

# **Cooperative Extension System**

## **Annual Report of Accomplishments**

**2002**

**University of Idaho Extension  
College of Agricultural and Life Sciences**

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## **A. Planned programs**

### **GOAL 1 – AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY.**

#### **Overview**

- a. Economical and sustainable agricultural systems are fundamental program objectives for UI Extension. Our educational efforts and products address topics ranging from global commodity crops to minor specialty crops; from large confined animal operations to backyard and youth animal projects; and from reducing environmental risks to reducing economic risks. Education in this goal area is delivered through traditional and innovative means. Among our more popular formats are dozens of winter schools presented each year; for cereals, potatoes, dairy, beef, sugarbeets, and pulse crops.

Idaho Extension has significant activity in education related to competitive agriculture. Focus areas include production, carcass quality and marketing of beef cattle; dairy production and dairy animal environment; aquaculture feeding for fish production and water protection; grazing management and forage quality improvement; improved cropping systems for commodity and non-commodity crops; irrigation and soil fertility management; and invasive species management. Programs reported in this section that might as easily be described in relation to natural resources and environment include home lawn and garden and master gardener programs that focus on pesticide application, water quality protection, and water conservation.

- b. In the competitive and profitable agriculture goal area, 86 different UI Extension faculty members reported 75,000 contacts made with residents of the State of Idaho. More than 500 scientific and popular articles, newsletters, reports, fact sheets, program announcements, and other publications in this goal area were prepared during the reporting year. Reported outcomes include new knowledge discovered, and increased knowledge for new and traditional audiences, trained and certified practitioners, new practices adopted, increased crop production, expedited breeding cycle, decreased use of water and inorganic fertilizers, increased price received for cattle.
- c. Investment in this goal area included approximately \$709,000 in Smith-Lever formula funds, \$1,450,600 in grants from all sources, and \$3,723,000 in State and County appropriated funds. Of the funds supporting Goal 1, approximately \$370,000 was invested in projects that involve and benefit multi-state areas, and \$594,000 was invested in programs that integrate research and extension functions.
- d. Programs conducted in this Goal area are international, national, multi-state, statewide, and local in scope.

#### **Key Theme – Adding Value to New and Old Agricultural Products**

- a. An increase in annual forage use and demand leads to a search for alternative means to increase the economic productivity of land. Livestock producers are interested in extending the grazing season through double cropping systems. Using annual forages for fall forage pastures would provide farmers an alternative cropping system to augment the productivity of land, and would supply the needed quality and quantity of fall forage.

For example corn silage acreage has increased from 82,000 acres statewide in 1974 to 135,000 acres statewide in 2000. This increase is primarily associated with the expanding dairy industry. In the principle dairy counties, increases in silage production from 1974 to 2000 are as follows: Gooding County 4,000 acres to 16,500 acres, Jerome County 2,800 acres to 22,600 acres and Twin Falls County 5,900 acres to 18,900

acres. Clearly, silage corn and other annual forages is an important crop in Idaho. Typically growers want annual forage crops for use in; 1) rotations, 2) seeding of bare ground for winter land cover and 3) a forage that produces well during years with below average irrigation.

Growers need knowledge about agronomic and economic characteristics of less traditional forages such as turnips, cereals, mustards, and legumes. There is little Idaho data on production and management of these crops and the only research being done is by industry trials, which are proprietary in nature. Information is needed as to which annual forage crops are appropriate for these uses throughout Idaho.

- b. Extension investments into these projects involve contracts and agreements with cooperators, on-farm field trials, and equipment. Summer and fall forage crop samples from southern Idaho have been collected and frozen. Grower information has been collected for yield measurements. Local and regional newspaper articles and newsletters, extension publications, a scientific abstract and a poster display have been developed and delivered. Presentations were given at six workshops across the state providing information on double cropping and the possible use of alternative forages, while three workshops were delivered solely for forage production and use.

Indicators of effective programs include an increase in the amount of triticale seed sold sufficient to plant 40,000 acres of winter forage, compared to negligible sales 10 years ago.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Additional support includes more than \$11,000 dollars from a variety of non-Federal sources.

- d. The Scope of this project is Statewide.

## **Key Theme – Agricultural Competitiveness**

### **a. Crops**

Idaho grain producers tend to spend less time managing their small grain crops than other crops in their rotation due, in part, to the greater production costs of other crops and the greater potential for income in some years from those crops.

Educational programs for growers attending field days or schools provide access to the latest cereal technology, providing needed balance to a variety of information received from agricultural service, equipment, and supply providers and vendors.

In order that producers receive adequate information, cereal school, Cereal Sentinel newsletter, grower meetings, and field days are delivered throughout Idaho for grain producers. Subjects dealing with production, varieties, insects, and diseases are delivered to Idaho producers.

Idaho is one of the leading producers of quality beans in the United States and internationally. In 2001, Idaho produced a total of 142.4 million pounds of dry beans. Nearly 75% of the total production in the state is produced in the South-central and Southwestern regions. UI Extension faculty work with producers, fieldmen, and commodity organizations to help address challenges in the bean industry.

Production costs in Idaho are not competitive nationally or internationally. Furthermore, input costs are increasing and returns on beans are decreasing. This leads to beans being a low value crop, which results in fewer producers growing beans. Idaho is one of the leaders in producing high quality beans, and efforts need

to be made to continue this production of superior quality beans.

### Beef Programs

Consumers expect food products to be safe, wholesome, high quality and consistent. Consumers have various options for protein sources in the market place today. To maintain a viable market for beef products, it is necessary to address and eliminate quality and consistency shortfalls. When the beef industry found its market share threatened by swine, poultry, and other competing industries, industry leaders initiated audits to address quality and consistency issues. The two most recent audits, the 1999 National Market Cow and Bull Quality Audit (non-fed cattle) and the 2000 National Beef Quality Audit (fed cattle), provide beef producers with a "blueprint" of how to address beef quality and consistency concerns. The 1999 National Market Cow and Bull Quality Audit outline four directives for improving the quality and value of market cows and bulls (non-fed cattle). Extension beef education programs address those directives.

Ultrasound technology allows animal producers and 4-H members to assess the influence of breeding, management, and feeding techniques on their live market animals. For beef, measurements include rib eye and backfat, and also intermuscular fat. Two methods to measure intermuscular fat include 1) a computer model (developed at the University of Tennessee) that uses ultrasound measurements in the program to calculate percentage intermuscular fat (%IMF); and 2) calculation of Expected Progeny Differences (EPD'S). For that procedure, carcass ultrasound pictures are evaluated at a central processing lab and the results are sent to the respective breed associations for EPD calculation. A study by the University of Idaho (in conjunction with Chadron State College and Colorado State University) compares the results of both of these ultrasound-derived indices compared to direct lipid extraction from the muscle.

### b. Crops

Cereal schools were held throughout Idaho during 2002. Newsletters and other media were distributed through direct mail and mass media. Educational topics included variety performance and selection information, critical for economic small grain production.

Fall planting of spring wheat varieties has been demonstrated in multiple-year trials to be more productive than spring plantings of the same varieties. This practice holds potential for increasing production of specific varieties grown for niche markets including (1) hard red spring wheat, (2) wheat grown for seed increase, and (3) malting barley.

Cereal insects have a high incidence in many areas of Idaho. Fieldmen and producers have little experience managing these new pests and have learned about management options through field days, tours, schools, website pages, extension publications and personal contacts. Biological control of insects from introduced parasites has proved effective in some areas.

A website, newsletters and cereal schools have proven popular for information delivery. Improved communication has resulted in growers who are better informed of production and marketing issues. Ag publication professionals are using newsletters and cereal school information for story ideas and occasionally use articles in the newsletter verbatim in their own publications.

Approximately 761 growers attended cereal schools in Idaho for 2002. Approximately 2,600 are receiving monthly newsletters and about 150 readers currently receive newsletters electronically.

The effectiveness of the Spanish language curriculum presented at the University of Idaho Potato Conference was evaluated. In 2001, the pre-test scores averaged 6 percent and the post-test scores averaged 54 percent. Improvements in both presentations and the curriculum showed that in 2002 the pre-test scores averaged 2.8 percent and post-test scores rose to 74.1 percent. The increase in test scores was significant.

Each year UI Extension faculty plan and coordinate the Southern Idaho Bean School and Trade Show. This annual commodity school is a joint venture of the University of Idaho Extension, the Idaho Bean Commission, and the Western Bean Dealers Association. The school provides producers with current information to assist in management decisions, updates on the Idaho Bean Commission activities, and reports and predictions on domestic and world bean markets.

Faculty presentations on dry bean management are delivered through a variety of venues. Extension provided information through articles, interviews, and field visits. Bean school program evaluations indicate that producers find the bean school highly informative, and that it raises their knowledge and awareness of management topics, political issues, and bean market activities. This annual program assists growers to make better-informed decisions that will improve profitability and competitiveness in the bean industry, both domestically and internationally.

### Beef Programs

Stakeholders represented by the Magic Valley Cattle Association requested University assistance in the formation of a state beef quality assurance (BQA) program. These types of programs help producers grow high quality calves that command market premiums. To initiate the program in Idaho, a BQA steering committee was formed to develop an Idaho BQA training/certification program. The committee included UI Extension, Idaho Cattle Association, Idaho Beef Council, veterinarians, beef producers, and allied industry representatives. After reviewing other states' BQA materials, UI faculty drafted a BQA manual and training/certification materials. Printing costs for the final manual were borne by the Idaho Beef Council. An initial certification/training session has been completed and program evaluation results indicate an increase in participant knowledge of 23%. Each participant passed (scored 80% or better) the final test. As a result, 17 individuals and 3 ranches received Level 1 BQA certification. Evaluation results are being used to make improvements in the BQA materials and presentations.

- c. Sources of funding for these projects include Smith-Lever 3(b&c), State Agricultural Research and Extension appropriations, and a variety of grants from stakeholder organizations and commodity commissions, as well as a variety of other non-Federal sources.
- d. The Potato Extension program is delivered in more than 25 counties across Idaho. The ultrasound evaluation studies are conducted in partnership with Chadron State College (NE) and Colorado State University (CO).

### **Key Theme – Agricultural Profitability**

- a. Growers need variety performance and end-use quality information to allow them to select varieties that fit their needs for maximum profitability. Idaho has extremely diverse growing conditions for small grains and few varieties are widely adapted to all environments. Small grain breeder nurseries are not feasibly located in all geographic areas of Idaho. Local variety performance information is needed for appropriate variety selection throughout the major growing areas in the state and region.

Seed dealers and producers have come to recognize the credibility of the Extension variety performance information. Public and private wheat and barley breeders are increasingly dependent on these nurseries for their advanced line and variety evaluations. Information derived is used in part as the basis for Foundation Seed Stocks Committee decisions on variety release and seed increase.

The year 2001 was our second full production year to grow high-moisture corn under contract to Snake River Cattle Feeders. Thirteen growers were again involved in this project contracting 2815 acres of corn

production to the feedlot.

In local variety evaluation trials, winter and spring wheat and barley varieties are tested annually for performance in diverse geographical areas that represent most northern Idaho growing conditions. These replicated, multi-year tests provide standardized evaluations for public released varieties, private seed company varieties, and advanced breeder lines close to release. Local evaluations are part of a coordinated, statewide program conducted in concert with multiple faculty. Because the programs are linked statewide; summaries, data exchange, entries and quality evaluation programs are coordinated for efficiency and efficacy. Multi-environmental performance data is more robust and provides the greatest inference potential. Consistency and accuracy of the evaluations ensures the quality and value of the information.

Most small grain variety trials are reviewed by clientele at field days across the State. At these field tours, performance of new variety trials and of previous trials is discussed, and other information of concern to growers is presented. Trial results are also presented at extension crop schools and workshops, industry meetings, and other grower functions. Results are published in an annual progress report given to clientele at meetings, summarized for growers in county newsletters, and included in *Idaho Grain* magazine as a statewide small grain summary published in the spring for the spring crops and in the fall for winter wheat. The wheat and barley variety evaluation results are also published as three annual articles in *Idaho Grain* magazine, reaching grain producers statewide.

- b. Nearly 2400 acres of field corn averaging 138.6 bu/acre were delivered to Snake River Cattle Feeders. We delivered almost 800 acres more corn as high-moisture corn in 2001 (a high-value crop). Our success prompted the buyer to seek contracts for 3000 acres of high-moisture corn and an additional 300 acres of silage corn for 2002. Eleven growers contracted 2844 acres of production for HMC and an additional 385 acres for corn silage.

The small grain variety-testing program provides timely, independent, accurate performance information, facilitating rapid adoption of new varieties. Regional performance information shows the adaptability of new varieties to specific areas allowing growers to make informed choices (either to plant or to refrain from planting) about new varieties as soon as seed is available. An example of rapid variety adoption was 'Baronesse' barley in the mid-1990s. It was widely adapted and clearly superior. Two recent varieties, 'Camas' and 'Xena' have some performance advantages over Baronesse, but appear to be superior only in specific growing areas. Both planting new varieties and exercising caution with a new variety until proven, have economic impacts on small grain production and overall farm profitability.

The summer of 2002 presented above normal temperatures in June and most of July, resulting in reduced yield for winter wheat and, to a lesser degree, for spring wheat. Spring barley yields were near normal but test weight was lighter than normal. Small kernels that did not develop normally were thrown over the combine resulting in above normal crops of volunteer grain. Discussions of temperature data at field days helped producers understand the connection between environmental conditions and crop response. Over 2700 'hits' were recorded on the Aberdeen cereals web site showing this continues to be an effective communication method for research information. Over 10,000 hits have been recorded on the site. Timely information concerning efficient irrigation allowed greater economy in utilization of valuable water on full season crops, increasing the income from both grain and other crops. Attendance at field days and cereal schools, our best methods to reach large numbers of producers, continues to be high and previous surveys indicate that growers find useful information that they incorporate on their farms. One indicator of this is the switch to newer and higher yielding varieties. This is shown on crop reporting surveys also.

Results from participant evaluations indicate that 71% felt that the information addressed current concerns in cereal production. Additionally, 20% plan to implement practices they learned about in the workshop.



A “model” potato grower in Madison County was selected and monitored for his practices and productivity. Technical support ensured that best management practices (BMP) were being followed. Plots for comparison of BMP with traditional practices (high input to maximize yield) were established. The high-input plots produced 20 percent more plant biomass, but this had a negative effect on tuber growth. The BMP plots yielded significantly more potatoes (3000 lbs. per acre) than the high input plots. The combination of reduced inputs and increased yield resulted in a \$364 per acre increase for the BMP plots over the high-input plots. First-year results for this project were demonstrated to 50 growers at a field day.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. In addition, support for this project includes eight grants from state commodity commissions totaling \$34,587; and four grants from private sources totaling \$35,200. Variety trials were made possible with funding from state allocations, wheat and barley commissions, and private funds from companies developing grain varieties. County educators cooperated with Specialists and private producers in locating trials on producers’ farms. Four grants from State and Federal sources (SARE) totaling \$376,000 have been received to support the model potato grower program.
- d. Although most programming effort was directed at Idaho, there was also interactions and programming at the regional, national and international level throughout the scope of the effort in this topic area.

### **Key Theme – Animal Health**

- a. USDA has initiated a program to eradicate Scrapie from the US sheep population. The program is structured much the same as the brucellosis program in cattle. The program requires identification of all breeding animals over the age of 18 months. Mature animals that go to slaughter will be screened for symptoms. Should the disease be located it will then be traced back to the herd of origin for appropriate action. Although there are no proven human health risks from Scrapie, the consuming public is very concerned about this family of diseases (TSEs) and Cooperative Extension should make every effort to inform sheep producers of the program and get all breeding age sheep identified as soon as possible.
- b. Scrapie eradication efforts were directed through the 4H program. Since all of the members in the state must have Scrapie identification this was a logical way to reach producers. 4H newsletters and public information systems were used to get the word out on the necessity of individual identification of all breeding sheep. The University of Idaho Sheep Research and Teaching Center website ([www.avs.uidaho.edu/sheep](http://www.avs.uidaho.edu/sheep)) provides information on Scrapie and links to federal information on this disease and eradication efforts.

According to federal veterinarians, all youth project lambs that were required to be identified were. There are some producers that sell directly to slaughter facilities that have not identified their breeding stock and will only be required to do so if they sell to a non-slaughter outlet.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Our contributions to this National program are conducted within the State of Idaho.

## Key Theme – Animal Production Efficiency

### a. Dairy

The Idaho dairy industry has undergone rapid growth recently, as progressive dairy producers enhance their profitability through high volume, low cost production. In November 2001, there were 369,000 dairy cows in Idaho, an increase of 37,000 cows since January 2000.

The USDA National Animal Health Monitoring Systems Dairy '96 study reported that the number one reason for culling was reproductive failure. Idaho's high average annual cull rate of 38%, coupled with the low average number of lactations (1.8) for Idaho dairy cattle, is of great concern because longevity has a major impact on dairy farm profitability. Cows that are slow to conceive cost Idaho dairy producers from \$1.00 to \$3.00 per day in lost milk production, increased feed costs, and AI and veterinary services. Compared to 1992, increased days open cost Idaho dairy producers between \$28.00 and \$84.00 per cow. Taken together with high replacement costs, an average Idaho Holstein cow (producing 21,000 pounds of milk) may not achieve profitability until the second or third lactation. Clearly, it is financially prudent to increase reproductive efficiency and to reduce the annual replacement rate in dairy herds.

Extension dairy programs emphasize reproductive efficiency, nutrient management, facility design and cow comfort, milk quality, and risk management. Other areas of emphasis include dairy/beef quality assurance, nutrition, records analysis and management, and biosecurity. Farm visits by Extension Dairy Specialists and County Extension Educators provide one-on-one consultations for dairy producers, their employees, and allied industry.

Reproductive research field trials in Idaho, Washington, California, and Ohio are investigating the effect of elapsed time between initial thawing of semen straws and insemination, on conception rates in dairy cattle. Eight dairies located in ID, WA, CA and OH participated in the study. Initial data included beginning thaw time, cow identification number, and time of AI. Herd records were retrieved following pregnancy diagnosis

### Beef Programs

Consumers are demanding a consistent quality beef product. The beef quality is influenced by genetics and by the environment. Beef cattle produce high quality protein and other nutrients for human consumption. However, this results from utilization of land and forage that is typically unavailable for direct human food production. These lands and forages occur in highly variable environments, requiring cows with different genetics than required for maximum growth in a feedlot. For genetic improvement to succeed, producers must identify their production (resource) characteristics and market objectives, evaluate animal traits that influence production in their management system, and identify and select breeding animals that produce efficient and desirable progeny.

Using ultrasound for the evaluation of replacement bulls and heifers provides beef producers with an additional tool to make selection decisions. Ultrasound is also used to evaluate quality and yield grades of market cattle.

The cattle industry uses Expected Progeny Differences (EPDs) to inform the genetic selection of herd sires and dams. EPDs use information from a database of various breeds. Creating this database once required that progeny be slaughtered to determine the parent's ability to transfer traits for consistently superior carcasses. Ultrasound technology has provided the industry with the ability to measure some of those carcass characteristics on live animals. This saves years in the evaluation process, and allows superior animals to be selected as yearlings rather than waiting until their offspring can be grown-out and evaluated. Benefits for Idaho producers include more rapid actualization of breeding advancements and

commensurate profits, and reduced costs to maintain less promising breeding animals.

Feed represents the single largest cost of producing beef cattle, up to 70% of the total annual cow cost. Overall nutrition influences the percentage calf crop and weaning weight of market calves. Providing needed nutrients must be cost effective, if beef producers are to be profitable. Idaho's producers meet their herd's nutrient requirements through grazing on rangelands, irrigated pastures, and crop aftermath, as well as feeding harvested crops. Grazed land may be private, public, or both. During the winter months, most producers rely on harvested forages to maintain their herds. Demand (from dairies) for feed, and cost of harvested forage continues to increase. Drought causes shortages in forage and irrigation.

Local beef producers have shown an increased interest in optimizing the protein and energy content of their forages. These producers are trying to match the quality of the forages with needs of the cowherd (at various production levels).

b. Dairy

Extension programs serve the dairy industry and help secure a profitable future for Idaho farm families, their employees, milk processors and allied industry. In August 2002, there were 392,000 lactating cows in Idaho-making Idaho the second largest dairy state in the western US. Herd expansions and movement into Idaho have been fueled by: 1) abundant, inexpensive feed, 2) plentiful land and water with topography suited for large herds, 3) proximity to modern processing facilities, and 4) knowledgeable dairy producers enhancing their profitability through high volume, low cost production.

UI Extension has contributed to the growth of the dairy industry through 1) consultations with dairy producers, farm workers, and allied industry, and 2) educational programs. Annual Dairy Advisory Board meetings are well attended throughout the state, giving evidence of a strong relationship between Extension and the industry. Of the numerous educational opportunities offered, the best attendance has been at the "Milking School" and "Risk Management" seminars.

Milking School (Clase del Ordeno) has been offered in English in southwestern and south-central Idaho and in Spanish in southwestern, south-central, southeastern and northeastern Idaho. The Spanish language "Clase del Ordeno" has been a huge success, with more than 50 dairy employees attending. Many dairy owners and managers have attended this program in both English and Spanish. Completing participants often ask when other Extension programs will be offered in Spanish. Two producers, both fluent in Spanish, attended the Spanish language seminar with their milking crew. Both remarked that the seminar was valuable to them, and stimulated much interest in their employees. One producer remarked, "After consultation with my employees and through subtle changes in our milking procedures, we realized a gain of two to three pounds of milk per day."

Extension Dairy Specialists and County Educators have collaborated on numerous educational programs to increase reproductive efficiency, including: on farm consultations, popular publications, presentations in statewide and regional meetings, and artificial insemination schools.

On a statewide basis, indicators of reproductive efficiency such as average days open, services per conception, and percentage first-service conception do not change rapidly. Therefore, more time must elapse before an accurate assessment of the outcome of the overall project may be accomplished. Nevertheless, notable indicators of success are cited below.

A Treasure Valley dairy manager that recently remarked that "The OvSynch program has significantly reduced the average days to first service and increased the average days in the milking herd." Through these improvements, increased profitability may be realized. This example gives evidence of new knowledge leading to a change in reproductive management through systematic breeding programs.

Reproductive research on cooperating farms in Idaho, Utah, Washington, California, and Ohio focuses on "The effect of elapsed time from initial thawing of multiple semen straws on conception rate in lactating dairy cattle," and a "Modified Systematic Breeding Protocol." These projects are funded by grants totaling \$ 17,105, and have generated a significant amount of data.

During the past year Extension programs and individual assistance were offered in all three areas of the state where the dairy industry is located. Over twenty of Idaho's 44 counties were included in the Idaho Dairy Extension program effort which included the following program offerings: 6 workshops presented, 2 field days, 31 presentations, 6 seminars presented, 2 presentations made at professional meetings, 1 abstract published in a regional program proceedings, regular columns in the local dairy publications, numerous articles in Extension newsletters and interview articles in the popular press. There were 905 people who were involved in the programs listed above. Of those involved 84% were Caucasian and 16% were Hispanic, 79% were male with 21% being female, and 87% were adult with 13% youth.

### Beef Programs

To genetically increase the productive capacity in their herds, beef producers must make sound selection decisions. During winter beef schools, field days, and presentations producers receive information on: (1) how to evaluate and identify superior animals, (2) selection tools, (3) breeding programs, and (4) trait relationships. Approximately 250 producers were in attendance at these events.

Ultrasound evaluation of potential replacement beef, sheep and swine is an accepted technology. This year, 3 beef herds, 4 swine herds, and 2 sheep herds used the technology. The information is being incorporated into breeders' selection and marketing plans. In addition, data is used to develop breeding value indices and EPD's (Expected Progeny Differences). Sixteen (16) operations, representing approximately 1000 head of animals, received consultation regarding the use of ultrasound technology. The majority of these operations have scheduled ultrasound evaluations for the coming year.

The A to Z Retained Ownership program started in 1992 as a cooperative venture by cow/calf producers, the Bruneau Cattle Company feedlot, veterinarians, packers, bankers, allied industry representatives and the University of Idaho Cooperative Extension System. The program gives producers a chance to experience retained ownership without risking the whole farm. Ranchers participate by enrolling a sample of their cattle (5 - 50 head) in a feeding trial. The calves are pre-conditioned on the ranch and delivered to the feedlot. The feeding trial starts in November and ends in May when the finished cattle are processed. Owners receive feedlot, carcass and economic information on their calves. The feeding trails for 2001-2002 included a yearling program with 3 ranches consigning 120 head of cattle (78 steers, 42 heifers) and a calf program with 35 ranches consigning 589 head of cattle. Thirty-eight individual ranch reports of data were prepared and distributed, one feedlot tour and two packing house tours were conducted, two year-end meetings held, and a summary report was published.

From the exit survey, all participants demonstrated a better understanding of retained ownership, a better understanding of how their cattle perform and how they can improve the genetic potential of their cattle. One ranch initiated a beef cattle improvement program. This will provide baseline data on the initial set of cattle and help the producer improve the overall productivity of the herd. An additional producer gathered ultrasound data on his replacement heifers. Several producers are using their individual data to market their calves to order buyers and on satellite and Internet marketing systems.

Evaluation questionnaires ranking the usefulness of the information gained note (1) enhanced marketing of the calf crop, (2) keeping abreast with changes in the beef industry, (3) improved selection of replacement heifers and bulls, (4) retaining ownership of calf crops, and (5) fine-tuning ranch management, as most highly valued.

Winter beef schools gave beef producers opportunities to increase their awareness and knowledge of beef cattle selection and breeding programs. Inquiries following presentations, and requests for additional information, suggest an increased awareness and possible adoption of selection and breeding practices.

Cattlemen at the Idaho Cattle Association convention were surveyed using a beef quality assurance (BQA) checklist. Results indicated that cattlemen had a good understanding of the importance of BQA practices. The producers that were surveyed indicated that they were using 90% of the practices listed on the checklist. The practice listed most frequently, as not being used, was pre-conditioning.

Participants at beef schools were taught Beef Quality Audit Results, bull selection, disease characteristics and bio-security measures. Cattle producers in North Central Idaho were educated on a variety of topics related to production issues, management concerns and marketing. Education about topics (identified by county Total Beef Program committees) was provided through classes, tours, workshops, newsletter, news columns, and personal consultations.

Work continued with the Clearwater Valley Beef (marketing) Alliance. This group continues to be very successful in marketing. In August of 2002 they sold their heavy calves weighing on average 650 pounds for \$0.80 per pound and their light calves weighing on average 550 pounds for \$0.83 per pound. The cattle were sold using an Internet Marketing service. The price they received is about 5 to 8 cents higher than what cattle are being sold for locally.

The quality of a feed ration can affect the number of cows bred early in the season. Two producers shared the results of their herd's pregnancy checks. One herd had a 97 % pregnancy rate and was able to do so with his existing forage supply. The other herd had a 99 % pregnancy rate on second calf heifers and a 96 % pregnancy rate on mature cows. Taking forage samples and adjusting the feeds to match the cows' nutritional needs at critical times accomplished these results.

- c. Sources of funding for these projects include Smith-Lever 3(b&c), State of Idaho appropriations to Agricultural Research and Extension, and County and Local funding sources. Grants of \$63,627 from private sources supported the reproductive efficiency program. An additional \$45,500 dollars in private funding was from United Dairymen of Idaho and from Select Sires. Two grants totaling \$9,601.00 supported beef cattle breeding and genetics efforts in Idaho. Those grants reflect State and county funding. Four private sources made grants totaling \$24,350.00 to support beef quality assurance (BQA) efforts in Idaho. The grants were awarded by state agencies, and commodity groups. The "Modified Systematic Breeding Protocol" projects are funded by private grants totaling \$ 17,105.
- d. Reproductive research conducted for this project is in collaboration with faculty and with cooperating dairy farms in Idaho, Utah, Washington, California, and Ohio. Other projects in this area are Statewide.

### **Key Theme – Aquaculture**

- a. Aquaculture growers are challenged by effluent compliance limits, increasing regulations including a phosphorus waste load allocation, national effluent limits, losses due to disease and the need to improve production efficiency through high quality feeds and/or genetic selection in order to remain competitive and economically sustainable while protecting water quality.
- b. Reviewing EPA guidelines with the industry were a major output with the outcome yet to be determined until the final draft is published in two years. Outcomes of the workshops on water quality were significant with indicators of less disease problem being positive. Disease diagnosis workshops have the outcome of

reducing losses because producers can recognize diseases early and take preventive action. Water quality education of teachers extends the audience of extension and will continue to be important contacts of the extension aquaculture position.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. There were two federal EPA grants totaling \$11,150 that addressed the phosphorus concerns in tail water going into public streams.
- d. Ten invited presentations were delivered within Idaho and the United States on a wide range of subjects from front yard water ponds to the state of the US trout industry.

### **Key Theme – Diversified/Alternative Agriculture**

- a. In some areas of the state, alternative crops are needed to improve economic viability. The need for alternative crops shows up in four areas: 1) where traditional crops have become unprofitable, 2) where traditional economic practices have been abandoned (i.e. logging), 3) to add diversification and stability to the cropping systems, 4) where new industries have grown up and have established a local need (i.e. silage for dairies, specialty barleys for malt)

A successful grant from the 'Fund for Rural America' program supplied support for development of mustard as an alternative crop. This cooperative project included a focus on the agronomic aspects of mustard culture: seeding date and rate, starter fertilizer placement and rate, nitrogen fertilizer response, and rotation effects. Some of the agronomic trials were conducted at Pendleton, Oregon with the cooperation of Oregon State University.

Experiments revealed no effect of seeding rate. However, mustard yield declined in all trials (as much as 50%) as seeding dates progressed across a six week planting range. Very early dates gave the highest yields and plant morphology was also changed. The seeding date effect on mustard appears to be greater than seeding date effects found in spring barley and wheat. Ongoing studies are being conducted to characterize the morphology and yield components of mustard relative to seeding date.

Fertilizer experiments with mustard produced no significant positive responses to starter fertilizer, but higher rates placed within the soil reduced establishment and yield. Seed sensitivity to fertilizer is common with small-seeded crops.

Mustard responds positively to total N fertilizer rates. After initial trials with N fertilizer that showed a good response, ongoing mustard trials combined seeding date and fertilizer rate, the two factors that showed responses in early experiments. These ongoing experiments show the greatest N fertilizer response with early seeding dates that gave a higher yield potential. This combination of critical management variables is now being evaluated under direct seeding management.

Crop sequence trials showed that mustard is an excellent rotation crop preceding wheat. Mustard following mustard or canola is not as productive as mustard following a small grain or pulse crop. All of these studies supported the overall concepts of rotation diversity giving the most productive system

A collaboration with Utah State University on annual forage variety trials was conducted with the cooperation of a host farmer. The trials yielded some early data on two types of annual ryegrass.

#### Education for the Green Industry

The value of nursery and greenhouse production in Idaho in 1997 was 37.5 million dollars (Idaho Ag

Statistics Services). This figure does not include other services such as retail nurseries or landscape design, installation, or maintenance companies.

The floral, landscape and nursery industries, collectively called the green industry, continue to grow each year in Idaho. New employees hired by various green industry companies often lack horticultural training or education. Green industry managers and their workers, whether in retail or wholesale businesses, need to increase their horticultural knowledge, particularly in landscaping. Employees in the “green industry” and the consumers who purchase their services and products benefit from research-based information and training on horticultural techniques, environmentally and economically sound pest control methods, and new plant materials and products.

- b. Twenty-one Extension Educators and Specialists delivered programming on a variety of horticultural topics, including lawn care, insects, diseases, weed management, pesticide safety, soil and water management, fruit and vegetable culture, composting, tree care and pruning, xeriscaping, and problem diagnosis. Four grants, totaling \$2,150 were used to support County Extension programs.

Extension Educators and Specialists gave over two hundred presentations on horticulture-related topics at workshops, shortcourses, seminars, and garden shows. In addition, field tours, plant clinics, and on-site visits were conducted. Homeowner and “green industry” questions were answered by phone calls, email, and face-to-face visits. In some counties, Master Gardeners and Advanced Master Gardeners assisted Extension Educators in delivering training, answering questions at plant clinics, and making home horticulture calls. Educators and Specialists wrote 45 popular press articles on urban and environmental horticulture related topics. Three Impact Statements on related-related programming also were written.

Two hundred fifty-two industry employees received pesticide safety training and earned pesticide recertification credits through programs offered in Ada and Nez Perce counties. Drought conditions throughout the state have sparked interest in xeriscaping and drip irrigation systems. Workshops, shortcourses, and field demonstrations and tours have resulted in 825 people increasing their knowledge of how to reduce water use while maintaining aesthetically pleasing landscapes and productive gardens. Ten volunteers completed the 12-hour training course on Tree Stewardship in Ada County and have donated 150 hours to pruning street trees in Boise.

The University of Idaho brought environmental and urban horticulture education to nearly 18,500 Idahoans who participated in a variety of educational events in FY '02. Master Gardener training was provided throughout the state and will return 30 hours of volunteer community service for each new Master Gardener. Many volunteer their time in local plant clinics. Working in the clinics not only benefits those using the service, it also benefits the volunteers. Clinic volunteers have the opportunity to exercise the knowledge gained in their Master Gardener Training course, improve their diagnostic and problem solving skills, practice their communication skills, and gain confidence in their abilities.

An additional 17 presentations were made to educate green industry personnel. In Ada County, five 2-hour sessions were held on Pesticide Safety, and four 1-hour sessions were held on plant diagnostics. A total of 683 people attended various presentations. Three articles in support of green industry education were published in a trade association newsletter. More than 100 phone calls are estimated to have responded to industry needs around the state, and an estimated 250 responses were made to e-mail inquiries.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Additional funds and grants were received from: State, Id. Nurs. & Florists Advis. Com., (\$2,900); Private, Eden, (\$5,000); Private, Engelhard, (\$3,500); Private, ID/OR Onion Research Comm, (six grants totaling \$15,350); Federal, USDA-WSARE, (\$20,195); Federal, USDA-

CSREES/Idaho Ag Experiment Station-Hatch, (\$5,000); Four grants from various local sources supported local programming efforts in urban horticulture (\$2,150).

- d. The mustard projects are conducted in collaboration with faculty at Oregon State University, and the annual forage trails are cooperative with Utah State University.

## **Key Theme – Grazing**

- a. Idaho has 11.7M acres of privately owned grazing land, which produced \$763M worth of cattle and calves, \$766M worth of milk and \$19M worth of lamb and mutton in 2000. Of this, 1.3M acres are domestic (fenced and managed) pastureland. Idaho domestic pastures generally produce 50% or less of their potential due to poor production and poor harvesting efficiency. Much of the poor production results from overgrazing, compensated for through excessive fertilizer application, and accompanied by excessive erosion and invasion of pastures with undesirable plants and noxious weeds. Developing, adapting and implementing more economically efficient and environmentally acceptable methods for harvesting and utilizing forages underpins the long-term success of the livestock industries in Idaho, and the Idaho families they support.

As pressures from non-grazing interests increase on federal grazing lands, the traditional forage base for beef production in Idaho is shrinking. Further stress on the total forage base comes from the expanding dairy industry and the bludgeoning growth of small pastures and "ranchettes" as the result of urbanization and ranch subdivision. Many new landowners own fewer than 20 acres, have unrealistic expectations, and have no idea how to care for their land or their new pastures.

Finally, the cost of producing livestock with traditional fuel-based systems is rising as the cost of fuel and equipment increases faster than the value of the products. As a result, livestock operators are leaving the industry and their rural communities. Increasing the productivity of domestic pastures in Idaho offers the opportunity to:

- Maintain or expand the forage base that supports the livestock industries and their surrounding communities;
- Reduce production costs and the use of fossil fuels by increasing the amount of forages harvested directly by grazing animals; and
- Improve the ecological condition of Idaho pastures resulting in reduced erosion, improved water quality and reduced threats to ecosystems for common and noxious weeds.

Some pasture and livestock management practices that reduce costs and increase productivity require operators to make monumental changes in their thinking and in the structure of their businesses. There are few local examples of operations that have implemented intensive management strategies. Many of the most aggressive changes are difficult or impossible to revoke, causing apprehension on the part of operators. Successful demonstrations would provide superior examples as well as local information on economic, ecological and lifestyle changes resulting from implementing these practices.

To disseminate the information from the project, cattle producer schools were held, a field day and tour was held, news columns were written on the grazing system along with an Extension newsletter and an annual project report was published outlining results.

The Living on the Land program consists of 18 four-hour classes that cover a variety of issues related to rural living for new rural residents, including expectations and care of pastures. UI Extension, Zamzows, D & B Supply, NRCS, and the Idaho Soil Conservation Commission supported the program.



- a. A subgroup of the forage team has been developing and collecting components of an integrated curriculum. These components have been tested and improved in pasture workshops. Additional work to develop evaluation tools and publish the curriculum remains to be done.

Learner outcome data is being used to determine the effectiveness of curricular components. Learners have found a majority of the lessons to be effective and they have provided valuable input for improving the program.

#### Grazing Academies

Two 4-day and one 2½-day grazing workshops were held during the summer and fall of 2002. Each workshop combined classroom presentations and hands-on field exercises. Presentations covered the principles of management-intensive grazing (MiG), ecosystem processes of energy flow, nutrient cycling, hydrologic cycle and succession. In the field, small teams participated in guided practice in evaluating pastures, estimating available forage, trouble shooting and building electric fencing, and allocating forage to their small "herd" of animals based on assigned grazing targets.

Innovative operators (who have implemented recommended practices) were included as teachers at these workshops. Learners that adopt recommended principles and practices may realize greater pasture productivity and reduce the cost of purchased inputs. Operators also learn how to reduce the risk of resource depletion from surface runoff and ground water leaching, through a greater understanding of those systems. Increased carrying capacity of irrigated pastures provides additional flexibility for management of other riparian and range resources.

- b. Participants in the grazing academies complete pre- and post-tests to assess knowledge increases. Participants demonstrated increased knowledge in 29 of 34 areas tested. All participants indicated that they had learned at least one thing that was applicable to their ranch or farm that they would implement within the next six months. One operator who had intended to graze a Sudan-sorghum pasture decided to use electric fencing to improve utilization from 30 to 60%. This permitted him to double the amount of feed he was able to harvest. Another participant, encountered several months after the workshop, said "When I got home, I rode across the grazing association pastures just like I always have, but I will never be able to look at a blade of grass the way I did before the workshop." Focus groups with participants from one of the workshops indicated that they had changed their own pasture management. Interviews with a randomly selected group of 10 percent of the individuals that participated in the program indicated that this Extension program met the participants' goals.

A demonstration project conducted during 2001 and 2002 was used to teach how intensive grazing systems work, and what can be expected in terms of production. An area cattle producer cooperated on the demonstration in which a timothy grass hayfield was divided into 7 paddocks. A two-strand electric fence was installed to separate the paddocks and 64 yearling cattle grazed from May 1 to August 1. The cattle were weighed at the beginning and ending of the trial. Gain for the period was recorded and a pasture rent charge of \$0.25 cents per pound gained was assessed. An analysis was made of pounds of beef produced per acre and economic return per acre.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Funding from the ISDA/UI Alternative Crops program (\$9,500) was used to leverage a 3-year WSARE research and education proposal (\$1,000). State funding from USDA-EQIP was used to support the project (\$1,375). A Federal Department of Labor grant supported 20 learners in the grazing academy (\$10,000). A pre-proposal for a \$422,000 project was developed for a June WSARE deadline. The pre-proposal was subsequently accepted for development into a full proposal.

- d. Elements of these programs are Statewide, with collaborating faculty from OR and MO. Participants (learners) in the program are recruited by their own state extension services from NV, MT, WY, and UT.

### **Key Theme – Home Lawn and Gardening**

- a. Idaho has experienced significant population growth in the past 10 years resulting in significant new residential construction. New homes usually include yards and gardens that new residents to the State are unaware of how to manage. County Extension offices across Idaho are experiencing increased demand for reliable, unbiased gardening information including learning how to conserve water and other natural resources and to create aesthetic environments as economically as possible.

Educational for consumer horticulture helps: 1) improve knowledge and skills of gardeners, homeowners and residents across Idaho, and 2) residents improve decisions made as consumers of horticultural products and services.

Trained Master Gardener volunteers and county extension educators offered many classes to the public throughout the year. Lessons were delivered to individuals, upon request from a group or school, or as a series of seminars offered by county Extension Educators.

#### Advanced Master Gardener Education and Retention

Master Gardeners are trained volunteers that assist county faculty. Master Gardeners increase in value to the CES as they gain experience. Retention of Master Gardeners for a longer period of time is a value-added goal of this program. One way to retain incumbent Master Gardeners is to provide more educational opportunities. By expanding the curriculum, Master Gardener interest should be maintained and volunteers retained to help county faculty with the workload. The statewide demand for advanced training is increasing from stakeholders.

After Master Gardeners attend their initial training, they continue to be active by volunteering the required 30 hours. Beyond 30 hours these volunteer hours become "advanced" volunteer hours. The Advanced Master Gardeners receive further training through training provided by the University of Idaho.

- b. A total of 98 presentations were made throughout the state on consumer horticulture topics, and a total of 9,725 homeowners attended these presentations. In addition, 30 articles appeared in newspapers throughout the state, 11 focus articles were published, and 13 newsletter articles were written. Our samples indicate that faculty or Master Gardeners answered more than 1,400 phone inquiries visited more than 330 sites. Two presentations, aired on public TV, reached an estimated 1,600 homeowners each time they were shown reaching audiences in Idaho and Utah.

One unique project involved installation of a drip irrigation system in a demonstration garden. A \$500 grant was secured for this project. People visiting the demonstration garden were impressed by the amounts of water saved and produce harvested, when water is directly applied to the root zones. Two participants at a field day presentation were so impressed with the drip system, they made plans to install drip irrigation in their own gardens next year.

Individual outcomes from county programs included 150 hours of tree pruning by volunteers, an estimated 300 hours of volunteer time to train about composting of yard debris and other organic matter. We assume homeowners attending various presentations, reading different articles, or discussing problems on the phone would directly use the information to their advantage. The UI is able to provide information and experience. The ultimate outcome of providing information and education about consumer horticulture is to help homeowners conserve money and natural resources, while minimizing the effects of cultural practices on the

environment.

#### Advanced Master Gardener Education and Retention

Statewide, 15 Advanced Master Gardener classes and 10 workshops and seminars were presented, and 16 tours were held for Advanced Master Gardeners, producing 581 face-to-face contacts with Advanced Master Gardeners. Leadership skills developed and enhanced through the program are recognized in the communities. In one community the advanced Master Gardeners are largely replacing the city planting crews and are designing and assisting other volunteers in planting the city owned flowerbeds in the community. In other communities the Advanced Master Gardeners use their talents working on committees to enhance the plant life of the area.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. A \$500 grant was obtained from a local business to conduct a demonstration trial.
- d. The Master Gardener Program is a statewide project. Idaho Collaborates with WA in Dist 1.

#### **Key Theme – Innovative Farming Techniques**

- a. Tracking livestock, especially beef, from birth to slaughter and collecting relevant data is presently very difficult to do. Use of electronic ear tags and computer systems would greatly simplify the process, and provide valuable information.

A new three year program entitled: "Assuring Beef Quality and Food Safety Through Individual Electronic Identification of Beef Cattle" has been initiated by UI Extension. Objectives of this program are to: 1) Demonstrate the latest technology for electronically identifying cattle from birth to harvest. 2) Demonstrate how cow-calf producers can enroll their herds in a nationwide data base program. 3) Analyze reports obtained from the data base program and educate cattle producers on how to utilize this information to make improvements in beef quality, management and marketing programs. Five beef cattle producers from the North Central Idaho are cooperating on this demonstration project. Records on the cattle are kept and summarized annually. Producers will use the data to make management decisions, provide information about the quality and safety of their product; and to inform buyers when cattle are sold. Area beef producers will learn about electronic identification and how it can be used to inform consumers.

- b. The Assuring Beef Quality and Food Safety Through Individual Electronic Identification of Beef Cattle project has just begun. Herds were equipped with the electronic ear tags in October and November of 2002. There are no outcomes to report at this time.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. These projects are mostly Statewide.

#### **Key Theme – Invasive Species**

- a. Dry beans are an important irrigated crop for southern Idaho and Idaho is one of the largest producers in the nation. Weed competition significantly reduces dry bean yield and quality. Because growers understand these impacts, mechanical, and chemical control are used on most dry bean fields. More dollars are spent on weed control in dry beans compared to any other pest management practice. The Idaho Crop Improvement Association reports that weeds are the number one reason for rejecting bean

seed fields for certification. The University has formed a statewide team of Extension specialists and educators to collaborate on projects beneficial to the bean industry. This team ranks research and education about new, effective weed control practices among the highest priorities for that industry.

Although producers rely on integrated management for weed control in dry beans, herbicides tend to be the major tool used to manage weeds. Under Idaho's environmental conditions, weed control with herbicides can be inconsistent and may not suppress weed species throughout the growing season. New herbicides and changing registrations of existing herbicides require additional research to develop consistent, economical weed control practices.

Control of Bank and Aquatic Weeds: A pesticide recertification workshop designed to improve attendees' knowledge on control of bank and aquatic weeds. Evaluations were passed out at the end of the workshop. 24 individuals received pesticide recertification credits for attending the workshop.

Weeds continue to be a challenge for sugarbeet growers. Herbicide carryover and resistance problems are important issues. Economics of weed control are uncertain and growers continue to express frustration with weed problems in fields where the stand is poor or the plants are not vigorously growing. Plots in eight Idaho counties and Malheur County in Oregon are used to count weed emergence on a weekly basis, beginning shortly after planting and continuing for 6 weeks after the last cultivation. This data is currently being compiled and analyzed by the Extension Weed Specialist.

- b. Two large weed control studies of in dry beans at Parma and Kimberly are conducted to evaluate various herbicide treatments. Performance, efficacy, and crop safety data were recorded for three bean varieties. The results from last year were presented at the Idaho Crop Production Association annual conference and will be presented at those meetings again in 2003.

Results of herbicide efficacy trials on invasive species lead to knowledge about a greater number of effective herbicide treatments from diverse herbicide families and will avert the development of herbicide resistant weed populations, add flexibility in choice of subsequent rotational crops by reducing potential for residue damage, and promote a season-long weed-free environment, thus reducing the weed seed bank and the need for costly hand labor. Outcomes include a more profitable crop, less chemical dependency, and greater use of integrated weed management methods. Research also provides required information to support the registration of herbicides and provides growers with practical information on herbicide performance under local environmental conditions.

In the first pesticide recertification workshop offered in the Clearwater Basin to focus on bank and aquatic weeds, twenty-one attendees indicated that they would implement improved pesticide handling practices as a result of attending.

Nine sites were established across southern Idaho and eastern Oregon to monitor weed emergence and growth in sugarbeets. A sprayer calibration workshop was presented to 40 growers at the Snake River Sugarbeet Conference in Nampa, Idaho. The importance of checking nozzles frequently and conducting a calibration procedure on a regular basis had the greatest impact on the participants at the Snake River Sugarbeet Conference.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. A \$10,000 grant was received from the Idaho Sugarbeet Growers Association to conduct this late season weed emergence study. Two large weed control studies in dry beans are supported by funding from industry and the Idaho Bean Commission.

- d. This project includes 8 counties in Idaho and 1 county in Oregon. The issues addressed through these programs are common in the western region, and results and educational programs are widely available.

### **Key Theme – Ornamental/Green Agriculture**

- a. With income from traditional crops, logging, and other natural resource enterprises in Idaho declining, small-acreage, high-value crops are becoming increasingly important to the state and local economies. A major component of the extension program is support for prospective and established fruit, ornamental, vegetable, and herb producers.

The industry has grown over the past 25 years from an insignificant level to a major regional presence, especially in Boundary County. Nursery crops in the northern Idaho Panhandle support an economically viable industry. Growing systems include field production of trees and shrubs, and greenhouse production of bedding plants, vegetable transplants and perennials. Christmas trees also are included in this program. Established growers wish to stay up to date on current production and marketing information. In addition, there are many people that are either just starting to grow plants or are interested in starting a nursery operation that need more basic education.

Whitebark birch is a popular shade tree for home and commercial landscapes. During the past 20 years, a large percentage of birch in northern Idaho and surrounding regions succumbed to environmental stresses and the bronze birch borer.

- b. The growers, to promote education among its membership and to collectively market their products, formed the Kootenai Valley Nursery Growers association. Many Christmas tree growers belong to the Inland Empire Christmas Tree Assn., a regional group encompassing eastern Washington, northern Idaho and western Montana. There is no local or regional organization of greenhouse growers. Many people belong to the Idaho Nursery Assn.

In a joint project between the University of Idaho and Canadian researchers from the University of Northern British Columbia, birch genotypes from 18 seed sources are being evaluated for survival, developmental characteristics, and growth rates.

Data will be used by foresters interested in birch for lumber and as companion trees in forest ecosystems, and by horticulturists in selecting sources of birch better adapted to the changing environment and resistant to birch borer. One of the test sites is the Sandpoint R&E Center. Each spring, survival and date of bud break are determined for the various provenances.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Collaborators on these projects are from Montana, Oregon, Washington, and Idaho.

### **Key Theme – Pant Germplasm**

- a. Developing potato varieties with improved end-use efficiency by having genetically superior quality will increase the economic returns for both the producer and industry while at the same time providing a superior product for the consumer. Additionally, consumer tastes are changing and there is more consumer

interest in specialty potatoes. Furthermore, the potato-processing industry is looking for potato varieties with specific traits that impact the end-use.

Several test locations are planted in Idaho as part of the tri-state potato variety development program. In trials is located near Shelley, Idaho, 12 varieties were planted in 2002 including a newly released variety (Alturas) and Russet Norkotah and line selections (strains) from this variety.

The choice of sugarbeet varieties is among the most important decisions the grower will make. Variety test data is relied upon by growers for planting decisions. Seed companies use the data to determine what varieties to increase for future sale. The Snake River Sugarbeet Growers Research and Seed Committee uses variety test data and curly top resistance data compiled and analyzed by the University of Idaho for variety approval policy changes and calculations for varieties to be approved for sale in Idaho.

- b. Alturas, a newly release potato variety, has performed very well in locations with longer seasons, but there was a question as to how Alturas would perform in short-season locations such as in eastern Idaho. A variety trial near Shelley has been important for evaluating Alturas in a short season. Alturas performed well in Shelley, so it is now being grown in the Blackfoot-Shelley area and the acreage is increasing. Another variety, Russet Norkotah and various strains of this variety were also tested at the Shelley trial at the request of cooperating potato producers. More farmers are now growing this variety partially because of evaluations made in variety trials.

Test results from 2001 were used by the Snake River Sugarbeet Growers Research and Seed Committee to expand the list of varieties approved for sale in Idaho. The results were published in the Proceedings of the UI Winter Commodity Schools and distributed at the Snake River Sugarbeet Conference, January 9-10, 2002, in Nampa, Idaho.

According to the Grower Seed Committee, at least 80% of growers use the information for choosing varieties to plant. Once a grower selects several possible choices, he then reviews the emergence and vigor data for those that have the highest ratings, thus finalizing the choices.

The sugarbeet variety testing program is undergoing a transfer of responsibility from the UI to the Amalgamated Sugar Company and the growers, and will be final by January 1, 2003. This places the program under the control of the primary stakeholders, with trained personnel responsible for the operation.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Grants received include funding from five seed companies, totaling \$10,800.
- d. This work stems from a tri-state (Idaho, Washington, and Oregon) variety development program.

### **Key Theme – Plant Production Efficiency**

- a. Many factors influence the production of high quality, profitable potatoes. These include seed choice and management, crop rotations, precise planting, fertilization, water scheduling, and pest management. Additionally, maintaining the proper storage environment is essential to keep the potato crop in a condition that is acceptable for the intended market. A UI survey shows that Idaho producers are planting only 55 percent of the seed pieces within the desired seed piece spacing. UI research indicates that under or over irrigating potatoes by as little as 1.5 inches decreases potato yields by approximately 5 and 8 percent, respectively. Other UI research shows that Russet Burbank seed infected with potato virus Y yields about

40% less than non-infected seed. Producers receive information about production practices and enhancing potato quality from UI Extension, through news articles, bulletins, workshops, and seminars.

A series of seed piece planting depth and hilling studies were conducted to determine if and how green tuber yield could be reduced. Workshops were presented at the annual University of Idaho Potato Conference to educate producers on minimizing bruise damage. Thirteen Spanish-language workshops encompassing all facets of potato production were presented throughout Idaho.

Specialty potato trials were continued in 2002. Consumer surveys were conducted. Two potato fields were monitored for reporting to the Doan's agricultural web site (<http://www.potatotrak.com>). Crop condition and stage was reported.

A concern in the Idaho potato industry is the problem of foreign material in potatoes. This is a food safety and quality concern that is an issue for fresh, dehydrated and processing markets. A 20-minute video in English and Spanish titled "Continuing to Manage Foreign Material for Quality Idaho Potatoes" was produced with the support of Idaho Association of Commerce and Industry and the Idaho Potato Commission. A bulletin to compliment the video was written and both were distributed to every potato grower, packer and processor in Idaho.

Diseases continue to cause significant losses to sugarbeet growers. The primary diseases in Idaho are rhizomania, root and crown, and powdery mildew. Approximately 219,900 acres of sugarbeets are grown annually in the Pacific Northwest (ID, OR, WA); more than 200,000 acres in Idaho. Rhizomania, the most serious disease of sugarbeets worldwide, has contributed to a 50% reduction in sugarbeet acreage in California and elimination of the industry in Texas. More than 76,900 acres in the Northwest are currently infected, accounting for about 35% of the total acreage. This is a 15% increase in one year. Management recommendations include long rotations with resistant cultivars and other practices to minimize loss. Root and crown rot causes major losses in sugarbeets wherever the crop is grown. Powdery mildew can cause up to 25% loss without treatment, and many growers do not adequately manage this disease.

The Snake River Sugarbeet Conference was combined with the Snake River Sugar Company's annual meeting for a total of 2 1/2 days in Nampa, Idaho. A total of 15 workshops were presented. The Spanish agricultural curriculum was also modified for, and expanded to, the UI Sugarbeet School. 15 Spanish workers attended and were given pre- and post-tests.

Information from the USDA-ARS in Salinas, California, indicates that a probable new race of beet necrotic yellow vein virus, the causal organism of rhizomania, has been discovered in the Imperial Valley of California. Highly resistant varieties reacted in the field the same as susceptible varieties. It is likely that this race will find its way to Idaho sometime in the future. Several field studies, resulting from securing a USDA Specific Cooperative Agreement grant, were initiated at two locations to test the effect of a green manure crop on disease development.

Alfalfa grown at high elevations was preferred as dairy hay in the 1960's and 1970's. During the 1980's and '90's, forage testing created a market premium for high quality alfalfa. Cooperative Extension programs and industry successfully promoted cutting less mature alfalfa to meet the premium hay quality requirements. Increased forage testing appears to favor alfalfa hay grown at lower elevations, in part due to producers cutting at earlier maturity. Some dairy producers will not feed hot season cut hay to milking cows, regardless of forage tests, because their experience is that milk production loss is dramatic. Using current forage testing to compare high versus low elevation grown hay, or to compare hays from different cuttings even from the same location, is not reliable. The use of environmental variables or refined forage quality test which predicts the energy value of hay may provide more accurate animal production estimates and allow for more accurate value of hay.

- b. The potato topic team transferred information to nearly 11,300 people via 124 presentations. There were 30 newspaper and 42 popular press articles published. There were eight Extension newsletters distributed. Forty-two Extension publications were written along with six scientific journal articles. Two workshops were conducted on planter performance at the 2002 University of Idaho Potato Conference to a total of 156 growers. Two field demonstrations were presented in Spanish to growers and Hispanic workers. A survey was given to those attending a potato tuber bruising management workshop at the 2002 University of Idaho Potato Conference. Nineteen of 26 participants (73 percent) strongly agreed that the information presented was useful, and all said they would adopt some, most, or all of the practices presented.

A three-year depth-of-planting study found that planting depth and hilling height influences green tuber yield and quality differently for various varieties of potatoes. This data will be useful for improving production and profitability.

Sugarbeet growers are aware that over-application of certain powdery mildew fungicides can cause resistant strains of the pathogen. Resistance data was presented in publications and in workshops during the 2002 growing season. Sugar company fieldmen and agronomists, and chemical company representatives worked with growers to design spray programs to improve powdery mildew control and minimize the risk of resistance developing in the pathogen.

Acres planted with rhizomania-resistant sugarbeets and requests orders for seed increases as a direct result of the education program. Most growers have lengthened their rotation and taken steps to more precisely manage irrigation. The losses from rhizomania are not as evident as in years past. The number of rhizomania samples coming to the UI laboratory in Twin Falls for diagnosis has markedly declined. Sugar company fieldmen and seed company representatives both report that this decline is directly due to 1) better management of the disease and 2) fieldmen are better trained to recognize the disease as a direct result of this program.

We evaluated the efficacy of different fungicides. Even though plant pathologists determined that submitted samples were free from powdery mildew; we are still getting yield reduction. Further studies on proper timing of fungicides need to be established for 2003.

Participant evaluations of the Sugarbeet Conference were very favorable. On a scale of 1-5, the overall rating for the Conference was 4.1, with some workshops rated as high as 4.7. Written comments indicated strong favor for combining the Conference with the Snake River Sugar Company's annual meeting. Most participants indicated they would use the information presented.

Attendance at alfalfa workshops in six communities across Idaho included more than 200 producers. Comments after the schools were very positive. Reports on alfalfa variety trial results at 2 sites were presented to these workshops, distributed by the seed industry, and published in *The Progressive Hay Grower*.

A national in-service training was provided in Boise, Idaho. The curriculum included comprehensive instruction on topics from alfalfa seed, establishment, irrigation, physiology, harvest management, forage quality and testing, grazing, and marketing. This 20-hour program is targeted toward extension educators, crop advisors, and large farm managers.

Twenty extension educators from Idaho were among the 78 participants to attend the Alfalfa Intensive Training Seminar. In a letter, an agronomist from Rigby, Idaho related how a client who attended " . . . commented on how much he learned and also how impressed he was with the caliber of people teaching as well as attending." An article in *Progressive Hay Grower* stated "The fast-paced three-day course was packed



with practical information that covered everything you wanted to know about alfalfa in an easy-to-understand simplified format. Presentations were direct, informative, and at times, hotter than a pistol, which kept everyone's attention." Another participant was quoted, "I've learned more about alfalfa in three days than I have in four years at college. Way to go, staff."

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. There were 8 grants totaling \$175,754 used to complete potato projects. Sugar beet disease programs were supported through grants totaling \$74,000 in Federal funds and \$13,300 in private funds. Grants for forage projects includes support from Seed companies, and from Lemhi and Nez Perce Counties.
- d. A national collaboration, with faculty from the University of Wisconsin, Pennsylvania State University, University of Kentucky, University of Idaho, and USDA-ARS Dairy Forage Research Center, provided instruction at the Alfalfa Intensive Training Seminar. Other issues addressed are priorities for extension services in California, Washington, and Oregon.

### **Key Theme – Risk Management**

- a. Risk Management: Risk management education has been conducted throughout the state via the "Achieving Risk Management Success in Dairy" (ARMS) and "Dairy Options Pilot Program". The ARMS program has been integral in educating dairy producers regarding milk markets, cost of production, and historical economic price cycles. The Dairy Options Pilot Program, in cooperation with the USDA, has been successful in teaching dairy producers the value of put options, a unique means of securing a floor price for a portion of their milk production.
- b. After completing a course regarding the Dairy Options Pilot Program in southwestern Idaho, two producers signed up for the innovative cost-sharing program administered through the USDA, in conjunction with approved brokers.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. A Federal, USDA Risk Management, grant for \$70,690 also was used for this project.
- d. This program is delivered in the dairy-producing regions of Idaho.

### **Key Theme – Small Farm Viability**

- a. In recent years, prices for many Idaho crops have remained level or declined, while the costs of farm inputs have increased sharply. Idaho farmers are feeling hard pressed to make ends meet and are looking for ways to diversify their crops and/or their markets. County extension offices are witnessing an increasing demand for assistance in production and marketing of specialty crops by both traditional growers looking for a way to diversify and from the small acreage landowners looking to make a living off their land while preserving their natural resources. At the same time, there is an increase in the number of small-acreage landowners growing out of the population centers.

Extension needs to address the growing demand for information for growers of specialty crops to help farmers remain profitable. Research and program delivery on production and marketing of specialty crops has the potential to serve many of our current and beginning farmers. In addition, these small-scale, high-value enterprises show potential to help in stabilizing and expanding income, particularly in rural communities

facing serious economic situations due to reduced returns from agriculture, logging, and mining.

In south central Idaho, around 60% of all farms are considered "small" (179 acres or less). Some small acreage farmers have found relative economic stability among an increasingly unstable agricultural economy. Many of these farmers are growing specialty crops, practicing alternative production systems, and/or implementing different marketing strategies. Their success can be a source of learning for other farmers looking to try new crops, alternative production methods such as organic or marketing direct to consumers.

Small-acreage landowners constitute one of Idaho's fastest growing components of livestock production. Often, these individuals want the land and the life experience of raising crops or livestock but lack the experience, training or resources necessary to adequately take care of the land or the animals. As the population of small acreage farmers increases the demand for educational efforts to address this situation increases.

To address the demand for Idaho generated information about small fruit development, raspberry and strawberry plots were established in 1999 and harvested through 2002. The data is currently being analyzed and summarized. In addition, a blueberry trial has been established in Camas County to determine if the crop is suitable in the marginal conditions. Production publications will be developed from these projects, which are both grant funded.

Previous studies have provided information on specialty potato production and consumer acceptance. A grant funded "growing greens under high tunnels" project has been established by 4 local producers in southern Idaho with the University of Idaho as a cooperator. This project will provide local information on the suitability of this technique for local growers wishing to produce during all seasons.

In response to a conflict over livestock production in the urban/rural interface, 4-H members are involved in a program designed to teach them about livestock Best Management Practices. The educational program is designed and implemented by an Extension. Knowledge of Best Management Practices will be transferred to 4-H parents and siblings. If complaints do occur about livestock being raised by 4-H members who have been through the program, the City would explain to the complainant that the 4-H member and family are using accepted, environmentally sound practices.

- b. The Living on the Land Curriculum (Donaldson 2001) addresses conservation of resources specifically for small acreage landowners. Ada County offered the full *Living on the Land* program, consisting of a series of 16 classes. Classes involved instruction and hands-on activities in land use planning, inventorying resources, soil sustainability, water sustainability, plant sustainability, plant management, animal sustainability and animal management. The course is designed to address small acreage land units and urban sprawl. In Lemhi County, 3 stewardship classes were held using the cooperative *Living on the Land* curriculum.

Non-agricultural landowners participating in *Living on the Land* indicated increased awareness and knowledge of about the necessity of proper resource management for the long-term health benefit of their land and animals. They indicate that they are able to assess their own resources, identify problems and propose solutions. In addition, the knowledge and skill level of local feed store operators to provide assistance to non-agricultural landowners was increased.

A live four-state satellite program *Living on the Edge: Grassroots Watershed Planning in the Pacific Northwest* was also conducted. It was followed by a live panel discussion. The program dealt with living on the urban/rural interface and the watershed implications. Indicators of the *Living on the Land* program success are: The number of participants in the *Living on the Edge* Program (9), number of class projects completed (25), number of changed management practices (30), and the number of participants in the Living

On the Land Program (23).

In Post Falls, a 2-day conference on Using Direct Marketing Strategies to Enhance the Bottom Line on Small Acreages was held. In Twin Falls a similar 2-day conference focused on Successful Direct Marketing as part of the Southern Idaho Farm Conference. Topics of the conferences included: Direct Marketing Options, Farmers Markets, Community Supported Agriculture, The Food Alliance, and Agri-tourism/Entertainment Farming. These conferences were a part of a multi-state SARE Professional Development grant with additional funding from USDA-Risk Management Agency.

Forty people attended the conference in Post Falls. Overall, participants rated the conference as excellent. Participants gave a 4.4 out of 5 when asked if their knowledge of direct marketing strategies and opportunities had been enhanced by the conference. Participants rated the value of the day on food processing, safety, and/or labeling of food products as 4.0 out of 5. When asked if they would use what they learned, participants gave a 4.2 out of 5 rating. When asked how they would use the information, comments included: "Use resource materials for outreach and program presentation to Extension audiences; ...share information with market vendors, urban farmers, and local community members; ...create specialty products workshops for market vendors; "Develop a market plan for further processed foods; ...create promotional strategies for farmers' markets; ...develop a tag line for business; ...use pricing ideas; ...put better signs on farm; and, ... create more agri-tourism." The post conference survey of those attending the *Annual Southern Idaho Farm Conference* indicated an appreciation for the direct marketing presentations (scores 4.00 to 6.00 on a 6 point scale for usefulness).

After the conference, at least two participants contacted NAFDMA to do a similar conference in their states. One of the NAFDMA presenters who is also an extension educator wrote a SARE professional development grant to hold a similar conference in his region (north central US). In addition, The NAFDMA team indicated they have a much better idea of the direct marketing challenges in the Pacific North West and are incorporating workshops into their national conferences to address these issues.

An educational program in northern Idaho is titled *Cultivating Success*. The first course, *Sustainable Small Acreage Farming and Ranching* attracted 22 students in 2001 and 26 students in 2002. A course in *Ag Entrepreneurship* teaches 21 students. Colleagues at Washington State University are simultaneously offering the class to pilot the format and curriculum. The Ag Entrepreneurship course was taught in the spring of 2002 using the NxLevel "*Tilling the Soil of Opportunity*" curriculum, which *Cultivating Success* adopted for its farm planning/business management course. WSU and UI developed and delivered the program as a 100 level university course *Science Society and Sustainable Food Systems*. Continuing Education Units are being offered to community members taking any of the *Cultivating Success* courses. Evaluations indicated that 95% of students taking the courses would recommend them to other students.

A small farm case study herb video was completed in November 2001. Twenty-five videos were distributed to county faculty in Idaho and Washington. The video was promoted on the UI Extension website and flyers for the video were distributed to county offices in Idaho, Washington and Oregon. The video was displayed at the Country Life and Farm Expo in Spokane, and at the National Small Farm Conference in New Mexico. After viewing the herb video in a small farm course in Colville WA, a participant decided she did not have the resources needed to produce herbs. A small acreage vegetable producer reviewed the video and she gave it high marks for its down to earth information and the depth of information.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Educational efforts to provide assistance to small acreage owners were partially funded by 5 Federal USDA grants totaling \$353,848 (part of a multi-state SARE Professional Development grant; a portion from USDA-Risk Management Agency), one private grant totaling \$32,000 and two Idaho State grants totaling \$3,300.

The educational resources were developed or are being developed by 3 Federal USDA grants totaling \$93,418, and 1 Idaho State grants totaling \$300; the *Cultivating Success* curriculum is funded through a USDA Higher Education Challenge Grant and a Kellogg Partnership 2020 project. Another State grant for \$20,000 is pending.

- d. Most of this work is collaborative with Washington and Oregon. A grant funded multi-state project with Washington State University, Oregon State University, the University of Idaho, Washington State Department of Agriculture and Rural Roots formalizes the partnership. Collaborators on a SARE Professional Development grant from California, Hawaii, Colorado, and Oregon. A team of 4 people from MA, OH, PA, and BC collaborated in program development and delivery.

## **GOAL 2 – A SAFE AND SECURE FOOD AND FIBER SYSTEM.**

### **Overview**

- a. The United States, including Idaho, has an extremely safe food supply, arguably the safest in the world. However, concerns still exist about food borne pathogens, pesticide and other residues in foods, and foods produced by biotechnology.

In Idaho, food borne illnesses affect about 350,000 citizens annually (about 1 person in 4) resulting in about 1500 hospitalizations and 23 deaths. Contamination of food with pathogens can occur at any point in the food chain, so information about preventing food borne illness is needed by food producers, processors, preparers and servers, and by consumers.

The types of food safety information needed is audiences specific, differing among children, young and middle-aged adults, and the elderly; different occupations, cultures, and income levels, and among the various strata of workers along the farm to plate continuum. UI Extension provides food safety information for many of these audiences through a variety of programs.

This project report includes these topics:

- Answering Food Safety Questions
- Consumer Food Safety Programs, Workshops and Outreach
- Food Service Food Safety
- Pesticide Use/Organic Foods Education
- Food Industry Assistance
- New Programs

- b. In Food Safety and Security goal area, 21 different UI Extension faculty members reported nearly 14,000 contacts made with residents of the State of Idaho. Extension faculty wrote 42 scientific and popular articles, newsletters, reports, fact sheets, program announcements, and other publications during the reporting year. Reported outcomes include new knowledge discovered, and increased knowledge for new and traditional audiences, trained and certified practitioners, new practices adopted in commercial and home kitchens, just-in-time learning to reduce the risk of food borne illness, and hundreds of hours of trained volunteer time committed to public well being.
- c. Investment in this goal area included approximately \$82,700 in Smith-Lever formula funds, a portion (approximately 20%) of both ENP and EFNEP grants (about \$200,000) and \$430,000 in State and County appropriated funds. Of the funds supporting Goal 2, approximately \$74,000 was invested in projects that involve and benefit multi-state areas, and \$4,800 was invested in programs that integrate research and extension functions.
- d. Programs conducted in this Goal area are international, national, multi-state, statewide, and local in scope.

Stakeholder Identified Food Safety Concerns in Idaho  
November 2001

**1) Consumer Food Safety**

- Information on safe home food preparation and storage practices (including sanitation, cooking temperatures, thermometer use, cooling foods, storage temperatures, cross-contamination issues, avoiding risky foods, and wild game processing and storage).
- Correct information on home canning and food preservation methods; men are increasingly interested in food preservation; there is a “skipped generation” in food preservation skills— more first time and one-time canners.
- Emergency preparedness and food storage
- Resources for scientific information on potential and perceived food risks (for example, Chronic Wasting Disease (CWD), Bovine Spongiform Encephalitis (BSE or Mad cow disease), Foot and Mouth Disease)
- Resources for scientific information on potential food safety concerns (for example, Genetically Modified Organisms (GMOs or biotechnology-produced foods), pesticide and other residues on foods, imported foods)
- Resources for making choices about purchasing food produced in specific ways (for example, irradiated foods, organic foods)
- Need to target food safety information to specific underserved or at-risk consumer audiences, including:
  - low income groups
  - the Hispanic population (ethnic foods, recipes in presentations)
  - children
  - youth (more curriculum and activities for youth and teens) to increase food safety awareness.
  - teen moms/young parents education on the “basics”
  - at-risk populations: YOPIs (young, old, pregnant, immuno-compromised)
- For county faculty, the majority of time spent on food safety is spent answering food preservation questions; time per call is increasing, and questions become more serious.

**Societal trends, such as changes in basic family structure, busier lifestyles and fewer at-home meals have resulted in fewer opportunities for in-home food safety instruction.**

**2) Food service and retail workers and volunteers who cook for groups**

- Food safety for quantity and group cooking (fair booths, church groups)
- Food safety for food bank volunteers
- About 70% of high school students work in food service as their one of first jobs, but many receive little or no food safety training
- Training, especially videos, targeted to Spanish-speaking food service workers
- Need for HACCP in school food service—Extension and Dept of Education could work together to provide.

**3) Food industry (established and new entrepreneurs)**

- HACCP training
- Cross contamination in processing
- Emerging microorganisms
- Environmental contamination of raw commodities
- GMO acceptance and use

## Key Theme – Food Accessibility and Affordability

- a. Limited income Idaho families have a particular need for good food safety information. Inadequate resources can make it difficult to follow such food safety advice as “when in doubt, throw it out” and may limit access to some food safety tools, such as adequate refrigeration and food thermometers. This audience needs practical food safety information realistic to their lives. Food safety practices have been identified as a target area for this audience. The Expanded Food and Nutrition Education Program (EFNEP) and the Extension Nutrition Program (ENP) are nutrition education programs for limited income families with young children in the home. The programs are similar, but receive funding from different sources. The mission is to assist families and youth in acquiring the knowledge, skills, and attitudes and changed behavior necessary for nutritionally sound diets, and to contribute to their personal development and improvement of the total family health and nutritional well-being. The lessons cover a number of topics, including food safety. Inputs and outputs for EFNEP/ENP programs are detailed in the report of the Human Nutrition Topic Team.
- b. Results are reported under other nutrition headings.
- c. EFNEP and ENP (food stamp education) are National programs that are supported through Federal grants. The ENP program requires a 50% match of State and local funds.
- d. EFNEP and ENP (food stamp education) are National programs that are supported through Federal grants.

## Key Theme – Food Handling

- a. *Ready, Set, Food Safe* is a curriculum developed to teach food service food safety to high school students. This curriculum is specifically designed to meet the developmental stages of adolescents, the Idaho Professional Technical Education competencies and the certification requirements of Section 02.19400.02 of the Rules Governing Food Safety and Sanitation Standards for Food Establishments (UNICODE). Curriculum and project planning started in 2001.

The curriculum consists of a binder containing nine lessons, a CD with PowerPoint slides for each of the nine lessons (including video clips), student fill-in notes, an exam, and an Activity Kit (a box of supplies to support the various food safety activities). It was developed and piloted by a team of Extension Educators, the State Specialist and two high school FCS teachers. The teachers who piloted the program gave valuable insight into some changes that would enhance the curriculum. *Ready, Set, Food Safe* was distributed and training on the curriculum presented to 27 high school Family and Consumer Sciences teachers at the Idaho Vocational-Technical Teachers Conference (August 8, 2002) and to 18 Idaho Extension FCS educators at an in-service training (October 22, 2002).

- b. Teachers statewide are adopting the curriculum and extension educators are teaching this curriculum in many counties. As of October 31, 2002, 10 FCS teachers and/or extension educators have taught or are teaching the *RSFS* curriculum to 276 students; 99 students have received food safety and sanitation certificates.

Each teacher receiving the curriculum and kit was asked to teach the program and send evidence of knowledge gained, attitude and behavior changes made by their students. Each instructor can choose from a list of nine different evaluation activities. Some examples include administering a pre and post test, completing a narrative summary of skills used in the classroom, sending digital photos depicting food safety behaviors being used. The results of these evaluation strategies are in progress. We plan to see evidence of change by Spring 2003.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. The development of *Ready, Set, Food Safe* and its accompanying Activity Kit was supported with USDA food safety and quality funds.
- d. The food quality programs are statewide.

### **Key Theme – Food Quality**

- a. Issues of pesticide use and decisions about using organic foods are of interest to both consumer and small-scale food processors. Many people have misconceptions about the use, value and risk associated with pesticides. Organic certification and choice of organic foods is an area that is not well understood. Emotional issues regarding the safety of our food may cloud the actual science of true risks. Actual pesticides residues in market basket foods may be non-existent or very low, providing safe and nutritious foods. Educating Extension Educators and Extension volunteers on the risk assessment process for pesticides in foods, and how pesticides are regulated will help them deliver sound, scientific information to consumers regarding food safety.

Extension Educators are often contacted to answer consumer questions about food issues, including information about pesticides. However, these Educators frequently do not have depth of knowledge or resources to offer

- b. The Pesticide Coordinator has presented *Pesticides and Food Safety* to Food Safety Advisors, to provide educational information regarding the risk vs. benefits of using U.S. registered pesticides for food production. The Food Safety topic Team plans to support the further dissemination of this information during 2003.

The volunteers provide scientific, real information, to the public, regarding safe food, and safe, judicious use of pesticides to supply a plentiful and safe food supply.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Local programs in this topic area are being expanded to statewide.

### **Key Theme – Food Safety**

- a. Many Family and Consumer Sciences (FCS) extension faculty spend the greatest percentage of their food safety effort answering specific questions from consumers. Since its inception, Cooperative Extension has positioned itself as a reliable source of home food preparation information and consumers recognize and respect UI Extension faculty as a science-based source of food safety and food preservation information.

Food safety questions are an integral method of reaching clientele with reliable, safe food handling guidelines. Although the number of consumers who preserve food at home is declining nationwide, Idaho continues to have a large number of families who participate in home canning and food storage practices. Consumers call Extension offices about proper food preservation techniques – often demanding “just-in-time” learning -- as they call from their kitchens in the midst of their activities. Many calls involve food preparation and safety and food storage. Some calls are from people cleaning out their parents' homes needing some help in knowing what to keep.



- b. UI Extension conducted thirty food safety workshops and classes, attended by 874 learners. The topics of the programs included: food storage, summer food safety, slow cooker safety, risky foods, food safety for seniors, and food safety for parents of young children. For example, the Idaho County Extension Homemakers received training on the importance of following food safety guidelines in the summer to prevent harmful bacteria from multiplying and causing food borne illness. The Homemakers operated a food booth at 4-H Super Saturday and at the Idaho County Fair, both summer events, so the workshop stressed the importance of temperature control in storing and serving food and cooking hamburgers to the 160° F. Hands-on learning allowed participants to try out different thermometers to meet their needs. Participants also received a publication put out by USDA's Food Safety and Inspection Service called *Cooking for Groups: A Volunteer's Guide to Food Safety*.

In 2001-02, UI Extension Educators and trained volunteers (Food Safety Advisors/Master Food Preservers) answered thousands of phone and in-person questions on how to safely handle, store and preserve food. County faculty receive subject matter and programming support from the Extension Food Safety Specialist, who fields and researches questions forwarded by county faculty and also tries to anticipate areas in which questions are asked to provide pertinent information via *The Communicator* (monthly newsletter from FCS Specialist to county faculty), emails or memos.

Although the volume of calls is not recorded in detail, seven counties reported specifically that answering food safety phone calls and questions from the public is a major food safety activity. Three counties report receiving between 33 and 150 calls per month (depending on season, county population, and availability of food safety resource personnel in neighboring counties). A great deal of time is spent to research and provide accurate answers for these questions. When someone has a food safety question, they want an answer -- now!

It is difficult to measure the impact of answering food safety telephone and in-person questions. However, these contacts are the ultimate "teachable moment". Individuals calling to request information are highly motivated to learn something new about the topic. This results in a reduction in their home of food safety problems. Recently, when a county educator explained why steam canners are not recommended, an elderly gentleman exclaimed, "You may have just saved my life".

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Food Safety is a statewide program. Idaho collaborates with other States in the development of several of the programs, particularly related to thermometer use (multi-state grant-supported with WV, WA, HI, AL) and the "germ city" project.

### **Key Theme – Food Preservation**

- a. Many Idaho families preserve garden produce, meat, wild game and fowl using home canning, freezing and dehydration methods. The economic costs of unsafe and outdated canning practices are high. Extension Educators offer classes to provide consumers with research-based information to help them determine and practice safe food preservation methods. Improperly home canned foods can cause serious health risk.

With fewer FCS Educators, the need for volunteers to help deliver information and programs is increasing. Having individuals complete the Food Safety Advisors/Master Food Preserver program and volunteer their time is provides well-informed community members who can disseminate information to others and volunteer to help Extension Educators answer food safety questions.

The Food Safety Advisor/Master Food Preserver Program (FSA/MFP) is a 30-hour, intensive class on food safety and food preservation taught by FCS extension educators for consumers with a high level of interest in food preservation. Participants who pass a 50-question written and oral test qualify to become Food Safety Advisors/Master Food Preservers. These FSA/MFP volunteers assist in delivering food safety information to the general public by answering questions in extension offices, phone help, staffing booths at county and health fairs, and teaching classes at churches, libraries and other community locations. The role of the FSA/MFPs is vital in helping Extension system in Idaho teach reliable food safety information. This program has existed in Idaho for over 30 years. (The name was originally Master Food Preserver program, and has been updated to Food Safety Advisor program in some counties.)

- b. Food Safety Advisor/Master Food Preserver program was taught in 3 counties and trained 18 new FSA/MFP. Update training, generally consisting of four half-day training sessions, for re-certification of Advanced Food Safety Advisors was provided in Districts I, II and III. FSA/MFP participant evaluations indicated an increase in knowledge in the areas of general food safety and home preservation methods.

The text for the Food Safety Advisor/Master Food Preserver program, the *Food Safety Advisor Volunteer Handbook*, was extensively revised and updated jointly by the Food Safety Extension Specialists at University of Idaho and Washington State University. (This text, originally written by Washington State University had been used in our program for several years; now the text reflects both Idaho and Washington content.)

Food Safety Advisors/Master Food Preservers volunteered at fairs, answered questions in county offices, provided classes for a Spanish-speaking audience, and conducted survey on food preservation practices. For example, during the North Idaho Fair FSA/MFPs manned a display entitled *Safe Food Preservation = USDA Approved*. FSA/MFPs also staffed booths at the Canyon County Fair and Western Idaho Fair. In Ada County, FSAs contacted 5580 people during a 4-month period (June through September, 2002). In Gooding County, four MFP volunteers organized and presented two workshops for Spanish-speaking home food preservers using an interpreter. Volunteers researched the types of food and appropriate preservation methods for their Spanish-speaking audience prior to the program. In District III, FSA/MFPs administered a *Tomato Canning Survey* in five counties. In District III, 18 Master Food Preservers donated 385 hours, an average of over 21 hours each. Volunteers reached clientele by manning displays and information booths, conducting a tomato canning survey, helping organize open class food preservation classes at many county fairs, serving as a fair judge for these classes, offering educational classes in their communities and answering telephone requests for information. A total of 1218 consumers were provided information in face-to-face contact, and an additional 739 were reached by non-face-to-face methods including judging events, mailings and telephone contacts. The feedback from the participants in the workshops for Spanish-speaking home food preservers was positive, with many expressing an interest in more classes. Surveying consumers about canning practices indicated that people are least sure about the need to add citric acid or lemon juice when canning tomatoes and use of pressure canning for tomatoes. The survey also revealed a need to increase awareness of Extension bulletins.

Twelve general food preservation classes were offered in nine counties, with titles like *Tips for Summer Canning*, *How to Be a Safe Canner*, *Food Preservation*, *Canning Basics*, and *Canning Sins*. These classes offer food preservation information to consumers who cannot commit to the requirements of the Food Safety Advisor/Master Food Preserver program.

Extension offices continue to sell the *USDA Complete Guide to Home Canning* and the 19 University of Idaho and PNW food safety publications; for example, Ada County sold over 500 food preservation bulletins and gave away 230 copies of *Cooking for Groups*.

Information on home preservation is also prepared for local newspaper and Extension newsletters. For example, in Ada County, two questions/answers articles on home canning, with attractive accompanying pictures (pickles and salsa), were prepared in cooperation with the Life Editor to run in the *Idaho Statesman*.

A number of counties also provide accuracy testing of pressure canner gauges, particularly when no one else in town offers this service. Many Educators would prefer not to do this (it should be the responsibility of the canner manufacturer to provide service for their product), but it has been a traditional extension offering. In some areas, local religious and civic organizations advertise and support the pressure gauge testing and other food preservation services and activities. The service raises awareness of safe home food preservation methods and sources of information.

Class and workshop participants indicate an increased knowledge of food safety and food preservation. An increase in the number of home pressure canner gauges tested indicate that consumers are aware of the need for accurate equipment when they are preserving food at home.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Nutrition advisors, who are funded through the EFNEP and ENP programs, deliver a portion of the Food Safety portfolio.
- d. Statewide, Food safety advisors handbook collaboration with WA.

### **Key Theme – Food borne Illness**

- a. A safe food supply is a priority for all families. Idaho consumers seek reliable, up-to-date information on general food safety and specifically on food preservation in a variety of ways.

An important continuing Extension role is to help people understand the magnitude of food safety risk. Failure to wash hands often and thoroughly enough is a major contributor to food borne illness. Foods that present the highest risk of food borne illness include raw or undercooked animal foods such as unpasteurized (raw) milk, raw shellfish, and undercooked ground meat. These foods frequently contain bacteria that can cause illness in humans. It is important to insure these foods have received adequate heat treatment to kill bacteria and that they do not contaminate ready-to-eat foods. Improperly cooled or temperature-abused foods are also a frequent source of food borne illness outbreaks. Another task is to help people think through the serious nature of some of the food borne illnesses.

- b. Food safety practices are tracked in the EFNEP reporting system. Three hundred eighty-seven people graduated from the EFNEP program in 2002. Of graduates, 68% showed improvement in one or more of the food safety practices (i.e. thawing and storing foods properly). Fifteen 4-H EFNEP youth took pre and post-test and one question was on washing their hands with soap and warm water before they eat. At post-test, 6% were more likely to wash their hands before they eat with soap and warm water.

As a result of a grant from the Idaho Beef Council, 600 dial instant-read thermometers were given to EFNEP and ENP clients, so that safe endpoint temperatures could be assured when cooking meats. A number of clients have written to express their appreciation for the thermometers and to tell how they use them regularly to check for safely cooked meats.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. These programs are developed and delivered by Faculty across Idaho.

## Key Theme – HACCP

- a. Food service workers in Idaho need training in safe retail food handling practices, which differ in specific ways from home food handling practices. The Idaho Department of Health and Welfare, Food Protection Program, requires at least one employee in each food service establishment to have a food safety and sanitation certificate. However, all employees need to know safe food handling. The Health Districts in Idaho offer food safety training leading to the required certificate; another option are training programs offered by UI Extension.

HACCP Training and Industry Assistance. Five food safety workshops were provided to the Idaho food processing industry by the Extension Food Processing Specialist, two specifically dealt with HACCP (Hazard Analysis Critical Control Points), the relatively new system industry must use to assure safe food.

Specific food safety consulting was also provided to individual Idaho food processors (sixteen programs to 12 companies), including on-site HACCP training, prerequisite programs training, preparation for food safety inspections and general food safety information.

An underserved group with regard to food service food safety training is high school students. Surveys show that children and teens are among the major groups who are the "most lacking" in information on how to handle food safely. Over 70% of high school students work in foodservice as their first job. High school students comprise a major portion of the employees who work in fast food establishments. In addition, many high schools have vocational food service programs, including in-school cafes or bakeries. By providing adolescents with the opportunity to learn safe food handling practices, food borne illnesses can be prevented. However, Health District training is not readily available to high school students. In addition, a specific training program in food safety as related to food service, Idaho regulations and high school students did not exist.

- b. *Practical Food Safety for Food Service Supervisors (PFSFSS)* is a 4-hour workshop developed in 1995-99 by UI Extension. Partnerships have been developed and maintained with local Health Districts, primarily in Extension District II, to teach this class to foodservice and food plant employees. Individuals passing the state approved food safety examination receive a food safety and sanitation certification.

A total of 340 individuals took part in *PFSFSS* workshops conducted October 1, 2001 to September 30, 2002. The *PFSFSS* pre/post tests showed a significant increase in knowledge with an average of 65-67% for pretest scores verses 87-92% for post-test scores. The pass rate on the certification test following the workshop varied between 87 to 95 percent. *PFSFSS* participants are asked to set personal goals in food safety to foster behavior changes. The categories of goals selected include: kitchen safety, labeling and organizing, personal food safety, temperature and cooling, and continuing education.

*Practical Food Safety for Food Service Supervisors* was delivered to twelve high school classrooms in Idaho. The classroom program reached 318 students. The program was also taught to foodservice workers and to workers at a produce processing plant (22 clients).

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Statewide program

## **GOAL 3 – A HEALTHY, WELL-NOURISHED POPULATION.**

### **Overview**

- a. Research indicates that a person's health is linked to their nutritional intake. The Healthy Eating Index, developed by the U.S. Department of Agriculture, estimates that only 12% of individuals consumed diets that would be classified as "good." The vast majority of Americans are still not meeting the recommended number of servings from the five major food groups and do not follow the Dietary Guidelines. Time and budgetary constraints have been listed as reasons why people don't eat healthy. Some of the consequences of inadequate diets are an increase in obesity, diabetes, osteoporosis, and heart disease.

Idaho has addressed this health and nutrition issue by focusing on the following projects that will teach individuals:

- How to plan healthy and quick meals and menus;
  - Basic nutrition principles covered under the Dietary Guidelines 2000;
  - In lower socioeconomic groups, how to make wise food choices with their food dollars (ENP and EFNEP);
  - With diabetes, how to plan healthy meals;
  - With osteoporosis, how to increase their calcium intake at meals and snacks;
  - Weight management principles.
- b. In the Health and Nutrition goal area, 27 different UI Extension faculty members reported nearly 96,000 contacts made with residents of the State of Idaho. Extension faculty wrote 54 scientific and popular articles, newsletters, reports, fact sheets, program announcements, and other publications during the reporting year. Reported outcomes include curricula developed and adopted, appropriate and valuable learning by both new and traditional audiences, and behavior changes in people to apply new knowledge about the relationships between nutrition and diseases.
- c. Investment in this goal area included approximately \$49,000 in Smith-Lever formula funds; most (approximately 80%) of the ENP and EFNEP grants (about \$830,000); \$115,000 in annual expenditures from competitive grant sources (including USDA) and \$861,000 in State and County appropriated funds. Of the funds supporting Goal 3, approximately \$80,000 was invested in projects that involve and benefit multi-state areas, and \$3,800 was invested in programs that integrate research and extension functions.
- d. Programs conducted in this Goal area are international, national, multi-state, statewide, and local in scope.

### **Key Theme – Human Health**

#### **a. Diabetes**

In Idaho and the U.S., diabetes is the seventh leading cause of death. Approximately 50,000 adult Idahoans have been diagnosed with diabetes, and approximately 25,000 are not yet diagnosed. In total, approximately 5.4% (75,000) of Idahoans have diabetes.

The Behavior Risk Factor Surveillance System (BRFSS) conducted through the Centers for Disease Control and Prevention (CDC) found that Idaho adults with diabetes are more likely to: be overweight, high blood pressure, high blood cholesterol levels, be sedentary, and less likely to eat fruits and vegetables. Individuals who do not follow a prescribed treatment for diabetes are more likely to suffer from heart disease, stroke, high blood pressure, blindness, kidney disease, nervous system damage, amputations, and dental disease. The total annual cost of diabetes in Idaho, including direct medical expenses and indirect costs, such as

disability, work loss and premature mortality is estimated at \$338 million. Research indicates that effective diabetes education can not only reduce the number of complications from diabetes but also decrease the overall cost of the disease.

Approximately 709 individuals in Idaho have received diabetes education through UI Extension. There were 510 individuals who participated in one of two diabetes education curricula developed by UI extension: (1) Healthy Eating with Diabetes and (2) Dining Healthy with Diabetes and 101 individuals participated in an overall diabetes seminar. The two curricula discuss importance of controlling diabetes, planning meals using the Idaho Plate Method, incorporating recipes, eating out, and resources available to the participants. Pre- and post-surveys were submitted by participants completing the two programs. Another 98 individuals attended nine diabetes support group meetings to learn about holiday eating, carbohydrate counting, exercise, lab tests, stress management, sick days, heart and kidney disease.

### Osteoporosis

Information from the National Osteoporosis Foundation indicates that osteoporosis and low bone mass are currently estimated to be a major public health threat for almost 44 million U.S. women and men aged 50 and older. The 44 million people with either osteoporosis or low bone mass represent 55 percent of the people aged 50 and older in the United States. By the year 2010, it is estimated that over 52 million women and men in this same age category will be affected and, if current trends continue, the figure will climb to over 61 million by 2020. In 2002, it is estimated that over 10 million people already have osteoporosis. Approximately eighty percent of these people are women. This figure will rise to almost 12 million individuals by 2010 and to approximately 14 million by 2020 if additional efforts are not made to stem this disease, which may be largely prevented with lifestyle considerations and treatment when appropriate.

There were 226 individuals who attended classes on osteoporosis. Of these individuals, 68 attended one class that was an overview of osteoporosis and 158 attended a series of classes in the Bone Up on Osteoporosis curriculum that has been developed and piloted by UI Extension.

The participants in the Bone up on Osteoporosis classes learned about the incidence of osteoporosis; how to increase the calcium in their diet, the importance of physical activity, what foods in the supermarket were high in calcium planning meals and snacks that were high in calcium and how to set mini-goals for increasing calcium intake and level of physical activity.

### Weight Management

The latest survey of 4,115 adult men and women conducted in 1999 and 2000, by the Centers for Disease Control and Prevention indicates that 64.5% of American adults are either overweight or obese. In addition, approximately 15.5% of young people between the ages of 12 and 19 are overweight. In Idaho, the most recent survey found that 59.3% of Idaho residents are overweight. Overweight prevalence has increased by 30% since 1991. Some of the health risks associated with obesity include an increased risk of diabetes, heart disease, liver disease, and some types of cancer, arthritis, and other health problems. Research studies indicate that overall, 95% of people who follow a weight loss program regain the weight.

The University of Idaho Extension has partnered with Montana and Wyoming in a unique four-year community-based research, development and education project called Wellness IN (WIN) the Rockies to reverse the rising tide of obesity in three states. This project addresses nutrition, physical activity, and body image issues to help people meet their weight loss goals. In Idaho, the demonstrator and comparator groups are located in Preston and American Falls, respectively. This report chronicles events for year 2 of the project.

The interventions aim to educate people to value health, respect body-size differences, enjoy the benefits of self-acceptance, enjoy physically active living, and enjoy healthful and pleasurable eating. Some of the

curricula that are currently being tested include: (1) "A New You, Health for Every Body" adult curriculum (10 classes) on healthful and pleasurable eating, physically active living and self-acceptance and size-acceptance, (2) "WIN Kids" (Wellness In Kids), an 8 lesson series for 5<sup>th</sup>-6<sup>th</sup> graders on nutrition and physical activity, (3) "Preston on the Move," a walking program, and (4) "Full of Ourselves", a body image program for grade school girls.

Approximately 100 adults and 163 youth are the cohorts in this project. Data has been collected on their height/weight, one-mile run time, physical activity levels, eating habits, and body size acceptance.

#### b. Diabetes

Results indicate that 95-100% of participants who complete these classes: (1) are more familiar with the American Diabetes Association's Standards of Care; (2) will use the Standards of Care Cards when seeing their physician; (3) are more aware of the complications associated with diabetes; (4) are more aware of the nutrition practices that raise and lower blood cholesterol (5) try to eat a lower fat diet; (6) are more confident about buying groceries; (7) will try to increase their consumption of fruits and vegetables; (8) are more knowledgeable about diabetes; (9) will use the Idaho Plate Method to help plan their meals; (10) will encourage other people to take these classes.

A new pre and post survey evaluation tool was tested and validated. Data collected on 70 participants who completed the pre and post survey found:

- An increase in knowledge. Approximately 60% of participants planned meals correctly at the end of class 1, and 81% planned meals correctly at the end of class 4.
- Changes in eating behaviors. A pre/post eating habits survey indicated that participants increased their whole grain, fruit, vegetables and milk consumption from 4 to 30% by the end of class 4.
- A baseline determination of self-care measures. Diabetes self-management results indicate that approximately: (1) 95% of participants had a flu shot; (2) 86% checked blood sugar levels and had an eye exam; (3) 71% had a foot exam; (4) and 60% had a hemoglobin A1C test within the last year.

Information about these classes has appeared in local newspaper articles, and has been promoted by health departments, health care professionals and support groups. Both curriculums have received national attention at the following conferences: Society for Nutrition Education, National Priester Extension Conference, and National Extension Association of Family and Consumer Sciences Annual Session. Diabetes education has been successful in increasing knowledge of diabetes and changing eating behaviors.

#### Osteoporosis

Results from pilot testing the curriculum indicated participants significantly ( $p < 0.01$ ) increased their knowledge of: (1) osteoporosis causes and risk factors, (2) bone health, (3) how to use food labels to plan meals and snacks high in calcium. Behavior changes that occurred were an increase in calcium consumption and physical activity. Calcium consumption was increased by: (1) using recipes high in calcium, (2) purchasing foods naturally high in calcium, and (3) purchasing calcium fortified products. The physical activity logs indicated that the most popular way participants improved their level of physical activity was by increasing the amount of time they spent walking and/or gardening.

The pilot data for the Bone Up on Calcium was presented at the Society for Nutrition Education Conference in July 2002.

#### Weight Management

The project has been promoted by: extension, schools, hospitals, medical clinics, grocery stores, newspaper articles, live radio shows, health departments, at health fairs, during a Rodeo Days parade, and a bill board display. It is estimated that this program has reached 17,000 individuals.

Results from the curricula interventions include:

- (1) 16 adults completed “A New Year, Health for every Body. A majority (90%) rated the overall quality of the program as outstanding and 10% rated it as good. All participants felt they benefited from the program.
- (2) WIN Kids – UI piloted four of these classes to approximately 90 fifth grade students and found a significant ( $p < 0.001$ ) increase in knowledge of students on the classes that covered fat, fiber, Food Guide Pyramid, and senses perception.
- (3) Preston on the Move – An 8-week walk program that provides pedometers to community members that records each step taken during the day. Participants are encouraged to work up to 10,000 steps daily. About 180 pedometers have been distributed to date.

Physical assessment data collected on the adults reveal that the average body mass index (BMI) was 29.8. Individuals are classified as overweight if their BMI is 25-29.9 and obese if their BMI is 30 or greater.

Results of the eating habits survey completed by 5<sup>th</sup> grade students reveal that only 17% of 5<sup>th</sup> grade students reported eating vegetables 2 or more times a day and only 22% reported eating fruit two or more times a day.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. The weight management project is a multi-state four-year grant (WIN in the Rockies) funded by the United States Department of Agriculture for \$4,375,000.00 and Idaho received \$479,852.48.
- d. Idaho’s Partners in the USDA-funded WIN in the Rockies project are Wyoming and Montana. Other projects are developed and delivered by Faculty across Idaho, often in consort with faculty in other States.

## **Key Theme – Human Nutrition**

### **a. Planning Healthy and Quick Meals and Menus**

What is the nutritional quality of the American diet? One of the most comprehensive measures used to determine this is the Healthy Eating Index (HEI) developed by the Center for Nutrition Policy and Promotion of the U.S. Department of Agriculture. The HEI evaluates the following components: grains, vegetables, fruits, milk, meat, total fat, saturated fat, cholesterol, sodium, and variety in the diet. The most recent HEI indicates that approximately 70% of individuals had diets defined as “needing improvement” and only 12% had diets that could be classified as “good.” The vast majority of Americans are still not consuming the recommended number of servings from the five major food groups in the Food Guide Pyramid. In addition, less than 40% of the individuals had diets that conformed to the total fat or saturated fat recommendations in the Dietary Guidelines. In 1999, the Food and Nutrition Information Center (FNIC) conducted a survey showing that a healthy diet would prevent \$71 billion in medical costs, lost productivity, and the cost of premature deaths associated with these conditions. Unfortunately, most people are not motivated to consume a healthy diet until something bad happens.

What influences food choices? Since 1988, the Food Marketing Institute’s (FMI) Trends survey has found that approximately 75% of consumers rate nutrition as being an important factor, as to food choices, but 90% rated taste as the most important reason for why they selected that particular food item. Time constraints were cited as an obstacle by 21% of consumers. Therefore, it is important that consumers learn how to prepare nutritious meals that taste good and are quick to prepare. The planning menus and meals curriculum will meet that goal.



A needs assessment was conducted by each of the four districts in Idaho to determine what topics individuals were most interested in learning about in the area of health and nutrition. The number one priority was learning how to plan meals and menus. A search for existing curricula found none, and the team received grant to develop and test new materials.

### Dietary Guidelines

The Dietary Guidelines for Americans were developed by the Departments of Health and Human Services (HHS) and Agriculture (USDA) and provide recommendations based on current scientific knowledge about how dietary intake may reduce risk for major chronic diseases and how a healthful diet may improve nutrition. The last revision was in 2000.

These guidelines have 10 recommendations and are grouped within three areas that the guidelines call the ABCs of good health: Aim for Fitness, Build a Healthy Base, and Choose Sensibly.

The majority of Americans do not follow these guidelines. A study released by the Centers for Disease Control found that more than 60 percent of American adults are not regularly active, and 25 percent of the adult population is not active at all. The most recent Continuing Survey of Food Intakes by Individuals (CSFII) indicates that when most Americans eat, they do not build a Healthy Base or Choose Sensibly. Approximately 20 % consume the recommended fruit and dairy servings, approximately 30% consume grain and meat serving recommendations, and 36% meet vegetable serving recommendations.

### Extension Nutrition Program

Nutrition education is critical for limited income families that have a poor dietary intake. Under-nutrition can have serious effects on overall health, most notably in children. Over 58,000 families in Idaho receive food stamps. These families and others with qualifying income need nutrition education in order to make better food choices and make better use of their food dollars. Approximately 11% of Idahoans adults who are 18 years and older have an income below the poverty level (Census 2000). Twenty one percent of Idaho children live in poverty, compared to a national rate of 19% (Idaho Kids County Data 2000) and 12.7% of Idahoans live in poverty based on a 3 year average (1999-2001) compared to 11.6% nationally. An average of 58,726 persons (4.6% of the population of Idaho) per month received food stamp benefits during State Fiscal year 2001 (Idaho Department of Health & Welfare, Facts, Figures and Trends 2000-2001). And in the month of September 2002, 72,455 persons in Idaho received help from the Food Stamp Program. This totaled \$5,321,651.00 with an average benefit per case of \$187.57.

The Idaho *Extension Nutrition Program (ENP)* is a community-based education program that provides instruction to low income adults on nutrition, food safety, and management of food and resources, leading them to improved health and well-being. Lessons cover a variety of topics in nutrition, food buying, food safety and sanitation, basic living skills, family budgeting, and decision-making. ENP also reaches youth with basic nutrition messages.

The State Personnel time contributed to this program is 10.93 FTEs. This State-in-Kind Match includes Extension Educators, District Directors, Extension Specialists, and District Office staff. Twenty-seven Nutrition Advisors in 23 counties administer ENP. Funding and program partners are the Idaho Department of Health and Welfare, Food Stamp Program, and USDA Food and Nutrition Service. County extension educators along with the State Specialist in nutrition guide the program. The number of collaborators that contribute to the program is approximately 235. The ENP program covered 23 of Idaho's 44 counties. Federal funds support the hiring of part-time Nutrition Advisors and Project Coordinators (approximately one per five-county area). Bilingual assistants are located at program sites with a high proportion of participants whose native language is not English. In addition to hiring personnel, funds are used to purchase educational materials.

Each District in Idaho has been unique in meeting the needs of their clientele. In Northern Idaho, a state grant was obtained from the Aging and Adult Services to address the issue of malnutrition of their senior homebound clientele. A recent needs assessment of this population found that 46% of these individuals were at high nutritional risk and the Nutrition Advisors have worked with 77 seniors to improve their nutritional status. Youth continue to make up a large component of ENP in District II. For the second year, ENP has collaborated with the Western Idaho Community Action Program (WICAP) to provide nutrition education activities during the summer months for participants in the USDA-funded Summer Lunch Program. Some lessons that were of particular interest to youth were: the Food Guide Pyramid Toss (using stuffed vegetables and fruits); Food Magnets, and Snacking Easy: Hands on Trail Mix activity. In District III, the Magic Valley, the focus has been on increasing the calcium consumption of youth since USDA data found that only 47% of males 6 to 11 years and 36% of similar aged females consume the recommended number of servings of dairy foods. This past year approximately 1079 elementary school children participated in the Got Calcium curriculum developed and tested by UI Extension. In District IV, the ENP has a Spanish speaking nutrition advisor in Power County that works with the Spanish-speaking people. She taught 20 lessons on the Food Guide Pyramid to Spanish Speaking pre-school and Kindergarten classes. She also taught 40 Hispanic adult ENP clients and had 766 contacts in the county throughout the year. The program has been promoted by our collaborators and by graduates of the program as well as information conveyed on one of the local cable networks.

#### EFNEP

Approximately 11 percent of Idahoans over the age of 18 live below the poverty level (Census 2000). Twenty-one percent of Idaho children live in poverty (Idaho Kids Count Data 2000). Idaho has had increased unemployment since September 11, 2001, and under-employment since welfare reform was implemented in 1997. Idaho has had a great number of people that have left the welfare system. Welfare reform put many people back to work in Idaho, but their low wages are often not enough to pay for rent, utility bills and put food on the table. The Brandeis University (2002) report indicated that Idaho was one of ten states with the highest level of food insecurity.

Two USDA-funded EFNEP units are managed in Idaho; one in District II (Ada, Canyon, Elmore) and one in District IV (Bannock County and the Fort Hall Indian Reservation). The project supported ten part-time paraprofessionals with 5.1 FTE in FY2002. One FTE was committed to our program for EFNEP 4-H youth. A total of 269 volunteers worked with EFNEP in FY02 with an equivalent to 2.1 FTE.

Twenty-one educational workshops for paraprofessionals were held in District II. Twenty-five educational workshops for paraprofessionals were held in District IV. One two-day District II training for EFNEP and ENP paraprofessionals was given. A 2-day State training for EFNEP and ENP paraprofessionals was held. Monthly reviews were performed with each EFNEP paraprofessional to evaluate the quality and quantity of work done, work habits and work attitudes. Paraprofessionals were taught to use curriculum that included lessons about 1) nutrition, 2) food safety, 3) resource management 4) meal planning and food buying.

#### b. Planning Healthy and Quick Meals and Menus

A curriculum for this program has been initiated, including 4 lesson plans:

Class 1: Basic meal planning

Class 2: Shopping

Class 3: Healthy Guide to "What's For Dinner"

Class 4: "Fast Food at Home – Tips for Streamlining Your Kitchen"

The first three classes have been piloted to 168 individuals and participants indicated they would use strategies presented in the classes. Outcomes and Indicators will be determined from evaluation tools that are developed and pilot-tested.

### Dietary Guidelines

Federal Grant funds of \$1,800 were obtained from the USDA WIC the Rockies grant for an Extension Educator to work with a Wellness Support Group and provide nutrition classes that covered the Dietary Guidelines. There were 61 classes and 3091 participants that attended classes on the Dietary Guidelines 2000. Under the Aim for Fitness guideline, there were 533 participants and some of the topics covered how to get and stay motivated, the health benefits, and how to make physical activity a lifestyle goal.

The Build a Healthy Base guideline had 1170 participants. Topics that were covered included the Food Guide Pyramid, and specific food groups such as: fruits, vegetables, grain, dairy, meat and meat substitutes (soy).

The Choose Sensibly guideline had 1388 participants. Topics that were covered included sugar and sugar substitutes, healthy fats, healthy holiday eating.

A survey completed by participants that attended the soy class indicated that 100% planned to start using or eating more soy products in the future and 87% had increased their knowledge of soy. Dietary Guideline articles appeared in three Extension publications and 13 popular press articles.

### Extension Nutrition Program

During FY 2002, there were 65,181 contacts, which are broken down into 29,617 adult, and 35,562 youth contacts. There were 346 graduates who completed an average of 12 classes in nutrition, food safety, and resource management.

Data collected from the Food Behavior Checklist measured improvements in behaviors. The results showed that 63-77% of graduates improved their nutrition behaviors; 59% improved their food safety behaviors, 52-77% improved their resource management behaviors, and 42% improved their physical activity behaviors. The four nutrition behaviors that improved were an increase in fruit, vegetable and low-fat food consumption as well as reading labels to make wise nutrition choices. The food safety behavior that improved was that graduates were less likely to thaw meat at room temperature. The six resource management behaviors that improved were that graduates were more likely to: plan their meals, compare food prices, not run out of food, to use a grocery list, have a spending plan and emergency money. The physical activity behavior that improved was an increase in physical activity (walking, gardening, etc.) level.

### EFNEP

There were 713 families enrolled in EFNEP in FY 02 and 387 people graduated from EFNEP in the state of Idaho. Twenty-five percent of the total participants were minorities. Fourteen percent were Hispanics, seven percent were American Indians and two percent were black and two percent were Asian. Forty-six percent of the EFNEP families had incomes less than fifty percent of the poverty level.

Thirteen WIC offices were served in the EFNEP counties. Eight Food Stamp offices were served in the EFNEP counties. Twenty-three agreements with agencies were made to recruit clients or teach nutrition lessons at their location.

From the Twenty-four Hour Food Recall surveys taken at entry and at exit, EFNEP graduates had a 94.3 percent increase in positive change at exit in at least one of the five food groups. Participants that ate 2 plus servings of fruit per day, increased from 30% at entry to 44% at exit. Recommended servings of vegetables also increased from 44% at entry to 58% at exit. Those who ate 3 plus servings of calcium rich foods increased from 16% at entry to 36% at exit. In general there was an increase in the nutrient content of the diet of those nutrients that were tracked with the National EFNEP Reporting System (ERS).

Of EFNEP graduates, 86% showed an improvement in at least one of the food resource management practices. In nutrition practices, 91% showed improvement in at least one of the nutrition practices. In the

area of food safety, 68% showed improvement in one or more of the food safety practices.

There were 218 youth enrolled in EFNEP 4-H food and nutrition projects in the state of Idaho in FY02. There were 2,244 contacts made with the EFNEP 4-H youth in Bannock County. Seven children went to 4-H camp. EFNEP youth exhibited 22 projects at the county fairs. Seven received Best of Show Awards. Fifteen youth completed pre and post-tests during the year. They indicated on their post-test that they chose soft drinks and fruit flavored drinks 29% less often for their beverage choice than when they took the pre-test. They indicated they chose milk 8% more often at post-test than when they took the pre-test. The youth were 7% more likely to have eaten breakfast on their post-test. The youth were also 6% more likely to wash their hands with warm water and soap at post-test than at pre-test.

- c. Federal Grant funds of \$1,800 were obtained from the USDA WIN the Rockies grant for an Extension Educator to work with a Wellness Support Group and provide nutrition classes that covered the Dietary Guidelines. In Northern Idaho (District I), \$10,688 in state grant funds were recently obtained from the Aging and Adult Services to address the issue of malnutrition of their senior homebound clientele. A proposal was written and submitted to the College of Agricultural and Life Sciences. A critical issues grant (State funds) for \$5,035.00 was approved for developing and testing these materials.

The FY2002 ENP budget ((FNS—food safety education) was \$1,514,945 (\$755,969 federal and \$758,976 state) and covered 23 of Idaho's 44 counties. USDA funded \$281,789 for EFNEP programs in Idaho.

- d. ENP and EFNEP are National programs; ENP is delivered in 23 counties in Idaho. Two EFNEP units are operating in Idaho, one in District II (Ada, Canyon, Elmore) and one in District IV (Bannock County and the Fort Hall Indian Reservation). The weight management programs are partially supported through a multi-state collaboration with MT and WY. Other Nutrition education programs are Statewide.

## **GOAL 4 – GREATER HARMONY BETWEEN AGRICULTURE AND THE ENVIRONMENT**

### **Overview**

- a. UI Extension programs in Natural Resources and Environment cover a diverse array of topics. Our education teaches customers about managing the benefits derived from renewable natural resources (water, soil, forage and trees) and protecting those benefits from degradation through management of cultural practices involving equipment, animal wastes and pesticides. Many of the programs reported in this goal area might have easily been reported under goal 1 (competitive agriculture). Similarly, programs reported in that goal area might have as easily been reported as environmental programs.
- b. In the Health and Nutrition goal area, 59 different UI Extension faculty members reported more than 54,000 contacts made with residents of the State of Idaho. Extension faculty wrote 77 scientific and popular articles, newsletters, reports, fact sheets, program announcements, and other publications during the reporting year. Reported outcomes include the transfer and application of new knowledge by new and traditional audiences. Recommended practices were adopted and decision support technologies and equipment was installed that conserve and protect soil, water, and air quality. Direct impacts include reduced amounts of pesticides and fertilizers applied, and reduced costs for irrigation.
- c. Investment in this goal area included approximately \$287,000 in Smith-Lever formula funds; \$56,1000 from RREA; \$691,000 in grants from public and private sources; and \$1,321,720 in State and County appropriated funds. Of the funds supporting Goal 4, approximately \$127,000 was invested in projects that involve and benefit multi-state areas, and \$118,000 was invested in programs that integrate research and extension functions.
- d. Programs conducted in this Goal area are international, national, multi-state, statewide, and local in scope.

### **Key Theme – Air Quality**

- a. Growers need economical and effective alternatives to burning for crop residue management. Growers use grass burning as a tool to remain competitive in the market place. Both grass and cereal producers use burning to manage crop residue in both conventional minimum-till and direct seed operations. Growers need judicious non-biased information for decision making to remain legal and competitive.
- b. UI research and extension faculty are collaborating on a number of projects to evaluate cultural practices that may be able to replace burning, for use by grain growers and by bluegrass seed growers.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Development of economical alternatives to burning is supported, in part, through a suite of grants from the Idaho State Department of Agriculture.
- d. Projects are collaborative with faculty from Washington State University.

### **Key Theme – Biological Control**

- a. Biological control with introduced parasites on cereal leaf beetle has proved effective. Introduction of egg and larval parasites was facilitated at the Parma R&E Center in conjunction with the Idaho Department of Agriculture. Larval parasites were found in larvae feeding on wheat grown on the Parma station during 2002. The introduced parasite is apparently well established in this area. This will provide good biological

control of cereal leaf beetle as it becomes more firmly established throughout the area; increasing grain production, reducing the need for insecticide application, and increasing profit for producers.

- b. Parasite efficacy studies on brown grass and wheat indicate a high probability that the released parasites have established and are doing well.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. These programs are developed and delivered by Faculty across Idaho.

### **Key Theme – Forest Resource Management**

- a. Over 2 million acres (11%) of Idaho's forests are owned and managed by thousands of non-industrial private forest (NIPF) owners. Forest owners have unique goals for their property, ranging from timber income to simply "a place to get away from it all". However, one goal common to most forest landowners is to *steward* their forestland, for their own goals and future generations.

Input from the focus groups, the Idaho Forest Owners Association, and evaluations of 2000-2001 stewardship educational activities, was used to prepare educational activities offered at sites throughout Idaho. These programs were announced in a large, comprehensive calendar titled "Strengthening Forest Stewardship Skills", which was sent out to the *Woodland Notes* mailing list (roughly 11,000 recipients). Programs received additional publicity through Extension and Conservation District newsletters, newspapers, and short registration flyers displayed in many locations. Program flyers were also mass-mailed to forest owners for selected programs.

Needs assessment for 01-02 Non-Industrial Private Forest (NIPF) owner Extension programming was through focus groups held in 1992 with inactive private forest owners, periodic formal needs assessment meetings with the board of the Idaho Forest Owners Association (last session - March 16, 2000), program evaluations from the previous year, and individual and group consultations with cooperating agencies and institutions through the Idaho Forest Stewardship coordinating committee and other bodies.

Needs assessment for 01-02 panhandle extension programming for loggers was from interaction with individual loggers, the Idaho Statewide Logger Education Committee, program evaluations from the previous year's LEAP programs, two Idaho Panhandle LEAP steering committees (last met in January, 1998), and with individual and group consultations with cooperating agencies and institutions such as the Idaho Department of Lands, and other UI faculty.

Needs assessment for 01-02 panhandle Extension programming for natural resource professionals was from individual interactions with professionals, program evaluations from the previous year, and individual and group consultations with cooperating agencies and institutions such as Washington State University, the Society of American Foresters, the USFS Rocky Mountain Experiment Station and Region 1 researchers, the Idaho Department of Lands, and other UI faculty.

As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Dept. of Lands (IDL) and many other partners, UI Extension provided a series of workshops, field days and other educational activities titled *Strengthening Forest Stewardship Skills* (supported in part by grant funds from the USFS through the IDL). The activities are designed to strengthen forest owners' ability to implement practices that improve forest health and growth, and were offered in a variety of locations and times. In addition to Stewardship programs, many other Extension programs were given to groups requesting them, or in partnership with other agencies and organizations.

*Woodland Notes*, a forestry newsletter providing practical advice on forest management, is mailed out twice annually (once during this reporting period) to over 4,000 Idaho panhandle households. It is often the only consistent contact absentee forest owners have with professional forestry (26% of panhandle forest owners receiving *Woodland Notes* reside out-of-state or south of Idaho County).

Panhandle forest owners can choose from over 140 forestry Extension publications available through local UI Extension offices. Recent Extension videos on water quality, "selective" logging, and forest tax management, provide additional resources to help forest owners learn on their own. Panhandle Forest owners can also access archived *Woodland Notes* articles, a database of consulting foresters, links to relevant websites, and a variety of other useful information on the UI Extension Forestry Web site, maintained by Extension forestry staff on the UI campus in Moscow.

In 01-02 we provided five sessions of *Logger Education to Advance Professionalism* ("LEAP"), which features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. The program is delivered by University of Idaho faculty, with additional presentations from Idaho Dept. of Lands personnel on state forestry laws and insects and disease. Enrollment is limited to 30 loggers per session, for an effective learning environment.

Forest products companies are looking for ways to improve forestry operations on their own lands and properties they buy timber from. To this end, most Idaho forest products companies are participating in the "Sustainable Forestry Initiative" (SFI), a national effort of the American Forest and Paper Association. Partially stimulated by SFI, a statewide logger education committee recently developed a new Idaho "Pro-Logger" program, administered through the Associated Logging Contractors of Idaho (ALC). Among other standards, the Pro-Logger credential requires participation in LEAP and 16 credits of continuing education annually. With the increased emphasis on providing educational opportunities for loggers, Extension has worked to integrate logger education needs into other education programs as well.

Since 1993, the Extension Systems of the University of Idaho and Washington State University have cooperated to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with NIPF owners. The program, titled the NIPF Foresters Workshop, updates participants on emerging technology and knowledge applicable to non-industrial private forestry. It alternates between northern Idaho and eastern Washington locations.

"Strengthening Forest Stewardship Skills" is an annual series of programs focused primarily on increasing private forest owners' forest management skills. But in offering these programs, we learned something -- graduate foresters were coming too! Because of this and because of some landowners' increasing skill levels from attending previous Extension programs, we have sharpened the focus of selected forest stewardship programs to meet the continuing education needs of graduate foresters as well.

In response to requests from K-12 teachers, we also offer University of Idaho credit for applicable Extension programs, such as the Forestry Shortcourse. This allows teachers to obtain university credit for programs that help them integrate forest science into their classrooms.

Individual activities in 2002 include:

- The UI Extension Forestry Tree Clinic was open from March to the end of September, 2001.
- Four Master Gardener training sessions were given in three locations.
- Current Topics in Forest Health, offered annually in Orofino, updates farmers and ranchers on current farm and forest health issues.
- Three guest lectures were delivered.
- One invited presentation was delivered.
- One poster session was developed and staffed for 2 days.
- Five committee meetings were attended.

- Daily remote consultations were given via telephone, fax, surface mail, and e-mail.
- Walk-in consultations were given on an as-needed basis.
- On-site consultations were given to two green industry businesses.
- One edition of Woodland NOTES and the 2000-2001 Strengthening Forest Stewardship calendar was developed and delivered.
- Six contributions were written for HomeWise newspaper column.
- The UI Extension Forestry web site was maintained through weekly updates.
- 10,000 copies of "Landscaping for Fire Prevention" Protecting Homes on the Wildland/Urban Interface" 2nd reprint.

- b. Teachers will teach what they know. The We Grow Full Circle program helps them learn in an actual field setting about the full cycle of forest management from regeneration and stewardship to harvest and back to regeneration, including practices of sustainability, soil and water conservation, wildlife and societal objectives.

The Selection silvicultural system is considered to be highly desirable and broadly applied across all forest ownerships, yet research shows that only a small percentage of professionals and landowners understand where and how to apply this management practice. This presentation covered research results that provided specific application information for successfully attaining the goals of this sustainable management practice.

Program participants were asked to complete a consistent evaluation form, asking them to indicate: forest acres owned or managed, previous participation in specific forestry education or assistance programs, how they found out about the program, whether they planned to implement improved management practices as a result of attending the program, and topics they recommended for future programs.

In FY 01-02, 559 owners of more than 61,000 private forest acres attended Extension workshops and other educational activities in the Idaho panhandle. Fewer than half of the participants typically indicated previous involvement in other forestry education or technical assistance programs (see the "Idaho Forest Stewardship Educational Activities Report: 2001-2002" on the forest management topics team web site: [http://extension.ag.uidaho.edu/planning/forest/plan\\_docs.htm](http://extension.ag.uidaho.edu/planning/forest/plan_docs.htm))

In most program evaluations, fewer than half of participants indicated previous involvement in various forestry education or assistance programs; over 90% indicated they would implement improved management practices as a result. A follow-up survey of people who completed the forestry shortcourse is planned to get data on practices implemented and other outcomes of that program.

One hundred fifty-seven people attended the five *LEAP* sessions held in the Idaho Panhandle in 01-02. On exit evaluations, 84-100% of the participants indicated they would implement improved management practices as a result of attending LEAP. In addition to LEAP, 90 loggers attended other Extension forestry programs, such as *Current Topics in Forest Health, Scaling & Marketing Private Timber, and Managing Organic Debris & Slash*. In total, UI Extension provided 3,253 contact hours of continuing education for panhandle loggers last year. Thus far, 446 loggers have signed up for the Idaho Pro-Logger program (roughly 300 more than were signed up in the previous year).

One hundred eighty-nine natural resource professionals attended Idaho panhandle Extension forestry programs in the in 2001-2002, for a total of 1,770 contact hours. In the NIPF Forester's Workshop, 90% of the participants indicated they would be able to work more effectively with NIPF owners as a result of the program. Five Idaho panhandle teachers took the forestry shortcourse for credit in 2001-2002.

Additional outcomes include:

- 36 individuals received 8 contact hours pesticide recertification credits with emphasis on forestry



applications. Evaluations returned indicated that all attendees would implement improved pesticide handling practices as a result of attending the workshop.

- 114 private forest landowners, UI County faculty, and green industry employees have an increased knowledge and understanding about specific insect and disease problems effecting their trees and woody shrubs.
- 87 Master Gardener Trainees and Advanced Master Gardeners have increased knowledge and understanding of how to make a diagnosis of a plant problem and how to recommend and advise landowners and green industry employees on treatment of specific problems and care for their landscapes in general.
- 162M254 private forest landowners, UI County faculty, green industry owners and employees, and other general public and interested citizens have increased knowledge and understanding on forest management techniques, nursery management, and forest ecosystem dynamics and health. This information was delivered via newsletter, telephone, fax, surface mail, e-mail, web site hits, publications, CD-ROM, and the HomeWise newspaper column.
- 71 UI undergraduate and graduate students have increased knowledge and understanding of the diagnostic process and of common tree problems in urban and leisure settings.
- 27 UI Alumni and faculty members have increased knowledge and understanding of the UI Extension Forestry unit's objectives, available educational materials, and offered workshops, and previewed the UI Extension Forestry website and the new *UI Extension Forestry Information Series* CD-ROM.
- 49 people from partnership organizations cooperated on selecting an area urban forester for the Clearwater Resource Conservation and Development district, and in determining criteria for the development and selection of small community urban forestry grants for Latah County.
- 197 private forestry landowners have increased knowledge and understanding of the UI Extension Forestry unit's objectives, educational materials, and offered workshops, and previewed the new *UI Extension Forestry Information Series* CD-ROM.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Idaho applies RREA formula funds (\$56,140) to programs in this area. Additional operating support comes from: State funds for two grants from the Forest Stewardship program (\$20,500); Kootenai River-Bonneville Power Administration (\$22,800).
- d. University of Idaho and Washington State University have cooperated to hold an annual forum for consulting foresters, and a variety of professional development programs, including LEAP. Other programs are collaborative with Extension Foresters and other faculty across the U.S.

### **Key Theme – Integrated Pest Management**

- a. In field trials testing chemicals for controlling aphids, all those tested reduced aphid numbers significantly from the untreated checks through the entire study period. Optimizing insecticide use will eventually save pesticide applications. Saving even one pesticide application per year in Idaho would result in a substantial savings to growers and would greatly reduce the use of hard broad-spectrum insecticides such as the organophosphates.

The adoption of Integrated Pest Management (IPM) practices is documented approximately every five-years by conducting statewide surveys of commercial potato producers via a mailed questionnaire. The next scheduled potato IPM practices survey is winter 2002-03. Prior statewide surveys of Idaho potato growers during 1992 and 1998 provide statistical benchmarks by which the impact of Extension programming can be documented. During 1998, 80 percent of commercial growers (123 surveyed) indicated that they follow an IPM system of field scouting, thresholds and a suite of cultural pest controls that include crop rotation, planting certified seed, cultivation, disease sanitation, destruction of alternative pest hosts, and adjustment of

seasonal fertility and irrigation practices on more than half their acreage. In regard to IPM Extension activities, over 90 percent of the audiences who completed post-workshop evaluations said the information presented was useful and 85 percent said they would adopt into their own operation at least some of the practices discussed.

A group consisting of university personnel from three states along with potato-industry personnel and others developed a Pacific Northwest Potato Pest Management Strategic Plan that prioritized research, regulatory and education needs for potatoes in the PNW. The coordination of information from all over the Pacific Northwest allowed the potato industry to focus resources for possible registration of fosthiazate for nematode control. The strategic plan has also coordinated the efforts of researchers, growers, and extension throughout the region.

A Pest Management Strategic Plan was developed for potatoes to enable producers and other stakeholders to document what their current and future pest management needs are. This allows the industry to focus their resources on their priorities, and targeting research projects to stakeholder needs.

- b. Ten field trials testing the efficacy of new and old insecticides on potato pests were conducted. The trials contained 84 insecticide treatments including seed piece treatments, foliar and soil-incorporated insecticides. Workshops for growers, consultants and industry field staff were held to teach the participants how to differentiate among detrimental and beneficial insects as well as how conventional insecticides can be used in ways that minimize harm to beneficial agents.

Field trial research with standard two- and three-way herbicide tank mixtures was conducted at multi-state locations including Aberdeen, Kimberly, Rexburg, and Parma. Trial results were published in the 2001 Idaho Weed Control Reports, and Western Society of Weed Science Research Reports. Workshops were presented at the annual University of Idaho Potato conference.

Approximately 40,000 potato acres were reviewed for damage from sulfometuron-methyl off-target movement from treated BLM ground. A commercial greenhouse bioassay was developed to detect sulfometuron-methyl. Growers were able to send in soil samples from suspect fields, and based on bioassay results, assess the risk of planting potatoes in those fields.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. The development and implementation of the Pacific Northwest Potato Pest Management Strategic Plan is a collaboration among ID, WA, and OR.

## **Key Theme – Land Use**

- a. From 1982 to 1997, farm numbers declined 9.71%, from 24,714 to 22,314 farms, according to the Census of Agriculture. Average farm size during this period declined slightly from 563 to 530 acres. According to the National Resource Inventory (NRI), from 1982 to 1997, cropland, pastureland, and rangeland declined 7.21% (from 14,003,800 acres to 12,993,800 acres) while urban build-up increased 94.24% (from 218,900 acres to 425,200 acres).

One of the issues driving changes in land use in Idaho is population growth. The population of Idaho in 2000 was close to 1.3 million people. Since 1990, only 2 of 44 counties lost population. Boise County had a 90.1% increase in population and Teton county witnessed a 74.4% increase. Nineteen counties had over a 20% population increase. Much of the population increase has occurred in counties that have easy access to one

of the three interstates that run through the state. Per capita income in metropolitan areas outgrew per capita income in non-metropolitan areas by almost 10% from 1982 to 1998.

Numerous local issues are brought to Extension for assistance, including the Coeur d' Alene Tribe Environment Program, which is working to educate their young people about their environmental programs, and the Boise Valley area that is under going massive water reallocation and growth in water usage. An interregional trade model is being developed to examine water market and other water transfer institutions for the Treasure Valley.

Work in Custer County runs the gamut from wolves to road closures to the development of a Comprehensive Plan for the county. Nine working groups were chaired to develop comments for the County Commissioners. Extension serves as the ex-officio chair of the Comprehensive Plan group and a member of the Wolf Depredation Taskforce for the Office of Species Conservation for Governor Kempthorne.

- b. Extension investment in local land use issues is varied, as are the outcomes from those investments. The process is slow and painstaking and often seeded in conflict. For those efforts in Custer County, each group developed comments and position papers related to one of the following subjects: wolves, lynx, weed plan for the FS, Western Watershed Project 319d grant, spring developments on BLM, Craters of the Moon management changes, the Forest Legacy Act, changes to the NEPA process and the Salmon-Challis Forest Travel Plan.

OSC is slowly developing a plan to reimburse producers affected by wolf depredations. The issue is determining how much "damage" occurred in the "gray" areas. It is easy to pay on confirmed kills or probable kills. Research elsewhere indicates that for every confirmed kill there are another 5.7 calves lost. Getting the environmental community buy-in and determining the amount of records needed to "prove up" on a lost is the issue that is slowly being worked out.

A water market and water institution for the Boise Valley is being developed.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. In 2002 a grant for \$10,000 was received from the Idaho Department of Water Resources and the Bureau of Reclamation to work on a water market and water institution for the Boise Valley.
- d. These programs are developed and delivered by Faculty in Idaho.

## **Key Theme – Natural Resources Management**

### **a. Range Programs**

A large portion of the acreage in Gem and Boise counties is federally owned. This land is used by cattle producers as a forage resource for their herds. Beef cattle represent one of the major agricultural commodities in these two counties. When available, beef cattle are pastured on dryland and irrigated pastures.

The Fort Hall Reservation consists of 346,000 acres of rangeland. Many Fort Hall tribal members run cattle on this rangeland and on private pastures they own or lease from the Shoshone-Bannock tribes. These tribal members are in need of educational efforts to improve and update their existing management and production practices. The Annual Fort Hall Beef School has been developed to assist in efforts to improve current management and production techniques.

Nez Perce and Latah Counties have many small acreage livestock producers, as well as several commercial operators. They often have production or health questions they refer to the Extension office, or they ask for additional resources or workshops. The ability to meet the needs of the public is a primary objective of Extension. The ability to find answers or to refer questions to those who can answer them is critical in program delivery.

Lemhi County ranks second in beef production in Idaho. It is the backbone of the agricultural industry in the county. Producers need to stay current on what is happening in the industry and make the most efficient use of all their resources.

- b. Each week, an average of 25 beef producers attended winter schools. Overall, 60 different producers attended the schools. After attending the schools, four ranches [with assistance from the Natural Resource Conservation Service (NRCS)] moved their corrals. These moves were in accordance with recommendations from the workshop.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Two (2) grants totaling \$730.00 supported beef cattle production and management educational efforts in Idaho.
- d. These programs are developed and delivered by Faculty in Idaho.

## **Key Theme – Nutrient Management**

### a. Water and Nutrient Management in Urban Landscapes

Idaho has experienced rapid growth in urban population centers over a very short time, increasing pressure on the water resource. Management of water and nutrients in urban landscapes is relatively inefficient, resulting in increased disease, cost of applying unneeded water, and risk of contaminating ground and surface waters by nutrients. Often homeowners apply too much water and fertilizers to their plants, causing nutrients to leach to groundwater or run-off to surface water.

Improper water management impacts every citizen in the state. The reason for inefficient use in urban landscapes is due to a lack of knowledge by the public, apathy, and increased emphasis on aesthetics in the urban landscape. Some lawn and garden care companies business goals may also lead to over-application. Research needed to address this situation includes: water and nutrient use rates for landscape plants, fate of fertilizers (e.g., N or P) applied to the urban landscape in relation to water quality, and water-induced incidences of diseases and insect pests on landscape plants.

### Animal Agriculture

Increased public concern about non-point source pollution of water resources has increased the need for effective applied research and education on nutrient management. In Idaho, State Water Quality Standards have been established and approved by the EPA. These standards, required under the Clean Water Act, are designed to protect, restore, and preserve water quality in the State. The occurrence of elevated levels of nitrate and phosphorus in surface and groundwater in Idaho indicates a need for coordinated research and educational programs to improve nutrient use efficiency.

Current legislation requires medium and large-scale livestock operators to file a nutrient management plan. Many do not understand the process of developing the plan, what is required or how to carry out the plan once it has been approved. There is a lack of communication of policy changes from state agencies to people who are writing or implementing the NM plans. It is important the planners and end-users have the most current information available when making and implementing plans as there can be environmental,

agronomic, and economic consequences of nutrient mismanagement. A system of certification has been implemented, however, there needs to be a system of recertification to ensure that planners have the most current information.

All livestock producers that have streams running through their property are impacted by these regulations. According to the law, no manure may runoff of livestock feeding areas into a stream or body of water. If this occurs, the producers are subject to serious penalty. Education is needed to provide producers with information on how to stay in compliance with the law.

Certified agricultural practitioners such as Certified Crop Advisors (CCAs) are required to obtain recertification credits to maintain their certification. Historically only available at workshops and training sessions, acquiring regional credits frequently involves significant travel and the associated resources. Travel resources are increasingly limited for presenters and participants.

Efforts are underway by NRCS, ISDA, and UI to provide education about nutrient management planning and to develop nutrient management plans for farms. Although this has addressed some immediate needs of nutrient management planning in Idaho, the approach has been rather fragmented with respect to coordination of research and educational efforts. A coordinated approach to research and extension programming related to nutrient management is needed to provide a structure for effective coordination of state, federal, university, and industry efforts.

The Idaho Nutrient Management Team (INMT) is developing an integrated approach to nutrient management research and education, which considers the interdependent effects of crop, animal, soil, water, cultural, and socio-economic factors on water quality. The goal of the INMT will be to integrate effective existing programs or program components and new programs identified through needs assessment to facilitate improved nutrient management systems. The INMT will utilize U of I extension and research faculty, government agencies, and private industry to develop a comprehensive, statewide, educational program for nutrient management.

The continued growth of both the livestock and human population within the state of Idaho has resulted in increased conflict at the interface between animals, people and the environment. The public perceives the dairy industry to be responsible for many environmental problems. The resulting public outcry of concern has resulted in several new regulations, which have been enacted at the local, state and national level. The regulations cover a broad spectrum of real and perceived problems including: water quality, lighting, flies and odors.

The implementation of these new regulations has created an opportunity for education and challenges for producers. Many of the regulations are based on "best management practices," which are already used by many producers. Nevertheless, some of the requirements are not well understood and will require an intensive educational effort to insure compliance by producers.

The environmental impact of confined livestock production is complex, because the treatment of waste is commonly accomplished in conjunction with the production of crops. In many cases the livestock producer is not producing crops. Consequently, waste treatment is being done on land not owned by the livestock producer. To further confuse the situation, crop producers utilizing manure also add commercial fertilizer to their fields to balance nutrient needs for crop production.

Currently the primary and most economical means of waste treatment is through land application, providing a source of nutrients for crop production. Composting of livestock manure is not currently a widespread practice. The use of methane digesters is being widely discussed as a method of pre-treating waste prior to land application. The pre-treatment is being considered primarily as a means of addressing odor concerns.

Little is known about the application of the by-product of the methane digester and its potential environmental impact.

Developing a successful program for the management of nutrients in livestock manure is critical for producers to maintain viable production units. When producers are able to successfully manage the excess nutrients produced in the production of meat and milk, consumers, rural residents, landowners, local watersheds and local units of government will all benefit by having a clean environment and economically viable communities in which to live

The following activities were conducted during FY 2002:

- Sampling of 27 dairies for a Nutrient Balance Study has been completed and the samples are in the analysis cycle at the end of this planning cycle.
- Continued work on the One Plan Nutrient Management Plan software.
- Preparation of the Idaho Nutrient Management Manual.
- Resource Manual of Educational materials developed by UI Extension Faculty.
- Presentations were developed on: nutrient composition of dairy waste, calibrating manure spreader applications, measuring nutrient content of liquid waste storages.
- Extension publications on Nutrient Management topics were reviewed from other states and fact sheets were incorporated into the Idaho material where it was applicable.
- There were 4 popular press and interview articles provided to local media related to the nutrient management planning and implementation process.
- There were 7 publications that were developed to address educational needs related to nutrient management.
- There were 4 classes, seminars and workshops held to provide educational information on nutrient management throughout the state.
- A total of 89 contacts were made for nutrient management programs with 81 being Caucasian and 8 being Hispanic. There were 39 female adults and 50 males adults who were involved in nutrient management programs.

During the past year 10 Magic Valley producers have received assistance in the planning of facilities and waste management structures to facilitate the management of the nutrients produced by their dairy or dairy heifer operations. In most cases the plans were prepared for new facilities. Some of the plans were prepared to allow for accommodation of herd expansion or remodel of facilities. The producers were involved in the planning and development of nutrient management plans which were prepared to meet the requirements of state and local laws, rules and ordinances. These plans have been reviewed and approved by the Idaho State Department of Agriculture.

Eleven dairies in Bear Lake County and one in Bannock County received assistance from the Extension Educator in Bear Lake County in the development of their Nutrient Management Plans (CNMP's). After the completion of these plans, the Extension Educator worked to provide training for these producers to gain an understanding of how to use the CNMP's. Each producer was invited to the training and copies of the CNMP's were published and readied for the training. The plans included information on irrigation best management practices for crops grown on the individual dairies. The information was specific to each different field as to the specific soil types and other field conditions. Each plan included a site map for the individual dairy. The CNMP's also included a plan by which manure/nutrients would be applied at each facility. The plans included nutrient information based on cow numbers and an estimated amount of nutrients excreted per cow per year. The plans provided the storage information and specific instructions on how much manure could be spread in each individual field to return necessary nutrients back to the soil prior to the growing season.

Regional programming on nutrient management issues has enabled the planning for regional publications, training on participatory/collaborative training methods, and use of those methods in workshops. Two nutrient management planner training workshops were held in southern Idaho, utilizing participatory learning methods, to improve workshop participant understanding of nutrient management issues. A Nutrient Management conference was organized and held in Idaho to educate people. The speakers ranged from the effect of dairy ration on manure to crop nutrient uptake and removal calculations.

The Idaho OnePlan Nutrient Management Planning Tool was developed by a group of agency experts headed by the Natural Resource Conservation Service, the Environmental Protection Agency and University of Idaho. The software is Geographic Information System (GIS) based, making the application very user friendly. On the Internet, producers can locate their farming operation(s) on farm-level imagery, then download "clipped" farm imagery, soils, topographical, water quality and other GIS data, and the planning software. Using the planning software is voluntary and confidential.

The Nutrient Management Planning Tool will enable agricultural producers and professional planners to:

- Print Idaho-approved components of a certified Nutrient Management Plan (certification will still need to be completed by a certified planner).
- Identify and designate farm fields, buildings and structures on farm imagery;
- Identify vulnerable resource areas that require special consideration;
- Evaluate the adequacy of existing animal waste containment facilities based on the NRCS Agriculture Waste Handbook;
- Calculate nutrient content of animal manure produced on the facility;
- Schedule agronomic-based nutrient application rates based on the University of Idaho Fertilizer Guides and the NRCS Idaho Nutrient Management Standard. UI researchers served with ARS and NRCS development team to finish the integration of UI recommendations into the program;
- Maintain farm records including crop rotation, soil testing data and nutrient and pesticide applications.

Faculty and staff from the CALS Department of PSES, Agricultural Communications, and Information Technology Services have collaborated to develop on-line proficiency testing for re-certification credit that will preclude the need for much of the travel and associated costs. This Extension program has excellent potential for better serving the re-certification needs of CCAs, and possibly other certified agricultural practitioners (certified pesticide applicators/consultants and certified nutrient management planners).

A regional land-grant approach to nutrient management education helps avoid duplication of efforts, increase credibility of land grant university nutrient management recommendations, increase the information resources available to address specific concerns, improve the quality of publications, and better use limited educational resources to serve regional clientele. A SARE grant, "Western Integrated Nutrient Management Education," is currently in place to facilitate this interaction among PNW Extension nutrient management professionals from UI, OSU and WSU. A new grant is being prepared to continue this collaboration.

Idaho's dairy industry has been instrumental in proactively establishing nutrient management Best Management Practices (BMPs) by signing a Memo of Understanding (MOU) with the Environmental Protection Agency (EPA), the Idaho Department of Environmental Quality (DEQ), and the Idaho State Department of Agriculture (ISDA). Recent legislation was passed to require certified nutrient management plans on every dairy in the state (over 900 dairies in Idaho) by July 2001. The Natural Resource Conservation Service (NRCS), the Idaho State Department of Agriculture (ISDA), and University of Idaho Cooperative Extension have been jointly providing training courses to technical Specialists preparing them to become nutrient management planners.

The nutrient management planning group identified the need for a curriculum that could be used by extension

professionals who were not trained planners to deliver nutrient management information to producers. The curriculum is intended to serve as a resource in counties where livestock producers need assistance and the educators have little expertise in the field of nutrient management.

#### Fertility Management

Potato producers must balance the cost of fertilizer with a realistic yield goal while at the same time minimizing the potential of leaching or run-off of fertilizer, particularly nitrogen that could have an environmental impact. Micronutrients also are important for producing a high-yielding, quality potato crop, however, data on micronutrients' role in potato production are lacking. A need exists to develop educational programming on fertility management to inform producers how to use fertilizers most efficiently to maximize economic returns while at the same time minimizing potential environmental impacts.

The effects of 0, 1, 1.5, and 2 times the recommended rate of phosphorus were applied with and without fertilizer zinc. In addition, a preliminary study was conducted looking at 1 and 2 times the recommended rate of phosphorus with all combinations of with and without added manganese, iron, and copper (zinc was applied at recommended rates to all plots). Three rates of phosphorus (0, 0.5, and 1x) were applied either as 100 percent pre-plant, 50 percent pre-plant/50 percent water-run, or 100 percent water-run. The water-run phosphorus was split-applied four times during the season, mimicking practices commonly used by growers. Two tillage-timing treatments, fall and spring, were applied to the alfalfa in preparation for potato planting. Five rates of nitrogen were applied to the potato crop. Intensive tissue and soil sampling were conducted in order to determine nitrogen mineralization rates. For these projects, there were two grants totaling \$37,000. There were five presentations (attended by 184 people) given, and one extension publication and three popular articles written.

#### Coordinated Research and Education Plan

Much research has gone into the development nutrient management plans that are environmentally, economically and agronomically sound. However, there are certain situations, such as nutrient crop removal values, where more research needs to be conducted. The state of currently available information needs to be examined. Areas that need more research need to be identified and plan put into place to answer the questions. Some numbers in the NM plans are based on national values because there are not current values available. A method of ensuring that the information gets into the hands of NM planners and end-users needs to be outlined. This effort needs to be coordinated with state and local agencies to ensure that information is getting to the people how need it.

Fertilizer expenses represent significant production costs for producers and sound nutrient management is essential for sustaining farming enterprises and the rural and urban communities that depend on them. Effective nutrient management is also essential for avoiding degradation of ground and surface waters. My program is focused on improving fertilizer use efficiency through (1) development, evaluation, and calibration of soil and plant testing for southern Idaho irrigated crops, (2) comparison of fertilizers and application methods/timing, (3) study of cultural practice influence on nutrient availability and use efficiency, and (4) study of nutrient management in relation to crop quality.

#### Nutrient Concentration and Migration

Current farming practices result in geographical nutrient migration and are not sustainable. Nutrient mining has resulted in certain areas with exportation of nutrients (feeds). Nutrient importation has resulted over application of wastes and nutrient concentration on dairies and AFO s. Economics of returning nutrients to mined areas may not be sustainable. Need for understanding of nutrient balance on a regional basis. This has resulted in social problems and regulatory action (policy control). This is a field to farm to county to regional problem.

Butte County produces several tons of alfalfa and oat hay as a cash crop, used primarily in the Magic Valley



to support the Dairy Industry. This cash crop removes many tons of N, P, and K from soils in Butte County and moves it into the Magic Valley where it may become a waste management issue. Composting has been shown to be an effective method of dealing with livestock wastes, with favorable production results. Hay and dairy operators as well as the public would be served if a production function for compost application could be determined to make economic evaluation of back hauling compost to hay producing areas is economically feasible.

b. Water and Nutrient Management in Urban Landscapes

Extension personnel in conjunction with local government and private concerns have joined to focus on educating the general public, private citizens and government agencies in this arena. A 7-week course has been developed and presented to the public on water conserving xeriscapes. A community planning and zoning commission was approached about reducing water use in the landscape. As a result they are considering requiring all new sub-developments to use water saving landscaping. The educational aspect will be handled through the local Extension Office. In addition xeric plant variety trials are being conducted at two different locations.

A SARE grant was obtained to install drip irrigation equipment to demonstrate water conservation on Main Street in a local community. A field day was held in which 15 participated. Other outputs include samples submitted and results interpreted with proper recommendations given to clients. A xeriscape presentation has been put together and is now available for county faculty to use.

There were 825 people that took advantage of programming in this area. Phone calls and comments indicate a strong impact on improving their knowledge on water and nutrient management issues. Two individuals plan on installing drip irrigation systems on their property.

Nutrient Balance

The Nutrient Balance study is being done in two counties with the objective being to help producers reduce their nutrient inputs without affecting production. By reducing feed nutrient in feeds, nutrients in manures will be reduced, resulting in reduced nutrient loading of soils receiving animal waste as a fertilizer.

Producers receiving Comprehensive Nutrient Management Plan assistance from UI Extension Educators and Specialists were involved in the planning and development of their own nutrient management plans which were required to meet the state and local laws, rules and ordinances. The producer involvement increases the producers' understanding of the plan and improves the implementation of the plans.

Several producers attended training on Comprehensive Nutrient Management Plans (CNMP). A follow-up training was held in the fall of 2002. An expected outcome is that producers increase irrigation efficiency while at the same time making better use of the livestock manure as a fertilizer because of the numbers provided in the NMP.

Feedback from a limited group of agronomists that work with sugarbeets was positive. It looks promising for growers to increase sugar yield and profits by applying band applications of P in the form of ammonium polyphosphate. Future goals are to a.) obtain second year of funding from the Fluid Fertilizer Foundation and Simplot. b.) complete second year of trials. c.) conduct plot studies to further evaluate the effects of banded P on sugarbeet nutrition and soil crusting. d.) Evaluate the effects of the first year treatments on the subsequent wheat crop.

Nitrogen management is an important factor in sugarbeet quality. Understanding levels of organic matter, crop rotation, biological breakdown of organic amino acids or protein compounds are essential in maximizing sugars and lowering conductivity. In 2002 and previously, UI generated and disseminated data, that has been used by industry, growers, and governmental agencies. More than 300 have participated in seminars and

workshops, and the Royal Society of Chemistry published results.

#### Animal Agriculture

Many people are looking for information help them write better nutrient management plans. The first Idaho Nutrient Management Conference succeeded in bringing together a diverse audience (over 100 people) for a variety of topics. Attendees felt that they had a better understanding of the process. The seminar that made the greatest impression was the effect that dairy rations have on nutrient load. Workshop attendees from the NRCS felt that they would do their job better because they understood the whole picture better. The topic the NRCS felt was most important was how fertilizer recommendations are made.

During 2002, classes, workshops and tours were held to educate producers on CAFO regulations. Speakers from the State Department of Agriculture, EPA, Basin Advisory Groups, the Idaho Cattle Association, DEQ, and other partner agencies have participated in these meetings. In addition, scores of individual ranch consultations have answered concerns about CAFO compliance and the Clean Water Act.

Approximately 225 people have gone through the Nutrient Management certification since its inception in 1998. After taking the training, personnel are required to write 2 nutrient management plans to become certified.

#### Coordinated Research and Education Plan

This project has the expertise of several Extension Educators and Specialists. There is information published in journals, Extension publications and Government bulletins that will be referenced in the compilation of research that is currently available.

A study of Potato Nutrition aims to understand and improve the efficiency of P uptake and utilization. Trials were conducted the Aberdeen experiment station. A coordinated project between the Sugarbeet, Potato, and NM team looked at various methods of P application on sugarbeets. There were several projects that focused on P nutrition in crops (sugarbeets, potatoes and alfalfa).

There appears to be some benefit to applying zinc when high rates of N are applied. Phosphorous utilization can be improved by various timing and methods of application over the current method of broadcast prior to planting. Preliminary data shows that the banded applications performed the best with no difference between a 2" or 6" band. Deep injection (6") increased yields and sugar. It was thought that since the beet has a taproot, then a deep band would be more conducive to growth and P uptake than injecting the P to the side of the seed.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. In addition to appropriated funds, support for this project includes \$5,000 in grant funds received from private sources for nutrient management programs and projects. Additional support was received through grants from Simplot (\$2,000) and Fluid Fertilizer Foundation, (\$6,000). The nutrient management education project had over \$80,000 in grants from various sources. The coordinated research and education project was supported by over \$81,000 in grants. A \$500.00 SARE grant was obtained to install drip irrigation equipment to demonstrate water conservation on Main Street in a local community.
- d. These programs are developed and delivered by Faculty across Idaho. Faculties from neighboring States participate both in program design and delivery, notable from OR, NV.

### **Key Theme – Riparian Management**

- a. Riparian areas provide habitat and forage for a wide range of domestic livestock, fish, avian, and wildlife species. In arid environments, riparian areas also draw human use through fishing, hunting, hiking, and camping. Travel arteries and home construction also affect riparian areas. There is heightened concern about water quality, and a fear that improperly managed riparian areas are becoming "sinks" for noxious weeds. There is a general lack of knowledge about riparian areas and a lack of "good" science in formulating management alternatives for their use. Riparian areas encompass less than 5 percent of the land area, yet management decisions based on these sensitive areas affect management on broad areas of land. For example, grazing may be curtailed in an upland area simply because grazing in an adjacent riparian area has been stopped; this may result in degradation of the quality of the upland range. Unhealthy riparian areas impact all uses and users. There is a need to establish monitoring protocols to assess changes in riparian area vegetation, water quality and other factors.
- b. UI Extension faculty organized and developed the program and conducted the 2002 thirty-first annual Pacific Northwest Range Short Course. The short course focus on "Challenges in Grazing Management", dealt with annual rangelands and on drought. Over 160 people from Idaho, Oregon, Washington, Nevada, Montana, Wyoming, and Utah participated in the 2-day program. The audience consisted of ranchers, federal and state land management agency personnel, Native Americans from 3 reservations, students and interested public

UI Extension provided faculty instructors in 3 riparian proper functioning condition workshops held at Ft. Hall, Twin Falls, and Moscow. Over 100 participants attended the workshops, including ranchers, agency personnel, students and interested public. Participants learned about riparian soils and vegetation and the hydrologic function of streams, as well as how to make stream assessments. The majority of workshop attendees indicated on evaluation forms that they not only had a better understanding of riparian areas and how they function, but that they also planned on using what they learned to assess stream condition in their jobs. UI Extension also helped organize and instruct a field workshop on grazing management of riparian areas in Elmore County with the Owyhee County Extension Educator.

Extension helped organize, develop and deliver instruction at a 3-day pasture management short course held August 26-28, 2002 in Twin Falls County. Participants included 10 farmers/ranchers grazing irrigated pasture. All gave very positive feedback on the workshop and indicated they will incorporate what they learned in their own grazing programs. A half-day workshop on small pasture management was also conducted on March 2, 2002 in conjunction with the annual Agric-Action farm show in Twin Falls.

Feedback from all short courses and workshops was positive, with many of the attendees indicating they planned to use what they had learned in their operations/jobs.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. The Pacific Northwest Range Short Course is an annual collaboration among ID, OR, and WA. Other aspects of these projects are Statewide, often in collaboration with neighboring States with whom we trade expertise and resources.

### **Key Theme – Soil Erosion**

- a. Growers are converting land to reduced tillage systems (including no-till and direct seeding) to conserve soil and water. Production and pest management needs change with the conversion to reduced tillage systems. Growers need information on the necessary alternative management practices. UI/Nez Perce

County advisory committee and private enterprise have identified direct seed applications as a priority education issues. Growers need information for informed decision making.

The need for Northwest grower adaptation of direct seeding or other minimum tillage systems and more intensive cropping is being driven by several factors regionally, nationally and globally, including: the need to lower production costs and improve profitability to be more competitive in national and global markets; to control soil erosion from wind and water in light of increasing environmental regulations and public concern about environmental quality; to improve soil quality, reversing the trend in declining soil productivity due to erosion and intensive tillage, and to increase water conservation efficiency. The continued growth of direct seed intensive cropping systems in this region depend on expanded research programs, and grower access and successful adaptation of the new technology. ,

An ongoing STEEP funded project assessing the impact of no-till and conventional-till on crop, variety, soil, insect, and disease responses was started in 2000. This experiment involves cultivating three crops in rotation on replicated tillage treatments. A portion of each crop's area for wheat, barley and pea compares variety performance. Few, if any, factorial comparisons of tillage and variety performance have been done in the region. Most published tillage comparisons compare a tilled site with a no-till site and are subject to environmental differences because tillage is not replicated within the experimental design. The bulk planted areas in the trial are used by the other project researchers to evaluate soil properties and earthworms, Hessian fly dynamics, beneficial ground-dwelling insects, and soil-borne disease dynamics. My efforts provide a multi-dimensional site for investigation of many properties that need to be characterized in a no-till and conventional-till comparison.

- b. The primary program outcomes are measured as increased knowledge by growers and Ag advisers about research results and technologies to develop successful direct seed / minimum tillage cropping systems. Of the 860 participants from the January 16-18, 2002 NW Direct Seed Cropping Systems Conference in Spokane, 100% of the evaluation respondents stated that they felt the Conference would help increase the successful development and adaptation of direct seed cropping systems in the region.

Data from the national Conservation Technology Information Center on county-level increases in adoption of direct seed / conservation tillage systems in 2002 will be available in early 2003. Increases in low-disturbance direct seed / no-till acreage for total small grain production in Idaho, Oregon and Washington increased from 3.8% in 1990 to 8.7% in 2000. The use of mulch tillage (conservation tillage practices with >30% surface residue retention under full-width tillage) increased from 18.9% in 1990 to 25.1% in 2000. Continued increases in small grain acreage under direct seed / no-till and mulch tillage are expected in the 2002 CTIC survey.

Forty growers from eight counties in Idaho (Latah, Nez Perce, Lewis, Idaho and Clearwater Counties), Washington (Asotin and Whitman Counties) and Oregon (J) attend monthly meetings held in a central location (Lewiston, Idaho). Growers interact with UI and WSU researchers about direct-seed system topics, such as: Soil health and productivity, fertilizer types and rates, and crop rotations. This interaction exposes growers to the latest research and serves as a conduit for growers to provide direction and practical insight into the scientists' research programs. Growers also host a hands-on tour of their farms during the summer.

Growers are presenting their insights and knowledge gained from farming under a direct-seed system. This exchange of success and failure results in a group dynamic that creates a cooperative synergy and a shared interest in each grower's future. Attendance steadily increases over the years as more producers recruit more growers to attend the meetings.

The PNW Conservation Tillage Systems Information Source Web page (<http://pnwsteep.wsu.edu>) was updated and expanded with new PNW publications and other resources and averaged over 200 hits per day.

The PNW Direct Seed E-mail / Internet List Server expanded from 380 e-mail addresses in 2001 to over 470, and 80 messages were sent. Four new PNW Extension Conservation Tillage Handbook Series bulletins were published and added to the PNW Website. Three issues of the PNW Conservation Tillage Update newsletter were distributed on a PNW mailing list of over 2850, and added to the PNW Website. Over 25 articles were featured in PNW farm magazines and newspapers. The 2002 NW Direct Seed Cropping Systems Conference was held in conjunction with the Spokane Ag Expo and PNW Farm Forum in Spokane, WA. Over 860 PNW growers and Ag support personnel attended. The Conference was organized as a service to Northwest growers by the PNW STEEP program through the STEEP Extension Team and the PNW Direct Seed Association. It was co-sponsored by 12 Ag companies and agencies, and developed and promoted in cooperation with 12 PNW grower organizations and Ag support groups. The program featured 24 speakers, including 10 growers, from Idaho, Oregon, Washington, and the Canadian Provinces of Alberta and Saskatchewan. Presentations on conservation cropping systems technologies were given to over 25 grower meetings with a total audience of more than 1750.

Results from this project were presented at professional meetings and included in abstracts and proceedings. Results from the studies were summarized and published in annual STEEP reports and other extension publications, presented at field days, discussed at grower meetings and made available for adoption and adaptation by growers.

Attendance at the Latah school has steadily increased over the years and is now up to 40+ growers who attend the sessions. Growers expressed desire to continue the sessions and to support the Risk Management Grant.

These programs reached more than 1,100 customers in face-to-face meetings in Idaho (4,491 regionally), presentations, and consultations during the reporting year. In addition, transfer of knowledge and technology was facilitated by more than two-dozen scholarly and user-targeted publications.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Nine grants were obtained from federal sources to support programming in this area, totaling \$410,561. These grants include more than \$366,285 of special grants (over \$96,000 new in FY02) from USDA-CSREES STEEP (Solutions To Environmental and Economic Problems), USDA-CSREES Columbia Plateau Wind Erosion / Air Quality Project, and USDA-SARE (Sustainable Agricultural Research and Education). This project also received a \$32,000 private grant to teach growers managerial accounting and to study the production costs of direct seed systems; and several grants through WSU, UI and OSU.
- d. The scope of this Extension project is multi-state, primarily the dryland cropping regions of Idaho, eastern Washington and northeastern Oregon. The projects are conducted as collaborative efforts of a team of six PNW extension Specialist in crops / soils in cooperation with county extension educators, conservation districts, USDA-NRCS, the PNW Direct Seed Association, and other agricultural support groups and companies in the Northwest.

### **Key Theme – Water Conservation**

- a. Commercial potatoes in Idaho are produced under irrigation. Irrigation systems for potatoes include set-and-move, linear-move and center pivots. Water sources include both aquifer (underground) and surface (reservoirs). The recent drought and chronic issues concerning other uses of water have put extreme pressure on the agriculture industry that has historically used these water sources. Issues including salmon recovery, recreational uses of water, and water quality as it relates to agricultural production systems are increasing the pressure on potato producers to efficiently apply water using various irrigation systems.

Recently developed data demonstrates that proper water scheduling will result in significant savings to producers. Although producers currently likely use some form of water scheduling, training is needed to provide producers with information that will significantly improve their water-scheduling program resulting in less water use, improved yields, and less chance of contaminating water sources.

Most growers excessively irrigate sugarbeets. Periodically growers face inadequate water supplies. Over-irrigation leads to a) increased disease, b) excessive leaching and erosion, and c) lower yields. Growers are not taking advantage of current technology for soil moisture monitoring and irrigation scheduling. The sugarbeet irrigation efficiency project is in its third year. The project demonstrates the use of a soil moisture monitoring program in growers fields to achieve proper irrigation, based on known principles for reducing soil erosion and nutrient leaching while improving sugarbeet production and quality.

Soil moisture data were recorded, graphed on a weekly basis, and e-mailed to the collaborating grower. The grower used the graphs and field monitors to adjust his irrigation schedule throughout the season. Soil and water samples were taken throughout the season and analyzed for nitrate. Results were reported at the 2002 Idaho Sugarbeet Conference. Presentations were made to growers at workshops and field tours and thru a poster display.

Due to increased concern over irrigation management, regulations this past summer, and the fact that ground water pumpers agreed to cutback their water application by 8%, irrigation workshops were conducted in Twin Falls and Minidoka counties.

A workshop on "Potato Irrigation Management with Water Short Supplies" was presented at the 2002 University of Idaho Potato Conference. Two field days and one seminar were presented to a total of 164 people. One article for the popular press was published.

- b. The sugarbeet irrigation/water monitoring study is, underway in five southern Idaho counties, is demonstrating 10% to 20% less water used than with traditional irrigation scheduling practices. In the Canyon County study, water monitoring will save \$94.11 per acre in irrigation costs. With 14,000 acres of sugarbeets in that county alone, the projected annual savings is \$1.3 million.

Soil water was also extracted beneath the root zone and analyzed for nitrates. The highest nitrate value from the demonstration field was 4.5 ppm, while the highest value from the traditional field was 190 ppm. These data indicate additional economic and environmental benefits from installing water-monitoring devices.

Results from the 2001 sugarbeet irrigation study in Washington County showed that the grower used 10% less water on the treatment side but obtained 3-tons/A higher yield. Sugarbeet quality and sugar percentage were the same for both treatment and control. An analysis of soil nitrate revealed that the treatment side only lost 8 Lbs/A nitrate at the head of the canal and 157 Lbs/A at the tail end. The control side lost 263 Lbs/A nitrate at the head of the canal and 186 Lbs/A at the tail end. The grower learned that small reductions in irrigation would maintain, or increase, yields and crop quality while reducing nitrate losses.

The grower also learned that restrictive soil layers in this particular field were causing deep leaching of nitrate in some areas and preventing water penetration and crop growth in other areas. The grower realized that soil improvement activities such as field ripping would be needed to obtain optimum crop production. Field soil improvements and irrigation management could return sugarbeet yields in this field to 40 ton/A (approximately 14% yield increase).

The short-term outcome of raising the awareness of the technology has certainly taken place. Several producers and crop consultants are aware of the technology and its usefulness in determining soil moisture status. Some producers are even purchasing the technology and putting it to use in their operations. As more

and more adaptation takes place the expected longer term outcomes will begin to happen. These expected outcomes are increased production efficiency, better informed irrigation decision, which leads to better irrigation efficiency, and reduced disease occurrence.

Seven seminars, 5 workshops and 1 field day were used to educate 481 contacts. Four proceedings, 3 research project reports, one Impact Statement and two interview articles shared Extension research findings with clientele across the sugarbeet production area of Southern Idaho.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Sugarbeet irrigation efficiency programs were funded in Idaho by \$5000 in private grant funds and \$15,679 in special state grants. Funding for the 2002 projects came from the Idaho State Department of Agriculture – Specialty Crops Grant program.
- d. These programs and projects are Statewide. Wee collaborate with neighboring Extension faculty in Oregon for certain aspects of these programs.

### **Key Theme – Water Quality**

- a. Water is the lifeblood of Idaho. Idaho is one of the most water-rich states in the country, with a multitude of rivers, lakes and aquifers. It has the Snake, Salmon and Clearwater rivers and large lakes such as Pend Oreille, Priest, Henry's, Spirit and Coeur d' Alene. Idaho also has several large reservoirs such as American Falls, Dworshak, Lake Lowell and Anderson Ranch. Idaho has 14 large aquifers that provide drinking water to over 95% of the residents of the state. Because of this abundance, some Idahoans take their water for granted. Yet Idaho's water is limited and vulnerable.

Much can be done to increase the efficiency of water use in Idaho. The most water can be conserved by the agricultural sector mainly because it accounts for 97% of the state's water use. For example, the flood irrigation now practiced on 1.1 million of Idaho's 4.0 million irrigated acres could be replaced by modern sprinkler irrigation. Investing in new sprinkler irrigation equipment, although initially costly, would save water without reducing crop yields. New water management strategies including low-pressure sprinklers, surge, and trickle systems would also save water and reduce soil erosion, which has been linked to surface water quality degradation.

Even an unlimited water supply is of little use unless it is of adequate quality. Major players in preserving and enhancing Idaho's water quality include the mining, timber and other associated industries, agriculture and urban centers. The quality of Idaho's surface water is compromised by: sediments, nitrogen, phosphorus, pathogens, heavy metals, and excessively high temperatures. Nutrient contamination (primarily N) and pesticides compromise the groundwater. Population growth is currently placing increasing pressures on surface and groundwater resources.

The mission of the water quality team is to provide educational solutions to protect and improve surface and groundwater quality in the state.

#### Nitrate Areas of Concern

Idaho's major agencies that deal with water, the Idaho Department of Environmental Quality (IDEQ), Idaho Department of Water Resources (IDWR), and the Idaho Department of Agriculture (ISDA), have identified 25 geographic areas in the state that have elevated levels of nitrates in aquifers (groundwater). Over the last 50 years human activities have caused an increase in nitrate levels in groundwater within these 25 geographic areas.

Idaho's nitrate areas of concern can be found in 23 counties throughout the state. Approximately 487,000 people live in these areas, which cover 1,891,000 acres within the state. Agriculture is the major land use in 22 of the 23 Nitrate Areas of Concern. This is not a new problem, but an increasingly important one in Idaho. Over the next 12 months these 25 areas will be prioritized and dealt with using educational, management and/or regulatory approaches. Within each area this problem will be solved by the following steps: 1) education, 2) use of BMPs with cost share dollars, 3) use of nutrient management plans, and 4) regulatory procedures.

Nitrate is often used as an indicator that pesticides or other chemicals might also be a contamination concern in groundwater. Consequently, targeted programs dealing with pesticide use efficiency and IPM also have an important place in the overall solution for the protection of these 25 aquifers.

### Surface Water/TMDLs

Sediments, nitrogen, phosphorus and/or heavy/toxic metals limit the beneficial use(s) of over 600 water body (lakes and streams) segments in Idaho. To deal with this problem the state of Idaho has launched a progressive TMDL program, which will significantly improve water quality in these water bodies over the next 10 years. Sediment delivery to Idaho's surface waters is a result of erosion processes associated with agriculture, forestry, range management, mining, recreation, industrial development and construction. Nitrogen delivery to surface water bodies is usually linked to less than state-of-the-art agricultural practices used on the state's 23,000 farms. Phosphorus introductions to surfaces waters are often related to erosion from agricultural, range and forest lands and from municipal waste-water treatment plants that do not have tertiary treatment facilities. Heavy/toxic metals are associated with tailings produced by the mining industry in both the Coeur d' Alene mining region of northern Idaho and the phosphate deposits in southeastern Idaho.

Total Maximum Daily Load (TMDL) development and implementation for the above pollutants will have significant economic, environmental and social consequence implications in many areas of the state. At present we do not have a database complete enough to wisely recommend specific BMPs to solve surface pollution problems in many Idaho watersheds. Both research and education are needed to accomplish the successful development and implementation of TMDLs in Idaho watersheds.

### NEMO

NEMO is a GIS-based educational program developed to improve land use planning decisions by local officials and planners. This GIS-based system allows planners to visualize the impacts of current decisions on counties and/or cities 20 years into the future. This system has a strong emphasis on protecting water resources.

The need for education for local municipal officials is critical for the understanding the relationship of land use, land use planning and water quality protection. The NEMO project uses research based, non-advocacy education techniques and technology for better equipping local officials for important land use decisions that need to be made.

The Pacific Northwest is a dynamic region that is rapidly undergoing change. This change creates many land use planning challenges to protect existing resources. A major concern is protecting both the quality and quantity of Idaho's water resources. The need for this program is as follows: (1) Idaho is third fastest growing state in the USA as population growth exceeded 29% over the last decade, (2) Idaho population growth is across both urban and rural counties, (3) people in the Pacific Northwest are more likely to show pride in their living environment than in any other region of the USA, (4) trends toward larger animal operation facilities have a big impact on water resources, (5) trends toward ranchette proliferation impacts water resources, (6) increased pressures on elected officials to meet local needs as populations grow, (7) and the lack of any formal resource and land use training by most elected county commissioners.



b. Nitrate Areas of Concern

County Educators collaborated with growers in the installation and use of irrigation monitoring equipment. Two of the fields were planted to onions and totaled approximately 30 acres. The third field was planted to pear and cherry orchard crops and totaled approximately 6 acres. Water use was recorded and collected from the irrigation monitors throughout the growing season.

UI instructed the growers on use of the equipment for their crops. Activities and results were reported in newsletters and to Western Region County Agents Meeting.

The irrigation monitoring equipment allowed the 2 onion growers to maintain soil moisture in the ideal range for onion development and, as a result, yields increased. Onion production on one field rose from 50,000 lbs/A to 78,000 lbs/A. This onion grower realized he had not been supplying adequate water during critical growth periods with his drip system. Although more water was applied to this field, fertilizer applications were not increased. The second onion field experienced an increase in yield from 40,000 lbs/A to 70,000-lbs/A. This grower also realized that he needed to increase irrigation frequency during July. Again, the increased yield was due to improved soil moisture management and not to additional fertilizer. Results on these two Washington County onion fields suggest that yields in the County could be improved 10 to 20% if soil moisture was managed closely. The third field consisted of orchard crops that were irrigated by a drip system. The irrigation monitoring equipment demonstrated to the grower that his trees were obtaining water from a 3-foot soil depth that remained wet naturally throughout the season. As a result, the grower only used his drip system for establishing new trees and not for irrigation of the main orchard. This grower saved water, nitrogen fertilizer, and electricity by eliminating 6 irrigations during the growing season.

Bulletins were published on Idaho's Nitrate Areas of Concern and Spatial Variability of Soil Moisture. Groundwater educational activities were conducted on both a state and regional basis. Topics included: aquifers, groundwater, and nitrate areas of concern and BMP education. Faculty gave approximately 15 presentations on aquifer protection at various workshops throughout the state.

Surface Water/TMDLs

Our four major accomplishments for this past year were: (1) completion of a set of PNW riparian bulletins, (2) development of a regional Web page, (3) development and completion of water issues survey for residents of the Pacific Northwest, and (4) a regional research and extension water quality conference in Vancouver, Washington.

PNW Riparian Bulletins: A set of six PNW riparian bulletins were jointly developed by the four states and distributed to clientele in the region. The bulletins were targeted at homeowners, ranchers, landowners and developers. Specific bulletins were produced for the wet and dry bioregions of the Pacific Northwest. These bulletins were highly popular as the initial press run is almost exhausted. An additional three PNW bulletins will be released in 2003.

Regional WEB Page: The region 10 web page was initiated. The web site's address is pnwwaterweb.com. The following materials were developed in the past year and are available on the web site: (1) home page, (2) regional initiatives, (3) goals, (4) regional strengths, (5) USDA non-discrimination page, (6) contacts page, (7) information about the regional water quality program, (8) a text only page, and (9) a site map. Many new pages will be added over the next several months.

Water Issues Survey: A 50-question water issues survey was developed and sent to residents of Alaska, Idaho, Oregon and Washington. The survey was designed to determine: (1) public opinions on water issue priorities in the PNW, (2) aptitudes about water, (3) priorities for educational programming, and (4) the media sources most likely providing water information to the public. The Dillman survey approach was used and is considered a recognized survey strategy used by professionals all over the world. A 50% response rate translates into a margin of error of less than 5%. The survey was developed using a 12-stage process. The regional water quality coordinators, liaison and EPA personnel were instrumental in the survey development.

Focus groups were used to evaluate the readability of the survey.

Regional Research and Extension Water Quality Conference: A major accomplishment of the coordination group was the organization and successful completion of the first Research and Extension Regional Water Quality Conference. This meeting held in Vancouver, Washington on February 20 and 21, 2002 produced a proceedings from papers presented at the conference and provided the opportunity for research, extension and agency personnel to exchange information on water quality issues that were important in the Pacific Northwest. Conference attendance was 177, with all four states in the region represented.

The NRCS and Idaho DEQ have been extremely interested in having Extension provide educational programming to small acreage landowners regarding water quality, and ways to improve specifically surface water quality. A TMDL study has been completed on Tammany Creek, which provides drainage for a part of the Lewiston Orchards, which is mostly in what is commonly termed "ranchettes". Problems with excessive loads of sediment and other contaminants have been identified on Tammany Creek. Idaho State DEQ has the unpleasant job of trying to put teeth into regulations regarding nonpoint source pollution, and has specifically pursued Extension collaboration on education.

Three faculty participated in the development of local TMDL reports. Surface water educational activities were conducted on both a state and regional basis. Topics included: TMDLs, sediments, riparian buffer zones, pesticides and erosion BMPs. Faculty gave approximately 24 presentations on surface water protection at various workshops throughout the state. Faculty have become much better informed about surface water quality issues and the TMDL process.

Balancing the facts (from surveys) with the needs requires creative ideas being born and raised into practical solutions. The TMDL process has been successful. As with all compromises, it most likely is successful if neither side likes it completely.

### NEMO

Planning with the Mid-Snake River Commission for a training program that involved local Planning and Zoning authorities. The output was a training program that included Planning and Zoning Commissions and Administrators along with county extension educators. The training involved learning how to operate software for GIS evaluation and application technologies.

Work continued on developing a NEMO program for the Magic Valley region of Idaho. A M.S. thesis on nitrogen fertilizer inputs in Twin Falls County was completed.

NEMO educational activities were conducted on both a state and regional basis. Faculty gave four presentations on surface water protection at various workshops throughout the state.

GIS (geographic information systems) training were provided to the eight Magic Valley counties. They were given layered maps of their county and the surrounding area. These layers included: geographic layers, hydrologic, political and demographic data. They can use them to help the P&Z Commissions make informed decisions on specific situations. We plan on continuing the training in the coming year.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. U.S. EPA-region 10 provides additional support.
- d. All of the work done in water quality is essentially statewide. In our work contributes to an alliance of Northwestern land-grants (primarily University of Alaska, and Washington State and Oregon State Universities) collaborating on the development of the NEMO project, supervision of an EPA-funded

regional Extension Water Quality Specialist, regional water quality publications, and regional conferences and training for land management and water professionals.

## **GOAL 5 – ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS.**

### **Overview**

- a. UI Extension programs in economic opportunity and quality of life include major emphases in 4-H/youth development, family development, and community development. These areas cover a diverse array of topics, especially with the youth audience. Our programs teach Idahoans to understand and to apply an array of life skills that improve their lives. Our programs relate to finances and budgeting, interpersonal communication, solid work ethics, and many other areas. Our education often includes teaching people how to gather relevant information, to assess the quality of the information, to perform a deliberate analysis of that information, and to apply these steps to an informed decision-making process..
- b. In the enhanced opportunity goal area, 96 different UI Extension faculty members reported more than 157,000 contacts made with residents of the State of Idaho. Extension faculty wrote 120 scientific and popular articles, newsletters, reports, fact sheets, program announcements, and other publications during the reporting year. Reported outcomes include the transfer and application of new knowledge by new and traditional audiences. Specific outcomes include increased knowledge of social skills that affect future personal successes, increased understanding of personal finances, increased financial stability for families and individuals, an increase in the number of people with desirable parenting skills, more community partnerships to support youth development, more skillful volunteers working with our youth, more of our children involved in safe learning activities before and after school, and an increase in the employment-based income of struggling Idaho farmers.
- c. Investment in this goal area included approximately \$552,720 in Smith-Lever formula funds; \$1,496,700 in grants from public and private sources; and \$1,632,620 in State and County appropriated funds. Of the funds supporting Goal 5, approximately \$137,000 was invested in projects that involve and benefit multi-state areas, and \$165,000 was invested in programs that integrate research and extension functions.
- d. Programs conducted in this Goal area are international, national, multi-state, statewide, and local in scope.

### **Key Theme – Character/Ethics Education**

#### **a. Civility**

The growing diversification of our communities represents one of the greatest challenges ahead for Idaho's families and individuals. Recent census figures show that the Hispanic representation in the state has grown to over 8% of the population. Though smaller in numbers, Native American, African-American, and Asian families also play a key role in Idaho community life. All of these trends mean that families today experience increasing diversity at work, school, and in our neighborhoods. The issues of tolerance, raised in many communities after September 11, are just a sample of the challenges ahead as we build a society where all citizens can be appreciated for the contribution they can make.

The University of Idaho Extension program can play a role in helping Idaho develop community environments that are hospitable to its diverse members. From basic principles of courtesy to cultural awareness and understanding, extension is well positioned to bring information and to facilitate community discussions on building a civil society for all.

#### **Etiquette**

The How Rude program was piloted in Bonneville County in three different schools during the 2001-2002 school year, and twice during fall of 2002. The teachers find the etiquette curriculum appropriate when they are engaged in food-related and career-related courses. The How Rude materials we developed have

expanded into District III and have been used in 4-H.

As a result of studying this material, several articles were written for county newsletters that address the subject of etiquette. The Mind Your Manners column has received numerous comments from residents of Bonneville County.

b. Civility

We had just begun our work for the Civil Society project at the end of this reporting year. We obtained Critical Issues funds to explore several existing curricula for use in Idaho. We tested one of the more promising programs with our FCS Extension educators at the in-service training in October 2002. We will evaluate that test at our planning meeting at Annual Conference in December to identify our first steps on this project

Etiquette

During the How Rude presentations, pre- and post-tests were administered to assess knowledge gained. The percent of correct answers on the pre-test were 65.8. The post-test resulted in a score of 97.2% correct.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. \$3,550 in State critical issues funds were invested in this program.
- d. These character-building programs are developed and delivered by faculty across the State of Idaho.

### **Key Theme – Children, Youth, and Families at Risk**

a. CYFERnet

UI participates on the Parent/Family editorial board of CYFERnet. This board is responsible for the Parent/Family web pages of CYFERnet. The Board also develops and presents in-service opportunities for extension faculty and for other service providers across the country.

- b. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- c. Support for our faculty to participate in this project is provided through Federal and State appropriations to Extension.
- d. CYFERnet is a national project.

### **Key Theme – Family Resource Management**

a. Basic Financial Management Education

Idaho individuals and families are having a difficult time making ends meet. Household median income is \$37,572 placing Idaho in the bottom third of the nation. Since Idaho families are larger than the national average, Idaho per capita income is only \$17,841-in the bottom quintile of the US.

Lower income households lack financial awareness, according the American Savings Education Council. They're less likely to participate in the mainstream financial system. Many low-income households have no relationship with traditional bank or savings institutions. Unbanked households are more likely to rely on "fringe" financial service providers such as check cashers and payday lenders, whose interest rates average from 300 to more than 1,000 percent on an annualized basis.

For low and mid-income households having access to traditional financial institutions, use of credit cards and

automated teller machines makes spending too easy. Average household debt in the US is \$8,000- much of it credit card debt. Almost half (47 percent) of Americans carry finance charges on their credit card balances every month. One fifth of US households with incomes under \$50,000 spend at least 40% of after tax income on debt payments. Defaulting on a credit card is often linked to bankruptcy. Personal bankruptcies are escalating. Idaho's personal bankruptcy rate is 9<sup>th</sup> in the nation.

The concept that one must save for financial emergencies and long-term goals such as home ownership and retirement seems simple. But low- and moderate-income households give savings a low priority or overlook savings altogether if they have difficulty meeting basic needs and discretionary wants. Nationally, savings are at a historic low, approximately 1% during 2001.

Many financial institutions and media provide financial management information to consumers. Information is not education. Idaho Extension professionals can make sure that information leads to education- and the resultant change in behavior that improves the economic security and stability of Idaho individuals and families.

### Teacher Training

Today's youth need to enhance their knowledge of consumer economics. Teachers provide a path for High school aged youth financial literacy education. The Idaho Financial Literacy Coalition has identified that teachers need the best information possible in order for youth to make informed personal finance choices. There are a number of resources for financial education but the materials must be tied to Idaho Achievement Standards. Effectively delivering high school financial education using Idaho Standards is an important goal.

### Youth Financial Literacy

Teenagers in the United States have become a formidable economic force. In December 2001 Teenage Research Unlimited (TRU) projected that teens ages 12 to 19 spent \$172 billion dollars. According to TRU, teen consumers spent an average \$104 per week- money spent on their own discretionary spending and spending they do on their parents' behalf for personal or household purchases. It's imperative that youth be taught about personal finance at an early age so they'll have the skills and knowledge needed to become financially responsible adults.

Recent youth surveys of economic and financial knowledge demonstrate that young people are woefully ignorant. According to a 1999 study by the National Council on Economic Education, two-thirds of all American high school students failed a test of their knowledge of basic economic principles. In a 2002 financial literacy survey conducted by the Jump\$tart Coalition for Personal Financial Literacy, Idaho high school seniors correctly answered only 53 percent of multiple choice questions designed by a team of educators. Students who felt "very sure" about their ability to manage their own finances were less knowledgeable than those who feel only "somewhat sure" about their ability.

Where do young people learn about personal finance? An overwhelming number say they turn to their parents for financial education and guidance. However, only fifty-one percent of parents believe they understand financial matters very well, according to a 2001 survey conducted by the American Savings Education Council. Fifty-five percent of parents said they carried over credit card debt from one month to another, often inspiring the same behavior in their children.

Personal finance is taught in most Idaho high schools. It's one of many subjects included in Economics course requirements, but is overshadowed by 'macro' economics topics. Personal finance is also included in some Family and Consumer Sciences, Business and Math classes. However, there are only broad guidelines as to the course content; therefore, effective teaching of personal finance is dependent upon teacher knowledge, interest and motivation, and most high school graduates have few of the personal financial skills they need to support themselves. In a nationwide survey by the Jump\$tart Coalition, 12<sup>th</sup> graders' level of

knowledge of personal finance basics was measured. On average, participants in the 2002 survey answered 50.2% of the questions correctly - a failing grade based upon the typical grade scale used by schools.

Extension can improve youth financial literacy by educating parents, teachers and youth leaders how to teach personal finance. We can provide content and educational resources. Education should be goal linked, positive, team-oriented, entertaining, and exciting. Humor, silliness and irreverence are techniques to reach today's youth.

Personal money management skills are expected to be increasingly important in our ever more financially complex world. Early understanding of the importance of saving and managing a checking account will be of significant educational value as youth prepare to function in an increasingly complex financial environment.

The UI Extension presents basic concepts of personal financial planning through high schools. These concepts can be integrated effectively into a variety of classes such as economics, mathematics, business, marketing, consumer and family studies, vocational education, and of course, personal finance. Statewide teacher training offers resources to teachers for inclusion in their classrooms.

#### Welcome to the Real World

Money management is one of the most important life skills to be learned. Learning by experience in this field can be very expensive. Area and state financial institutions report that many high school graduates do not have adequate training in financial management. Fewer than 10 percent of all high school students have had an organized course on financial management. Even though they may be employed and receive a salary, they lack the knowledge and ability to make the lifestyle choices necessary for successful money management. Area financial institutions report that the greatest needs for education are in the areas of proper check writing, check book balancing, and making appropriate spending decisions.

The target audience is high school students. This program is an active, hands-on experience that gives teens a chance to explore career opportunities and make lifestyle and budget choices similar to those faced by adults on a daily basis.

In the simulation, participants assume they are 25 years old, single, live alone, and have completed their basic education requirements. Students discuss factors that influence career choices and randomly select a career for this activity. When they have determined their net income, they open a savings account and deposit 10 percent of their income into that account. They make choices for housing, transportation, insurance, groceries, etc. Each category has several options worth varying amounts of money based on prices in this area. For each category students make a choice, write out a check and balance their checkbook. At the end of the exercise, they draw a "chance card" that reflects emergency expenditures or unplanned income that require budget adjustment. At the end of the program, participants complete a survey to measure skills learned, knowledge gained, and attitudes changed in financial management and career choices.

#### b. Basic Financial Management Education

- Over 500 clientele received training
- 83% can manage money better.
- Twenty-one ENP Advisors from across Idaho participated in a record keeping lesson.

The Idaho Financial Literacy Coalition members teamed up to develop a new financial management program Top Ten Financial "Need to Knows" For Couples and Everyone. Patricia Brennan's *"Top Ten Financial Needs to Know for Newlyweds"* was used to develop the series. The goals of the program were to help participants learn how to reduce debt, increase savings and investments, develop an organized record keeping system and well as reduce stress in their lives by practicing positive financial behaviors. Five four-hour workshops

were held in September and October of 2002. "We have made a budget!" was the answer to the question, "What changes have you implemented as a result of this program?" This statement was made three weeks after taking the class.

All individuals learned about different types of credit and when your debt is too high. They also learned how to use the PowerPay computer program to make decisions as to what debts to pay off first, the highest interest or smallest amount owed, etc. Two individuals had PowerPay Summary Reports done for them. Since these were done anonymously, no follow up has been done at this time. One individual did have the PowerPay program look at two possible ways of getting out of debt, 1) pay an extra \$50.00 a month towards outstanding debt or 2) to do a one-time extra payment like a tax return of \$2000.00 a year.

Individuals liked the information that the PowerPay program offers; they seemed to prefer the option of purchasing their own copy of the program and doing the calculations at home. As an outcome of these classes, information on purchasing or utilizing an office copy of the program is being evaluated for future classes.

### Youth Financial Literacy

*Welcome to the Real World* workshops are conducted for young people in communities across the State. Through these activities, students experienced what it is like to be faced with bills, needs and desires, and a finite income. Comments from students: "Now I know why mom is so upset when she is doing the bills," "Can't I just put this on a credit card and pay for it later," and this interchange between two students - student one "This is getting easier to do" and student two responded, "But you're not a blond." With the addition of the checkbook balancing worksheets, students experienced balancing a checkbook. A total of 84 students completed the 3-hour workshop increasing their knowledge and confidence in writing checks, using a debit card, and recording purchases in a check register. Twenty-five students also learned about balancing a checkbook.

Over 170 students trained

93% increase in understanding of basic financial literacy

89% increase in ability to balance a checkbook and track expenses

*Welcome to the Real World* continues to be requested by all of the teachers that have used it in the past. During June, *Welcome to the Real World* was presented to the largest class thus far - 71 high school students who were attending the Civitan Youth Seminar at ISU. This program won the state Excellence in Teamwork Award and was the regional winner of the Search for Excellence in Teen Programming awarded by the National Association of Extension 4-H Agents. Since UI initially offered the program, students completed 833 surveys. Ninety-five percent agreed or strongly agreed that the program was interesting and useful; 94% agreed or strongly agreed that participating in the program would be helpful in the future.

### Teacher Training

The summer conference for teachers was held at the new technology high school in Meridian. Nine concurrent sessions provided information and resources for meeting Idaho's Economics and Achievement standards.

A statewide summer conference offered help to teachers:

- Enhance their knowledge of consumer economics
- Develop effective instructional and assessment strategies
- Learn how to implement the High School Achievement Standards for Economics
- Effectively integrate technology into consumer economics curriculum
- Increase awareness of curriculum materials/resources/web sites



- Network and share effective teaching strategies
- Earn in-service credit (from the University of Idaho if a fee is paid)

Fifty-five teachers from throughout Idaho will extend knowledge gained to 2,500+ students during the 2002-2003 school year. 100% will use the information gained in their personal and professional lives. 96% reported an increase in their capacity to teach personal finance.

94% will recommend the conference to another teacher. Pre- and post-test surveys revealed they will put into practice over 30 teaching skills this year. Some listed:

- Multiple intelligences
- Lifesmarts.
- Stock Market Game
- Plus many others

Teachers reported that conference strengths included:

- Excellent speakers
- Curriculums provided
- Quantity of resources
- Multiple intelligences information
- Experiential activities for classroom use

More than half the teachers took the conference for in-service or graduate credit. As a result of teachers participating in the NEFE High School Financial Planning Program teachers will offer the program in their classrooms. Teens will gain money management knowledge and skills to use throughout their lives.

- Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Additional program support was generated through a variety of grants, including: Federal, ENP, (\$2,000); State, ID Department of Finance (\$1,700); Private, Capital Educators Credit Union (\$1,400); Mildred Haberly Endowment (\$1,940); Jump\$tart Coalition for Financial Literacy (\$1,200); and registration fees (\$1,500).
- Family Resource Management programs rely heavily on resources developed by Extension partners across the U.S. In addition, localized materials are developed and delivered by faculty across Idaho.

## **Key Theme – Parenting**

### **a. Parents as Teachers**

Trends for families in Idaho parallel those at the national level, with 64% of mothers in the work force, and families finding it difficult to form support networks with friends, relatives, and neighbors after a long day at work. Families at risk are especially disadvantaged by these trends, particularly those families below poverty level in income (18% of Idaho families), single parent families (19% of Idaho families with children), and those headed by teen parents (13% of Idaho births were to teen mothers). These trends mean that many Idahoans find that their own family dilemmas look a lot different from those of their family of origins. As a result they are scrambling for reliable sources of information about how to meet these new family needs. Fortunately, recent decades of research in family relationships can offer guidance about effective parenting strategies for today's families. The University of Idaho Extension program is in a unique position to bring this information to Idaho families.

The University of Idaho Parents as Teachers Demonstration Project has 13 sites across Idaho. The Demonstration Project was put in place (by grant monies) to assess the PAT program and determine the program fit with Idaho families and communities. The Demonstration Project is a voluntary, open enrollment

program for parents/families of children 0-Kindergarten entry. Certified Parent Educators deliver this program to the enrolled families. Originally, one program was based in Power County that served English-speaking families. Shortly after the Power County PAT program had begun (May 2000), the Demonstration Project Steering Committee asked if any supervisor would like to take on a program for Spanish speaking families. In July 2000 a bi-lingual person was hired to serve as the Parent Educator to work in the American Falls / Aberdeen area.

### Marriage

*Married and Loving It!* is a program designed to strengthen the marriage relationship by teaching participants how to enjoy sharing their lives with each other. Many couples are marrying because they expect to be happier married than single and are aware of the positive societal, familial, and personal benefits associated with marriage. Five classes are taught addressing the topics of communication, finances, sources of anger, conflict resolution, and daily decisions. To facilitate these topics, the Idaho Falls Police Chaplain teaches two of the classes. The *Married and Loving It!* program has won several awards. The PowerPoint presentation for the first class placed second in the western region for the Educational Technology award presented by NEAFCS during the year 2000. During 2001, this program was the regional finalist and the national winner of the Market Package award sponsored by NEAFCS.

Since it began in February 2000, *Married and Loving It!* has spread to several other counties in Idaho. The curriculum, published by the University of Idaho has been distributed to 28 states. During the October 1, 2001 - September 30, 2002 year, 85 people from Bonneville County participated in *Married and Loving It!* Post-test results and evaluations reflect improved communication skills and positive conflict resolution practices implemented by the participants.

During this past year, the material taught in class one was used for a video taping for Channel 12, Public Broadcasting, out of Pocatello. The Extension Educator responsible for the program was a guest on the morning news of Channel 6 and was interviewed for articles in the Post Register Idaho Falls, and the Morning News, Blackfoot. The University of Idaho Communications and Marketing department published an article about *Married and Loving It!* Information about this program was featured at the Smart Marriages Conference in Washington D.C., at the NEAFCS national meeting in Portland OR, at the Northwest Regional Parenting Conference, in an Electronic Village sponsored by CYFERnet.

### Basic Parenting and Parenting Apart

Topics included in these Extension programs teach participants about: caring for self, child development, disciplining and nurturing children, motivating children, advocating for children and communication and problem solving skills. Participants included parents of children birth to twelve, single parents, stepparents and grandparents raising grandchildren. Audiences were approximately equal in gender and included parents from late teen years to senior citizens. Some parents were referred by the court system and Head Start while others joined simply to improve their own parenting skills.

Goals of the parenting classes included:

- increase parents' confidence in their ability to respond to their children's needs
- increase parents' understanding of normal child development
- decrease parents' use of coercive punishment.

b. Parents as Teachers

The University of Idaho *Parents as Teachers* Demonstration project is now in its third year of operation and has 13 local sites in 14 counties distributed throughout the state. County educators provide oversight for the program in their area, organizing steering committees of community members, hiring and supervising parent educators, and monitoring data collection. At the state level, faculty members bring skills in program development, research, and evaluation to develop policies as needed, devise an evaluation scheme with relevant data indicators, coordinate data collection, and analyze the data.

Now in its 3<sup>rd</sup> year, the Demonstration Project is serving over 300 families with over 450 children. Trained parent educators conduct personal visits with the families once a month, and hold parent group meetings once a month. One bilingual educator serves Spanish-speaking families. AmeriCorps volunteers from the community assist six programs.

Our evaluation program has attracted the attention of Parents as Teachers programs around the nation, which are hungry for new indicators of program outcomes. We developed a Parenting Survey to assess changes in parent's knowledge, abilities, confidence and behavior, which is currently in use in several other states. We have just developed and collected data on a measure of community fit for *Parents as Teachers* and will have outcome data available soon. We recently received funding from *Parents as Teachers* National Center for a pre-literacy content analysis of the curriculum, which we expect to have completed by January 2003, and to present at the national PAT meeting in May. This analysis should help PAT programs articulate their relationship with literacy initiatives such as federal Even Start and "No Child Left Behind" programs.

In March 2002, we joined with *Success by Six* in hosting a Northwest Regional meeting for Parents as Teachers educators and administrators. All of these efforts have paid off in increased visibility for Parents as Teachers in Idaho, the University of Idaho Demonstration Project, and awareness of the valuable resources UI Extension can bring to the people.

Parents completing a retrospective post-test provided demographic information and qualitative data upon completion the parenting series. Results were used to evaluate teaching and curriculum effectiveness.

Parents reported increased in all measured areas including:

35% increase in knowledge of how their child is growing and developing

28% increase in knowledge of typical child behavior

31% increase in confidence in their ability to respond to their child's needs

41% increase in their ability to respond effectively when their child was upset

40% increase in their ability to develop and use logical consequences for their children's behavior.

Qualitative data indicated parents' satisfaction with the classes and parents have requested more classes, which Extension will continue to offer.

All children in the program are screened for health, vision, hearing and developmental progress. Early identification allows families to address problems early, so children can take full advantage of the learning opportunities ahead. In 2001, parent educators identified 43 developmental concerns or delays in vision, hearing, health and development. When a concern is identified, parents are given a referral to an appropriate professional. Health screenings at the end of 2001 showed 91.5% of children 19-35 months of age were fully immunized, well above the state average of 74.6% for children of comparable age.

Parents report that the *Parents as Teachers* program has been influential in their lives. Parents who had been in the program for a year completed a questionnaire on their current state of understanding and ability in working with their children compared to their level before they entered the program. Parent responses showed that they have gained knowledge of basic child development, including new research information on

children's brain development. They also said they had more confidence in themselves as parents and in their ability to help their child learn. In addition, they felt stronger in parenting skills, including their ability to identify their child's needs and to respond when he or she is upset. Gains reported by parents were sizeable as well as being statistically significant, with mean increases ranging from one to two steps on a 6-step scale.

*Parents as Teachers* teaches parents how to support their children's learning and development as they interact with their children. Program effects on behavior are shown in parent's reports that they read more to their children and do more activities with them after one year in the program. Data indicates that participating parents have stronger connections to other families with children after they participate, another way that the program builds family strength.

Data show that parents find the information from the program to be useful in their family lives. Parent educators ask at each month's visit if families have followed up on any of the information or activities from the last visit over the intervening month. Eighty-two percent of parents in the program report that they followed-up more than half of their visits by implementing new practices. Fifty-four percent followed-up more than 3/4 of the time.

### Parenting Apart

We have developed and implemented *Parenting Apart* through partnerships with the Idaho Department of Health and Welfare and the Idaho State Supreme Court. The curriculum was developed with joint funding from Critical Issues funds and the Idaho Department of Health and Welfare. The advisory group for the project included Extension staff as well as professionals from Health and Welfare, the public schools, and psychologists and counselors.

Two County Extension faculty have offered the curriculum in their counties. Also, the Idaho State Supreme Court has a network of divorce education classes associated with the courts. These educators have been offering *Parenting Apart* in many areas of the state. The strongest program is in the Twin Falls area, where the judges require divorcing parents to complete the course before granting them their divorce. Over 800 parents in this judicial district had completed the course by mid-summer 2002.

Parents completed a survey at the end of the course on what they had learned.

93% of parents agreed that the course had helped them understand the challenges of divorce for their children.

91% learned new ways to help their children adjust to their new family form.

94% of parents learned to shield their children from parental conflict as a result of the course.

83% of participants learned ways to work effectively with their child's other parent.

93% learned the importance of having both parents involved in their children's lives.

Parents were asked what practice they had adopted as a result of the course. The three most common responses were strategies to shield their children from parental conflict, ways to maintain communication with their former spouse, and ideas for communicating to their children about the difficult changes ahead.

The *Parenting Apart* project is testimony to the power of collaborative relationships, using partnerships with other state agencies to expand the support available for project development, and extending our reach in program implementation.

The *Grandparents as Parents* project has modified a publication series developed in Illinois for use in Idaho. Half of the series is available in Spanish, and we are investigating the possibility of translating the remaining brochures. The series is designed to address key topics and concerns of grandparents raising their grandchildren. We have pursued the project with funding from the Critical Issues program, with additional support from the Idaho Office on Aging.

Our county FCS educators chose *Basic Parenting* as a statewide parenting curriculum in 2000. Since that time, educators have used the curriculum in printed material as well as in workshops.

#### Marriage

Evaluation of the *Married and Loving It* program indicates that ninety percent of the participants agreed or strongly agreed that they had increased their awareness of the importance of communication in marriage. The Educators collect case-study and testimonial data from program participants that provide strong evidence that *Married and Loving It!* is meeting a need in our communities.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Additional resources to support these projects include: Private, PATNC, (\$5,000); State Critical issues funds; Idaho Department of Health and Welfare; State, Idaho Public Television; State, Idaho Children's Trust Fund, (\$7,743); Federal, AmeriCorps (\$4,765, Hampton); Federal, TANF through the Idaho Governor's Office (\$750,000); Private, March of Dimes; State, Critical Issues Funds, (\$1,200); The Mildred Haberly foundation (\$2,266).
- d. Idaho faculty are National leaders in the development and application of Extension programming on topics related to parenting. Our faculty support the expansion of original programs to other States through partnerships with other land-grant institutions.

### **Key Theme – Promoting Business Programs**

#### a. Food Safety Training for Entrepreneurs

University of Idaho Extension has successfully presented information for small specialty food entrepreneurs in 1-day workshops delivered in two Idaho communities:

Selling Your Specialty Food Product Workshop, (Reporting year 2001)

Using Direct Marketing Strategies to Enhance the Bottom Line on Small Acreages, Post Falls, February 28, 2002

Food safety information was a critical component of both the workshops as entrepreneurs often have little knowledge of the regulations and technology required to produce safe and wholesome foods. A description and evaluation of the Post Falls workshop is available in the Small Acreages Topic Team report.

- b. The positive reaction of the attendees at these two workshops and information from various stakeholders has suggested that similar workshops be offered in other regions of Idaho. Outcome information for the *Using Direct Marketing Strategies to Enhance the Bottom Line on Small Acreages* workshop is available in the Small Acreages Topic Team report.
- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. The programs reported in this section are collaborative with partners in Washington.

### **Key Theme – Volunteerism**

- a. Volunteers are the strength of the 4-H program. In Idaho, the number of enrolled volunteers has remained fairly stable over the last 10 years. However, the number of youth has increased and new, innovative projects have been adopted. The need for recruiting and retaining volunteers continues to be a priority. A recent informal study of the Western Region indicates that 50% of new volunteers do not reenroll after the

second year. Idaho data supports this finding. Retention of these volunteers would increase the total number of volunteers, reduce the time spent orienting new volunteers, and allow more time for specific volunteer training. The National 4-H Strategic Plan (2001) outlines a plan to develop a volunteer management system that attracts, retains, and energizes youth and adult volunteers with a progressive and enduring commitment to youth. Idaho will benefit from such a volunteer management system.

Youth are highly dependant on their adult leaders to provide education and guidance in the completion of their projects and for the development of life skills. Leaders are generally individuals who love to work with young people, but they may often lack the necessary training to do the job to the level it requires. It is the responsibility of the county extension educators to provide both the technical and process training to volunteer leaders to assist them in becoming proficient at working with young people.

Time committed by volunteers is considerable. For example, there are over 30 adult leaders working with the 295 4-H and FFA members in Twin Falls County who are taking beef, swine or dairy projects. These leaders volunteer in excess of 100 hours annually to help 4-Hers grow in the life skills associated with the animal projects. In addition to life skills, youth learn the technical skills associated with producing meat and milk products.

Programs to retain and increase current volunteer leaders include:

- Training on a regular basis
  - New Leader Orientation
  - Curriculum and new project updates
  - Process Training (Interview Evaluation Training)
- Timely communication:
  - Lines for Leaders (newsletter)
  - Distribution of educational materials
  - Monthly meetings
- Market Program:
  - Advertise (National 4-H Week, Fair Ads, etc.)
  - Recruitment plan (Get to know 4-H Night)
- Provide Additional Resources
  - Maintain a resource library (videos, books, computer access)
  - Learning kits
  - Challenge Equipment

- b. UI 4-H provides advanced training opportunities for volunteer leaders. As volunteer leaders develop increase their knowledge and skills their enthusiasm will is prolonged, and they remain with the program for a longer period of time than without advanced training. Counties have found various ways to provide the advanced training.

Some of the newest Idaho 4-H projects build volunteer training into the project from the beginning. In the shooting sports project, volunteers are extensively trained, and receive certification as shooting sports leaders. Volunteers completing this certification typically show at least a 30% increase in knowledge of the 4-H shooting sports program (which includes teaching skills and safety). Another indicator of success is that the program is growing, and that the pool of leaders who have been certified is also growing.

Several counties require leaders to attend a minimum number of meetings (e.g., 5) and trainings (e.g., 3) each year. Trainings are offered on various topics, and are repeated frequently, to allow volunteers to fit the necessary trainings into their schedule. They particularly like having a Saturday with many offerings to take

advantage. We offer a Super Saturday of training opportunities in late January. In 2002, the Leader's Council is paying leaders a \$50 scholarship if they register and attend the state Leader's Forum in Boise. Their training requirements will be easily met at the meeting.

The leaders continue to support the 5-meeting requirement for 4-H volunteers. The program has grown stronger and more involved with more people involved and aware of the activities and events. We have made special accommodations for the leaders unable to attend the regularly scheduled meetings.

As a team, Extension faculty have developed and delivered a 4-session program about multiple intelligences to teach volunteers and care providers about learning preferences. Activities provided methods to work with a team to use the strengths in the work setting. A post test out of 20 responses about Multiple Intelligences 6 questions were missed out of 160 possible responses.

Another important strategy for volunteer retention is to publicly recognize the time and efforts donated by leaders. In most Idaho counties, 4-H volunteer leaders are recognized during achievement nights, where youth, parents and extension personnel thank them, and where they are able to communicate their satisfaction in seeing youth grow and develop.

A final strategy that will enhance the recruitment and retention of volunteers is founded on the need to provide a safe place for our children. Idaho 4-H has instituted a background check procedure for all new volunteers, and for existing volunteers to be screened over a three-year period. In several counties, leaders are equally concerned about volunteer screening, and have included finger printing as part of the process. These security procedures increase the perception of the importance of volunteer leaders to provide healthful, safe learning environments.

In many cases, new and incumbent volunteers are willing to be involved with youth but may lack in a full complement of skills to provide the optimum experience for the 4-H youth. It is the responsibility of the extension professionals to provide training to volunteer leaders that improves their skills working with youth. The species committee structure allows leaders with similar interests to plan the programs for a specific project. This structure makes it easy to provide training targeted to the needs of a specific group. In these committee approaches, leaders are given training that is appropriate to the species in which they are serving as a leader. In addition to leader training in species areas, training is provided in working with youth and in development of life skills among the members.

The expected outcomes of advanced training for volunteers are improved leadership, and better programs to develop youth and the projects they are exhibiting. Improved projects can be measured using quality and efficiency indicators.

As a result of decreasing resources and extension personnel many leaders have taken on additional responsibility and exhibited outstanding professionalism. Current outcomes include:

Increased leadership skills (managing new leader orientation with the guidance of extension faculty).

Increased number of volunteers (both traditional and non traditional).

Increased number of leaders using CCS materials and resources.

Increased number of volunteers taking on fair responsibilities

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension.
- d. Volunteerism is a National issue for 4-H, with many State Extension Services, councils, and foundations contributing resources and materials to the effort. The projects above describe Idaho's application of these efforts.

## Key Theme – Workforce Preparation - Youth and Adult

### a. Succeeding in the Working World

Teens often lack the basic employability skills needed to get and keep a job in today's society. Research shows that 85% of people who lose a job do so because they lack good work habits, rather than a lack of appropriate job skills. Factors most often cited for job loss are tardiness and absenteeism, failure to follow instructions, and inability to get along with supervisors or fellow workers.

Basic employability skills that are based in a strong work ethic are needed in all occupations. While the proper technical skills are important, today's employers are looking for employees with the ability to communicate effectively, work on a team, resolve conflicts, confront ethical dilemmas and manage their time in an effective manner.

#### Alternative Careers for Idaho Farmers

The state of our agricultural economy is troublesome. Numbers of bankruptcies, foreclosures, and farm families dependent on external income are indicators of the crisis. UI Extension manages a program that helps Idaho farm families develop the skills and training needed to capitalize on employment opportunities in their communities. The first trainees of ACIF entered education or training programs in January 2002. To date, over 100 Idaho farmers have entered the program, and about 40 have completed training and have been employed in their new occupations.

### b. Succeeding in the Working World

Over 280 individuals completed the training  
94% increase in knowledge of work ethics and employability skills  
87% completed mock job interviews and developed resumes

#### Alternative Careers for Idaho Farmers

Participants have completed short-term (< 6-months) and medium-term (6-12-months) ACIF training programs. Participants enrolled in long-term training programs have yet to complete their training. To date, 100% of the completed participants (about 45 individuals) are applying their training to new income generating enterprises or careers. Income projections for these graduates indicate that the annual increase in earning will exceed the total cost for training for both short-term and medium-term programs. After the first year (once project costs have been recovered), the ACIF program is expected to return about \$1.2 million per year in increased income for Idaho farmers.

c. Sources of funding for Succeeding in the working world include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. The ACIF project is totally funded through a \$1.391M grant (over 2-years) from the U.S. Department of Labor.

d. These projects are Statewide in scope.

## Key Theme – Youth Development/4-H

a. In 2002, 4-H in Idaho and across the nation celebrated its Centennial. We kicked off the Centennial with a satellite conference, and followed with local conversations to set the agenda for Positive Youth Development in the next century. From local conversations, more than 50 attended the Idaho State Conversation. Eight youth and adult delegates from Idaho carried Idaho's Agenda forward to the National Conversation for Positive Youth Development held in Washington D.C. Much of the agenda for positive youth development, identified through these conversations, has been incorporated into the Strategic Plan for 4-H Youth Development in Idaho. Local newspapers picked up on this information and included it in



newspapers across the state. Idaho submitted nominations for the National 4-H Hall of Fame and had two individuals inducted in April. In November we inducted 100 individuals into the Idaho 4-H Hall of Fame. At the Idaho 4-H Teen Conference we recognized the oldest 4-H clubs in Idaho, still in existence, along with a historical fashion show and displays of 4-H memorabilia. Numerous displays recognizing 4-H's Centennial were set up throughout the state and we had a birthday party for 4-H with over 500 in attendance as a part of the Idaho 4-H Volunteer Leader Forum.

Idaho 4-H had an External Review, led by CSREES, with 4-H professionals from Maryland, Wisconsin, Iowa and Arizona. We received final recommendations from the review process that have been shared statewide. We have an active 4-H Advisory Committee that meets regularly. Our new 4-H Volunteer Screening Process is fully implemented and at least one-third of all 4-H volunteers in the state have been through the new process, which requires an Idaho Criminal Background Check in addition to a written application, reference checks and an interview. Some counties have been aggressive and have completed the Idaho Criminal Background Check on all of their volunteers.

Participation in the Idaho 4-H Program is continuing to change and increase. In 2002 there was an increase of almost 6,000 4-H members (25% increase), from 22,733 to 28,608. Latino youth has been targeted as an important new audience for 4-H programs in several counties; and enrollment of Latino youth increased from 1,737 (2001) to 4,145 (2002), a change from 8% to 14% of our total 4-H enrollment. Over half of our 4-H members live in towns under 10,000 and animals continue to be the most popular 4-H projects. We had a 5% increase in number of volunteers from 3443 (2001) to 3602 (2002). We had a 25% increase in number of youth attending Idaho 4-H Teen Conference. The Idaho 4-H Teen Conference and Washington Teen Conference will share a day next year as we explore possibilities for joint conferencing in the future. The Idaho 4-H Volunteer Leader Forum had an increase in participation this year and KYG held constant as we are already at space capacity for this event.

#### Community Partnerships

For the last decade the University of Idaho Cooperative Extension System has been strategically positioning itself to improve statewide capacity to support community based programs for children, youth and families in Idaho, who are considered to be at risk audiences.

Through building partnerships within communities between young people, adult volunteer leaders and other community adults, 4-H helps develop leadership and citizenship skills, gain positive attitudes and habits about work, become stewards of the environment, develop substance abuse prevention skills, and engage in entrepreneurial opportunities.

#### Leadership and Citizenship

One mission of 4-H is to help youth acquire the life skills to become active, responsible citizens whether they are enrolled in a citizenship and/or leadership project or not. One way this is done is through community service projects and 4-H citizen activities. 4-H participation begins to decrease about 7<sup>th</sup> grade, before most 4-H youth become involved in citizenship activities. In Idaho, state government is offered as a class for the first time in schools in 8<sup>th</sup> or 9<sup>th</sup> grade. At this age, youth are becoming aware of laws and government, and are shaping habits that will determine whether they will be active participants in government or apathetic. 4-H with its "learn by doing" approach, offers a program for this age group that provides hands-on learning about state government and an introduction to 4-H citizenship programs.

Youth learn leadership skills by observing and listening to others and practicing Leadership behaviors. Teens are faced with many choices of activities and programs and, as a result, 4-H has experienced decrease in teen enrollment. Leadership skills support the core of citizenship, and teen leadership programs contribute to the development of other critical skills. To enhance Idaho teen leadership programs and increase participation, youth and adults need recognition and affirmation. One former Idaho 4-H member commented

on a survey, “if the people I have been involved with would have taken more time to say, ‘Look, you’re an effective speaker,’ or ‘Your opinions really do matter,’ I think I would be much more confident and effective leader as an adult.”

### Technology

Telecommunications offers residents of Idaho the opportunity to overcome great distance that separate them from neighbors, communities, and cities and markets. Yet, telecommunication systems are more difficult and expensive to develop in rural areas. Both the infrastructure and the training need to be in place for rural residents to take full advantage of telecommunications and the Internet. Albertson’s Foundation in Idaho is providing some computers to school districts and the library systems are developing their capacity for telecommunication systems in their communities. However the systems will not be effective until training of community members takes place. Through the Idaho 4-H program (Idaho Technology Team) and the Idaho Rural Partnership (Internet Masters Program) we are making training available through volunteers across the state.

### School Age Programs

Not only is Idaho very rural, Idaho is ranked 6<sup>th</sup> among the states expected to have the fastest growing population of Hispanics between now and 2025. The rural counties of Canyon and Owyhee are located in southwest Idaho. Both counties are areas with one of the highest poverty rates in the state (17% to 22%); almost double the state rate of 12.6%. The high percent of children at the poverty level (28%) is nearly twice the state rate of 16.5%. In the county school systems 59.3% qualify for free or reduced lunch compared to the state average of only 42%. In addition Canyon and Owyhee Counties have one of the highest percentages of Hispanic populations (25.2% to 28.6% of children under 18 years old) in the state. There is much evidence to show that Hispanic youth could benefit from non-school, educational programs such as 4-H. In both counties these at risk youth populations lack the resources and opportunities that encourage completing high school and moving into higher paying jobs. Both school systems have taken steps to address the problems associated with poverty and a diverse population. The communities are aware and supportive of activities that integrate the minority population.

In Idaho a large number of elementary age youth have inadequate adult supervision and interaction before or after school. Just over 70% of the mothers of school age children in Idaho are in the workforce and a single parent heads 19% of Idaho families with school age children. Nearly 20% of Idaho’s children live in poverty. Idaho’s overall school dropout rate is 10.4%. However, the dropout rate for Hispanic youth is 27.6%. In the FY99 school year 4<sup>th</sup> graders in Idaho ranked at the 52<sup>nd</sup> percentile on standardized tests of scholastic achievement. Almost 10,000 cases of child abuse and neglect were reported in Idaho last year. Even though the birthrate to teens and juvenile crimes has dropped slightly in Idaho last year, they are still much too high. In order to provide Idaho’s children with safe and educational environments when their parents are unavailable to take care of them, Extension has helped many communities in Idaho start school age programs. Almost 2,000 youth were reached through these programs last year.

### Financial Management and Career Development

Teenagers in the United States are a formidable economic force. Teenage Research Unlimited (TRU) projected that teens, ages 12 to 19, spent \$172 billion dollars in 2001. Teen consumers spent an average \$104 per week on their own discretionary spending and spending for personal or household purchases for their parents.

Recent youth surveys of economic and financial knowledge demonstrate that young people are woefully ignorant. According to a study by the National Council on Economic Education (1999), two-thirds of all American high school students failed a test of basic economic principles knowledge. In a financial literacy survey conducted by the JumpStart Coalition for Personal Financial Literacy (2002), Idaho high school seniors correctly answered only 53 percent of multiple-choice questions. Students who felt “very sure” about

their ability to manage their own finances were less knowledgeable than those who feel only “somewhat sure” about their ability.

UI Extension delivers a suite of educational programs aimed at improving economic understanding and fiscal management skills of young people, including:

- High School Financial Planning
- Welcome to the Real World
- Succeeding in the Working World
- The Credit Lesson
- Savings and Checking
- Financial Champions

#### Natural Resources and Environmental Education

Youth in Idaho enjoy active learning about natural resources. Understanding different uses of natural resources, and the potential impacts of those uses, is critical in decisions youth of today will make as adults of the future. To help address this need, almost 3,000 youth participate in natural resource and environmental education programs annually.

The University of Idaho along with the Idaho Association of Soil Conservation Districts, and the Natural Resources Conservation Service sponsor a Natural Resources Workshop for youth (ages 12 to 14) and school teaches every summer. One goal of the camp is to develop leadership potential in the youth who return as cabin leaders. Campers apply to be future cabin leaders and are invited back to camp as cabin leaders because of their leadership potential.

Other educational activities in natural resources include: the Red River Natural Resources Camp for area reservation youth sponsored by the US Forest Service and The Clearwater Area Farm and Forest Fair. These programs help youth grow to be more responsible citizens, to better understand resource policy issues, and prepare them to participate in public life.

The Nez Perce Soil and Water Conservation District organizes an educational program each year held at Hell’s Gate State Park. The objective is to educate are 6<sup>th</sup> graders regarding natural resources, their management, and their uses. One area covered is ranching and farming, specifically livestock. A field trip was held for grades two through four at the Arco Grammar school where the students attended an Arbor Day celebration of tree planting, observes how trees were planted and were then given an opportunity to plant a tree in the green belt under the supervision of a master gardener. Students were given a small tree to take home.

Several counties have introduced the Wildlife Habitat Evaluation Program to provide educational activities and to recruit more youth into 4-H. The program consists of classroom and field instruction in wildlife habitat in preparation for a state contest held each year in Pocatello, Idaho. Participants have the opportunity to learn wildlife habitat principles and practices from Extension Educators and professionals. The participants are eligible for scholarships and a national trip if they score well at the state contest. Topics are taught by a combination of UI Educators and Specialists and State and Federal professionals.

Many families in Idaho enjoy recreational shooting and sport fishing. As changes in demographics of the state of Idaho continue, fewer and fewer youth get the opportunity to learn safe and ethical firearms handling from knowledgeable and qualified adults. Shooting sports and sport fishing clubs have introduced many young people to these cultural activities.

### Junior Master Gardener

JMG stands for Junior Master Gardener. It is a horticulture and environmental science program that involves youth of all ages in exploring their world through meaningful activities that encourage leadership development, personal pride, responsibility, and community involvement. Older youth are trained to become mentors for younger children participating in the program.

The curriculum consists of the JMG Handbook (Texas, 1999) that covers eight chapters associated with gardening: Plant Growth and Development, Soils and Water, Ecology and Environmental Horticulture, Insects and Diseases, Landscape Horticulture, Fruits and Nuts, Vegetables and Herbs, and Life Skills and Career Exploration. In addition, existing Idaho 4-H Gardening and Horticulture curricula will be used as supplemental materials.

In Idaho the pilot JMG program will be closely linked to the Idaho Master Gardener (MG) Programs in District II, capitalizing on adults who have completed or are enrolled in the MG program. Youth and adults involved in the program will develop life skills in gardening, nutrition, critical thinking, problem solving, and the ability to identify community concerns, as well as, take action to address them through individual and group projects.

### Camps

4-H Summer Camp has a long tradition and almost 7,000 youth participated last year. Summer camps are unique, in that they do not revolve around a particular sport or activity, but exist for education and fun. Camps provide chances for adults to build stronger relationships with youth, and for older youth to develop their leadership skills as camp counselors or as group leaders. Furthermore, it provides the opportunity to expose the youth to 4-H subject areas with which they may not be familiar.

Based on the information in a brochure from a previous camp, the Director of the PiNeeWaus Community Center on the Nez Perce reservation in Lapwai, ID, requested an Extension activity camp for Nez Perce youth. Underserved audiences were targeted with a Youth Activities Camp planned and programmed by Nez Perce and Asotin County Extension personnel. Grantham Elementary in the Clarkston, Washington School District was selected as the campsite since it is located in a particularly low-income neighborhood. The Lewiston School District Food Services Program provided free snacks and lunch for camp participants. Grants and donations were actively pursued by Extension Educators to keep the fee for camp at a reasonable \$15.00 per participant and provide instructors with the equipments and supplies needed.

### Animals

More than 10,000 Idaho 4-H members participate in animal projects each year. The 4-H horse project has the highest enrollment reaching just under 3,000 youth per year. Youth need to understand the various aspects of the production of meat animals and of milk products. The quality assurance principals that are necessary to produce a wholesome quality product must be taught to the youth. Very few of the youth involved in the 4-H animal programs will ever become actual producers, however, they will all continue to be consumers. The lessons taught in production of meat and milk products will be invaluable in years to come by increasing the population of individuals who understand and appreciate the production of our food.

To help provide the education needed, 4-H livestock day camps have become annual events. This year, extension educators from five Idaho counties and one Utah county planned the camps. A grant was obtained from Southeast Idaho ultrasound for \$500 to fund the camps and operating expenses. They were planned for three hours in each of the counties and were held at the county fair grounds.

One Extension Educator shared that he had developed a new 4-H livestock judging tour in his county this year. This tour provided an opportunity to give an in-depth educational experience on livestock evaluation and selection for 4-H members, parents and leaders. Before each specie was judged, he presented a detailed explanation on how to evaluate the animal for quality. Ninety people participated in the tour. After

the judging was completed the placings were scored and awards given for the highest scoring judges. For the first time in his extension career, a 4-H member received a perfect score for the contest.

b. Community Partnerships

Increasingly, partnerships with other youth service organizations helped us to accomplish the goals of 4-H. The Healthy Communities Healthy Youth (HC\*HY) Coalition provided a forum for accomplishing shared goals and missions in youth development. Over the past three years the HC\*HY has partnered with the local school districts, Boise City, and the Search Institute to conduct a survey profiling the youth in Ada County. Key aspects of this research guide the Ada 4-H program.

City leaders have implemented an approach to strengthen the environment youth grow up in. The survey Search Institute Profiles of Student Life: Attitudes and Behaviors was used to measure assets among youth in Ada County. Similar research has been conducted with hundreds of youth in communities across the country. The survey was administered in December 2001 to students in grades 7, 9 and 12.

As partners in strategic planning with HC\*HY (2002) coalition Ada county 4-H will work toward achieving the mission, vision and guiding principles identified. For 2002-2003 we are working on three specific assets:

- Community values youth
- Positive adult role models
- Positive view of personal future

To help meet the needs of girls at the Gem Youth Services Girls Home, a 4-H Club was started within the home. Though membership fluctuated, the club elected officers and held monthly meetings. In addition, 4-H project meetings were held on a weekly or bi-weekly basis. 4-H projects included Foods and Nutrition and Woodworking. The 4-Hers were encouraged to attend and participate in county 4-H events. A total of 26 girls were part of the 4-H club at the Girls Home. Fourteen of the girls completed 4-H projects including record books, demonstrations and displays. Four of the girls participated in the job interview contest and the prepared speech contest at the County Communications Rodeo. Seven of the girls exhibited at the Gem-Boise County Fair and participated in the Gem-Boise County Home-Ec Judging contest. One of the girls was the top scoring senior in the judging contest. Four of the girls received gold seals on their 4-H portfolio of records.

The Centers for Discovery project assisted the Idaho Communities of Cottonwood, Elk City, Grangeville, Kamiah, Kooskia, and Riggins in establishing locally managed, holistic learning programs that focuses on the social, emotional, physical and intellectual development of youth. In each community, a Program Operations Board comprised of community members, parents, and school personnel, designs and establishes a sustainable program. Each community's board is empowered to shape the local services provided in their program.

Owyhee and Canyon County Cooperative Extension Educators along with State 4-H Specialists are partnering on a project that will offer underserved youth in low-income communities opportunities to expand their development of life skills, leadership skills and time spent with caring adults.

Collaboration among local, state and federal agencies and organizations has allowed us to strengthen program delivery impact in programs throughout the state. Partnerships already established with local coalitions include the Department of Health and Welfare, the Department of Education, the National Community Education Association, the Association of Elementary School Principals, and local school districts, and Community Action Agencies. These partnerships will be continued and expanded.

### Leadership and Citizenship

The residents of Adams County recognize 4-H as an important contributor to youth development. They learn subject matter knowledge and proficiency. By giving demonstrations they learn communication and public speaking skills. Leadership, citizenship and social skills are among life skills they gain. Canyon County has a strong 4-H program. As a result of strong 4-H leaders and a high interest in programs proven to reduce at-risk behavior we have considerable community support.

4-H is the flagship program for youth development in Lewis County. The Lewis County 4-H Program demonstrates success by level enrollment, solid project completion rates, and quality continuing adult volunteers and very few problems that are not handled within our county. Special events such as the Lewis County Fair, the 4-H Project Camp, the Lewis County 4-H Horse Show, the Achievement Celebration, and the Leaders Recognition Banquet help round out the program.

### Technology

Owyhee and Canyon County Extensions are launching a project that will offer underserved youth in low-income communities opportunities to expand their development of life skills, leadership skills and time spent with caring adults.

Marsing is the site for a housing complex for Latino families, both year around and seasonal. A working relationship also exists with the Marsing school system and Resource Center. In addition two large high tech companies, Micron and Hewlett Packard are located in southwest Idaho. Both have acknowledged a shortage of adequately trained workers. Hewlett Packard has been outspoken in the need for a diverse workforce and demonstrated their commitment to the concept in their hiring practices and community involvement.

The Marsing Resource Center, which has over 70 on-going partnerships, is a non-profit organization supported by fund raising and organized primarily as a Job Service Center. However, they have several computers that can be used by youth and community members when not needed for job service. Of the youth frequenting the Center, mostly elementary age, high percentages are Latino and low-income youth, a good indicator that if the resources are available the youth will come.

The focus of the program in Marsing is the teaching and enhancement of skills related to technology with major audience focus on the Latino youth population but would also include other needy populations, i.e., those in poverty or in other risk situations.

To meet these needs, UI Extension entered into a Memorandum of Understanding with the Marsing Resource Center and its partners to manage a USDA New Communities grant, creating projects in both Owyhee and Canyon counties. The Owyhee County project is carried out in partnership with the Marsing Resource Center, which houses the Power Up Lab. In addition to the Power Up lab, high speed internet connectivity is being provided by a grant from the Advanced Internet Satellite Extension Project and will provide the cost for connectivity and equipment for 3 years.

The WOW computer lab was utilized for 4-H programming in Owyhee County in the summer of 2000 and spurred interest in a larger technology project. Interest on the part of teens further created potential to outreach to more youth in the area of technology. One 4-Her was encouraged and mentored to apply for the National Technology Team and was selected to attend "National 4-H Conference" in Washington, D.C.

In the short time the project has been in operation the Responses of parents, teachers and community organization has been positive. The program coordinator reports these positive responses with the program. The Marsing School Superintendent commented how pleased he was to see a program like ours developing in the Marsing area and commended our collaboration with the school and other agencies in town. The

director at the Nampa Boys and Girls Club welcomed our youth technology team from Owyhee and Canyon counties to do robotics workshops with the children at the club. We completed four nights of “Hands-on” robotics with over twenty children. Two parents commented on how much their children were enjoying the latest phase of our technology project, an after school technology program for children kindergarten through fifth. A member of the youth technology team said she enjoys the project because she is learning career skills by using technology and working with younger children. A volunteer leader and parent to three teenagers in the project commented that she felt that the opportunity for her children to learn about computer and other technology was as important as any other learning experience.

#### Financial Management and Career Development

Faculty involved in the Youth Financial Literacy Topic Team provided in-service training to 100 Extension educators, Extension program assistants and teachers. Extension faculty, public school teachers and youth leaders trained 353 additional adults and 9,100 youth with Extension-provided financial educational materials. Faculty created seven new presentations/curricula. Six poster sessions (three peer reviewed) highlighting Idaho Extension youth financial literacy programs were presented at regional meetings. One Idaho Youth Financial Literacy Program received a regional 4-H “Excellence in Team Programming” award and the Idaho Extension Team Award.

#### Natural Resources and Environmental Education

The outcomes easiest to observe include Natural Resource Workshop cabin leaders who were back for a second or third year. Based on performance of the previous year these cabin leaders were more prepared to handle difficult situations and take more of a leadership role without being guided to do so. An evaluation questionnaire was developed that asked questions about 15 identified leadership traits. The cabin leaders were asked for each trait how often they used these skills before the workshop and how often they will use these skills after the workshop. Results show a statistically significant increase in the probability of the cabin leaders use of all fifteen skills. The traits indicating the highest percentage change were “Dealing with difficult people” and “Experiential learning” (learning while doing). “Problem solving” and “Group dynamics” were other traits the cabin leaders indicated they would use after the workshop.

In preparation for the State Wildlife Habitat Evaluation Contest, District II youth and adults participated in six hours and eight learning activities WHEP fun day on Earth Day 2002. Nine youth completed evaluations and gave the overall program a rating of 4.77 on a 5-point scale where 5 is “excellent.” Typical youth comments included; “This was interesting and fun. The trips kept us involved and we learned so much from all the knowledgeable adults. Thanks!” Seven adults completed evaluations; they rated this learning event 4.28 on the same 5-point scale. Adults noted; “I will use ideas for posters for classroom instruction” and “A well planned day! Thanks for your time and effort.” Two teams went on to compete in the state competitions sponsored by the Idaho Fish and Game where the Ada County team won and went on to compete in Ohio at the National WHEP competition and placed 13<sup>th</sup>. A news article about the fun day was published in the Idaho Statesman. The article and a color photo of 4-H members was keyed to the Idaho Statesman.com web site to learn more about 4-H opportunities, the WHEP state contest, and the wildlife habitat evaluation program. Channel 7 NBC also used footage of 4-H members doing WHEP along the Boise River in a nightly newscast on April 20<sup>th</sup> as part of their Earth Day coverage.

Evaluation data from the shooting sports pre/post test indicates that participant’s knowledge has increased as a group. With 61 scores from all five training, the pretest score averages 64% and the post-test score averages 87%. This equates to a 34% improvement. While potential rifle club leaders are required to take this training, most indicate afterwards that the training is beneficial and will help them think through the risks associated with teaching shooting sports.

#### Junior Master Gardener

In the spring of 2002, Ada County Extension instructed a 15-hour, two credit, training over the Junior Master

Gardener (JMG). The curriculum effectively helps kids in the third to fifth grade learn about plants and gardening through fun activities. By using fun activities to teach youth about plants and gardening, they retain more information and gain more for plant life.

The Idaho Science Teachers Association invited the JMG group to present training at the 2002 Idaho Science Teachers Association Meeting in Sun Valley. Four Extension faculty, along with two Master Gardeners, presented a one credit, 8 hour training at the meeting to 16 Idaho Science Teachers. Part of the requirement for taking the class for credit is for them to report how they are using JMG in their classrooms.

### Camps

The results of an 11-item survey administered to parents of children attending 2002 camp show 44% of the parents of non-4-H campers indicated that their child would likely join 4-H, the other 56% indicated their child might join 4-H in the future. 96% of parents indicated their child had shared information learned at the camp with others. 58% of the parents rated the overall quality of the camp as excellent, with 42% rating the camp good. 63% of the parents rated the cost of the camp as excellent.

Because the goal of the Pi-Nee-Waus Activity Camp was for the Nez Perce County Extension office to begin building relationships with members of the Nez Perce tribe, our invitation to return next summer was a welcome sign of a positive interaction. The enthusiasm of the youth during classes was gratifying as well. Planning meetings for 2003 Pi-Nee-Waus Activity Camp are scheduled to begin in February.

Other reports of outcomes from camp indicate increased life skills and fun learning opportunities. Some workshop topics at the 2002 camp were selected to teach youth about community service. One community service project resulted in services for veterans housed in the state VA Hospital in Boise. Other youth learned about growing plants from seed and of the different shapes and sizes of seeds. For the 4-H Money project, campers were given \$10.00 and given opportunities to earn more or lose money throughout the week. Youth could purchase items at the general store, silent auction, and carnival. The goal of the project was to teach youth life skills in money management. Campers, counselors and adults enjoyed this component of camp.

In some counties the most popular camps are day camps. Over 120 youth and 9 adults attended the summer day camps at the Ada County Extension office. Of the 120 youth, 78 were not previously enrolled in 4-H. We were able to reach new audiences with this type of program.

Other camps are more specialized, such as the "Going Places Making Choices" camp for urban youth ages 13 to 18. The camp was in collaboration with Boise City Environmental Compass (a regional planning organization), Alberston's, National 4-H Council, and Ada County Extension, and was housed in the University of Idaho Urban Design facility in downtown Boise.

- c. Sources of funding for these projects include Smith-Lever 3(b&c) and State of Idaho appropriations to Agricultural Research and Extension. Extension faculty received additional grant funds totaling \$9,740 to conduct youth financial literacy programs. A grant was obtained from Southeast Idaho ultrasound for \$500 to fund the camps and operating expenses. Marsing Resource Center and its partners received a New Communities Grant USDA. A grant of \$2,500 from National 4-H Council was used to develop the Going Places Making Choices curriculum.
- d. All 4-H and youth development programs are essentially statewide. Several are developed and delivered in partnership with other State 4-H programs and faculty. The Native American youth camp for at-risk youth from the Nez Perce Tribe was conducted in partnership with Washington State Extension. Many of the National CCS curricula are used in Idaho, and Idaho faculty, along with faculty from many States, contribute to the development and evaluation of these materials.





## B. Stakeholder Input Process

The University of Idaho Cooperative Extension System was engaged in a major, statewide process to gather stakeholder input in 1999, immediately prior to the development of the current five-year plan of work. That process invited and involved Idahoans from across all counties and interests to help determine the priorities of Cooperative Extension. Findings from that effort were used to identify specific customer needs and program expectations and were built into the plan of work as priorities.

In the period since that statewide effort, stakeholder input has been solicited and gathered in a variety of ways. Our State level advisory process has been modified to help focus input. Each academic department in the College has formed and gathered discipline-based advisory councils. In addition, Extension District advisory councils and a Statewide Extension council have been formed, gathered, and led through a process to provide input on issues and needs, and on programs and delivery. These new or re-formatted consulting groups add to the input collected at the County level, through advisory groups.

At the local level, educators in every county maintain a variety of advisory councils including 4-H leaders' associations and expansion (diversity) committees, agricultural producer committees, community development committees and FCS advisory committees. These groups are assembled and provide input about programs, needs, and priorities at least annually.

UI Extension collects input from stakeholders through ongoing program contacts with interest groups, commodity and industry groups, and other organized groups. Extension faculty are active members in a large number of interest-based organizations, frequently holding elected or *ad hoc* leadership positions. At many organizational meetings, Extension (and research) faculty learn about stakeholder needs and priorities through participation on program planning committees or, more informally, through participation in the meetings and conferences. Faculty often schedule specific meetings with members of organizations to discuss existing and future programs and needs that interface the industry and the university. Faculty attend priority-setting meetings with commodity commissions, professional organizations, and industry or producer groups. Extension faculty work with Federal and State agencies to share information about problems, programs, and priorities.

Formal needs assessments are conducted with interest groups and stakeholders, as well. For example, the Potato team administered a formal assessment at the 2002 Potato School. Approximately 300 participants at the conference completed the survey instrument. Youth development needs have been evaluated in a number of community-based surveys associated with the Search Institute survey of community assets. Annually each Extension educator provides a formal opportunity for evaluation and feedback from stakeholders, in association with multiple programs.

Extension programs are influenced by State legislators, through targeted appropriations and legislation. Programs are influenced through other grants, as well. Grants from commodity commissions, local agencies and organizations, and industry, help shape Extension's portfolio.

Stakeholder input is incorporated throughout the development of Extension programs; from problem identification through evaluation. Extension program and planning teams gather and summarize

input from stakeholders that is used to determine program priorities.

## **C. Program Review Process**

At the most basic level, all Extension faculty (and all other UI faculty) develop annual position descriptions that outline major programs for the year. These position descriptions are subject to annual merit review at a number of levels, beginning with division leaders and department heads and ending with associate deans and deans. Merit and program success of each faculty member is also thoroughly reviewed throughout the tenure and promotion process by a panel of faculty, at years 3, 5, 10, 15, 20, etc. Review panels charged with specific program responsibilities conduct further merit review. These review panels may include commodity interests, other academics, agency personnel and stakeholders.

UI Extension has adopted a “Topic Team” approach to program planning and delivery. Teams of faculty meet to discuss priorities, and agree upon which of those projects should be advanced. Topic Team procedures are monitored by College administration. Topic Teams prepare and submit competitive grant applications for state critical issues funding. Successful applications are those that demonstrate that the project meets a team-identified, peer-reviewed priority, and will result in measurable outcomes for stakeholders.

## **D. Evaluation of the Success of Multi and Joint Activities**

Idaho Cooperative Extension’s involvement in multi-state and integrated activities is an integral part of our five-year plan of work. Individual faculty have described their efforts in relation to twenty-two Topic teams that form the framework for our planning and reporting process. The Topic Team priorities were originally identified and characterized following a statewide effort to generate stakeholder input, and are reviewed during annual Topic Team planning meetings. The cumulative total of investment planned in multi-state programming is reported for 2002.

Idaho Extension realizes significant benefits from involvement in integrated and multi-state activities. A principal benefit is that faculty and staff develop new ideas, skills, and interests through collaborations, as they share, learn, and co-develop new applications, new models, and methods with colleagues across mission areas and States. New curricula, new concepts in teaching and learning, and new ideas about how to address stakeholder needs are cornerstone benefits from collaborative efforts.

*Did the planned programs address the critical issues of strategic importance, including those addressed by stakeholders?*

Our efforts during 2002 have directed Idaho Extension resources toward issues of importance to stakeholders. Among the many programs described in section A. “Planned Programs” (above), multi-state examples can be found to address most of the 18 critical issues identified during the statewide stakeholder input process conducted prior to the development of our current plan of work. Many of our multi-state and joint activities produce annual output consistent with the objectives of the project. For example, the annual cow-calf symposium results in a predictable, annual product; and many of our research and extension trials with neighboring States result in annual gains in

knowledge. However, it would be premature to proclaim that our programs have achieved their goals. Many of our intended goals and outcomes have long-term implications.

*Did the planned programs address the needs of under-served and under-represented populations of the state?*

Primary under-served populations in Idaho have been identified as Latinos (doubled over the last ten years, to over 7% of the population), American Indians (1%) and economically disadvantaged persons. Programs that addressed the needs of under-served audiences were both planned and not planned. Among those planned efforts with the greatest influence on under-served residents are EFNEP, ENP (Extension Nutrition Program), EIRP (Extension Indian Reservation Program), and 4-H. Each of these programs directs significant resources to meet identified needs of under-served.

Notable accomplishments in 4-H include an increase in Latino 4-Hers from 1,737 (2001) to 4,145 (2002), a change from 8% to 14% of our total 4-H enrollment. One project that contributed significantly to this increase is the 4-H technology partnership in Canyon and Owyhee counties. UI Extension also continued to grow membership in the new EFNEP/4-H clubs, and started some new clubs for non-traditional audiences, including the Gem County Youth Services Day School.

Much of our outreach targeting Native Americans is conducted through our two EIRP programs. Participation in Extension programs for the Shoshone-Bannock tribe has increased. Further, Extension has begun to deliver more of our regional (multi-county) programs in partnership with the Shoshone-Bannock program (such as the Shoshone-Bannock range school), bringing traditional audiences to visit the people and programs on the Fort Hall Indian Reservation. Our newest EIRP program on the Coeur d' Alene reservation has made significant progress. Extension has worked with the Tribal government in areas of youth development, community development, and natural resources. Extension is responding to an increasing number of specific requests from the leadership and membership of the Coeur d' Alene tribe, and also the Nez Perce tribe. For that audience, Extension developed the PiNeeWaus 4-H camp for tribal members in Lewis and Nez Perce Counties.

Agricultural programs continued to extend their reach to Latino audiences. In 2001, two Spanish-language programs were delivered at Potato School. In 2002, the number of Spanish-language presentations at potato school increased to 13. Spanish-language presentations were also introduced at milking school (at four different locations), and at sugarbeet school. Food safety classes were offered in Spanish for the first time in Idaho, and outreach to Spanish-speaking clients continued through the EFNEP and ENP programs. Parenting programs were introduced to Spanish-speaking audiences this year, through the Parents as Teachers program in Power County. Our "Grandparents as Teachers" curriculum has been partially translated into Spanish, and will be completed in 2003. In addition, a number of our other family-related publications currently under development have been budgeted for Spanish-language versions, as well.

Another important under-served audience includes small-scale farmers. Multi-state efforts with Washington and Oregon continue to reach larger numbers of this audience in both northern Idaho and in the Treasure Valley, with a variety of targeted programs including alternative farming and pest alert networks.

*Did the planned programs describe the expected outcomes and impacts?*

Idaho Extension continues to learn, understand, and implement outcome-based programming. Our 2002 programs were much better aligned with this philosophy and methodology than in any previous year. A review of our annual report of accomplishments will reveal some valuable information about program outcomes for many of our planned programs. However, we are still learning, and in transition, and there is variable quality in the measurement and description of our diverse programs. As UI Extension more fully adopts outcome-based programs, we will develop new approaches to accountability and implement new measurement of meaningful indicators. In most cases, multi-state activities describe outputs of collaboration rather than intended outcomes. Examples of such planned multi-state outputs include workshops, publications, conferences, databases and curricula.

*Did the planned programs result in improved program effectiveness or efficiency?*

UI Extension lost approximately 20% of its professional workforce during the 2002 reporting year. Our Topic Team process, only in its second year, allowed our faculty to deliver quality programs and to produce outcomes exceeding those measured in previous years. Our faculty have also relied more heavily on external collaborations than in the past. We have increased our participation on multi-state projects as well as with in-state partners. These collaborative efforts helped Idaho CES achieve efficiency and effectiveness, especially in the development of educational products. Multi-state collaborations allow diverse faculty to combine skills, talents and resources to develop tools useful to each collaborator and their in-state colleagues. A notable multi-state collaboration to deliver education about weight management brings expertise and materials into Idaho that would not be available otherwise. These collaborations greatly increase the number of programs offered through UI Extension, and reduce per learner costs to a fraction of what any state could accomplish on its own. Our involvement with the PNW publications effort enables Idaho, Washington and Oregon to develop regional products that meet the needs of multiple states, eliminating inefficiencies associated with duplication and reducing the per unit cost of production.

## E. Multi-State Extension Activities

Appendix C

U.S. Department of Agriculture

Cooperative State Research, Education, and Extension Service

Supplement to the Annual Report of Accomplishments and Results

Multistate Extension Activities and Integrated Activities

(Attach Brief Summaries)

Institution University of Idaho

State Idaho

Check one:  Multistate Extension Activities

Integrated Activities (Hatch Act Funds)

Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Goal 1; competitive agriculture</u>		<u>\$249,977</u>	<u>\$367,968</u>		
<u>Goal 2; Safe Food</u>		<u>11,355</u>	<u>74,837</u>		
<u>Goal 3; Health &amp; Nutrition</u>		<u>11,355</u>	<u>79,972</u>		
<u>Goal 4; Natural Resources &amp; Environ</u>		<u>104,370</u>	<u>127,270</u>		
<u>Goal 5; Econ Oppor &amp; Quality of Life</u>		<u>166,443</u>	<u>137,226</u>		
<u>total multistate projects</u>		<u>543,500</u>			
<u>Other Multistate investment (admin &amp; partnering)</u>		<u>197,630</u>			
total reported by faculty _____		<u>\$741,130</u>			
Total (actually expensed in Budget)		<u>\$695,289</u>	<u>\$780,274</u>		

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Director

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Date

Form CSREES-REPT (2/00)

MultiState Projects reported By University of Idaho Faculty

<u>Scope of Project</u>	<u>Title of Project</u>	<u>Scope of Project</u>	<u>Title of Project</u>
International	Barley Enhancement program Research Crop Pathology Potato Production, Storage, and Pest Management Whitebark birch project	AK, OR, WA	Water quality consortium NEMO, TMDLs Regional R&E water quality conference
National	21 <sup>st</sup> Century Task Force Galaxy II – ESP ANREP Aquaculture-water quality EFNEP ENP Pesticide impact assessment CYFERnet	OR	Diversified Ag/ FRA, mustards Treasure Valley Pest Alert Network Extension crop pathology Extension horticulture Late weed emergence study Irrigation efficiency management Youth activities camp
PNW (OR, WA, ID)	Beef Nutrition Conference Alternative Crops support IM/ pests & beneficial insects in alfalfa seed IM/ pests & beneficial insects in Hops Economic Production Checklist General small fruits Professional forestry shortcourse Web-based CCA PNW publications collaboration Whitebark birch Tri-state potato varieties Small farm – direct marketing Potato pest management strategic plan PNW range shortcourse STEEP	UT	Forage trials – ryegrass Cache County crops school Diabetes education Nutrition and health County & State 4-H Livestock day camp
		Western Region	Alfalfa yield and quality Beef cattle breeding & genetics Cow-Calf symposium Research Crop pathology Regional Aquaculture Center Western Rural Development Center WRPLC Huckleberry domestication Potato seed quality & disease Nutrient management-dairy Potato pest management Western Pest Management Center Wildland fire Conservation tillage systems Potato production & storage

MultiState Projects reported By University of Idaho Faculty – page 2

<u>Scope of Project</u>	<u>Title of Project</u>	<u>Scope of Project</u>	<u>Title of Project</u>
WA	Cereals economics and marketing Leader enhancement & development Master Gardener Panhandle/HUB 4-H Shooting Sports 4-H camp activity Food safety advisors handbook NIPF workshop	MT	4-H impact study Professional Forestry continuing education
NV, MT, UT, MO, OR, WY	Grazing academies	CA,OR,ID,NV	COIN-beef cattle
OR, UT, WA	Potato geospatial project	CA	Ultrasound evaluation
CO, NE	Ultrasound Evaluation project	IN	4-H youth exchange program
WV,WA,HI,AL	Germ City	MN	Potato production
UT, WY	Alpine 4-H camp		
MT, WY	WIN in the Rockies		
UT, WA, CA, OH	Dairy reproductive research and extension		
CA,CO,HI,OR,MA, OH,PA	SARE-Small farms-alternatives		
WI,PA,KY	Dairy forage research		
NV	Farm Management MV grazing school		



# F. Integrated Activities

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

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

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Goal 1; Competitive agriculture		\$508,586	\$594,100		
Goal 2; Safe Food		6,136	4,769		
Goal 3; Health & Nutrition		1,455	3,706		
Goal 4; Natural Resources & Environ		118,495	118,405		
Goal 5; Econ Oppor & Quality of Life		286,465	165,517		
Total (Smith-Lever)		\$921,137	\$886,497		

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 Director

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 Date

Form CSREES-REPT (2/00)

UI Faculty with Joint Extension – Ag Experiment Station Appointments

Faculty Member	Primary Goal Area	% CES	% AES
BULGIN	1	20	80
DALTON	1	70	30
GLAZE	1	49	39
OTT	1	1	60
RICHARD	1	4	95
VANDERWAL	1	5	95
ZAUGG	1	25	75
ANDERSON	all	35	35
FRITZ	all	75	25
FOLTZ	5	39	46
GRAY	5	90	10
GUENTHNER	1	50	30
HIGGINS	5	60	40
MAKUS	1	6	50
NELSON	5	50	30
PATTERSON	5	67	30
RIMBEY	4	60	40
TAYLOR	5	50	50
PALS	5	15	15
RIESENBERG	5	8	15
ALLEN	1	10	85
KARSKY	1	50	50
KING	1	18	80
NEIBLING	1	55	45
QUALLS	1	20	80
SHEFFIELD	4	80	20
CULBERTSON	2,3	20	20
McCURDY	2	72	28
RAIDL	3	75	25

Faculty Member	Primary Goal Area	% CES	% AES
SHAKLEE	5	75	25
ALVAREZ	1,4	30	70
BARBOUR	1	15	80
BARNEY	1	10	90
BECHINSKI	4	81	19
BERGER	1	10	70
BROWN	1	34	60
ELLSWORTH	1	75	25
GALLIAN	1	70	30
GEARY	1	79	20
GUY	1	58	40
HAFEZ	1	33	67
HOPKINS	1	80	20
HUTCHINSON	1	25	75
MAHLER	4	25	50
MILLER	1	25	75
MOHAN	1	55	45
MORISHITA	4	68	30
NOLTE	1	81	19
OLSEN	1	73	25
PRATHER	4	70	30
ROBERTSON	1	80	20
SCHWARSLANDER	4	20	80
SHEWMAKER	1	66	34
STOLTZ	1	82	18
THOMPSON	1	40	60
TRIPEPI	4	30	70
MAHONEY	4	80	20
SANDERS	4	80	20