youth to be most effective in long-term behavior change and reduction of risk. The Strengthening Families Program (SFP) for Parents/Caregivers and Youth ages 10-14 is an integrated research and best practices program designed to positively impact the whole family by reducing the risks of substance abuse and other problem behaviors in adolescence. WSU Extension began offering the program in 1999 with two faculty trained and certified by the developers at Iowa State University.
- b. Impact: Over the last five years, WSU Extension Trainers of Facilitators have trained more than 420 facilitators in thirty Washington counties to implement SFP. Partners include school teachers, staff and administrators; social service agencies; church groups and 4-H clubs; and community coalitions. WSU Certified Trainers have grown from 2 to 12, including three Spanish language trainers. In 2005, the first concurrent English and Spanish language facilitator training was conducted. Of the 32 attending, 15 participated in the Spanish track. Seven counties subsequently conducted Spanish language programs. A faculty member in the WSU Human Development Department served as Extension’s research partner. Dr. Laura Hill received funding from the National Institute for Drug Abuse in 2005 to study implementation patterns for the SFP program. Data for 63 programs conducted between 2001 and 2005 (including 6 Spanish language programs) are summarized below (n=661 adults and 651 youth):
 - i. Adult program participants reported statistically significant improvements in consistency (having clear and specific rules with applied consequences when not followed, and having smooth daily routines); warmth (openly discussing situations and feelings with their youth); and management (controlling tempers and avoiding harsh criticism when disciplining youth).
 - ii. Youth participants reported the following significant changes in their parents’ practices after participating in SFP: Parents include youth more in decision-making and fun activities; notice when youth are doing a good job and give positive reinforcement; and control their tempers and avoid harsh criticism when disciplining. Youth also reported significant changes in feeling closer to parents after program participation.
- c. Source of Federal Funds: Smith-Lever 3b and c, State matching

- d. Scope of Impact: State specific

Key Theme – Community Development

Key Theme – Impact of Change on Rural Communities

- a. Through its activities in Leadership Development for Public Decision Making, WSU Extension provided education to community members and leaders across Washington State. Notable ongoing Extension programs include the Partnership for Rural Improvement (PRI), and the Certified Public Officials (CPO) program. Now in its 31st year, the PRI is a consortium of four community colleges and WSU Extension. The consortium’s mission is to bring the resources of participating institutions to bear on issues and opportunities of importance in Washington communities by expanding business and community education program offerings through innovative partnerships with recognized community groups.
- b. Impact: Community education programs in Washington enrolled 1,563 students in 122 personal enrichment workshops and assisted in the development of an “intensive Spanish” program offering that has graduated more than 450 student since the programs inception. Through the efforts of three partners and 120+ volunteers, Leadership Skagit looking towards its fourth year has 90 graduates who enhanced their leadership skills and studied different aspects of local issues. To practice their new skills, the students partner with local non-profits to complete needed community service projects. The fifteen projects (five each year) have been completed with a combined value (cash and in-kind donations) of over \$150,000. A full class is expected to enroll for 2006. The Partnership for Rural Improvement worked directly with more than 450 local businesses and helped create 25 new jobs. Eighty-five (85) workshops were held and attended by 1,021 small business owners, managers, and employees.
- c. Source of Federal Funds: Smith-Lever 3b and c, State, County
- d. Scope of Impact: State specific

Key Theme – Community Development

Key Theme – Impact of Change on Rural Communities

- a. Over the past 20 years, bark beetles devastated about 1.5 million acres in Alaska and in many stands up to 95 percent of the trees have been killed. Local communities are concerned about wildfire risk, but also have questions about how to add value to low-value wood. Project funded by Pacific Northwest Research Station is investigating extrusion technology for manufacturing wood-plastic composites as an economically viable option for using dead and dying spruce removed in fuel hazard reduction treatments. Based on the outcome of the project, it has a potential to foster local economic development, reduce fire risk, and promote use of mill-waste residues from the local area wood industry. Removal of hazardous fuel loads from the overly dense forests in many regions of the U.S., and especially in the west, is costly. The market value for the smaller logs is generally lower than the harvest and transportations costs, creating no incentive to lower fire risk in these regions. However, a value-added opportunity such as production of wood-based composites could yield higher profit margins resulting in more profitable thinning operations and efficient utilization of biomass. As part of a study conducted in a Pacific Northwest funded project, we are characterizing wood from small-diameter trees harvested from the Olympic Peninsula in Washington and evaluating the raw material properties for use in wood-strand and wood-plastic composite manufacturing. This information will be critical for producers to efficiently utilize the available raw material resources. Integrated Extension and research on feasibility of wood residues for wood-plastic composite manufacturing could lead to the establishment of new manufacturing facilities in Washington. These projects are critical to grow a stable forest products sector in the State of Washington where this sector already contributes significantly to the state’s economy (\$4.415 billion). Eastern Washington sawmills produced 1,077 million board feet of lumber during 2004, thus any contribution to adding value to the

generated wood residues will positively benefit the state's manufacturing sector and its economy. Based on 1998 statistics, sawdust and planar shaving volumes produced by sawmills in Washington could support over 225 extruders per year. Currently, the State of Washington has more number of operations (four to be specific) dealing with some aspect of wood-plastic composites than many other states in the U.S.

- b. **Impact:** Research on development of high performance oriented strand substrate for furniture manufacturing could provide an alternate material to a significant number of cabinet and counter top manufacturers in Washington. The product being developed could potentially provide a solution to the problems originating from substrates currently used in furniture, such as poor fastener holding capacity and low resistance to impact loading. As a result of work done so far, there has already been interest shown by a firm in Canada and a floor manufacturer in the U.S. to develop a strand-based flooring substrate (U.S. hard surface flooring is \$6.3 billion market). The U.S. Forest Service Pacific Northwest Research Station has shown interest in providing partial funding for such a project. Another outcome of this research is an interest by a Washington entrepreneur to use the developed thin oriented strand plies for outer laminates of a lightweight structural fiberboard core. Currently valued at nearly \$1 billion annually, the natural-fiber polymer composite industry has grown over seven-fold since 1997. It is predicted that there will be a 20 percent annual growth in wood-plastic composites market share over next five years. Efforts in providing technical assistance to U.S. Bioenergy Corp. and connecting them with economic development officials and county commissioners has resulted in serious consideration by the company to choose a site on the Olympic Peninsula for BioStrand™ manufacturing facilities. Other sites in North Eastern WA were also explored. There is also an interest among the Timber Cluster Group to establish a wood flour manufacturing plant in Washington. Furniture manufacturers in the Yakima valley are looking for markets for their residue streams. Establishment of any wood composite plant will only increase the \$4.415 billion contribution to the economy by the forest products sector in the state. The web site www.wpcinfo.org was developed to assist in promoting this growth and foster new structural and non-structural applications for wood-plastic composites. The portal is compiling information that is pertinent to producers, distributors, end-use consumers, researchers, and potential investors. It is designed to provide information regarding the industry, disseminate the known knowledge regarding the natural-fiber polymer composite technology, serve as a discussion platform to further this knowledge, and offer a channel for continuing education. The site provides technical information sought after by start-up businesses.
- c. **Source of Funding:** Smith-Lever Act, USDA, Forest Service
- d. **Scope of Impact:** Washington State

Key Theme – Impact of Change on Rural Communities

Key Theme – Management Goal: Diversity

- a. The WSU Farm Family Support Network (FFSN) completed its third year of operation with a network of consultants serving farm families, working with women in agriculture and other underserved segments of the agricultural producing population. The existence of the family farm continues to be in jeopardy for various reasons including corporate farm consolidations, low prices, and global economic pressures. The goal of the FFSN is the preservation of the family farm. There continues to be no other source of assistance in the State of Washington as offered by the FFSN financial analysis, personal stress management, business, and other human services. The FFSN continues to be a resource of information to assist the family farmer to make clear focused decisions regarding the continued existence of the family farm. Hispanic Americans continue to be a growing segment of ownership of small farms. Our efforts to serve this segment of the population are increasing. During 2005, the FFSN continued to expand their service area to include the entire State of Washington and all segments of agricultural producers. The FFSN is administered through the FFSN headquarters in the Chelan County Extension Office in Wenatchee. In 2005, he FFSN

expanded its initiative to serve the Hispanic American agricultural producing population. The Hispanic American population continues to be the fastest growing segment of new agricultural producers in central Washington and is also expanding rapidly in other parts of Washington.

- b. **Impact:** A network of eight consultants, living in various parts of Washington, serves clients throughout the entire state. In addition to consultants, partnerships with a variety of industry groups have been established to support and enhance the work of the FFSN. Through the work of consultants, workshops, and topics presented at The Women in Ag Conference, family farm members learned various skills to allow more meaningful management of the farm. Skills learned included good family communication, coping with change, financial analysis, learning to talk to their banker, and preparing business plans. As a result of learning these new skills, farmers gained new insight on managing the family farm, which resulted in new motivation and a positive attitude and a behavior change in the way families communicated or coped with change. Decision making was improved as a result of learning the methodology of goal setting. Through the learning of new skills and behavioral changes as a result of activities of the FFSN, the economic viability and survival of the family farm was enhanced.
- c. **Source of Funding:** Smith-Lever Act, USDA, Risk Management Education (RME) Center
- d. **Scope of Impact:** Washington State

Key Theme – Community Development

Key Theme – Leadership Training and Development

- a. For the past three decades, police officials across the country have struggled to increase citizen involvement in creating safer communities and improving quality of life at the neighborhood level. Historically, answers to crime, community problems, and crime control have been left solely in the hands of the police. It has become increasingly clear there are never enough police, weapons and tools, cars or technology to stop crime or reduce the fear of crime. Rather than focus upon the scarcity of resources, community policing strives to build partnerships between the police and law abiding citizens; providing the means necessary to embrace solving problems before they erupt into criminal behaviors and to focus on crime prevention as a mechanism to build assets within the community. The Western Regional Institute for Community Oriented Public Safety (WRICOPS) provides capacity-building training and organizational assessment to enhance the ability of police agencies and their communities to collaborate for a common good. WRICOPS is a jointly-sponsored project of applied social science research and outreach units of WSU Extension, the Division of Governmental Studies and Services, and the Department of Political Science and a partnership with the Washington Association of Sheriffs and Police Chiefs (WASPAC), the Washington State Criminal Justice Training Commissions (CJTC) Peace Officer Standards and Training (POST) organizations and tribal communities and community representatives of Idaho, Montana, South Dakota, Washington, and Wyoming. Extension has traditionally used outreach partnerships to bring research-based educational information to its clientele. Using this unique philosophy and format WRICOPS chose to build upon the community oriented policing philosophy to help local agencies enhance community-based co-production of order through partnerships, innovative training, and problem solving. Local communities, research intuitions, police, and police training organizations provide the basis for this five state partnership. This ten year project has enhanced the university-wide Extension partnership involving the College of Liberal Arts and WSU Extension, along with police training agencies in the five partner states. The WRICOPS initiatives include certified training, technical assistance for onsite consultation and organization development assistance, and applied research assistance.
- b. **Impact:** Formative evaluations provided information to guide the immediate future of the project. Summative evaluations focus on the ultimate impact. Results and outcomes of the WRICOPS onsite assessment process are the subject of at least four levels of analysis intended to measure value added to organization and community. 1) Chief Executive Officer surveys and leaderships cadre focus

groups, 2) independent evaluation research, 3) questionnaires, interviews, community surveys, and research projects used to document long-term impact of the organizational development interventions and technical assistance provided to both the departments and the communities, and 4) an application of social constructionist theory in the form of an appreciative inquiry process. Conducting over 60 onsite organizational assessments, in five states, six tribal communities, and directly involving over 7,000 individuals has revealed that the implementation of community policing principles often entails major second-order change in the established paradigm and societal role of law enforcement within the community. The principles of community policing embody the need for system-wide learning and adaptive change. A sample of some ideas and conclusions that have begun to emerge: successful communities believe that broad ownership of community problems and responsibility for participation makes a difference in the quality of the community; participation is often seen as willingness to problem solve and collaborate to address community issues. This is Social Capital and is associated with a sense of hope that things will get better. How kids are treated is a measure of trust within the community. If people are afraid of their teens, they are also often afraid of government, police, etc. When the youth are involved with residents in the community, the community residents respond with a sense of hope and determination to address tough problems before they result in criminal behavior. Communities that seek to solve problems are forward thinking, risk taking, and willing to build collaborations and partnerships with ease. Often residents speak of solving a problem in the past and using those ideas as a means to address emerging issues. Communities receiving onsite assessment are provided a set of findings and strategic recommendations, along with options for technical assistance. Technical assistance includes community surveys, trainings, community meetings, strategic planning, and long term organizational assistance. Evaluations indicate that as the communities began implementation of the recommendations they confronted issues of drug abuse among teens, youth accountability, crime in public housing, vandalism, graffiti, alcohol sales, through programs such as Crime Prevention through Environmental Design (CPTED) , teen court, Crime Free Multi-housing, police substations, Citizens Academy, Citizens Neighborhood Observation Patrol and Teen Night. Examples of curriculum development include Community Capacity Building Problem Solving, Community Oriented Policing, Police Training Officer Program, Effective community meetings, Ethics and Integrity, Early Identification Warning systems, state and local anti-terrorism training, conflict resolution, community engagement.

- c. Source of Federal Funds: Smith-Lever 3b and c, US Department of Justice Office of Community Oriented Policing Services, State matching
- d. Scope of Impact: Multistate Integrated Research and Extension—ID, OR, SD, WA, WY

Key Theme – Community Development

Key Theme – Leadership Training and Development

- a. Over a four-year period, WSU Extension in conjunction with community agency partners designed and developed a certification program for public officials. Curriculum for the Governmental Structures was developed. Nine Community Engagement Series workshops were conducted throughout the state in 2005 with 150 individuals in attendance. Enrollment for individual classes is generally full and participants continue to ask for more classes.
- b. Impact: Elected and appointed local government officials are better prepared to deal with policy decision making, financial planning, and human resource decisions, which saves time and money by avoiding lawsuits and union grievances and assists with growth management decisions and conflict management issues within their counties.
- c. Source of Federal Funds: Smith-Lever 3b and c, State, County
- d. Scope of Impact: State specific

Key Theme – Community Development
Key Theme – Leadership Training and Development

- a. The Policy Consensus Center (PCC) works to improve the capacity of parties and institutions in Washington to collaboratively resolve conflicts around difficult public policy issues. As a joint effort of Washington State University (WSU) and the University of Washington (UW), the PCC benefits both the state and the universities by linking the state’s premier institutions of higher learning with community leaders by trying to solve problems. In addition, the PCC helps advance the teaching, curriculum, and research missions of the two universities by bringing real-world policy issues to the campuses.

Early pilot projects demonstrated the combined abilities of the UW and WSU to provide a unique and important service through the PCC. These successes also helped the PCC to refine its approach and establish a foundation of useful practices and knowledge for future work. The PCC’s work includes mediation assistance, training, and applied research.

- b. Impact: In 2005, the PCC conducted training sessions for 120 Assistant Attorney Generals in alternative dispute resolution. The PCC was also in the early stages of the Agricultural Stewardship project. This pilot project provides funding geared towards adding to producers’ bottom line while also providing an environmental benefit.
- c. Source of Federal Funds: Smith-Lever 3b and c, State, County
- d. Scope of Impact: State specific

Key Theme – Community Development
Key Theme – Leadership Training and Development

- a. The Natural Resources Leadership Academy (NRLA) is managed by Washington State University’s Division of Governmental Studies and Services (DGSS), a jointly-sponsored endeavor of the College of Liberal Arts and WSU Extension. NRLA offers training to state, federal, tribal, and local agencies in four core curriculum areas in multiple formats which address both agency training needs and individual capacity development: stewardship, leadership, communication, and collaborative problem solving.
- b. Impact: In 2005, NRLA conducted eight trainings: six for the Department of Fish and Wildlife; one with the Columbia River Inter-tribal Fish Commission for tribal resource managers; and one for the Pacific Region Native American Wildlife Society. These trainings were attended by 250 people and ten new collaborative efforts resulted among local governmental entities and/or community groups.
- c. Source of Federal Funds: Smith-Lever 3b and c, State, County
- d. Scope of Impact: State specific

Key Theme – Energy Efficiency

- a. The Pacific Northwest Extension Energy Initiative Pilot Project was launched in partnership with the U.S. Department of Energy; the National Association of Land Grant Colleges and Universities (NASULGC); and Washington, Oregon, Idaho and Alaska Extension. This pilot project taps into the highly-reputable Energy Efficiency and Renewable Energy Information Center as the core resource, which is managed and operated by the WSU Extension Energy Program on behalf of the U.S. Department of Energy. This pilot project capitalizes on the relationships that county Extension staff have with local government leaders to deliver more sound energy efficiency and renewable energy information into the hands of officials making energy decisions for the community.

- b. Impact: This project was launched in November 2005 – with targeted trainings for County Extension Directors in each of the four participating Pacific Northwest states. It is the hope that there will be some solid first steps in Washington and the other participating Pacific Northwest states, in reducing costs for communities and businesses, improving the environment, health issues, and more within communities.
- c. Source of Funding: U.S. Department of Energy
- d. Scope of Impact: Multi-State Extension (WA, OR, ID, AK)

Management Goal: *Multicultural and Diversity Issues*

Overview

The 4-H Youth Development Program continues to take very seriously its responsibility to provide effective outreach education programs for all youth. In 2005, all-time new achievements in inclusively was reached. Fully 35 percent of the youth enrolled in 4-H are youth of color (22 percent statewide population base). Hispanic youth continue to be the largest constituent group of young persons of color. A number of unique efforts were conducted by the 4-H Extension educators to address the special needs of youth.

4-H has offered international exchanges of over 35 years through the International 4-H Youth Exchange (IFYE) program. The unique global education experiences provide youth/families the opportunity to host high school students from Japan and former Russian Bloc countries for short-term, summer or long term, yearlong home stays. Annually, about 60 families participate in this exchange program; hosting youth aged 12 through 24 for 3, 4, or 6 weeks during the summer. We also have opportunities for Washington youth traveling to Japan for a 4-week home stay through two of our Japanese partners—Labo International Exchange or UTREK International Exchange Center. Evaluations reveal growth in accepting differences, communication and concern for others as normal outcomes for participants. Impact takes the form of greater tolerance of others and interest in a different culture, making a difference in how these youth look at the world and their place in that world. Nearly all host families maintain long-term contact with their exchange student after they return home.

Through the Center to Bridge the Digital Divide partnership, Washington State 4-H trained and sent four 4-H youth and two adult volunteers to Rwanda to provide computer technology training for Rwandan youth. In 2006 plans are underway to host these Rwandan youth in Washington State.

The 4-H Youth Development Program continues to be the program of choice for families of children with disabilities. In ever increasing numbers, the 4-H program is attracting youth who require special accommodation. It is the flexibility of the 4-H Program and its commitment to inclusion that makes the 4-H Program so attractive to diverse families. In addition to inclusion in existing 4-H programs, both Walla Walla and Chelan counties have horse camps for youth with disabilities. Thirty-two youth participating in these camps demonstrated increased physical mastery, confidence, and self-esteem. Parents and caregivers report longer attention spans and better listening and communication skills of the youth who participate. In addition, physicians and physical therapists report increased balance and muscle tone in riders.

Another example of the 4-H commitment to inclusion is through WSU Spokane County Extension's outreach to the immigrant Russian community. The program offers a monthly newsletter in the Russian language and the only classes in the community provided in Russian. American etiquette classes, three 4-H clubs aimed at youth of Slavic families, Free Application for Federal Student Aid (FAFSA) workshops to encourage higher education, and celebrative events to provide opportunities for interaction between

Slavic families and other community members are activities that encourage inclusion of the immigrant Russian community.

An eight-week summer camp provided 57 culturally and ethnically diverse youth from Salishan, a public housing neighborhood, the opportunity to participate in a 4-H Program. Activities emphasized skill building that addressed effective negotiation of problems related to ethnic diversity, gender, and age. Participants gained knowledge of healthy lifestyles, both physical and emotional. Camp classes included food and nutrition, gardening, sewing, and natural resources. They participated in technology workshops that advanced their awareness of potential future career choices.

In order for inner city youth to establish animal-human bond relationships, 4-H Clubs were established in the Hilltop neighborhood of Tacoma that focused on the knowledge and skills needed to care successfully for pocket pets and rabbits. The skills transferred to a positive maintenance of the physical, mental, and emotional care needed for one's self and family/community members. A multi-project community club supported a diverse membership and honored members' awareness of their individual ethnicities, such as a Native American youth researching, designing and sewing her traditional Jingle dress. A stronger connection to heritage with an understanding of place in the Tacoma community emerged from this diversity focus.

Through the "Today's Teens Teaching Technology" program refurbished surplus computers were placed in low-income homes throughout Klickitat County. The Georgeville, Washington (a Native American community) community computer laboratory was expanded to contain 11 computers. Sprint donated \$20,000 worth of goods and labor to establish ISDN service to the site and continues to fund one access line; the local Internet service provider donates Internet service. Youth are now using the computers to assist them with homework and internet access for educational purposes. Through this program, participating youth developed job skill enhancement and experienced career exploration opportunities.

Five 4-H Veterinary Science project youth participated in the Rural Area Veterinary Science service learning and career exploration opportunity on the Makah Reservation. This program allows 4-H youth that are interested in a career in veterinary medicine to volunteer at a large mobile dog and cat spay/neuter clinic in rural areas. Post-event evaluations revealed that this was a valuable learning experience and all youth were interested in pursuing a career in veterinary medicine. Two of these youth are now matriculating as pre-veterinary students at Washington State University in Pullman. The dollar value of the services provided during the 4-Her's period of service was estimated at \$14,172.

Forty-five diverse youth from Ballard Community Center, Seattle attended two workshops about international food. They expressed their appreciation and enjoyed preparing and eating new foods. Seventy-five individuals attended two workshops titled the "Day of the Dead and the Day of the Cross" during the month of November at El Centro de la Raza. They enjoyed getting knowledge about those celebrations. In overall, participants in these workshops expressed that understanding diversity will contribute to their life-long learning and the success for their community.

As part of the Cooperative Curriculum System (CCS) National Team, we produced a bilingual series entitled "Celebrating the Culture." This project has been published and formally presented during the 2005 4-H National Conference in Seattle. A Diversity Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) plan was presented to be approved during the 2005 National Conference to the Executive Committee in Pittsburgh, Pennsylvania. The plan included strategies to recruit and increase the number of minority students and professionals at MANRRS. This plan is an effort of six professional MANRRS members.

More than 200 children, parents, grandparents, and caretakers of diverse background participated in "Week of the Young Child" celebrations, including a parade in Goldendale, a rural community in Washington, which culminated in a reception and book reading at the public library. The importance of the educational, emotional, and physical development of young children was highlighted to parents and

community members. Children and youth were nurtured in safe and caring environments and appreciation for diversity was promoted.

The number of Hispanic residents in the region now approaches the 445,000 mark; however, migrant workers nearly double this number during the growing season. Research shows that radio is a one-to-one medium and that it is extremely culturally compatible with the Hispanic community as it relates to the listener on a personal level. Hispanic people are mobile and radio moves with the listener, according to Radio Cadena 91.9 (KDNA), unlike any other media. Ninety-five percent of cars have radios and seventy-four percent of adults are in cars every week. KDNA reaches the Hispanic community 24 hours a day—at work, at home and at leisure—in eight southeastern Washington and north central Oregon counties. It is the only full time Spanish language educational public radio station in Washington with an estimated listener audience of 150,000. According to a study done by the Corporation for Public Broadcasting, more Hispanic people listen to KDNA than any other local Hispanic radio station. KDNA's mix includes news, music, public affairs, entertainment, cultural, educational and children's programs, and public health. WSU Extension contracts with KDNA to provide hour-long Spanish language talk shows from 5-6 p.m. on the third Friday of each month. Subjects covered included WSU Hispanic outreach, Gear-Up, controlled irrigation design, diagnostic virology, plant quarantine and certification, osteoporosis, water efficiency and conservation, diabetes education, viticulture and enology, 4-H youth programs, diabetes lifestyle management, obesity, and farmers' markets

The Extension Indian Reservation Program (EIRP) is a partnership with the Chehalis Tribe and Washington State University's Southwest Extension District, as well as the Confederated Tribes of the Colville Reservation and WSU Extension Ferry County. The program has focused on natural resources issues related to water, fish, and native plants. Developed as a spin-off from the Intertribal Agricultural Council, the program was originally designed to use Extension agricultural and natural resources programming to assist tribal members. New educational efforts that address traditional food systems, water quality protection, native plants, revival of the spring salmon ceremony, and involvement of tribal youth were implemented through the Chehalis EIRP program. WSU Extension educators also serve as a communication link for WSU Extension through membership on the South Puget Sound Intertribal Planning Agency (SPIPA) and work with four other tribes in the region. In addition, the Chehalis EIRP program has served as a focus for youth education. One success was the creation of an after school program. The Cowlitz Tribe also benefited from EIRP. As a part of the Cowlitz "Garden to Table" program, a tribal garden was planted to compliment the senior food and nutrition program. Food Fact sheets were developed this year to accompany harvested crops and to educate tribal members about the nutritional values garden produce can add to their diet. Plans to design develop, and implement a native plant nursery is an ongoing discussion.

The WSU Extension *Food Sense* program currently has formal arrangements with three tribal groups: the Tulalip in Snohomish County; the Kalispel in Pend Oreille County; and activities on the Colville Reservation in Okanogan and Ferry Counties. WSU Extension has conducted various *Food Sense* activities on the Tulalip Tribes Reservation. Through *Food Sense*, WSU Extension-Snohomish County, in partnership with local tribal agencies contributing in-kind services and the USDA-Food Stamp Office, they have a nutrition education programming budget of nearly \$174,000.

2. SUMMARY: SOURCES OF FUNDING AND FTE FOR GOALS 1, 2, 3, 4, and 5

FTE Smith-Lever 3b and 3c	=	31.68 FTE
FTE Smith-Lever 3d	=	14.81 FTE
Federal Extension	=	\$5,014,669
Non-Federal	=	\$29,207,767
Other Federal	=	\$8,065,673
TOTAL	=	\$42,288,108

B. STAKEHOLDER INPUT PROCESS

Washington State University Extension's planning process was built from a major initiative in 1998 when four task forces were formed to help shape WSU's role in addressing significant issues facing the state. A strategic planning process is taking place around the opportunity to approach the state legislature for new funding for the 2007-09 state biennial legislative session. The yet-to-be-named initiative will encompass agriculture security and food systems. Input from the entire agricultural community was obtained in an extended and thorough process conducted by the Agriculture Program Director and the Dean of the College of Agricultural, Human, and Natural Resource Sciences in the fall and winter 2005-2006. Continued stakeholder input has been an important part of updating these programs. Input is also provided by the College of Agricultural, Human, and Natural Resource Sciences' citizen advisory council. This council is made up of representatives from the agriculture industry, county government, 4-H volunteers, families and businesses.

In addition, a private consulting firm Educational Marketing Group (EMG) was hired in August 2005 by WSU Extension to conduct a thorough analysis and make recommendations for "Positioning Extension for the 21st Century." Focus groups and tours were conducted in December through March. Stakeholder input was obtained via an online survey. Reports from EMG are still forthcoming and will be used to shape the Plan of Work 2007-2011.

All county offices have an advisory system. Most have formal advisory committees that meet regularly, and all have been encouraged to do so. These committees represent the makeup of the constituents in the county, with specific efforts to obtain input from typically under-represented groups. When it is difficult to obtain formal input from such constituents because they do not want to participate in a committee, then a system of informal input is used. County Directors also obtain input from County Commissioners, personal contacts, local agencies and organizations, and through the use of key people in that community. County Directors were surveyed in September 2005 as to their participation via formal membership in local economic development entities. Close to two-thirds active seek stakeholder input via organized development entities.

In addition to this standard stakeholder input, the WSU Extension is updating the Strategic Plan. Phase II of the university strategic plan is focused on economic development. During FY2004, major units of WSU including WSU Extension drafted benchmarks to help track progress toward strategic goals.

In 2004 WSU Extension launched the "Friends of Extension" Information Network, <http://ext.wsu.edu/ce.cahe/administration/FriendsofExtension.pdf>, to build a cadre of local clientele who are willing to express support for Washington State University and for WSU Extension to decision makers when they are informed of pending decisions that can positively or negatively affect the ability of Extension to deliver educational, research-based programs. One hundred forty three individuals have been named and are engaged in a stakeholder input process.

C. PROGRAM REVIEW PROCESS

No significant changes in the program review processes since the 5-Year Plan of Work. The Plan of Work Update was approved for WSU Extension to continue with the current approved Plan of Work, with modest changes to Goals 1 through 5. Plans are underway for the new 5-year plan of work 2007 – 2011 and we make adjustments to our Program Review Process at that time.

D. EVALUATION OF THE SUCCESS OF MULTISTATE AND JOINT ACTIVITIES

Washington State University made significant progress toward its planned activities in the areas of multistate, multi-institutional, and multidisciplinary activities, and integrated research and Extension activities. In Washington State, budget cuts have forced the Agricultural Research Center to focus its support on food and systems. So although our human sciences programs are based in research from both

WSU and other universities, many are grant-funded and joint research while Extension programs supported by CSREES formula funds are almost entirely in the agricultural arena. These activities address issues critical to the sustainability of agriculture in the Pacific Northwest. Planned programs occurred in risk management, forestry, potato production, conservation tillage systems, IPM and sustainable agriculture through the Center for Sustaining Agriculture and Natural Resources (CSANR) <http://csanr.wsu.edu/>.

In the area of risk management, WSU Extension regularly collaborates with the USDA Farm Service Agency, USDA Risk Management Agency, and Washington State Department of Agriculture. WSU Extension is the host for the Western Center for Risk Management Education <http://westrme.wsu.edu/>. The center's Trade Adjustment Assistance Specialist assists in the continued development of the communication network within the 13-state area as well as with the other TAA Regional Risk Management Education Centers; thereby, ensuring coordination and the free flow of information about the TAA for farmers. By coordinating with the CSREES program leader to develop systems applicable across regions, technical assistance package components reach across regional areas in program development and delivery when a commodity is produced in more than one region. In 2005 the Center worked collaboratively with the University of California Extension to provide TAA training to 350 California olive growers and the University of Idaho for 425 Idaho potato producers. In addition, the Western Center provided TAA training for 350 salmon harvesters in 14 states and 3 foreign countries.

Diseases, pests, and marketability are all problems identified by potato growers that affect the sustainability of their operations. Research and Extension participants of the trial and industry at an annual meeting select potato clones and cultivars for inclusion in either the Tri-State or Western Regional Trials. This program is a cooperative effort between the county and state Extension educators both in state and across seven potato producing states in the western United States including personnel from Oregon State University, University of Idaho, University of California, Colorado State University, Texas A&M University, and USDA/ARS in both Washington and Idaho. Cultivar use has changed significantly. For example, use of Russet Burbank—the standard cultivar ten years ago—now makes up less than 41 percent of the acreage; the remaining 59 percent are planted with other cultivars and clones. At least 89 percent of those other cultivars and clones were developed by the Tri-State and Western Regional breeding programs.

WSU Extension has built interdisciplinary and multistate teams to address Integrated Pest Management (IPM) and potato production. In potato production, Extension educators work with researchers in California, Colorado, Idaho, Texas, and Washington to test the adaptability of new cultivars and extend that knowledge to Washington potato growers. IPM efforts combine with potato production in a hot line for producers that helps them make spray decisions for the control of late blight.

The CSANR was active in several cross cutting issues. Teaching, research and Extension faculty collaborated to plan programs addressing the needs related to organic agriculture. The Washington Sustainable Food and Farming Network as a priority for their upcoming legislative effort picked up the organic farming program proposal. They were successful, in adding a position to the WSDA that works closely with the CSANR. In 2004, WSU CSANR hosted a nationally broadcast satellite conference, "Organic livestock: Principles, Practices, and Prospects." The CSANR also responded to the emerging issue of global warming with a new interdisciplinary research and Extension program, Climate Friendly Farming, to address green house gas reduction in agriculture and received \$3.75 million from the Paul G. Allen Charitable Foundation.

In a multistate effort, the CSANR helped develop and support The Food Alliance (TFA). TFA approved growers are experiencing direct and indirect benefits from their affiliation. Growers for whom Extension conducted the evaluation are accessing new markets and in some cases getting price premiums. Extension educators were featured in several articles about The Food Alliance that have exposed the public to a positive story about agriculture. TFA and Extension educators that help support that effort continue to be sought out as national leaders on food ecolabeling.

The Northwest Regional Parenting Conference has been held for the past eleven years. Initiated by the WSU Parenting Team, the planning group now includes representatives from Oregon and Idaho. Montana joined as a planning partner for the 2006 conference. The conference attracts a diverse audience and addresses parenting from a number of cultural perspectives and includes workshops offered in Spanish. The conference's primary audience is professionals in parent education and care giving roles, although it also attracts a large number of parents. The conference is very effective in reaching its goal of providing professional development and networking opportunities for parent educators, as well as reaching interested parents who wish to improve their own skills. Evaluations indicate that the majority of parent educators increase their confidence, ability and skills in parent education as a result.

E. MULTISTATE EXTENSION ACTIVITIES

(See Appendix C Form CSREES-REPT (09/04) Supplement to the Annual Report of Accomplishments and Results Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities)

Although this narrative report covers many multistate Extension activities and WSU Extension certainly does a great deal of work in collaboration with other states including Oregon and Idaho, **we have been granted a waiver for this year and will not be reporting any auditable activities.**

A large number of Extension educators are members of multistate research projects and multistate coordinating committees. However, the need to keep federal and state funding of positions flexible and the resultant impossibility of providing an auditable report to reflect all this work has required us to ask for a waiver of the report this year, and to underreport our actual work on the auditable forms.

Examples of *multistate* work already highlighted in this year's annual report of accomplishment include:

- Food safety (Germ City; HACCP; BPCS)
- Health (Diabetes)
- Forestry (Rural Technology Initiative; forest stewardship coached planning)
- Marine resources (fishing safety; stranded marine mammals)
- Invasive species (Spartina; mustard cover crops; IPM)
- Agriculture production (alfalfa hay)
- Community (WRICOPS)

For the purpose of this year's multistate Extension activities, we would like to highlight our forestry, risk management, potato, water quality programs, and 4-H Youth Development programs.

Forestry: Washington State University Extension and University of Idaho Extension have collaborated to conduct the Family Foresters Workshop for 13 years. The Family Foresters Workshop strengthens forest management skills of Idaho and Washington consulting foresters, state-employed service foresters, other natural resource professionals, and ultimately all the NIPF landowners who attend directly, or work with these trained professionals as well as serving as a forum to provide updates on emerging technology, practices, and knowledge applicable to family forestry. In 2005 the Family Foresters Workshop hosted 75 professional participants. It is estimated that each forester represents 1,500 acres of land managed per year, resulting in 112,500 acres of Washington and Idaho timberland directly affected by the Family Forester's Workshop in the current year. Of these attendees, 63 percent stated that they had learned knowledge and skills that would enable them to work more effectively with NIPF owners as a result of attending the program. This potentially improves the management of nearly 71,000 acres of Washington and Idaho forests. NIPF landowners (representing 9,081.5 acres of forestland) who attended the meeting learned skills and practices to manage their forestlands in a beneficial manner to the state, while still meeting their goals.

To better serve WSU and Oregon State University Extension clientele on both sides of the Columbia River in the east end of the Columbia River Gorge, WSU Extension provides forestry Extension expertise from Skamania County to woodland owners in Hood River and Wasco Counties in Oregon. In return, OSU Extension Service provides horticulture expertise to apple and pear orchard and vineyard managers in Skamania and Klickitat Counties in Washington. This successful arrangement, which has been in place for more than 15 years, has resulted in close working relations between the Hood River County, OR, and Skamania County, WA, Extension offices.

Risk Management. In the area of risk management, WSU Extension regularly collaborates with the USDA Farm Service Agency, USDA Risk Management Agency, and Washington State Department of Agriculture. WSU Extension is the host for the Western Center for Risk Management Education <http://westrme.wsu.edu/>. The center's Trade Adjustment Assistance Specialist assists in the continued development of the communication network within the 13-state area as well as with the other TAA Regional Risk Management Education Centers; thereby, ensuring coordination and the free flow of information about the TAA for farmers. By coordinating with the CSREES program leader to develop systems applicable across regions, technical assistance package components reach across regional areas in program development and delivery when a commodity is produced in more than one region. The Center collaborated with the Departments of Agriculture in Alaska, Idaho, Oregon, Pennsylvania, and Washington to bring a new total farm revenue crop insurance product called AGR Lite to the Northwest. The Center also worked cooperatively with the Extension Services in each of the 13 western states to administer \$650,000 in competitive risk management education grants to public and private organizations throughout the West.

Potato: Potato clones and cultivars are selected for inclusion in either the tri-state or the western regional trials by participants of the trials and industry at an annual meeting. Results are printed for all locations in an annual summary and provided to the participants. Trial results are presented at the annual conference for most, if not all, the participating states. Results are also available on the web at <http://www.ars.usda.gov/main/docs.htm?docid=3019> and potatoes.wsu.edu. In Washington, the trials are used with other relevant information to host field days in all production areas. County Extension educators throughout the state are involved in the selection of the cooperating grower trials and in the field days. Each participating state—California, Colorado, Idaho, Oregon, Texas and Washington—is responsible for coordinating the effort, carrying out the trials, and reporting the results. Industry participation in the annual tour of trial locations is excellent and instrumental in making selection of early generation materials to be included in subsequent trials. Part of the salary of the team leader is paid from Smith-Lever Funds.

Water Quality: The WSU Extension Water Resources Leadership Team is a committee of Extension educators providing statewide leadership, support, and coordination for the water resource educational efforts of WSU Extension. Integrated, multidisciplinary team members represent a wide range of specialty areas and regions throughout the state in addition to their normal Extension responsibilities. The team provides statewide leadership for WSU Extension water quality programs by identifying regional and statewide priority issues and mobilizing resources to address these issues based on our educational roles and capacities. This team works in a very productive partnership with the water quality coordinators from the four Land Grant Institutions, the NRCS Liaison to EPA Region 10, the Agriculture Sector Lead from EPA Region 10, the Extension Liaison to EPA Region 10, the directors of the four state water research institutes, and a representative from EPA's Corvallis Research Lab. The Pacific Northwest Regional Water Quality Program and its impact may be accessed at <http://pnwwaterweb.com/>.

In the area of 4-H Youth Development, Washington State University Extension has also made remarkable progress in its goal of empowering people and communities, through research-based information and education, to address economic and social challenges facing our youth, their families and communities by effectively implementing multistate, multi-institutional and multidisciplinary efforts. Washington State 4-H Youth Development, in collaboration with the National 4-H Council, joined with 25 other states in the

4-H Curriculum Consortium System. The resulting curriculum development system provides up-to-date, relevant and leading edge curriculum for youth.

In 2005, Washington State University Extension 4-H Youth Development led 11 of the Western Regional States in their design and implementation of the Engaging Youth Serving Communities (EYSC) Grants 1 and 2. The focus of EYSC-1 was the professional development of early career Extension Educators in rural communities. EYSC-2 concentrated on the mid-career Extension professional. Both efforts focused on out-of-school time delivery methodologies. A particular highlight of 2005 was WSUE 4HYD's hosting of nation-wide satellite broadcast to 50 sites showcasing the very best of 4-H Afterschool Programs. The participant evaluations demonstrated clear improvement of professional skill levels.

F. INTEGRATED RESEARCH AND EXTENSION ACTIVITIES
(See Appendix C Form CSREES-REPT (09/04) Supplement to the Annual Report of Accomplishments and Results Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities)

A great deal of integrated work is going on in Washington State University Extension. Joint appointments between Extension and the Agricultural Research Center are common. These joint appointment personnel integrate the two missions seamlessly by delivering research-based information that focuses on real problems to the people of the state through Extension education programs. Where appropriate, we have given joint appointments to county-based Extension educators as well. WSU Extension has a multitude of integrated teams of faculty to address issues in both agriculture and human sciences.

Examples of *integrated* work highlighted in this year's annual report of accomplishment include but are not limited to:

- Forestry (wild land urban interface)
- Invasive species (Spartina; biofumigation)
- Agriculture production (pasture management)
- Marine resources (Beach Watchers)
- Forestry (Rural Technology Initiative; forest stewardship coached planning)

For the purpose of this year's integrated research and Extension activities, we would like to highlight our integrated pest management program and the CSANR.

Integrated Pest Management: WSU Extension conducts educational programs to maintain and improve agricultural production and a healthy environment by promoting pest management practices that provide adequate pest control while minimizing the potentially adverse effects of such practices upon people and the environment. Several faculty, including the IPM Coordinator, hold joint research and Extension appointments whose salaries are paid from Smith-Lever 3 (b) and (c) and Hatch Funds. Faculty holding integrated research and Extension appointments are located throughout the state and work together in multidisciplinary teams to address IMP programming needs in the areas of crops and soils, entomology, food science, horticulture and landscape architecture, and plant pathology.

CSANR: In response to rapid and complex changes facing the state, in 1991 the state legislature established the Center for Sustaining Agriculture and Natural Resources (CSANR) at WSU. The mission of the CSANR is to develop and foster agriculture and natural resource management approaches that are economically viable, environmentally sound, and socially acceptable. WSU Extension and the Agricultural Research Center jointly provide financial support to the CSANR.

The CSANR acts as facilitator to bring together interdisciplinary teams, both within WSU and in partnership with other organizations. CSANR has a stakeholder advisory committee with representation from a broad spectrum of interests. The CSANR provides education on emerging issues through conferences and workshops, on-farm testing and applied research, informational materials, a World Wide Web site, satellite broadcasts, a resource library, and personal consultation. Examples of current areas of

focus are alternative farming systems, small-scale and urban agriculture, energy and agriculture, organic farming systems, role of biotechnology, integrated pest management, soil and water quality protection, and farmland preservation. The director's salary is paid from Smith-Lever 3b and c as well as Hatch Funds.

Appendix C

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service**

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities
(Attach Brief Summaries)
Fiscal Year: 2005**

Select


One: Interim Final

Institution: Washington State University

State: Washington

	Integrated Activities (Hatch)	Multistate Extension Activities (Smith-Lever)	Integrated Activities (Smith- Lever)
<i>Established Target percent</i>		3%	3%
<i>This FY Allocation (from 1088)</i>		\$4,149,100 #	4,149,100
<i>This FY Target Amount</i>		\$124,473	\$124,473
Title of Planned Program Activity			
Potato		\$16,579	
Risk Management		\$21,300	
Water Quality		\$27,951	\$13,044
Forestry		\$32,217	\$14,012
Germ City		\$11,599	
WRICOPS		\$17,668	
CSANR		\$23,519	\$19,059
WMEL			\$27,037
Weed Research			\$36,068
IPM			\$55,512
Total			
Carryover		\$150,833	\$164,732

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.



Linda Kirk Fox, Dean and Director

March 31, 2006

Date