Annual Report

of

Accomplishments & Results

for

Colorado's FY1999-FY2004 Plan of Work

Colorado State University
Cooperative Extension

(Year-Five)
2003-2004

Colorado State University Cooperative Extension: 2004 in Review

It is with pride and a deep sense of responsibility to Coloradans that we prepared this 2004 annual report. The past two years have been very difficult for the agencies of Colorado State University because of reduced state funding. Nonetheless we continue to focus on relevant issues to Coloradans, bringing the power of this land-grant university's research and education to the people of the state.

Cooperative Extension, along with the Agricultural Experiment Station, are defining units of this land-grant university. We are committed to conducting relevant research based on the issues of Colorado via the Agricultural Experiment Station system and providing information and education across the state through the Cooperative Extension network.

This annual report was developed partially in a joint effort with the Agricultural Experiment Station. Because of the research and education linkages fundamental to a land-grant university, we felt it important to highlight that connection and collaborative efforts.

As Cooperative Extension moves into the future, we want to be true to our mission of providing information and education and encouraging the application of research-based knowledge in response to issues affecting individuals, youth, families, agricultural enterprises and communities of Colorado. To that end, we are actively participating with Colorado State University under the leadership of President Larry Penley in the development of a university-wide strategic plan. We have developed "Framework for the Future: A Strategic Plan for Cooperative Extension" which focuses on core competency areas where we have the capacity and expertise to address issues important to Colorado. We expect to serve as the "front door" to Colorado State University through our presence in 59 of the 64 counties. We also are working with the national Extension organization on e-Extension, a national web-based information and education network. This technology, along with our own online question and answer forum, AnswerLink, will complement our ongoing programs that we deliver through direct contact with Coloradans.

The programs highlighted in this report represent a small sample of the programs delivered every day by Cooperative Extension. As we deal with resource challenges in this time of uncertainty, we intend to continue with a strong local presence complemented by expertise on a more regional basis. Efforts are currently underway to increase revenue from contracts, grants and user fees in our educational programs. Said another way, Cooperative Extension is planning to grow into an uncertain future and be a strong, viable part of Colorado State University's future for Coloradans.

NOTE: Due to the physical move of the CE Administrative Offices and the total loss of access to our on-line reporting and accountability system (e-POWER), we are unable to retrieve any data for the 2004 program year. We have used our 2004 state annual report as the basis for the Federal reporting requirement. This year our annual report focuses on 9 'feature stories' that are representative of the work of Cooperative Extension agents all across Colorado. Those stories are organized here by the Goals and Objectives in our original Five-Year Plan of Work.

GOAL I: An agricultural system that is highly competitive in a global economy.

The business environment that agricultural producers operate in today puts the responsibility to manage risk squarely on their shoulders--it truly is the producer's "freedom to farm or fail." Price and income support programs are no longer the centerpiece of U.S. farm policy. The 1996 Farm Bill put into motion a plan to move agriculture to a market orientation, which increases risk exposure for farmers and ranchers. In addition to traditional sources of agricultural risk, such as weather, insect and disease problems, and other production issues, farmers now face increasing risk from market forces of supply and demand. Agricultural producers must take a strategic approach to managing risk in order to achieve long-term success in their operations.

Risk management programs define five categories of risk: production, marketing, financal, legal and human. To survive in today's risk climate, agricultural operators must combine and manage all of their resources effectively. Colorado Cooperative Extension program outcomes have shown that agricultural producers who effectively manage their farm risk and increase their operational resiliency are consistently more profitable than average and are better able to preserve their farm's integrity and enhance the land's environmental sustainability. Colorado Cooperative Extension invests in applied research and education to assist producers in managing livestock and crops to improve management strategies, develop viable management alternatives, increase production, reduce pests and disease, and enhance the quality and competitiveness of Colorado's food and fiber industries. Extension education also helps communities and local producers develop markets and value-added products in order to maximize return on production efforts.

Year-Five Feature Stories

Pickle Co-op Pays Off

Northern Colorado Farmers Pool Resources, Find Profit in Cucumbers

Larimer County farmer Mario Herrera probably didn't know he was about to take on a challenge that had frustrated many before him. Herrera, the founder and force behind the Northern Colorado Pickle Cooperative, believed the idea of growing cucumbers for food processor Dean Foods was a good one and thought a co-op with local farmers just might work. And so far, with a successful 2004 harvest and a three-year contract, it has.

Herrera first met Bob Hamblen, Colorado State University Cooperative Extension director for Boulder County, and Roberta Tolan, Extension horticulture agent in Larimer County, at a Mile High Growers Group meeting in 1999. Hamblen, Tolan and others were working with local farmers to find crops that could be grown profitably in the Front Range counties. Herrera, who began farming at his current location just east of I-25 near the Weld/Larimer County line in 1990, had previously grown cucumbers for Dean Foods, but gave it up when the food processor closed its facility north of Greeley. Herrera still had the name of a contact at the Dean plant in La Junta in southern Colorado, and suggested the growers group consider trying to grow cucumbers for pickle processing.

While Herrera knew growing cucumbers for a pickle processor could provide a farmer an excellent profit, he also knew the many challenges, including the debate over mechanical vs. hand harvesting, the problem of picking the cucumbers quickly once they reach the preferred size, and the race to get the cucumbers to the processor within hours of being picked.

Herrera credits Ernie Marx, Extension agriculture agent in Larimer County, and others within the Extension system for guiding him through the process of determining that cucumbers would be the best bet for a crop that could produce a good return per acre, and staying with him during all the steps of developing the co-op.

"We considered string beans, carrots, onions and peas, but cucumbers fit our growing season for this area so well," Herrera said. A cucumber crop harvested for pickle production can provide a return of up to $1,000 an acre, compared to the $50 an acre return on other crops traditionally grown in the area, such as barley, sugar beets and pinto beans.

Dean Foods welcomed the idea of cucumbers grown in Colorado for the La Junta facility, rather than the Texas cucumbers they were buying, because fresher cucumbers generally mean better pickles. But even with a crop known to be successfully grown and harvested in the area, one of the biggest hurdles would be forming a co-op that worked. The advantages to a co-op, such as a shared contract with a food processor, sharing the purchase of expensive equipment and a pooling of experience and knowledge, are often not enough to overcome the obstacles, said Doyle Smith, Director of the Colorado Cooperative Council. Smith said many new co-ops fail each year in Colorado, mainly due to lack of proper planning and a shortage of capital.

Smith met with Herrera, Marx and others from Colorado State Cooperative Extension and encouraged them to try for greater up-front capital for the pickle co-op. Herrera and the other 15 grower members paid a per acre fee to join the co-op and pay an additional fee per acre to self-insure the co-op against problems with the harvest. The co-op of farmers in the Johnstown, Berthoud and Milliken areas had 320 acres in cucumbers in 2004 and may increase that number for 2005, Herrera said, but added that this is a closed co-op because Dean Foods contracts for only a certain number of bushels of cucumbers.

During the process of finding farmers willing to join the co-op, determining the production cost per acre, negotiating with Dean Foods on a contract price for the cucumbers and learning the intricacies of mechanical harvesting, Herrera worked with Marx and other agents to find information and talk through the issues. "Their knowledge of resources and ability to run the numbers and find the answers was really invaluable, and they didn't try to encourage or discourage us on a certain path, they asked lots of tough questions and then helped us find the answers," Herrera said.

"The Cooperative Extension agents and specialists are a tremendous asset to have, they have absolutely nothing to gain – they just wanted to see us succeed," Herrera said.

Herrera's original invitation to farmers in the area to learn about the co-op resulted in only a 10 percent response, so he had to try again to come up with enough farmers who were close enough together to make the sequenced harvesting work. When cucumbers reach peak pickle size they must be quickly harvested or they're of no use to the processor. For the Northern Colorado Pickle Co-op, members agree to a planting schedule that allows for a staggered harvest so the three mechanical harvesters the co-op purchased can move from field to field in an orderly process.

Only three of the 16 co-op members had commercially grown cucumbers for pickles, so they had many questions. "Mechanical harvesters have been around since the 1960s and now about 60 percent of the cucumber crop is picked that way, but there are some adjustments and things we had to learn to be able to make it work for us," Herrera said. They enlisted the help of Ed Kee, a professor and Cooperative Extension specialist with the University of Delaware and expert in cucumber harvesting, who has visited Herrera's and other farms in the area several times to give advice. Marx and Herrera returned the favor with a trip to Delaware in January 2005, to talk with Kee and his colleagues about the pickle project in Colorado.

Marx said the credit for the pickle co-op success goes to Herrera for "the incredibly good job he did in researching and writing the business plan," as well as Herrera's credibility among area farmers. Herrera said he "can't give enough praise and thanks to Cooperative Extension" for the part they played in the creation of the pickle co-op.

Market-Fresh

Growers Embrace Value-Added Products, Niche-Marketing, and Direct Marketing

Dawn Thilmany, associate professor of agricultural and resource economics at Colorado State University, is dedicated to taking a fresh look at marketing foods. Thilmany grew up on a big but financially struggling farm in Iowa. There, she learned a model of agriculture where the producer didn't have much control over marketing. "But there are other models," she says. "Growers can choose to take control over their destiny by investing more in marketing." Her research and Extension activities show that there is more than one way to market food.

Thilmany stresses that the traditional, big business model of agriculture is not bad in itself, but it's always good to have choice. She feels that her work can help small producers gain access to markets. "It's become a pretty concentrated agricultural industry in the United States, and if you're not a big producer, it can be difficult getting into certain wholesale markets," Thilmany says. "If we can do research that investigates how to gain access to different markets, what share of the market wants to buy products differentiated in a certain manner, and what kind of premium consumers are willing to pay for the product, growers can determine whether they will pay to invest in new enterprises or change current enterprises to include different production practices." Some of the practices that growers might choose to invest in include processed value-added products, niche-marketing, and direct marketing.

Most people think of value-added products as an actual change in the product, such as turning apples into apple juice, but Thilmany points out that a value-added product can be anything that is done to a product that increases its market value. For instance, getting an eco-label or organic designation on a product or having a product labeled as Colorado-grown might increase its value.

With niche marketing, the grower capitalizes on the unique aspects of a product to appeal directly to certain consumers. Probably the dominant niche-market is organics. But in addition to organic certification, Thilmany predicts that consumers may soon see a variety of certifications – for instance, a certification for humane treatment of animals and an American Viticultural Area (AVA) designation for Western Slope wines. AVAs are geographic locations where the climate, soil, and elevation are assumed to give wines a certain characteristic. Although an AVA does not indicate anything about the quality of a wine, Western Slope grape growers should benefit from having an officially designated AVA.

Growers cut out the middle person when they market their products directly to consumers. The farmers market is a classic example of direct marketing. Thilmany's colleague Adrian Card, Extension agent for Boulder County, claims that Colorado has experienced a higher growth rate in the number of farmers markets than other regions of the country. There are now more than 80 farmers markets in the state. However, Thilmany wants to be sure that growers who choose to direct market are aware of the challenges involved.

"If you're going to market directly as a large part of your marketing plan, you have to be as serious about investing in marketing and communication resources as you are about production," Thilmany warns in the speeches she delivers around the state through Cooperative Extension.

"Many people get into careers in agriculture because they love the production aspect of farming," says Thilmany, but for success in direct marketing, they need to bring the same enthusiasm and work ethic to developing business plans. For his part, Card feels that producers are hearing Thilmany's message: "I see more farmers approaching their work by looking at the marketing side first and working backwards, and that's good."

Thilmany and Card are anxious to let farmers know that there are lots of marketing choices out there. There are diverse reasons customers buy a certain product. For instance, there is no one group of consumers that buys organic food. People choose to buy organic for different reasons. Some formulate

their choice based on environmental ideas, others on health concerns. Many parents make the decision to buy organic in order to promote nutrition in their childrens' diets.

Similarly, Card explains all consumers who buy locally don't do it for the same reason. Some customers want to buy locally produced foods because they want to keep agriculture and open space in their communities. Others want the benefits of the dollar they've spent to stay in their neighborhoods. Still others derive comfort and satisfaction from talking face-to-face with the farmer from whom they are buying their food. Then there are the "foodies" (self-proclaimed fans of the Food Network) and proponents of the Slow Food movement that agriculture is a culture: Food and agriculture are things that can enhance their quality of life just like art.

Thilmany hopes to market to all of these reasons by helping farmers create good business plans. Choice can make happy producers and consumers. With an agricultural system that makes room for a variety of different ways to market food, consumers are satisfied because they can make an informed choice about the foods they buy, and producers are happy because they can charge a fair price for a product they produce using techniques they believe in.

From Crop to Cuisine

Colorado Crop to Cuisine (CCC) is designed to connect farmers with restaurant chefs and increase market opportunities for local producers of fruits, vegetables, herbs, artisanal produce, and lightly processed foods. The Colorado Proud program, which received a 2002 Governor's Award for marketing, acquaints agricultural producers with Colorado chefs and coordinates orders and delivery of locally grown products to restaurants. No particular attributes about the product are advertised except that it is locally grown and that there is a 24-hour turnaround between harvest and delivery to the restaurant.

Yet the program is a boon to growers, chefs, and consumers alike. By joining CCC, farmers are able to easily diversify their marketing portfolio; chefs get to work with the freshest products and advertise menu items as locally grown; and consumers get to enjoy fresh tastes and become familiar with foods they might not have tried before. Certainly, even a short list of foods available through the program – raspberries, tomatoes, herbs, onions, peppers, natural pork, and peas – is enough to make any food lover's mouth water. (For more information on CCC, visit http://www.geocities.com/coloradocrop.)

Teamwork Pays Off

Extension, Experiment Stations Merge Strengths to Meet Market Demands

When consumers in western Colorado shuck an ear of sweet corn and delight in the clean, bright kernels, they're witnessing the benefits of partnerships between Cooperative Extension and Agricultural Experiment Station (AES) at Colorado State University. That's because corn that's picture-perfect, disease- and insect-free, sweet, and delicious doesn't happen by accident. Rather, it's because of a long-standing and deliberate effort to prevent the corn from environmental hazards and to create optimum conditions for the highest-quality product possible.

While both Extension and AES may have similar expertise and knowledge, they fulfill different roles. Extension agents work in the field, side-by-side with farmers and ranchers to help identify any problems they may be having or to determine what problems might be developing that haven't yet materialized. Likewise, AES provides the scientists, equipment, and facilities necessary to conduct long-term controlled studies in response to data collected by the field agent. As they study pests, diseases, moisture, temperature, and soils under controlled conditions, they are able to discern the best herbicides, spraying practices, harvest times, packing methods, and more.

An example of the positive impact of these partnerships was recently played out in Mesa County. In 2001, a corn-loving pest called a sap beetle infested about 400 acres of sweet corn, wreaking havoc on the crops and adding up to a harvest loss of about $500,000. Extension entomologist Bob Hammon,

along with AES research scientist, Rick Zimmerman (Rogers Mesa), Fred Judson (Fruita), and John Wilhelm (Orchard Mesa) began studying the beetle in controlled plots to learn how it caused the damage and how it could be controlled.

Within one year, they discovered that a change in the timing of chemical spraying could greatly reduce the impact of the beetle, and subsequently, thousands of acres of sweet corn were saved in future harvests.

Studies on how best to combat the sap beetle are ongoing, but even what the agents have gleaned so far has helped and given growers encouragement.

Olathe resident John Harold grows 1,400 acres of sweet corn, onions, and feed. “The folks at CSU have put a tremendous amount of research into insects and managing water and soil pH levels. They’ve also helped with EPA training and labor. What they do for us is so beneficial that if they weren’t around, we wouldn’t have half the success that we do.”

Extension agronomist Wayne Cooley, with John Murray of the Natural Resource Conservation Service, recently put together growers, Extension agents, and scientists to help treat the pH levels in the soils and irrigation water around the Uncompahgre Valley where Harold farms. According to Rogers Mesa Experiment Station research scientist Ron Godin, high soil pH levels prevent plants from taking up adequate nutrition, so he is conducting the first year of a three-year study to remedy the problem by adding sulfur and compost to the soil and acidifying the irrigation water. Harold appreciates how the cooperative efforts between Extension, research station scientists, and other agencies are proactive, thus preventing future problems from occurring.

Sweet corn growers aren’t the only people who benefit from this type of collaborative research. Studies are being conducted across the state to learn more about onions, alfalfa, canola, field corn, dry beans, mountain meadows, and small grains.

The small and controlled plots at AES research centers are excellent sites for many of the studies, but researchers also need multi-acre plots necessary for pesticide trials. In that scenario, area growers provide parcels of their own farmland for the projects. Pesticide studies are conducted to answer both immediate and long-term concerns so researchers can evaluate environmental impacts; how weather patterns effect the chemicals; the appropriate times and amounts to spray; and when or how pests and diseases develop resistance to the formulas.

In the end, the data gathered from these studies is communicated to pesticide manufacturers to help them create more effective pesticides; to chemical applicators for more efficient spraying; and to the producers themselves so they can yield the best possible crops and, therefore, reap the highest profits. With their involvement, producers become yet another partner in the efforts toward successfully managing agricultural lands and producing affordable and attractive food.

Similar partnerships abound involving a variety of projects which ensure that our food, environment, and backyards are healthy and beautiful. A sample of the kinds of work being conducted between Extension and AES agents include:

- offering technical training and hands-on pruning workshops for Colorado master gardeners,
- reclamation work on mill tailings in Leadville,
- training migrant workers for pesticide use and to understand worker protection standards, and
- educating ranchers on feed and pasture issues during times of drought.

In most cases, the team of agents and scientists from the different arms of the University relies heavily on producers, industry-related businesses, and even retailers. This promises that the tax dollars paying for the work will give farmers the greatest return on their investment and consumers the best, safest, and most affordable products and services.

GOAL II: A safe and secure food and fiber system.

According to the Healthy People 2000 Initiative, foodborne illness in the United States is a major economic burden and cause of human suffering and death. While foodborne illnesses are often temporary, they can also result in more serious illnesses requiring hospitalization, or in long-term disability and death. The Centers for Disease Control and Prevention estimates that one in four Americans become infected with some form of foodborne illness each year, and that annually foodborne contaminants cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the U.S. These estimates make the assumption that because most cases of foodborne illness are mild and/or short-lived and are difficult to trace back to a particular food, only 1% to 5% of actual cases are reported each year and even fewer are investigated.

The hazard of foodborne illness originating from mishandled food is an issue in any location where food is available to consumers. It is especially important when problem food is served to people with the highest risk--including pregnant women, young children, the elderly, and people with chronic disease and HIV. Food poisoning is usually a preventable disease and in most instances can be avoided simply by applying well-established hygienic standards in the production, preparation, holding and serving of food. Effective food safety education must increase knowledge as well as raise consumer awareness about food safety risks—then motivate consumers to change their food-related behaviors—primarily hand washing, adequate cooking of food, avoiding cross-contamination, and washing fresh fruits and vegetables to reduce microbial risks.

Year-Five Feature Stories

Hanging Pathogens Out to Dry

Getting the Word Out on Food Safety with SafeFood Rapid Response and Information Network

Pat Kendall, Cooperative Extension specialist and professor of food science and human nutrition, has always been interested in health and food, but her research on food safety has also made her very familiar with the language of pathogens and viruses. Escherichia coli (E. coli) O157:H7, Listeria monocytogenes, Salmonella enteritidis, Salmonella typhimurium, and Norwalk virus (norovirus) are all essential words in her vocabulary. Fortunately, Kendall doesn't expect everyone to be able to pronounce these pathogens, but she does want everyone to know how to avoid an illness from them.

Food safety is a major problem in the United States. Although it's estimated that only one in 10 food-borne illnesses is documented, Centers for Disease Control and Prevention (CDC) statistics indicate that 76 million people in the United States are adversely affected by food-borne pathogens in any year, resulting in 325,000 hospitalizations and 5,000 deaths. These illnesses are particularly dangerous to the elderly, young children, and those with compromised immune systems.

Food-borne illnesses can be linked to contaminated beef, poultry, seafood, eggs, and produce. "Outbreaks associated with meat may get more publicity because of large recalls, but produce-related outbreaks almost match the number of illnesses linked to contaminated beef, poultry, seafood, and eggs," Kendall says. In fact, in 2000, there were 3,981 reported illnesses associated with contaminated produce and 4,025 linked to the other foods mentioned.

Pathogens appear in surprising places, like home-dried foods. For years, it was assumed that the low moisture content in dried foods precluded the growth of microbes, but research has shown that E. coli O157:H7 and Salmonella can survive basic drying methods. Kendall, along with professor of animal sciences John Sofos (pictured, right) and Ph.D. candidate Patricia DiPersio, has developed some procedures for safely drying foods. They appear in a new Extension publication entitled Drying Foods: Dehydrating Fruits, Vegetables, Leathers, and Jerkies.

"The recommendations in the publication concern how foods that are about to be dried can be pre-treated to enhance the destruction of pathogens," Kendall says. The research team tried various pre-treatment methods including blanching, immersing in salt solutions, and immersing in acidic solutions. By examining the vegetables, fruit, and jerkies about a month after they had been dried, Kendall and other investigators came to several conclusions. For both fruits and vegetables, pre-treating them with an acidic solution enhances the destruction of potentially harmful microorganisms during dehydration. For vegetables, water blanching in a solution that contains ½ teaspoon of citric acid per quart of water is recommended to increase pathogen death and improve general quality. A vinegar dip or ascorbic acid treatment should be used on meat prior to marinating for jerky. Safely drying foods involves pre-treatment, sufficiently heating the food to draw out moisture, exposing the food to dry air to absorb moisture, and allowing for proper air circulation to carry off moisture. These processes provide multiple hurdles that together enhance microbe destruction.

Publications are only one way Kendall gets the word out on food safety. She also writes a weekly column that appears in 22 newspapers, co-edits the SafeFood News online newsletter, oversees a subscription-only listserv that sends out food alerts, and provides training for Extension agents, master food preservers, and the Women, Infants, and Children (WIC) program. She has also been instrumental in developing a Web-based, multimedia continuing education program for nurses, dietitians, and Extension agents on food safety issues for high-risk audiences.

Kendall's message may become even more imperative. "We didn't worry about Norwalk virus three years ago," Kendall says, referring to a pathogen that recently sickened diners at a Fort Collins steakhouse and that has generated news stories concerning outbreaks on cruise ships and care facilities. "The symptoms of Norwalk, vomiting and diarrhea, aren't particularly long-lasting, but an infected person can still be a carrier of the virus even three days after the symptoms disappear." This prolonged infectious period, Kendall explains, can be particularly problematic in a restaurant situation, in which the employer wants to keep the restaurant staffed, the employee wants to earn a paycheck, and outbreaks potentially can spread to a far greater number of people than is possible in a home kitchen situation.

Norwalk virus may seem particularly dangerous because it can land on any surface, but even a microbe like E. coli, whose original source may be in the gut of an animal, can easily cross-contaminate non-meat items without proper sanitary practices. "Furthermore, there is evidence that several strains of pathogens are becoming more virulent," Kendall warns. "Microbes like E. coli O157:H7 are learning to survive in severe environments."

Fortunately, Kendall and Sofos are committed to researching food-related health risks. Simple practices like hand washing, washing all produce with cold water before eating, keeping things refrigerated, and cleaning cutting boards, utensils, and refrigerators can significantly help protect health.

SafeFood: From Farm to Fork

Are free-range chickens safer to eat? At what temperature should a refrigerator be kept? Is there any truth in the five-second rule? Some fascinating and fun questions are asked and answered by SafeFood News (http://www.colostate.edu/Orgs/safefood/NEWSLTR/menunews.html), the online newsletter produced quarterly by Colorado State University Cooperative Extension.

SafeFood News is part of the SafeFood Rapid Response and Information Network, a Web site designed to help consumers and producers make informed decisions by providing objective, research-based information about food production and safety issues. In an entertaining, down-to-earth style, the newsletter explores topics ranging from Food and Drug Administration warnings to urban legends surrounding food.

The Fall 2004 newsletter described an investigation in which a Georgia researcher discovered that 25 percent of the 100 free-range chickens he examined tested positive for Salmonella, matching the

rate of conventionally raised chickens. An article in the Winter 2004 issue on food storage said that refrigerator temperature should be between 35 and 40 degrees Fahrenheit. And in Spring 2004, research was described on the five-second rule – a piece of folklore that holds that if something is dropped on the floor it is still safe to eat if it is retrieved within five seconds. In this case, a high schooler doing an apprenticeship at Hans Blaschek's University of Illinois laboratory, examined cookies and gummy bears dropped on tiled floors. Under a high-power microscope, she discovered that food could become contaminated with only five seconds of contact with inoculated tiles.

GOAL IV: Greater harmony between agriculture and the environment.

Range and Grasslands

The nation's forage, range, pasture and grassland resources, covering about 55% of the land area in the United States, make a vital contribution to the nation's environment and to its economy. Most important are the irreplaceable benefits provided to the public—food and fiber, wildlife habitats, aesthetically pleasing landscapes, and environmental protection for soil, water and air. Grasslands play an important role in environmental quality by providing biodiversity of plant and animal populations, wildlife habitat and green space around expanding urban and suburban areas; they reduce soil erosion and prevent stream and groundwater contamination. Forages and grasslands are a foundation for sustainable agriculture by serving as an economic and environmental safety net. Rangeland contributes directly to the economic, social and environmental sustainability of rural America. Livestock producers and small-acreage landowners who make use of pastures and grazing realize direct economic benefits for themselves and their communities. Nationally, the forage-livestock industry contributes more than $60 billion in farm sales annually, and the $11 billion hay crop is the third most valuable U.S. crop after corn and soybeans. In Colorado, hay is the leading crop in value of production.

Almost 75% of the nation's wildlife live on private land, most of which is open-space rangeland and grassland on farms and ranches. These highly diverse lands, extending from eastern pastures and hay fields to western prairies and deserts, provide habitats for a multitude of plant and animal life, including 20 million deer, 500,000 pronghorn antelope, 400,000 elk, wild horses, and a number of endangered species. Songbirds, pheasants, and countless smaller animals thrive in these habitats. Because of the vastness and diversity of range, pasture, and forage lands, they also play a vital role in providing open space, air and water quality, and a variety of recreational opportunities.

In the last decade, government programs and land-grant university research and education have helped America's agricultural producers make remarkable improvements in soil and land conservation. Adoption of effective conservation practices including conservation tillage, terracing and contour farming cut soil erosion by nearly one-third. Colorado State University Cooperative Extension scientists and educators continue to work with landowners and producers to provide education for best management practices and land stewardship for forage and grassland resources. Extension education is designed to strengthen the management, productivity and health of the state's forage, range and grassland resources; sustain grassland systems that add to and enhance the state's diverse natural resources; and teach best management practices that contribute to well-managed grazing lands. Cooperative Extension works to reinforce two of the most important benefits of grasslands--the control of soil erosion and the preservation of water quality.

Year-Five Feature Stories

The Grass is Always Greener

Manure Generated by Cattle Enhances Gardens and Landscapes

Sunny and dry Colorado offers a great environment for raising cattle but can be a challenging place for growing a lawn. Colorado State University professor of soil science and Cooperative Extension soil specialist Jessica Davis, associate professor of turfgrass science and management Yaling Qian, and professor of animal science and Extension feedlot specialist Tim Stanton are working together to show exactly how the manure generated by cattle can enhance suburban gardens and landscapes. (Pictured from left are Qian, Davis, and Stanton.)

Nearly 89,000 acres of agricultural land are developed along Colorado's Front Range annually, and about one-third of this area, or 29,653 acres, is estimated to be planted with turf every year. Front Range soils naturally tend to be heavy and clayey, and are easily compacted during construction. They also tend to lose their topsoil, making them very difficult to landscape or garden. Compost can help restore these soils. "Composted manure is great for landscaping," Davis says. "Turf represents one potential high-value use for composted manure."

Davis and Qian, along with graduate student Grant Johnson, are studying the benefits of using manure as top dressing on turfgrass. They have concluded that compost application at a rate of 35 cubic yards per acre improved turf quality and increased clipping yield over no treatment at all, and two annual applications of manure at this level eliminated the need for synthetic fertilizer to maintain a good-looking lawn. As manure and compost are the best natural, organic sources of phosphorus for Colorado's high pH (basic) soils, applying composted manure rather than chemical fertilizers could be a very attractive lawn care option for consumers interested in organic products.

The research team also is investigating how turfgrass top-dressed with composted manure responds to drought. A dry period was imposed on the turfgrass test plots. One week after the dry period had started, plots treated with 35 cubic yards per acre of compost had higher levels of soil moisture and lower turfgrass canopy temperature than untreated plots. The compost increased soil water-holding capacity and reduced drought stress on established turf. The compost treatments even helped one variety of turf, a drought-sensitive bluegrass, to maintain its quality during the simulated dry spell. "These beneficial results have important implications in Colorado, where water conservation is of critical importance," Davis says. "Homeowners and turf managers can conserve water and save money on their water bills."

To make manure safe for use in the landscape, it must be composted. "Composting is a managed microbial process," Davis explains. "The microbes need carbon, nitrogen, water, and oxygen in order to compost well. When the composting process proceeds correctly, temperatures will rise to 140 to 150 degrees Fahrenheit. These high temperatures kill pathogens and weed seeds in the manure. The entire composting process can take up to six months, depending on the intensity of the management."

However, even when composted correctly, some manure sources are better than others. Due to the diets of some animals in feedlots, some composts have relatively high levels of salt that can hinder seed germination and slow plant growth. The Colorado State University research team is addressing the problems posed by salts in manure. Stanton uses his role as Extension feedlot specialist to explore methods of reducing the amount of sodium in manure by changing the diets of cattle in the feedlot. The industry standard is to supplement the food of feedlot cattle with 0.25 percent sodium chloride. Stanton and the team compared cattle treated in this standard way with cattle that were given no sodium chloride, cattle that were offered free access to a salt block, and cattle that were given a 0.125 percent sodium chloride supplement. After feeding on these diets for six months, the cattle were harvested, and their carcasses were evaluated. The cattle with the different amounts of sodium chloride in their diets performed the same as the cattle fed the standard supplement when evaluated by average daily gain,

feed intake, and feed efficiency. However, the sodium levels in the manure were significantly reduced by lowering the sodium chloride levels in the food fed to the cattle. Therefore, removing salt from the rations of feedlot cattle could reduce sodium levels in manure and increase the horticultural value of manure without having detrimental impacts on cattle performance.

As the benefits of composted manure are proven to homeowners and landscape professionals, it is Davis' hope that the market for compost may rise, giving feedlot operators and small-acreage horse owners an incentive to compost manure. Manure shouldn't be a disposal problem as it sometimes is now, particularly when it has such high potential to keep urban and suburban landscapes beautiful.

Colorado State University Collaborates with Composters

In the past year, a group of local composters has joined together to form the Rocky Mountain Organics Council (RMOC). Their first order of business has been to develop compost quality standards to help consumers evaluate a compost and its potential uses.

Salinity levels are one of the key factors in evaluating compost quality. When salinity levels are too high, the RMOC recommends that compost not be used on salt-sensitive plants, like ornamentals. Another factor that contributes to compost quality is compost maturity, which is measured through both carbon to nitrogen ratio and germination tests.

Colorado State University has been at the table with RMOC aiding in the development of the quality grades from the start. In addition, research associate Kathy Doesken has just finished drafting a fact sheet on the compost grading system for consumers, and research associate Addy Elliott is planning a workshop to train composters and agricultural professionals in February. Colorado State and RMOC also are working together to seek funding for additional research in the area of compost quality and use. The relationship between Colorado State and RMOC is just one example of how the University supports partnerships to encourage local businesses and agricultural sustainability.

Restoring an Ecosystem

Extension Agents Contribute to Award-Winning Partnership Among Agencies

In 1999, The Colorado Division of Wildlife (CDOW) recognized that mule deer and elk on the Uncompahgre Plateau were competing for winter food sources, and that the mule deer were losing. In an effort to boost their survival, $500,000 of CDOW capital construction funds were necessary to complete the mission of improving their habitat. This infusion of funds launched an unprecedented collaboration between the CDOW, Bureau of Land Management, US Forest Service, and the Public Lands Partnership (PLP) that ultimately created the Uncompahgre Plateau Project (UP).

These days, UP reaches beyond concerns posed by the mule deer and is responding to wildlife and ecological degradation resulting from decades of grazing, logging, the introduction of roads, and juniper colonies created from fire management efforts. Overall, the project embraces the region's economic, social, cultural and ecological issues and is impacting 1.5 million acres of private, state and federal lands – 75 percent of which are public.

Successfully fulfilling their mission "to develop a collaborative approach to restore and maintain the ecosystem health of the Uncompahgre Plateau, using best science and public input," UP now boasts collaboration between approximately 50 governmental agencies and more than 600 private citizens. The project has received national press coverage and the attention of Lynn Scarlett, the assistant secretary of policy, management and budget at the Department of Interior (DOI) who visited the plateau last April. More recently, Kathleen Clark, director of the DOI, awarded UP with the nationally recognized 4 C's award (Conservation through Communication, Consultation and Cooperation).

Colorado State University Cooperative Extension livestock and range agent, Robbie Baird-LeValley, joined the collaboration soon after it was established. Participating under the umbrella of the PLP, Baird-LeValley brings to the table 16 years of expertise in range and livestock science. Since her

involvement in the project, LeValley has served as liaison between public land permittees, private landowners and the various government agencies. She's kept each entity aware of what the others were doing and what kind of science was necessary to move her part of the project forward. Her ability to communicate to these diverse groups has contributed to the ongoing success of the project.

"Collaboration of this magnitude, on 1.5 million acres and with the level of detail the agencies have given to it, is rare," said Baird-LeValley who is one of eight members of UP's technical committee. "One of the most promising components of the project is that it's portable to other people working on other landscapes. What we're doing will be a good, practical working model for projects occurring elsewhere in the future."

The overarching goal of UP is to improve the quality of the ecosystem's health and restore the natural functions to the Uncompahgre Plateau. Specific goals include:

- increase the species, age diversity, and productivity of native plant and animal communities,
- change the distribution of plant age classes to match a more natural distribution,
- improve watershed health, water quality and yield,
- improve habitat quality for most wildlife species,
- increase the recruitment and natural survival of mule deer,
- improve the distribution and quality of the mule deer winter range,
- develop community partnerships to promote the health of the Plateau while sustaining social and cultural values,
- provide new stewardship opportunities for sustaining community-based natural resource businesses, and
- demonstrate a collaborative partnership between communities and agencies working together in an adaptive approach to ecosystem management tailored to restoration efforts across jurisdictional boundaries.

Baird-LeValley currently teams with CSU Agricultural Experiment Station Research Scientist Ron Godin, and representatives from Utah State University and the Utah Department of Natural Resources, to develop a program to produce seeds native to the plants on the Plateau. Seeds from vegetation on the Plateau will be collected and taken to producers who will plant and grow them at their farms or ranches. The plants will then generate their own seeds, which will be taken to one of the test sites on the Plateau where they will be planted again.

From the get-go, Baird-LeValley urged that local growers be selected to participate in the seed development project, identifying nine producers with appropriate growing sites. LeValley and Godin's expertise and active participation will greatly contribute to restoring the plant balance on the Plateau, but it will also provide additional income to enterprising producers.

"This has been a great learning experience for me," said Godin who is located at the Rogers Mesa Research Station in Hotchkiss. "Even though we're just beginning with this project, I love trying new technologies that we can hopefully pass on to growers. It will take about five years to get there, but in the end, it will help growers diversify and increase their profit margins." The long-range goal, he said, is to revegetate 6,000 or so acres per year over the next ten years. To do that, growers will provide about 500 acres for cultivated native seed production and grow up to 60 plant varieties.

The plant seed program will go on indefinitely, and LeValley hopes that it will become business-as-usual for the participating producers and future growers. Between the efforts to restore the natural conditions on the Plateau and boost the economic viability of area producers, UP qualifies as one of the most successful partnerships on record.

GOAL V: Enhanced economic opportunity and quality of life for Americans.

Year-Five Feature Stories

Planning for a Future

Financial Security in Later Life Helping People Prepare for the Future

Dub Couch was looking for ways to make his money work harder when he attended a series of seminars offered by Colorado State University Cooperative Extension called Financial Security in Later Life.

The 75-year-old Rocky Ford resident proudly proclaims he found what he was looking for. “In 10 months, I’ve gotten a 7.94 percent return that beats the heck out of 3.25 percent.”

Semi-retired, Couch buys and sells golf carts and he’s looking ahead to full retirement. “I feel that I want my money to make all the money it can for 10 more years. At that time I want to run and play.”

Couch learned about retirement planning, types of investment products, legal issues and long-term care insurance in the five-session program held the spring of 2004 at the Otero County Cooperative Extension office in Rocky Ford.

The sessions represent a national initiative of the Cooperative State Research, Education and Extension Service (CSREES) aimed at meeting the retirement planning needs of folks like Dub Couch. Strengthening the capacity of families and individuals to establish and maintain economic security is at the heart of the initiative.

“At a national level, resources were assembled to support each of the states in carrying out this initiative,” said Jacque Miller, Cooperative Extension family economic specialist.

Research from CSREES in 2001 showed that retirement confidence had declined and fewer people were planning for retirement. A survey found that only 46 percent of the baby boom generation was saving for retirement.

“We’re not good savers in this country,” Miller said, “but after this seminar, 98 percent of the participants that responded said they felt prepared to make decisions about investments and would add at least two additional tasks to their financial planning such as reducing expenses to reach investment goals and consulting with a financial planner.”

Brenda and Dave Daniher drove 45 minutes each way to attend the Financial Security in Later Life seminars in Rocky Ford. The Danihers live on a ranch 20 miles south of La Junta where they raise Shire draft horses and cattle.

“The seminar from Cooperative Extension that caught my eye was the one on how to make a will,” Brenda Daniher said. Today she is the process of creating this important legal document.

The seminars helped the Danihers better understand what their retirement future looks like. It confirmed that they are on track in their planning, Brenda Daniher said.

“We do have some small investments in retirement programs and we realized that if we live frugally now and continue to live frugally, our golden years will be modest ones. But we are modest people anyway. It was nice to find out that we’re doing all right,” she said.

The Danihers and Dub Couch were among 200 people around Colorado to participate in Financial Security in Later Life sessions held around the state last year.

Statewide, the program is targeted at baby boomers and older individuals, even people who are already retired, Miller said. “At the community level, agents recruited audiences from either the general public or workplaces.”

In Otero, Bent and Crowley counties, Jean Justice, area Extension agent, family and consumer sciences, wanted to follow up on a series of women's financial education classes offered in the early 1990s.

"I thought this was a natural continuation of that, the next step. With everything going on in the economy today and the number of baby boomers we have out there, this was a natural time to do it. To make sure that particularly the baby boom generation would be ready for retirement."

Justice delivered the sessions on planning for retirement and making long-term care insurance decisions. She recruited a local financial planner and a lawyer to lead the other sessions. Justice had additional community support for the program.

"All of our local banks donated money to help support it and pay for advertising. One bank gave scholarships."

A team of Colorado agents tailor materials created at the national level for their local programs, Miller explained. "Our Colorado Web site was set up for our educators. Agents can click and download and copy handouts or outlines or get PowerPoint presentations."

Each of the seminars in the program is designed to spark action by the participants. In Colorado, these activities included estimating income sources and monthly financial needs in retirement, using a template created by Colorado Cooperative Extension to estimate retirement savings needs.

The work doesn't stop after the seminar sessions end. Attendees go away with "to-do" lists that might include crafting goal-oriented investment plans, calculating the amount of money needed to achieve their retirement goals and researching specific investments.

Agents gathered evaluation summaries after each session to help gauge the benefits of offering the seminars. "We asked them questions about what they had already done to prepare for retirement and what they were planning to do," Justice said. "We also asked them to rate the financial value of the workshop."

In general, participants found it valuable, she said. The majority of Otero County participants placed the financial value of the seminar series to themselves as between $100,000 and $500,000.

Miller said CSU Cooperative Extension plans to continue the Financial Security in Later Life seminars.

"The national figures on financial planning are just too daunting for us to ignore," Miller said. "With approximately 60 percent of Americans who die without a will, trust or advanced health directive, we already have plans in place for an updated legal education program, called, Legally Secure Your Financial Future."

Keeping Diabetes at Bay

Small Changes Do Make a Big Difference in Preventing or Delaying Diabetes

Jesse Ortega did just what the team who developed Small Changes Make a Big Difference hoped he would do. After attending the one-hour, lunchtime workshop on diabetes awareness in Arapahoe County he lost weight, started exercising and he's kept diabetes at bay.

Ortega, a workforce specialist with Arapahoe/Douglas Works, is happy he's been able to avoid taking medicine, even after his doctor diagnosed him as "on the edge of having diabetes."

Small Changes Make a Big Difference started in 2003 with Jane Frobose (pictured right in photo), Colorado State University Cooperative Extension family and consumer sciences agent in Denver, and Kay Zimka, then agent in Jefferson County. Each agent did needs assessments in their respective counties and decided to focus on diabetes for two reasons, said Frobose.

"First, type 2 diabetes is an epidemic in Colorado and across the country, and second, there was compelling research showing that for many people, this kind of diabetes can be controlled, or even prevented, by small lifestyle changes," Frobose said.

Frobose and Zimka were joined by Sheila Gains (pictured at left in photo) and Jennifer Eich, also Colorado State Cooperative Extension agents in Arapahoe and Adams counties, respectively, along

with dietetic interns from Colorado State. Their goal was to create a self-contained program that could be easily offered throughout the state. The team, along with collaborators from the department of food science and human nutrition at Colorado State, Colorado Diabetes Prevention and Control Program at the Colorado Department of Public Health and Environment and Salud Family Health Centers, put the Small Changes package on a compact disc and offered the CD (in both English and Spanish) to agents and others working in public health in Colorado and Wyoming.

The CD includes a PowerPoint presentation, activities and handouts for participants, pre-, post and follow up surveys and evaluations, risk statistics for diabetes for Colorado and the nation, print-ready posters to promote the workshops and information on additional community resources.

Gains reported that during the first year, the program was delivered to more than 350 people in Colorado and the CD distributed to some 100 Extension agents and health educators in Colorado and Wyoming. Those participating have shown a 20 percent average increase in knowledge of type 2 diabetes, including risk factors, signs and symptoms, and disease complications. Most important, participants have learned actions they can take to reduce their risk or delay the onset of type 2 diabetes. Post surveys of participants showed that after taking the workshop, 89 percent developed a personal plan of action to change their behavior in at least one way to reduce their risk.

Gains said the one-hour session is appealing for several reasons. “We often present during a lunch hour, so it’s easier to make time. Also, this information is broadly aimed at those who think they may be in a high risk group or those who are interested in gaining information for a family member who may be at risk, so there’s no need for participants to identify themselves as diabetic,” Gains said. And probably most important for those attending, there’s good news about the steps people can take to fight this disease.

A 2002 research report from the national Diabetes Prevention Program at George Washington University showed that while lifestyle changes and treatment with medicine both reduced the incidence of diabetes in people at high risk, the lifestyle intervention was more effective than the drugs. Frobose adds, “Just a 5 to 7 percent weight loss and the addition of walking 30 minutes a day, five times a week, was shown to be effective in preventing diabetes in a high risk person. This is good news for a lot of people.”

Approximately 17 million people in the United States, or 6.2 percent of the population, have diabetes, a 50 percent jump from 1990 to 2000. About one-third of those with type 2 diabetes don’t know it, because the disease often shows no symptoms for seven to 10 years, Gains said. Early detection is important because over the years high blood glucose damages nerves and blood vessels, leading to complications including heart disease, stroke, blindness, nerve problems, kidney disease, gum infection and amputation.

For Jesse Ortega the program was just what he needed. “This class enlightened me. I was already doing about 75 percent of the things they recommend, but adding the other 25 percent really made a difference. My blood pressure and cholesterol are down and I’m doing more exercise. I’m even hoping I can get off my blood pressure medicine eventually.”

Jhanadu Garza, who works in risk management for Arapahoe County, said Small Changes Make a Big Difference helped her understand more about the diabetes that runs in her family and gave her the insight to make some changes, including losing weight. “I was really encouraged to learn that even a 10 percent weight loss could make a big difference for me,” Garza said.

Growing People

Volunteer Support Extends Reach of Cooperative Extension Programs

Millions.

That’s the dollar value of volunteer hours donated to Cooperative Extension programs.

Across the state, whether it's native plant masters, Colorado master gardeners, 4-H leaders, food safety advisers or others, thousands of Coloradans are putting in thousands of hours annually.

Their efforts multiply Cooperative Extension knowledge, research and resources exponentially.

Take 4-H, for example. Dale Leidheiser, Extension 4-H youth development specialist, said that in 2003 a volunteer group 12,659-strong put in an average of 128 hours per person per year.

The statewide professional staff of 60 full-time workers couldn't begin to make a dent in the program delivery 4-H volunteers provide.

The U.S. Department of Labor values volunteer time at $17.19 per hour. That's a dollar value of more than $25 million in 2003 for 4-H volunteer hours alone.

Cooperative Extension's Colorado Master Gardener program offers similar benefits. David Whiting, Extension consumer horticulture specialist and Colorado master gardener coordinator, said there are about 1,700 volunteer gardeners statewide. In Boulder County, for instance, there are two Extension agents working in horticulture and 300 Colorado master gardeners.

"The Colorado master gardeners multiply the staff potential by hundreds," Whiting said. "If we did not have our volunteer gardeners, we would not be serving home horticulture. The Extension agents' time is spent working with the volunteers and the volunteers' time is spent serving the community."

Whiting said the value of Colorado master gardeners' time is about $1 million a year. "I'm excited about that. That's quite a contribution back to our community," he said.

Around the state, volunteer gardeners like Steve Kanewske (pictured at left) of Denver answer phone calls in county offices, help with school and community projects, at farmers' markets and plant diagnostic clinics.

Kanewske has been serving as a Colorado master gardener since 1996. Retired from a position at US West as director of corporate advertising and brand management, Kanewske said he wanted to learn more about gardening.

"I've always had an interest in horticulture and did it as a hobby. When I retired, I had a desire to get a little more solid foundation in some of the dos and don'ts and the proper way to do things. This was an excellent way to do that."

Master gardeners receive 60 hours of training taught by Colorado State University horticulture specialists and Extension agents. Once trained, the volunteers are required to contribute 50 hours the first year and 24 hours each year after that.

Kanewske has found a variety of ways to donate his time as a Colorado master gardener. He works with Habitat for Humanity homeowners on the design, installation and maintenance of their landscapes. He volunteers at the ProGreen Expo held each year in Denver, serves on a speakers bureau and helps review applicants for new volunteer gardener positions.

The Native Plant Master program, offered jointly by Gilpin and Jefferson counties Cooperative Extensions, is a volunteer-training program twice removed. The program trains a handful of trainers who then train larger groups of trainers.

"We're training the staffs and volunteers of other agencies. We do not have to manage those volunteers but they use the information," explained Barbara Fahey, director of Jefferson County Cooperative Extension.

Fahey launched the program in 1997, which asks each native plant master to commit to teaching 30 people about Colorado plants every year.

From there the benefits begin to multiply like ripples on a pond.

"We're in the thousands of public contacts every year. Through the end of 2003 we had 51,399 direct educational contacts as a result of this program," Fahey said.

"In 2003, more than 14,000 public acres have had noxious weeds controlled on them. More than 16,000 acres had native plants used in landscapes. That's more than 30,000 acres impacted by the program." Fahey said.

In 2004 alone, by the end of the third quarter the program had 3,755 direct educational contacts.

Volunteer trainer Christine Leahy said that participating in the Native Plant Master program allows her to explore a personal passion for native plants. She was already at work in the environmental education field when she helped Barbara Fahey develop the program. Leahy was director of Jefferson County's Lookout Mountain Nature Center at the time.

"Barbara and I worked together to conceptualize this idea of having an educational program that empowered homeowners and resource staff to teach the public about native plants," Leahy said. "There wasn't time for me to do that while on the job, even though the position I had was in environmental education. So I was committed to doing that with Barbara on a volunteer basis."

The Native Plant Master program focuses on teaching people about native plants as well as the nonnative plants and weeds that can threaten them. As they learn to identify various plants and their places in the local ecosystem, they become increasingly excited, Leahy said. "It helps them value these plants in a way they have not, perhaps, thought of before."

The efforts of volunteers like Leahy and Kanewske extend beyond the obvious roles of teaching people about plants or gardening, cooking or sewing, or raising cattle. Extension volunteers are engaged in community building.

Helping people with home gardens, for instance, isn't just about growing better backyard tomatoes. "Gardening is how people teach children job skills. It's a creative outlet, it's a stress reducer," Whiting pointed out. "We're not in it because we want to garden. We're in it because we're growing people."

More than a Monetary Return

Colorado State University Cooperative Extension statewide 4-H staff of 60 full-time workers can't begin to make a dent in the program delivery 4-H volunteers provide. In 2003, a volunteer group of 12,659 4-H leaders put in an average of 128 hours per person. According to the U.S. Department of Labor, who values volunteer time at $17.19 per hour, this translates into more than $25 million of service to their communities.

In exchange for 60 hours of training from Colorado State, over 1,700 Colorado master gardener volunteers give their communities 50 hours of service their first year and 24 hours of service the following years. This contribution is estimated at $1 million a year in service to Colorado communities.

High-Tech Weed Pulling

4-H Youth Help Routt County Manage Noxious Weeds and Learn High-Tech Skills

The Routt County 4-H community mapping project is a parent's dream come true.

The project represents a happy confluence of kids, high-tech computer applications, the outdoors and community service. The outcome: relevant experience in real-world endeavors.

Thanks to a partnership with the Orton Family Foundation, and knowledge gained about Global Positioning System and Global Information System technology, six youth from Routt County took on the task to help local resource managers by mapping noxious weeds at Elkhead Reservoir in Elkhead State Park.

Jay Whaley, Routt County 4-H youth coordinator, organized the project after being contacted by Connie Knapp, community mapping program manager for the Orton Family Foundation in Steamboat.

"Community mapping is a tool used by all kinds of decision makers," Knapp said. "In the case of the Routt County project, mapping the location of weeds around the reservoir helped resource managers understand the extent of the problem and make decisions about how to deal with it."

"Our community mapping program puts youth working alongside community members on real issues so that they learn new skills, like GIS technology, and how to apply it to decision making," said

Knapp. The program also teaches youth that math, science and technology skills have applications in the real world beyond school.

"I think the real carrot in this whole community mapping process is that kids learn in a real-world context that it's not that they have to learn math or how to measure pH just because they should," she said. "They see it being done for authentic reasons, are brought into the whole process of looking at the problem, monitoring it, assessing trends and hopefully working with the state parks folks to find out how to minimize those weeds."

The Routt County project also helped resource managers comply with a 2003 government directive requiring all state agencies to map tamarisk, a new invasive weed found growing along waterways, Whaley said.

Whaley launched the project in February 2003 by rounding up kids he thought would be interested, based on past 4-H projects. Ultimately, a group of six, ranging in age from 12 to 15, came together to form the 4-H community mapping team.

"It's a pretty unique group. We have three from Hayden, on the western side of the county, one from Steamboat and two home-schooled kids," Whaley said.

Emily Hallenbeck, a 15-year-old native of Hayden, said at first she wasn't very interested in the project. But the technology element and a friend's participation hooked her.

"I got interested because it had to do with computers," she said. Like many kids her age, Hallenbeck enjoys "messing around" with computers and discovering the different things that she can do with them.

After selecting the team, the next step was a class in GPS technology, which consists of 27 satellites orbiting the earth and a series of ground stations around the world that monitor these satellites.

Both civilians and members of the military use handheld GPS receivers to communicate with the satellites using radio waves. Combining information from four satellites, the receivers are able to pinpoint and save a location on earth, called a "way point." This data then can be loaded into a computer with Geographic Information System software and used to create maps.

Once the group was familiar with the hardware and software, members spent a full day surveying Elkhead reservoir. Happily, Whaley said, they found no tamarisk there. By boat and on foot the young mapping team members marked all of the Russian Olive plants they found using their handheld GPS units.

With their data in hand, team members paired up, with each pair creating a map. "So they not only learned how to load the way points on to the computer, we taught them all the things that need to be on a map and what they were trying to relay," Whaley said.

"It was easy to make the points," Hallenbeck said, referring to the way points created with the handheld GPS units. "But it was hard to put them into a map and design the map so it was attractive for people to read."

Hallenbeck said it took time for team members to figure out all the things the computer systems could do along with choosing appropriate colors and creating usable map keys for their maps.

Whaley plans to continue the 4-H community mapping team again in the spring of 2005. He also hopes to help educate others in 4-H about the power and potential of GPS and GIS technologies. He has developed a seven-step process for implementing projects.

Meanwhile, the GPS units haven't been gathering dust. "The kids come back in and check out the units."

One team member gathered a group who went out and mapped noxious weeds on his father's ranch. Hallenbeck and her friend, Jennifer Epp, mapped hounds tongue, a cockle-burr-producing weed, in the Hayden Town Park. They devised a control plan – chopping down the plants and bagging seed heads – and plan to go back in the spring to monitor the problem.

Whaley said the technology involved in community mapping offers opportunities for 4-H to expand its relevance to youth. “A lot of times the public sees 4-H as cooking and cow projects. They don’t realize all the citizenship and leadership and now even technology we’re providing to youth.”

Stakeholder Input Process

Annual critiques and input on our Plans of Work are provided from our State Extension Advisory Committee and from County Advisory Committees. This is an ongoing process whereby critiques and requests are funneled through county faculty to regional directors and discussed at regional meetings on an annual basis. An inventory of all advisory committees at the county and state level reveal more than 112 committees involving over 2000 individuals throughout Colorado.

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Program Review

The program review process has not changed since the submission in 1999. We continue to work with the Ag Experiment Station to develop joint program review processes based on our joint development of a program accountability system. In addition, all projects conducted by Extension Specialists are subject to the peer review process established by each College.

Evaluation of the Success of Multi & Joint Activities

Multistate Projects - As shown in the attached table, Colorado State University Extension faculty are engaged in a great variety of multistate activities largely focused on the immediate high plains states or in the western region. The activities are organized around our ongoing Program of Work Teams and provide additional resources and synergy in high quality programming and research. Because budgets have remained level or been reduced, there are no increases to the efforts reported in the 2003 Annual Report.

Multistate Extension Activities

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___Colorado State University_____
State_____Colorado_____

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

Title of Planned Program/Activity	Actual Expenditures FY 2004
___See Attached Description and _____	_____$417,337_____
___ Table _____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Total _____

Marc A. Johnson_____ August 16, 2005____
Interim Director Date

Form CSREES-REPT (2/00)

Multistate Extension Activities

Note: The funds shown identify ONLY CSU Smith-Lever dollars.

Program	States	FTE	Funds
Colorado Engaging Communities in Transition	Arizona, New Mexico, Utah	1.0	99,000
Certified Greenhouse Professional Program	Wyoming, Utah	.2	19,800
Colorado Water Outreach Program	Wyoming, Montana, North Dakota, South Dakota, Utah	.3	29,700
Veterinary Extension in the West	Nebraska, Wyoming, Utah	.3	29,700
Colorado Row and Vegetable Crop Foliar Disease Management	Nebraska, Wyoming	.2	19,800
LandHelp	New Mexico, Arizona, Wyoming	.1	9,900
Turf Production and Management in Colorado	Wyoming, Nebraska, Arizona	.2	19,800
Commercial Greenhouse Crops	Wyoming	.2	19,800
4-H Youth Life Skills Development in Archuleta County	New Mexico	.25	24,750
Sustainable Ag Using Alternative Methods in LaPlata and Archuleta Counties and San Juan County New Mexico	New Mexico	.2	19,800
4-H Youth Life Skills Development in La Plata County	New Mexico	.1	9,900
Living on the Land – Small Acreage Curriculum	Oregon, Nevada, Idaho, Washington, Utah, Montana, California	.3	29,700
Preserve Warhill Germplasm	Wyoming, Nebraska	.1	9,900
Southeast Colorado Dryland Cropping Systems	Kansas	.2	19,800
Northeast Colorado Dryland Cropping Systems	Kansas	.3	29,700
Food Safety	Wyoming, Minnesota	.2	19,800
Sunflowers	Nebraska, Kansas	.3	29,700
Irrigation	Nebraska	.2	19,800
	Total		**460,350**

Agriculture Experiment Station Integrated Activities

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___Colorado State University_____
State_____Colorado_____

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

Title of Planned Program/Activity	Actual Expenditures FY 2004
___See Attached Summary and the_____	_____$580,652.00_____
___Planned Programs Report_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Total _____

Marc A. Johnson_____ August 16, 2005
Interim Director Date

Form CSREES-REPT (2/00)

Colorado State University Cooperative Extension/Agriculture Experiment Station Integrated Activities

Note: No new projects have been added for the 2004 program year due to budget restrictions.

Program	Funds
Information Technology for Colorado Agriculture and Natural Resource Management	$ 31,763.00
Colorado Integrated Resource Management Western Center	26,850.00
Crops Testing and Alfalfa Variety Testing and Extension Education for Colorado	30,950.00
Colorado Environmental Pesticide Education Program	15,050.00
Sustainable / Organic Integrated Fruit Production for Colorado	15,525.00
Improving Certified Seed Potato Production and Management	43,500.00
Salinity Work in Colorado's Lower Arkansas River Basin	19,900.00
Turf Production and Management in Colorado	53,986.00
Colorado Row and Vegetable Crop Foliar Disease Management	48,140.00
Horticulture and the Green Industry	22,525.00
Precision Agriculture	15,833.00
Colorado Water Outreach Program	16,675.00
Colorado Sheep and Wool	31,763.00
Colorado Field Crop Entomology	35,202.00
Southeast Colorado Dryland Cropping Systems	14,450.00
Eastern Regional Range-Livestock Drought	12,000.00
Northeast Colorado Dryland Cropping Systems	15,350.00
Southeast Colorado Water Management	17,175.00
Southeast Regional Range-Livestock	30,000.00
Commercial Vegetable Crop Production	15,075.00
Technology Assessment, Applied Research and Information Delivery for Potato Production in Colorado	68,940.00
Total	**$580,652.00**

Stakeholder Input Process

Annual critiques and input on our Plans of Work are provided from the State Extension Advisory Committee and from County Advisory Committees. This is an ongoing process whereby critiques and requests are funneled through county faculty to regional directors and discussed at regional meetings on an annual basis.

Actions taken to seek stakeholder input:

Every county/area is expected to have an Extension Advisory Committee made up of a broad representation of stakeholders from all programmatic and geographic areas, as well as representative of the diversity found in the county. Evidence of an active advisory committee must be documented in performance appraisals by county directors. The committee and its efforts are also documented during the regular affirmative action review conducted in each county/area. Counties frequently have programmatically oriented advisory committees as well. In addition, specialists frequently have advisory committees at the state level, comprised of commodity group representatives, cooperators, etc. An inventory of all advisory committees at the county and state level reveals more than 112 committees, currently involving over 2000 individuals throughout Colorado.

Process used to identify stakeholders and collect input:

Representatives from program recipient groups (4-H leaders, master gardeners, agricultural cooperators), as well as programmatic collaborators (community agencies, county departments, commodity groups) are expected to be a part of the advisory committee structure. In addition, county advisory committees must reflect the ethnic diversity of the county. Advisory committees are expected to meet on a regular basis as evidenced by minutes and recommendations regarding programming being forthcoming. Extension agents provide programmatic input to committees and receive feedback and suggestions for new programs and changes to existing programs.

How Input is used:

Programmatic suggestions are funneled from county advisory committees to the State Extension Advisory Committee. In addition, in the summer of 2003, Extension convened a large group of stakeholders for a state-level "Futuring Conference." Representatives of county advisory committees, state-level collaborators, faculty and staff met for 2 days to re-establish the programmatic direction of Cooperative Extension in Colorado. The complete furturing report, ***Framework for the Future: A Strategic Plan for Cooperative Extension*** can be found on line at:

http://www.ext.colostate.edu/staffres/futuring/future.pdf

Out of this effort came a reaffirmation of six Core Competency Areas with twenty-six work teams:

Core Competancy Areas and Work Teams

- ***Strong Families, Healthy Homes*** - Leader: *Jacque Miller*
  - Early Childhood and Out of School-Age Care
    (Ann Bruce and Lois Illick)
  - Family Economic Stability
    (Laurel Kubin and Jacque Miller)
  - Healthy Colorado Homes
    (Laura Au-Yeung, Elisa Shackelton, Ken Tremblay and Nancy Banman)

- Strenthening Families and Marriage
  (Robert Fetsch and Pam Neelan)

- **Nutrition, Health and Food Safety** - *Leader:* Pat Kendall
  - Food Safety Education
    (Pat Kendall and Mary Schroeder)
  - Health Promotion/Chronic Disease Prevention
    (Jennifer Anderson and Shirley Perryman)
    - Small Changes Make a Big Difference...a Diabetes Awareness Program
      (Jane Frobose and Sheila Gains)
    - Strong Women, Strong Bones
      (Bonnie Sherman, Luann Boyer and Gisele Jefferson)
  - Promoting Food Security for Limited Resource Audiences
    (Susan Baker and Sarah Morales)

- **4-H and Youth Development** - *Leader:* Jeff Goodwin
  - K-12
    (Jan Carroll and Janice Dixon)
  - Leadership and Volunteer Development
    (Dale Leidheiser and Gary Small)
  - Project and Curriculum
    (Connie Cecil and Gail McKee)
  - Strengthening Youth Through Families
    (Christine Cerbana-Whaley, Jan Miller-Heyl and Janet Benavente)

- **Community Resource Development** - *Leader:* Nancy Banman
  - Sustainable Community Development
    (Dawn Thilmany, Kipp Nye and Jim Conley)

- **Natural Resources and the Environment** - *Leader:* Steven Newman
  Broad emphasis area with major impact on the quality of Colorado. It is closely aligned with the national extension initiative of the same name. Integrate research, education, and extension expertise to address contemporary environmental and natural resource problems with new approaches that are economically sound and environmentally advantageous.
  - Environmental Horticulture
    (Carol O'Meara, Jim Klett, David Whiting, and Carl Wilson)
    - Diagnostics and Pest Management
      (Carol O'Meara and Mary Small)
    - Landscape Water Use
      (Carl Wilson)

        - Plant Introduction and Invasive Species
          (Kerrie Badertscher and Jim Klett)
        - Sustainable Landscapes
          (Jennifer Bousselot and David Whiting)
    - Land Management
      (Roy Roath)
    - Pest Management
      (Thaddeus Gourd and Howard Schwartz)
    - Small Acreage Management
      (Dennis Lamm and Ed Page)
    - Water Resource Management
      (Troy Bauder and Joel Schneekloth)
- **Competitive & Sustainable Agriculture Systems** - *Leader:* Tony Koski
    - Agriculture and Business Management
      (Jeff Tranel)
    - Beef
      (Jack Whittier and Brad Gillmore)
    - Dairy, Forages, and Feedgrain Ag Systems
      (D. Bruce Bosley and Joe Brummer)
    - Small Ruminant
      (Steve LeValley and Tom McBride)
    - Sustaining Local Agriculture
      (Ed Page and Dennis Lamm)
    - Wheat-Based Dryland Cropping Systems
      (Jerry Johnson and Ron Meyer)

2004-2005 Summary of Extension Impact Reports* from ePOWER

March 2005

**Note: used in national database3/05*

Name	Impact Report Title	Success Story, OutPuts, Outcomes or Impacts?	Report Date
Adamson, Deb	Extension Nutrition Program Translation Project	P--four translations completed	11-25-03
Akey, Joy	Diabetes Health Fair	P—evaluation of event	2-3-05
Akey, Joy	Colorado On the Move	O—(5 counties data) participants completing program increased physical activity by 40-60%	2-18-04
Alvillar, Susan	Tri River Area Leader Training	P--positive feedback	1-16-05
Anderson, Jennifer D.	4-H Afterschool- 4-H Pizza Garden	O--increase of 27% agriculture knowledge gained—of what?	12-12-03
Anderson, Jennifer D.	Discipline Training for Shooting Sports Leaders	P—evaluation of training event; O--increased confidence by leaders	11-10-03
Anderson, Jennifer D.	Non-traditional 4-H programs in Rio Blanco County	O—youth learned things, shared stories	11-10-03
Arnhold, Lorri	Integrated Nutrition Education Program	None--results in 2005	2-11-05
Arnhold, Lorri	Dining with Diabetes in Colorado	O--60% of participants increased exercise, read labels, use less sugar and reduced fat	2-11-05
Arnhold, Lorri	Nutrition Adventures (4-H Youth)	O--participants gained knowledge	2-11-05
Au-Yeung, Laura	Marketing and Promoting Cooperative Extension	O--increased community support & awareness, more partnerships	1-31-05
Au-Yeung, Laura	Colorado Master Gardener Training Program	O—increase in MG volunteers	1-31-05
Badertscher, Kerrie	Sustainable Landscaping in Boulder County	O—survey results of task force training	1-28-05
Badertscher, Kerrie	Clinic Impact Study – Master Gardener Program for Boulder County – Final Report	O/I--44% changed watering and/or other gardening methods; 21% indicated using less pesticide as a result of the information; 24% indicated using more appropriate control	1-28-05
Badertscher, Kerrie	Growing Gardens, Cultiva Project report for 2005	None, but has one excellent testimonial	1-28-05
Badertscher, Kerrie	Sustainable Landscaping Media Success Story for Boulder County	P—results of media placements; one $50,000 donation	1-26-05
Badertscher, Kerrie	Sustainable Landscaping POW Report	P—tells about work done	11-7-05
Badertscher, Kerrie	Boulder County Jail Project	O--the first jail employee (of three) completed the Master Gardener program; I--19,136 pounds of fruits & veggies saved taxpayers more than $22,700 in 2003	11-7-04
Badertscher, Kerrie	Expanding Outreach via Colorado Master Gardener Clinics	I--estimated value of volunteer time to the community, based upon the value of $17/hour, exceeds $20,000 per season; high level of customer satisfaction and increased volunteer retention	11-7-04
Baird-LeValley, Robbie	Range Management School	***O--34% increase in knowledge gained from the range management schools;*** I--schools directly responsible for improved grazing management on over 4 million acres of public land	3-3-05
Baird-LeValley, Robbie	Tri River Area Sustained Livestock Profitability	I—savings of $99,440.00 for one producer	2-12-05
Benavente, Janet	Eat Well For Less Using TEFAP and other community food resources	O--increased knowledge of nutrient needs through the lifespan; relationship between diet and health;	10-13-04

		food safety and prep strategies Shows no specific data to explain	
Benavente, Janet	Learn, Eat, Act and Plan to Live Well (LEAP)	O--87% of participants named "more exercise" as one behavior they planned to adopt; others said "making more healthful food choices"	10-12-04
Benavente, Janet	Senior Series	O--92% of all participants indicated that they gained new and useable knowledge from attending an educational session	10-17-03
Benavente, Janet	Eating Well for Less for Pregnant and Postpartum Teens	O—40% or greater improvement in these behaviors: using grocery list, selecting healthy foods, reading labels, easting breakfast; 100% of participants showed improvement in one or more nutrition practices	5-21-04
Bosley, Bruce	Collaborative On Farm Wheat Trials in Morgan, Logan, and Sedgwick Counties	O—second hand feedback on adoption	1-31-05
Bosley, Bruce	Using Observational Agronomy on Brown Mustard as an Alternative Colo field crop	O—shows limited success	1-27-05
Bosley, Bruce	Farmers Coping with Drought and Changes in Colorado Water Law in the Lower South Platte Counties	O--at least 3 South Platte Basin producers shifted to reduced or no-tillage farming on most of their corn plantings	1-13-04
Boyer, Luann	Morgan County Diabetes Success Group	Incomplete report	2-9-05
Boyer, Luann	2004 ServSafe Training	O--73% learned importance of proper temperatures on food safety, 36% learned correct way for cleaning & sanitizing; 27% learned how to avoid cross-contamination and proper handwashing; 73% will keep temperature logs on foods heated and cooled; 43% will implement cleaning and sanitizing practices	1-30-05
Boyer, Luann	"Living With Your Teen" parenting programs	O--parents indicated they felt better able to cope with teenage behavior and identified strategies to use when youth were defiant, but shows no data	11-11-03
Boyer, Luann	Spanish ServSafe Food Handlers' Training (combined with ServSafe report above)	O--participants showed an increase in knowledge from 52% pre-test to 78% post-test, also 70% reported why personal hygiene is important and 30% indicated how to do sanitation and disinfecting in food service	11-11-03
Brewer, Perry	Health and Human Services Grant to Cooperative Extension	Incomplete report—indicates what **will** be done	1-25-05
Brewer, Perry	2004 State 4-H Shoot Summary	P—figures show number of participants	1-21-05
Brewer, Perry	Golden Plains Area CE Technology Program	P—report shows trends, outputs, no impacts of technology efforts except weather data archives were instrumental in resolving several court litigations—but no data to back up CE's role or no hard results/data to explain	1-21-05
Brewer, Perry	Advanced Internet Satellite Extension Project	WAYYYYYYYYYYYY too long for an impact report with no impacts	12-18-03
Cecil, Connie	Elbert County Support Team Creates CAN--Community Assistance Network	P—only gives number of families, individuals served with no mention of Extension's role	2-11-05
Cecil, Connie	4-H Members Provide Project Evaluation	O--4-H members reported against outcomes on personal & people skills, but no participant data to determine N or no hard results/data to explain	2-11-05
Cecil, Connie	A 4-H Survey of First Year Families	P—survey results of Cloverbud program	2-11-05
Cecil, Connie	4-H Members Evaluate Decision-Making	O—pre-post results of 4-H Youth Council officers' survey on decision-making skills	2-11-05
Cecil, Connie	Elbert County Provides Screening Process for Volunteer Applicants	P—volunteer training strategies	12-29-04
Colburn, David	Meat Quality Assurance Program for Logan County	O--actual survey results of 32 juniors who completed the pre-post-test required of Youth MQA program	9-17-04
Conley, James	4-H Workshop with Collegiate 4-H Club	O—results of one workshop evaluation	10-15-04
Cotton, Scott	Salt Cedar Control Project--Upper Arkansas Weed Management Cooperative	P--87 acres of salt cedar were treated after establishing collaborations with landowners; O--implementation and use of both the first aerial	1-28-05

		spraying of salt cedar and the first use of the EPA riparian approved salt cedar herbicide "Habitat" were approved and implemented	
Cotton, Scott	State and County Animal Response Team Development	P—shows mostly action taken, but did indicate from efforts that animal disaster response time statewide has been reduced from 4 to 2 hours	1-28-05
Cotton, Scott	Rangeland Monitoring Education Program	P—tells about work done	1-28-05
Cotton, Scott	Disaster Training for Extension Staff	P--tells about work done; O--indicates CE and community emergency-disaster response entities have strengthened collaboration for future events in 23 counties	1-28-05
Covington, Tommy	Grape Production for Small Acreage Qwners	O--over the last two years, 25% of the small acreage owners who attended one or both workshops put in vineyards varying from 10 vines to over 500 vines; actual grape production results are still in the future	2-8-05
Covington, Tommy	Drought Recovery	P—verbal results of drought workshop for livestock producers	2-8-05
Cramer, Steve	Life Skill Development in Logan County	P—some survey results of Character Counts workshops to 3rd & 6th grade students	9-15-04
Dillon, Merlin	Sustainable and Profitable Crops in the San Luis Valley	I—CE programs have increased growers' knowledge of benefits of bio-control crops; growers have adopted research-based BMP practices such as non-chemical alternatives for pest management; use of compost has increased dramatically over the last 5 years; use of sorghum-sudan for cover crop increased dramatically in 2003 Shows no hard results to explain	1-11-05
Dixon, Janice	Morgan County Youth Development	P—tells about involvement in youth programs	1-30-05
Dixon, Janice	Morgan County Workforce Preparation	O—survey results of Character Counts program for Brush 5th graders	1-30-05
Dixon, Janice	Morgan County Youth Development	P—number of participants in school enrichment; O--22 5th graders learned importance of fruit in diet and how to make pie crusts and took home cherry and apple pies for their families…?	1-30-05
Dixon, Janice	Morgan County Youth Development	P—number of participants; O--results of after-school science activities showed youth learned science processes and shared information they learned; majority of youth felt they were able to solve problems, follow instructions and contribute as a team member	1-30-05
Dixon, Janice	Morgan County Youth Development	P—number of participants in National Western Stock Show trip; O--vaguely that students increased their knowledge of agriculture	1-30-05
DuBois, Beth	East Elementary	P—feedback from participants in 5-week nutrition and cooking program funded by the Colorado Trust	7-26-04
Einarsen, Dan	Small Acreage Management Educational Impacts	I—results of seminars and follow-up study of participants show Small Acreage Seminars are succeeding in goal of helping improve land management practices and increase understanding of these practices among respondents but no data to explain	1-3-05
Fabrizius, Kim	4-H Forever Fund	S—success story--shows results of youth involvement in raising money for scholarship fund	2-15-05
Fahey, Barbara	Native Plant Masters Make a Difference	O—74% of surveyed Native Plant Masters reported they included native plants in a landscape as a result of their participation in the program; 82% used information from the program to control noxious weeds on private property or public lands they manage; lands impacted totaled 38,300 acres	2-14-05
Fernandez, Daniel	Promotional Materials for DCTV	Incomplete report	1-6-05
Fernandez, Daniel	DCTV 4-H Evening News Program	P—receipt of a $10,000 grant	1-6-05

Fickenscher, Bruce	Sand Creek Fire Prevention and Response Meeting	P—brief report on what's been done and work to be done	1-12-05
Fickenscher, Bruce	Bovine Viral Diarrhea Testing of Bulls in the Southeast Colorado Bull Test	O--general theory on test results; I--secondary report--in other states where BVD testing was done--antibiotic costs decreased by as much as 90%--shows only secondary data from other states	12-22-04
Fickenscher, Bruce	Biological Management of Field Bindweed in Southeast Colorado	P—shows work done and work to do	12-21-04
Fisher, Eldon	2004 Traditional 4-H Enrollment Gender and Ethnicity Golden Plains Area	P—lists ethnic and racial numbers for 4-H enrollment	1-28-05
Fisher, Eldon	Golden Plains Area 4-H Camp	P—two year comparison survey of camp attendance and feedback of experience	1-27-05
Fisher, Eldon	GPA 4-H Livestock and Small Animal Record Books	P—survey of livestock record book users	1-27-05
Frobose, Jane	Family Strengthening (Human Development) 04--Family Matters - Denver	O—3,400 Denver county families surveyed on use of Family Matters Newsletter: 96% reported increased knowledge of parenting skills; 95% reported increased knowledge of child growth & development; 96% reported actual behavior changes in nurturing children; 99% reported increased awareness of realistic expectations of children; 88% reported improved skills and behaviors in communication, resolving conflicts and making effective decisions	1-27-05
Frobose, Jane	Money In September: Catching Up and Planning Ahead Financial Security in Later Life	O—participating Denver City employees reported personal improvements in their financial skills: 94% would set financial goals; 89% would develop a personal spending plan; 92% would set up or maintain a savings plan; 96% would create a plan for keeping important papers Shows "woulds" not "dids"	1-27-05
Frobose, Jane	Healthy Denver 04--Small Changes Make a Big Difference: Diabetes Awareness and Prevention	O—more than 500 individuals participated in SCBD statewide in 2004; of those completing pre- and follow-up surveys 92% plan to make changes after attending the program; of those 63% plan to lose weight; 67% plan to increase physical activity; 54% plan to make changes in food choices; 67% plan to see their health care providers Needs follow-up to determine if "plan-to's" turn into "did-do's"	1-27-05
Gourd, Thaddeus	Front Range Small Acreage Management 2004	O—used long-term behavior change instrument that returned 20% of the surveys; returned results showed the majority of small acreage landowners were using weed management practices; 60% were able to identify pasture grass species on their property; other results	1-27-05
Gourd, Thaddeus	Northeast Colorado Dryland Cropping Systems 2004	O—Wheat Field Day event evaluation showed 81% of participants gained help in decision making; 49% increased ability to manage farm resources; 42% reported greater control of situation	1-27-05
Gray, Amy	Boulder Valley SAC Program	O—survey returned by teacher on kids' feedback on school program—raw data not summarized	1-26-05
Gray, Amy	Boulder County 4-H Life Skills Development - Team	O—ninth graders were surveyed about assets; but not sure who was surveyed for the raw data in this report—not summarized and unclear	10-14-04
Hall, Gary	Private Landowner Weed Control	O—weed education effort by CE and cost share program resulted in over 3500 acres of ground being treated for noxious weeds in Custer County	2-11-05

Hamblen, Bob	High Value Crops - Cucumber Coop (combined with Ernie Marx's report)	S--success story with I—with CE assistance, growers established a cucumber co-op and received a contract with Dean Foods, La Junta, for a flat $3.50 per bushel pricing; 320 acres were committed with an average harvest of 200 bushels per acre. Dean Foods has asked the co-op to expand production to 1,000 acres in the next two years.	1-28-05
Hamblen, Bob	Using PAM for Water Conservation and Sediment Reduction	O—follow-up survey of ditch company representatives participating in 2003 workshop with 30% response rate—of **??? (typo) "%0%"** of those respondents utilized PAM in their ditches for either sediment control or seepage losses; 100% of those using PAM felt it was worth the investment	10-14-04
Hammon, Bob	Managing sap beetles in Western Colorado Sweet Corn	O—2002 research effort identified effective management techniques for sap beetles using a modified spray program giving improved control of the beetles; more than 80% of the area sweet corn growers attended a 2003 results meeting and of these, 75% gained improved understanding of how sap beetle biology affects management decisions with improved ability to assess risk and make planting decisions	2-25-04
Hammon, Bob	Pinyon Mortality Education for Small Acreage Owners	O—a series of workshops on pinyon Iips beetle were held in Western Colorado with 400 people attending; 95% increased knowledge about pinyon tree mortality; of these, most were able to set realistic goals for managing the bark beetles; more than half interviewed will use knowledge to protect trees from mortality using cultural control options to maximize treatment effectiveness	2-25-04
Hancock, William	Southeast Colorado Wool Pool	I—CE agents helped develop a wool pool with increased economic advantages to the wool producers in SE Colorado; pool was able to market truckload lots which attract wool buyers and create a competitive bidding situation and decrease marketing expenses for small producers especially related to freight Would be good impact but shows no hard results or data to explain	10-18-04
Helm, Alan	Short Stature Clearfield Sunflower	O--research protocol developed & tested to determine effectiveness of Clearfield technology; weed control was exceptional in all treated plots compared to untreated; 90-95% control was maintained in all treated plots	10-1-04
Helm, Alan	Kochia Management in Irrigated Alfalfa	O-research plots were established to explore use of chemicals in later growth of alfalfa for kochia and Russian thistle control; injury was observed on all treated plots, however, alfalfa recovered completely and maintained plots free from weeds for 3 months	10-1-04
Helm, Alan	Chemical Fallow Herbicide Options	O--research project to explore residual herbicide options for chem-fallow in wheat showed residual herbicides could effectively manage weeds and extend the time period between applications Shows no hard data to explain	10-1-04
Helm, Alan	Water Use Efficiency of Key Colorado Weeds	O—research on water use by weeds produced some data shared at meetings	10-1-04
Helm, Alan	Weed Management in Sunflower Production	Incomplete report	10-1-04

Hla, Aung	Water Management Tools	P—number of participants and work done	1-28-05
Illick, Lois	Food Safety and Quality	O—scores and feedback from evaluation of ServSafe trainings & canning workshop	9-15-04
Illick, Lois	Child Care Provider Professional Development	P—shows number of participants	7-2-04
Jones, Kurt	Artistic Creations Unlimited, LLC	S—success story--shows results of Extension assistance to small business	11-22-04
Julian, Joe	Legislative Weed Awareness Brunch	P—feedback on weed poster display	10-27-03
Kubin, Laurel	Catch Up Strategies for Retirement	I--results of follow-up study of county employees who participated show 10/14 determined the amount needed to save each month for retirement; 7/14 took action to decrease debt; 8/14 increased contributions to an IRA and/or employer sponsored retirement account; 11/14 reviewed their Social Security benefits	1-28-05
Kubin, Laurel	Invest For Your Future	O--scores and feedback from evaluation of Invest in Your Future workshops for county health employees	10-12-04
Kubin, Laurel	Teens Learn Money Management Skills	O—scores and feedback from evaluation of Spend Some, Save Some, Share Some classes for high school students and high risk Workforce Center summer youth	10-12-04
Kubin, Laurel	Economic Stability for Estes Park Low Income Families	O—scores and feedback from evaluation of series of classes held in Estes Park for Crossroads Ministry clients and other community members	10-12-04
Lancaster, Gary	Communities in Transition	S—success story on CE's involvement in grant-funded wind energy project	2-3-05
Langworthy, Kate	Healthy, Wealthy and Wise Campaign in Bent, Otero and Prowers Counties	O—feedback and soft results of diabetes education trainings show "several" people reported an increase in activity level and/or slight weight loss; most indicated they had raised their awareness and planned at least one long-term life choice change	10-15-04
Langworthy, Kate	Children, Youth and Families at Risk - New Communities Project in Bent, Crowley and Otero Counties	P--tells number of participants & feedback on CYFAR project and DARE to be You program	10-15-04
Liess, Donna	Weld County Families and Communities Find Ways to Provide Care	P—feedback and soft results of county human service collaboration and senior caregiver & grand-parenting education, and family caregiver trainings; O—20 of 45 caregivers felt knowledge gained helped them make better decisions regarding ability to care and nurture other family members	11-18-03
Livingston, Mitchel	National 4-H Week	Incomplete report; what was done	1-25-05
Livingston, Mitchel	County & State Fair	Incomplete report; P—numbers participating & what was done	1-25-05
Livingston, Mitchel	Citizenship Washington Focus	Incomplete report; P—numbers attending	1-25-05
Livingston, Mitchel	Colorado State 4-H Conference	Incomplete report; P—numbers participating & who won	1-25-05
Livingston, Mitchel	GPA Area Project Camps	Incomplete report; P—what was done	1-25-05
Livingston, Mitchel	Wild Bug Fish Camp	Incomplete report; P—numbers participating & what was done	1-25-05
Livingston, Mitchel	State 4-H Shoot	Incomplete report; P—numbers participating & what was done	1-25-05
Livingston, Mitchel	4-H Shooting Sports	Incomplete report; P—numbers participating, what was done & desired learning concepts	1-25-05
Livingston, Mitchel	Youth Hunter Education	Incomplete report; P—numbers participating, what was done & desired learning concepts	1-25-05
Livingston, Mitchel	Meat Quality Assurance	Incomplete report; P—numbers participating, what was done & desired learning concepts	1-25-05
Livingston, Mitchel	Colorado 4-H Youth Fest	Incomplete report; P—numbers participating, what was done	1-25-05
Livingston, Mitchel	Livestock Judging	Incomplete report; P—numbers participating, who	1-25-05

		won, what was done & desired learning concepts	
Livingston, Mitchel	Leadership Development Conference	Incomplete report; P—number who attended	1-25-05
Marx, Ernie	Development of the Northern Colorado Pickle Cooperative	S—success story showing development of northern Colorado cucumber cooperative & acreage harvested—see Bob Hamblen's report for data	2-8-05
McBride, Tom	Integrated Resource Management Implementation Through Multi-County Adult Livestock Education	O—shows info on a series of livestock and animal heath events, with some pre-post data done through event evaluations	10-13-04
McBride, Tom	Options for Carcass Disposal in Colorado	O—evaluation of carcass disposal seminar—soft info on behavior changes--several small producers use compost piles; others in more rural areas are burying within regulations	10-29-03
McCarty, Pat	Cattlemen's Informational Sessions	P—feedback from participants on beef town hall meetings	2-11-05
McCarty, Pat	2004 Garfield Master Gardeners	O--results include over $4800 value in community volunteer time, increased overall horticulture knowledge in the county by small group of MGs	2-11-05
McCarty, Pat	Pinon Ips Informational Program	O—general assumptions about increase in knowledge and awareness of insect situation, and protection of high-value trees; numerous dollars were saved by landowners	2-11-05
Meyer, Ron	Northeast Dryland Cropping Systems	I—Attendees at series of sunflower education meetings were asked to tell the net benefit to their operations--responses indicated a $560,000 benefit Shows no hard data to explain	1-31-05
Meyer, Ron	Northeast Dryland Cropping Systems	O—CE is the only agency available to assist eastern Colorado producers with crop insurance requirements and is providing weather data & expert opinion on crop management strategies; 100% of producers contacting CE have received assistance adequate enough to secure crop insurance benefits; 85% of area producers are using CI as a risk management strategy	8-13-04
Miller, Gale	Fremont County Dare To Be You Family Program	P—numbers participating & what was done; O--pre/post tests revealed all adults increased knowledge & skills in strengthening their family Shows no hard data to explain	2-11-05
Miller, Gale	Food Safety Programs for Food Handlers, Seniors, Children	P—numbers participating & what was done	3-23-04
Miller-Heyl, Jan	Young Parent's Plus	O—the 2003-04 Young Parents Plus evaluation results showed positive changes in program participant's attitudes and behaviors in all five construct areas surveyed (inappropriate parental expectations; strong belief in use of corporal punishment; parental lack of empathy; parent-child role reversal; and oppressing children's power and independence; however, this report does not give those data	1-25-05
Miller-Heyl, Jan	DARE to be You--CARE to Wait Program for Families with Middle School Youth	O--data show that DTBY families talk more often about intimacy and sex (reported by parents but not teens); DTBY teens are less likely to affiliate with peers who might get them into trouble (reported by parents not teens); DTBY parents have more permissive attitudes toward sex, as do teens, but teens in control group report substantial changes toward more permissive attitudes; and DTBY teens show trends toward more abstinence behavior; data on sexual activity are quite site dependent: Denver site show none of controls were sexually active at baseline compared to 25% of intervention group (comparable figures for Cortez were 11% and 6%, respectively); Cortez	1-25-05

		site showed significant impact on sexual activity whereas the Denver site did not	
Miller-Heyl, Jan	DARE to be You--Bridges Research Project in Montezuma County and the Navajo Nation	O--142 baseline and 81 six-month parent posttests were entered into evaluation database—results show statistically significant intervention effects observed on 8 outcome measures--children's social skills increased; children's aggression decreased; parents' limit setting increased; parents' harsh punishment decreased; child-centered child rearing practices increased; parental self efficacy increased; parental view of family school community communication increased; parents belief that parents should be involved in school increased. Teacher surveys analyzed (6-month follow-up) showed significant improvements in three areas: more likely to endorse parental involvement, believed both parents & teachers should encourage children's success; more satisfied with teaching	1-25-05
Neelan, Pam	Pueblo County Parenting and Anger Management	O—from evaluations of 9 parent education classes, 100% improved knowledge about parenting; 97% improved anger management skills; 97% have more realistic expectations of children; 90% get along better with their child(ren); 97% have more 57 YES 4 NO (93%); improved my communication confidence in their parenting abilities; evaluations from 4 anger management classes shows 98% increased anger management skills; 91% used RETHINK to control anger; 90% feel more confident in abilities to control anger Report gives all the raw feedback—way too much to wade through for a good report	10-27-04
Neelan, Pam	Budgeting	O--of 72 budgeting classes held with 1,432 individuals participating--804 (56%) completed class; 84% indicated they were able to decide what they want most and plan for that goal, 72% indicated they learned methods to reach their goals sooner, and 85% said the learned how to balance their income and expenses	8-27-04
Noakes, Verla	Fremont County 4-H Youth Development	None, but has a good testimonial	2-8-05
Noakes, Brenda	Non-Traditional 4-H Program	P—numbers participating, what was done & plans	1-14-05
Nobles, William	Archuleta County Science Fair 2004	P—CE took over management of Science Fair; shows number of participants, volunteers trained, numbers completing projects and feedback	1-12-05
Nobles, William	Effects of Teamwork Dealing with Drought, Fire and Insects in Southwestern Colorado in 2004	O—of almost 200 participants, 95% reported they understood management options to protect against Ips beetle infestations including cultural and chemical controls; 82% of landowners understood the importance of long-term management options for Pinon Pine; 100% of landowners and professionals learned about efficient methods of tree removal including timing, available resources, financing, incentive programs, logging companies, and tree care professionals; 35% of participants indicated they would change management practices for removal and treatment of Pinon Pine	1-12-05
Nye, Kipp	Noxious Weed Seminar	O—survey of participants in annual weed seminar showed an 80% increase in knowledge due to program; participants identified areas of knowledge they would use including chemical use; identification, timing and control of weeds; Only general knowledge data--no specific N or data given to explain	2-11-05

Nye, Kipp	Dryland Cropping and Hay Seminar	O—survey of participants in series of seminars showed a 95% increase in knowledge due to program; participants identified areas of knowledge they would use including weed control, drought tolerant crops, crop rotation, no till practices Only general knowledge data--no specific N or data given to explain	2-11-05
Nye, Kipp	Small Acreage Management Seminar	O—survey of participants in annual small acreage seminar showed an 89% increase in knowledge due to program (100% in knowledge of poisonous plants and pasture management); participants identified areas of knowledge they would use including pasture rotation, inspection for poisonous plants, plant inventory, setting goals, weed control Only general knowledge data--no specific N or data given to explain	2-11-05
Oatman, Dean	Livestock Judging Program	O—general assumptions about youth's increase in life skills including decision making, critical thinking, public speaking, responsibility, etc. Shows no N and no data to explain	2-10-05
Oatman, Dean	Home Horticulture	O—general assumptions about participating homeowners' improvement in lawns, reduction in water usage, tree health and understanding of hort problems Shows no N and no data to explain	1-26-05
Oatman, Dean	Small Acreage Management	O—general assumptions about number of participating property owners' who increased awareness of problems, implemented weed management plans, removed dead or diseased trees to mitigate fire danger and curtail spread of insects or disease; 10% implemented plans to re-vegetate areas disturbed by construction	1-26-05
Page, Ed	Education Programs Development: Grand Junction Ruminant Birthing	O—general feedback and knowledge gain for 20 participating small acreage owners in workshop on livestock birthing education	2-13-05
Page, Ed	Education Programs Development: Montrose Area Ruminant Birthing	O—general feedback and knowledge gain for 27 participating small acreage owners in workshop on livestock birthing education	2-7-05
Page, Ed	Educational Programs Development: Grand Junction Horse Health and Nutrition	P—numbers participating & what was done plus assumptions about outcomes	2-7-05
Page, Ed	Education Programs Development: Ridgway Water Law and Management	O—general feedback and knowledge gain for unknown number of participating realtors in workshop on water law & irrigation management	2-6-05
Page, Ed	Garfield County 4-H Builds Community Support through Junior Livestock Sale	P—numbers participating in livestock sale, how many animals sold and for how much	8-27-04
Page, Ed	Educational Programs Development: Delta Horse Health and Nutrition	P—numbers participating & what was done plus assumptions about outcomes	8-11-04
Pearce, Nori	Garfield County 4-H Builds Community Support through Junior Livestock Sale	P—numbers participating in livestock sale, how many animals sold and for how much same report as Ed Page above	8-27-04
Pearce, Nori	Garfield County 4-H Council Members Learn Leadership Through Involvement	P—what council members and leaders have done and how much money they've raised	8-26-04
Pearce, Nori	Success of IFYE Program in Garfield County	P—number of presentations made and assumptions about improved relationships with schools	8-26-04
Pottorff, Laura	Screening for *Pythium spp*. Associated with Greenhouse Crops in Colorado for Mefanoxam Resistance	O—results of research done on greenhouse plants--data suggests that one out of every three crops may be lost due to damage caused by Pythium and its resistance to the treament of mefanoxam fungicide	6-29-04
Pottorff, Laura	Greenhouse IPM Survey	O--results of survey mailed to Colo greenhouse operations (32% return) to assess status and level of IPM adoption; 40% are in the medium IPM	11-12-03

		category; 19% in high IPM use; 15% at biointensive levels—no other explanation of data	
Rice, Karen Wendy	Community Health	P—number of participants in a Healthy Lifestyle Coalition and assumptions about increased physical activity	2-18-04
Rus, Dwight	Meat Quality Assurance Programs- Youth	P—what was done	12-16-03
Salzer, Robert	Reaching Out to New Audiences	P—number of kids, what they did, how they liked it	2-6-04
Schmitz, Gene	WSARE Irrigated Pasture Grant	P—number or participants on grazing tour returning surveys showed number of acres to be irrigated, things they learned, value of program and one I--one respondent indicated a feed cost saving of $0.25 per head ??per day by attending the tour	9-24-04
Schmitz, Gene	Forage Options for Limited Irrigation and Dryland Production Meetings	O—20 of 22 participants attending series of meetings reported they will make changes in their operations based on information presented--respondents indicated information will be used on an average of 405 acres per operation; estimated per-acre benefit of the knowledge gained was $32.50	3-10-04
Sennhenn, Jan	Youth Leadership & Volunteer Development	P—number of volunteers, what was done resulting in O--72% volunteer retention	10-4-04
Sennhenn, Jan	Nutrition Education Program for Montezuma County	P—what was done, types of programs, O--some data returned that showed 49% of families eat at least one meal together seven days a week; 80% or higher included grains, vegetables, meat and dairy in meals	10-4-04
Shackelton, Elisa	Moffat County Residents Getting More Exercise with Their Dogs as Motivators	P—numbers completing Moffat County on the Move; no analyzed data as yet	1/17/2005
Shackelton, Elisa	Moffat County Farm Safety Camp	O--60 third graders attending a Farm Safety Camp, plus 35+ adult and teen volunteers learned at least one life-preserving skill they plan to practice throughout their lifetime	1/17/2005
Shackelton, Elisa	Radon Education in Moffat County	O—following media campaign, 100 homes were tested for radon by distributing test kits; of these, 50% were found to have levels that exceeded the EPA's recommendation—20 now have mitigation systems installed	1/17/2005
Shackelton, Elisa	Moffat County Healthy Lunch Program	O--evaluation showed that Healthy Lunch participants are changing their grocery shopping habits, opting for lower-fat ingredients Shows no N and no data to explain	4-6-04
Sherman, Bonnie	Diabetes Health Fair	P—number attending, money raised, feedback on event	1-28-05
Shonle, Irene	Gilpin County Noxious Weed Management Education	P/O-through weed displays and school programs, 32 people self-reported that they are now aware of and controlling weeds on their property	10-1-04
Siegfried, Larry	Shooting Sports Safety Program	P—assumptions about law enforcement involvement in training and youth reactions	7-20-04
Small, Gary	Community Service Recognition Program	S—four community service success stories by county 4-Hers	2-14-05
Small, Gary	4-H Low Income Science Camp	P—what was done and feedback on success of "4-H is 4-Everyone Science Camp"	2-14-05
Star, Amy	4-H Scholarships in Adams County, Work Force Preparation	P—scholarships offered, value and feedback	4-13-04
Star, Amy	West Nile Virus Education for Horse Owners in Adams County	None—information was provided and assumptions made about program	4-13-04
Swift, Curt	Xeriscape Demonstration Garden - Master Gardener Program Impacts 2004	P—what was done, what was planted, how many vehicles pass by and assumptions about success	1-4-05
Swift, Curt	Landscapes West Conference and Garden Show - Master Gardener Program	P—what was done, number attending, and assumptions about success	1-4-05
Swift, Curt	House Call Program - Master Gardener Program Impact 2004	P—what was done, how many house calls & clients served, common problems handled	1-4-05

Swift, Curt	Evapo-Transpiration Research Garden Horticulture and the Green Industry - Master Gardener Program	O--research project tests 20 plant materials in replicated blocks at five different water levels Shows no N and no data to explain	1-4-05
Thilmany, Dawn	Developing Local Food Marketing Opportunities	O—through technical assistance & educational efforts on direct marketing, some results included an increase of 33% in Colorado Crop to Cuisine's sales to local chefs through 2 new producer suppliers and to 5 new chefs; development of a farmers' market in Telluride; niche beef marketing workshops in Montrose, Colorado Springs and Fort Collins with 150 participants--89% reported the information was useful to their business development; 61% that information led them to develop a production or marketing plan	11-2-03
Tolan, Roberta	High Plains Landscape Workshop Resulted in Changes to the Landscape	O—follow-up evaluation to attendees at regional workshop—of 115 respondents, 85% said they were likely or most likely to change their current landscape practices as a result of what they learned at the workshop; 33/37 (89%) said that they used the information gained during the 2004 growing season; most used information was drought-tolerant plant selection including perennial and woody plants;27/37 (73%) said that they made changes to their landscape with the information gained at the workshop, including were changes in plant material (23%), watering techniques (23%) and mulching (21%)	2-7-05
Tranel, Jeff	RightRisk	O—risk training program shows 100% of the participants have a better understanding of risk and risk-management strategies and nearly 60% plan to make changes to their operations or their educational programming; shows no N and gives no other data to explain	1-27-04
Vlaming, Greg	Sustainable Cropping Systems in SW Colorado	What was done, no outcomes	4-5-04
Vlaming, Greg	Dealing with drought issues for urban forests	O—evaluation from 100 attendees at irrigation management workshop revealed a greater understanding of importance of appropriate plant choices and efficient irrigation; evaluations of follow-up program on water-wise irrigation and water auditing showed that homeowners increased knowledge on using water efficiently in urban Landscapes; gives no data to explain	4-5-04
Vrabec, Johnathan	Small Acreage Management Seminar Series	O—series of seminars attracted 30 people--68% reported they would adopt or modify grazing practices; 76% indicated they would develop and implement a weed management plan; 82% wanted more in-depth information on manure management and composting; shows "woulds" not "dids"	1-28-05
Waldren, Deryl	Training Extension Volunteers in Managing Wildlife Conflicts	O—133 surveys were mailed with 50 returned (38%); report gives raw data on success of training with two program outcomes--49% adopted/used at least one of the Wildlife Master's suggestions; wildlife problem result in property damage for 44% of respondents with approximate value of $8,490	1-26-05
Waldren, Deryl	Issues for Youth in Agriculture and Natural Resources	No report for 2004	1-26-05
Waldren, Deryl Harder, Amy	4-H Life Skills & Asset Development in Boulder County	O—Boulder County 4-H members enrolled in livestock, horse and the general home economics projects were surveyed for life skills outcomes—	1-26-05

		82% made decisions about project; 77% kept records; 61% were able to resolve problems; 54% talked in front of others about project; 49% helped out in the community; 76% learned to finish what they started; 74% learned responsibility; no N given	
Waldren, Deryl Harder, Amy	Volunteer 4-H Leader Development in the Front Range	O—evaluation of orientation for 52 new volunteer 4-H leaders showed knowledge gained and other feedback about training	1-26-05
Wentworth, Glenda	What to Expect of Young Children	O—general feedback from training for babysitting employees of a Vail resort	1-14-05
Wentworth, Glenda	Tips for Healthy Eating: A presentation for HeadStart/Early HeadStart	P—31 people participated in presentations (30 of them were Spanish speaking) O—general feedback on knowledge gained from two presentations to school district Head Start no data to explain	12-30-04
Wentworth, Glenda	Take the Road to Financial Security	P--201 people attended series of five workshops on financial security; gives numbers of participants at each workshop who reached goals; no evaluation data to explain	12-30-04
Wentworth, Glenda	Eagle County Nutrition Education Plan	P—number of people attending or using modules of nutrition kiosks	12-29-04
Wentworth, Glenda	Eagle County Babysitter Basics Training Program	O—annual evaluation of participants (51 youth) showed knowledge gained, but gives only mean scores and general feedback from kids—no other explanation of data	12-29-04
Wentworth, Glenda	4-H Decorate Your Duds Workshop	P—numbers of youth participating & workshops offered	9-21-04
Westra, Phil	Weed shifts in roundup ready and conventional crops may impact grower crop management decisions	general statement of outcomes on long-term research study	12-16-04
Westra, Phil	Gene flow from herbicide resistant wheat to conventional wheat varieties	general statement of what is planned for this research	12-16-04
Westra, Phil	Management of winter annual grasses in winter wheat	P—what was done; number of acres that were planted to Clearfield wheat has doubled	12-16-04
Whaley, Jay	Increasing awareness, and leadership in 4-H to develop a stronger program	P--general feedback from youth	10-10-03
Wolfe, Kathy	Youth Engagement Team	O—explains goals and what was done to involve youth on boards, etc.; tells that House Bill 1224 was passed allowing youth under the age of 18 to serve on board of directors of non profit agencies; S--two agencies team worked with currently have youth serving as board members	2-23-05
Wood, Jennifer	Establishing Volunteer Development Workshops and Training	P—general feedback on attendance and what was done	1-7-05
Wood, Jennifer	Increased Attendance and Enthusiasm at 4-H County Council Meetings	P—numbers attending	1-7-05
Wood, Jennifer	Encouraging Involvement in 4-H Events Beyond the County Level	P—attendance increased and what was done	1-7-05
Wood, Jennifer	4-H Summer School Program	P—numbers participating and what was done	1-7-05
Yoder, Linda	Irradiation of Food	O—evaluations of participants in series of educational programs showed areas of food safety knowledge and educational needs	9-23-04
Yoder, Linda	Community Service	P—numbers participating and what was done	9-13-04
Zamora-VanSice, Rebecca	Nutrition Education Targeting Diabetes Prevention and Maintenance 2004	P—numbers participating and what was done; some evaluation to be done in future	4-15-04
Zamora-VanSice, Rebecca	Nutrition Focuses on Diabetes Education, 2003	O—evaluations showed significant knowledge gain and behavior change—gives pre & post data in percent changes that's hard to analyze	3-8-04
Zander, Ann	F&CS Extension Advisory Council- Food and Nutrition Issues for 2004	O—general feedback on outcomes and what was accomplished	2-17-05
Zander, Ann	The Latino Population in Boulder County's	O—focus group needs assessment survey of	2-17-05

	Eating Habits 2004	Latino eating habits	
Zander, Ann	Lafayette Oatmeal Festival 2004	P—number participating, what was done and continuing plans	2-17-05
Zander, Ann	Collaboration Between Boulder County Environmental Health Department and Boulder County Extension	P—number participating, partnership accomplishments and what was done	2-15-05
Zander, Ann	Radio Reading Service of the Rockies 2004	P—demographics, what is being done and plans to evaluate service	2-10-05
Zander, Ann	Better Kid Care Satellite Series from Penn State 2004	P—numbers participating and general feedback on video rental service	2-10-05
Zander, Ann	Trabajando Unidos (Eastern Boulder County Latino Collaboration)	status of collaboration and what is to be accomplished	2-9-05
Zander, Ann	Family Style Meals 2004	O—survey done to gain baseline data on family child care providers serving family-style meals	2-9-05
Zander, Ann	Family Matters Newsletter Series 2004	P—survey of newsletter recipients on usefulness of newsletter	2-2-05

2/05 wld

Colorado State University
Cooperative Extension

IMPACT Reports for 2004

3-11-05

(Gleaned from ePower reports from 10-1-03 through 3-1-05, Extension Annual Report copy 2/05, and selected special reports)

11-05 WLD

GOAL I: An agricultural system that is highly competitive in a global economy

A Fresh Look at Marketing Foods

Themes:

Value-Added Products

Enhanced Economic Opportunities for Agricultural Producers

Issue:

Most people think of value-added products as an actual change in the product, such as turning apples into apple juice, but a value-added product can be anything that is done to a product that increases its market value. For instance, getting an eco-label or organic designation on a product or having a product labeled as Colorado-grown might increase its value. With niche marketing, the grower capitalizes on the unique aspects of a product to appeal directly to certain consumers. Probably the dominant niche-market is organics.

What Was Done:

Colorado State University researchers are helping growers take control over their destiny by investing more in marketing. The traditional, big business model of agriculture is not bad in itself, but it's always good to have choice. CSU work in ag economics works to help small producers gain access to markets. The U.S. agricultural industry has become pretty concentrated, and if you're not a big producer, it can be difficult getting into certain wholesale markets. The CSU research team is investigating how to gain access to different markets, what share of the market wants to buy products differentiated in a certain manner, and what kind of premium consumers are willing to pay for the product, to assist growers in determining whether they will pay to invest in new enterprises or change current enterprises to include different production practices. Some of the practices that growers might choose to invest in include processed value-added products, niche-marketing, and direct marketing. A producer has to be as serious about investing in marketing and communication resources as they are about production. Many people get into careers in agriculture because they love the production aspect of farming, but for success in direct marketing, they need to bring the same enthusiasm and work ethic to developing business plans. Colorado Agricultural Experiment Station and Cooperative Extension are helping farmers create good business plans. With an agricultural system that makes room for a variety of different ways to market food, consumers are satisfied because they can make an informed choice about the foods they buy, and producers are happy because they can charge a fair price for a product they produce using techniques they believe in.

Impact:

The "Colorado Crop to Cuisine" program was designed to connect farmers with restaurant chefs and increase market opportunities for local producers of fruits, vegetables, herbs, specialty produce, and lightly processed foods. Through the "Colorado Crop to Cuisine" program there was an increase of 33 percent in sales to local chefs, through two new producer suppliers and five new chefs. Through this same program, chefs and producers also became more aware of each other's management challenges and some restaurant consumers were made more aware of local food offerings. The Colorado Proud program, which received a 2002 Governor's Award for marketing, acquaints agricultural producers with Colorado chefs and coordinates orders and delivery of locally grown products to restaurants. No particular attributes about the product are advertised except that it is locally grown and that there is a 24-hour turnaround between harvest and delivery to the restaurant, yet the program is a boon to growers, chefs, and consumers alike. By joining CCC, farmers are able to easily diversify their marketing portfolio; chefs get to work with the freshest products and advertise menu items as locally grown; and consumers get to enjoy fresh tastes and become familiar with foods they might not have tried before. Certainly, even a short list of foods available through the program – raspberries, tomatoes, herbs, onions, peppers, natural pork, and peas – is enough to make any food lover's mouth water.

Impact Nugget:
Through the "Colorado Crop to Cuisine" program--a direct marketing effort--there was an increase of 33 percent in sales to local chefs, through two new producer suppliers and five new chefs.
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Range Management School
Themes:
Environmental & Natural Resource Issues: Invasive Species
Sustainable Communities: Asset Mapping & Enhancement
Issue:
Western Colorado, like many parts of the West, has experienced conflict over livestock grazing on public lands. Colorado State University, the U.S. Forest Service, Bureau of Land Management, Natural Resources Conservation Service and public-land permittees designed the Range Management School to address this conflict. The primary objective of the Range Management School is to provide information to permittees to assist in forage evaluation and improvement of range conditions while improving communication between federal land managers and ranchers. Productive rangelands are a key component of healthy watersheds and economic sustainability of western agriculture. Rangeland (including federal and state land) accounts for 3.6 million total acres in western Colorado's Tri River Area.
What Was Done:
Significant new rangeland research and findings have been published and put into practice in the last five years. Improved practices provide rangeland permittees the ability to evaluate and plan grazing plans around the growth of the range forage. This approach has been accepted by the Bureau of Land Management and the U.S. Forest Service and an increasing number of rangeland users are practicing this improved method of rangeland management. To help explore opportunities with these practices, the Range Management Schools (RMS) started in 1995 when range permittees, Bureau of Land Management, U.S. Forest Service, Natural Resources Conservation Service and Colorado State University Cooperative Extension representatives came together to develop an educational program. The RMS focuses on providing in-depth range information to permittees, federal land managers, environmentalists, interested publics and private rangeland owners. The program's comprehensive, principle-based approaches help participants understand rangelands and implement grazing management programs that promote timely management decisions to meet their needs and those of the range resource. The purpose of the RMS is to provide science based, in-depth range education via classroom instruction, field tours and practical application. The federal agencies cooperatively teach the schools and then back up learning in the field. The permittees reported improvement on the range and better understanding of why the changes are occurring and how to continue an upward trend. Courses have been taught in Colorado, Utah, Wyoming, British Columbia and Nevada, and additional courses are scheduled for Nevada, and New Mexico, Montana, Idaho and Oregon. More than 2,550 permittees, federal land managers, Colorado Division of Wildlife representatives, environmentalists and private rangeland owners have attended the range management schools since 1995.
Impact:

Participant evaluations have shown a 34% overall increase in knowledge gained from the range management schools. These schools have been directly responsible for improved grazing management on over 4 million acres of public land. The Range Management Schools have worked because there is a good relationship between the permittees, federal land management agencies and the university to provide information that is needed and requested. Since the Range Management School's inception, more than 2,550 permitees, federal land managers, environmentalists and private range owners have attended from five states and one Canadian province--89% increased their knowledge about best management practices for livestock operations; 86% reported increased knowledge about how to integrate production practices with environmentally sound decision-making; 65% reported reduced production costs due to improved or more efficient management practices. These improved practices have resulted in increased livestock weaning weights and improved re-breeding rates. Rangeland health has improved where producers have actively participated in the range management schools, and communication and relationships between the federal land managers, permittees and the public has improved as a result of increased level of understanding gained from the range management schools. The schools have directly impacted improved grazing management on more than 4 million acres of public land in the West.

Impact Nugget:

Colorado State University Cooperative Extension's Range Management School has helped 2,550 participants increase knowledge about best management practices for livestock operations, reduce production costs with improved management practices, improve rangeland health, and directly impact improved grazing management on more than 4 million acres of public land in the West.

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Sustainable and Profitable Crops in the San Luis Valley

Themes:

Sustainable & Profitable Agriculture

Issue:

San Luis Valley farmers produce crops on 400,000 irrigated acres with a value of more than $200 million. These farms support 1,500 farm families and the area economy is heavily dependent on farm income. Currently, prices are low for most farm commodities, including potatoes and grains. These farms must be managed as highly productive and economically sustainable units while protecting the natural resources for future generations. New agricultural practices that both protect the environment and improve farm productivity are needed. Pesticides use is intensive, especially for vegetable crops. Pesticides threaten groundwater because the soils are coarse and very shallow over the water table. Vegetable crops leave very little crop residue to protect vulnerable sandy soils from strong spring winds that arrive before crop growth can protect the soils. Many crop acres are of low residue vegetable crops including potatoes, carrots, lettuce and spinach that deplete the soil resource. More profitable high residue crops would reduce the economic pressure to grow low residue vegetable crops. Proper irrigation management can conserve water, minimize irrigation pumping costs, minimize water quality degradation, and can increase yields and net returns. San Luis Valley growers use irrigation

scheduling more than any other area of the state. Precision sampling and application equipment has recently become available in this area. Such new practices can improve the efficiency of crop nitrogen use and reduce the potential and actual nitrogen leaching. New technology can help improve grower sustainability and profitability.

What Was Done:

Extension has provided information on the benefits of compost, use of bio-control cover crops, and nematode control including use of cover crops in rotation. Four years of field research, funded by the Research Center Committee (potato grower funds), has documented several benefits of bio-control cover crops. Results have shown excellent reduction in nematode density using cover crops. Columbia Root Knot Nematode (CRKN) density was sharply reduced by growing sorghum-sudan, mustard, or oil-seed radish as cover crops. Growers are encouraged to plant new, improved alfalfa varieties that have performed well in local trials.

Impact:

Cooperative Extension has increased growers' knowledge of the benefits of bio-control crops. Growers have adopted research-based BMP practices such as non-chemical alternatives for pest management. A growers' survey indicated an increase in the acreage of bio-control cover crops from 5900 to 7370 last year. Growers are using sorghum-sudan and mustard cover crops and rotation canola to reduce potato pests. Growers have also increased their knowledge of and use of compost in potato rotations to reduce their dependence on harsh crop chemicals. Area growers are trying to grow potatoes without having to rely on using harsh fumigants before potato planting. They are using environmentally sound decision making to choose these alternative pest management practices. The use of compost has increased dramatically over the last five years. Since this area has only a few small beef feedlots and even fewer dairies, compost is made locally from sawdust, straw and imported manure. Commercial growers have increased their use of compost and the use of sorghum-sudan for cover crop increased dramatically last year. It is estimated that the acreage increased from 4 circles to over 40 circles (5,000 acres). Growers were able to grow bio-control cover crops and still use much less water than for a commercial crop. Using bio-control cover crops also provided crop residue to conserve soil while at the same time conserving water. This helps in the current drought and shortage of groundwater supplies. Planting bio-control cover crops will substantially reduce the pest problems and pesticide use in the following potato crop—these fields will have much less problems with Columbia Root Knot nematode and Verticillium. Using bio-control cover crops instead of fumigation on 5,000 acres will save growers almost $1 million in costs.

Impact Nugget:

Producers in Colorado's San Luis Valley operate on a tight profit margin; by switching to use of compost and bio-control cover crops instead of fumigation on 5,000 acres, they reduced water use, pest problems, pesticide use and saved almost $1 million in costs.

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In Search of a High-Value Crop: the Northern Colorado Pickle Co-op

Themes:

Value-Added Products
Enhanced Economic Opportunities for Agricultural Producers

Issue:
Colorado State University Cooperative Extension agents were working with local growers in Colorado's northern Front Range counties to find crops that could be grown profitably in the region. What they were searching for were high-value crops that could fit into a cropping rotation. A local producer had previously grown cucumbers for Dean Foods, but gave it up when the food processor closed its facility north of Greeley a few years before. He suggested the growers consider trying to grow cucumbers for pickle processing and he still had the name of a contact at the Dean plant in LaJunta in southern Colorado. While he knew growing cucumbers for a pickle processor could provide an excellent profit, he also knew the problems--mechanical vs. hand harvesting, picking the cucumbers quickly once they get the preferred size, and the race to get the product to the processor within hours of being picked.

What Was Done:
Cooperative Extension agents worked with the group of growers to look at the possibilities of a crop that would provide a good return on investment—they considered beans, carrots, onions and peas, but cucumbers fit the growing season for the area so well. A cucumber crop harvested for pickle production can provide a return of up to $1000 per acre compared to the $50 an acre return on other crops traditionally grown in the area such as barley, sugar beets and pinto beans. Dean foods welcomed the idea of Colorado-grown cucumbers for their facility, rather than the Texas cucumbers they were buying because fresher cucumbers mean better pickles. The challenge was then of forming a co-op that worked. The advantages of a co-op, such as a shared contract, shared purchase of expensive equipment and a pooling of experience and knowledge are often not enough to overcome the obstacles. Extension agents worked with them on o developing an organizational structure and a budget that included production and related expenses, finding seed sources, and getting a guaranteed contract from Dean Foods for a one-time harvest of cucumbers. Extension agents enlisted the help of a specialist from the CSU Department of Ag and Natural Resource Economics, the Colorado Co-op Council, and a Delaware Extension specialist who was an expert in cucumber harvesting to get the project off the ground. They reviewed production issues and made on-site visits with the help of a CSU plant pathology specialist who worked with the producers on disease issues related to cucumber production. Three used harvesters were purchased by the co-op and assistance was provided to ensure that they were set up properly.

Impact:
A contract with Dean Foods from La Junta, Colorado was established with the growers before planting-which was based on size and quality for a flat $3.50 per bushel
pricing. Growers established the closed co-op and set their pricing structure to cover the cost of the harvester and unexpected possible losses based on dollars per acre for
planned grown crops. Growers committed to growing cucumbers on 320 acres for Dean Foods. The first scheduled plantings took place in May and the first harvest was in July.
The growers ranged in production from 125 bushels per acre to 360 bushels per acres, with the average across all fields at 200 bushels per acre. Dean Foods has asked the co-op to consider expanding production to 1,000 acres total in the next two years. The first year was very successful and the co-op will be monitored by Extension staff over the next two years to track progress.

Impact Nugget:
In a project focused on a high-value crop for producers willing to commit to growing cucumbers for a cooperative effort, the pay-off was substantial—averaging 200 bushels per acre for 320 acres (approximately $700 an acre), the growers realized approximately $224,000 for their first year's effort.

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Managing Sap Beetles in Western Colorado Sweet Corn

Themes:

Environmental & Natural Resource Issues: Invasive Species
Value-Added Products
Enhanced Economic Opportunities for Agricultural Producers

Issue:

Sap beetles are a significant problem affecting sweet corn production in Colorado's Tri River Area. Pest contamination of sweet corn ears is significant enough to cause rejection of some fields, which are not harvested. Contamination is wide spread enough to threaten national marketing programs.

What Was Done:

A research effort was initiated in 2002 to identify effective management techniques. Funding was obtained for the research program through a grant program and grower
funding through the sweet corn market order. The research program was continued in 2003 using 2002 results to focus research needs. Cooperative Extension faculty held meetings with growers to gather input before the research effort began and to extend results after the 2003 season.

Impact:

A modified spray program was tested in the last half of the 2003 and all of the 2003 spray season, with improved control of sap beetles. More than 80 percent of the area's sweet corn growers attended the 2003 results meeting. Of these, 75 percent reported they gained improved understanding of how sap beetle biology affects management decisions. These growers are now better able to assess their risk of sap beetle problems, and will be able to decide whether to plant sweet corn.

Impact Nugget:

A Colorado State University Cooperative Extension program on control of sap beetles in sweet corn in the state's Tri River Area attracted interest from more than 80 percent of the growers and resulted in 75 percent of those using improved understanding of beetle biology to assess risk and affect management decisions.

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Southeast Colorado Wool Pool

Themes:
Rural Community Economic Development
Value Added Products
Enhanced Economic Opportunities for Agricultural Producers

Issue:
With sheep numbers on a steady decline and farmers and ranchers in southeast Colorado keeping flocks averaging 100 head or less, the marketing of their annual wool clip as individuals was difficult and their wool commanded a much lower price than wool sold by large operators or through wool pools. The Southeast Colorado WoolGrowers Association decided to offer a pooling situation so interested area producers could offer truckload lots for sale.

What Was Done:
Cooperative Extension agents who were members of the Woolgrowers Association took on the responsibility of organizing the wool pool, managing the operations, designating collection points, and providing education on wool preparation for small producers. It was decided to sell each producer's wool separately to Mid States Wool and have them class and grade each lot and pay the producer for the quality and quantity they brought to the pool. In the past all similar wool was combined (i.e., white face and black face wool).
This individualized marketing strategy helped provide an incentive for producers to produce a quality clip.

Impact:
The economic advantage of a wool pool to the wool producers in southeast Colorado has been considerable. They have been able to market truckload lots, which attract a number of wool buyers and create a competitive bidding situation, and they have been able to decrease marketing expenses for small producers, especially related to freight. In the past, each producer was required to haul wool to a buyer in northern Colorado. But because now a truckload of wool is sold at one location, they have been able to increase the volume and therefore the sale price of each class of wool. For the past few years, the Southeast Colorado Wool Pool has had participation by producers from every county in the southeast corner of Colorado and has been successful for those participating. Because of wide participation, the Pool has been able to purchase and supply wool bags and sacks and both a round and a square hydraulic wool packer for use by producers.

Impact Nugget:
A Cooperative Extension organized wool pool provided an alternative method of marketing wool for producers in southeast Colorado and as a result, they have been able to decrease marketing and freight expenses and increase volume and sale prices therefore reaping economic benefits for each class of wool.

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2004 ServSafe Training for Spanish Food Service Workers

Themes:

Food Safety

Issue:

Restaurants and other food service establishments do not fully implement the food safety practices according to the Colorado Food Code. Therefore they do not have acceptable scores when evaluated and risk causing foodborne illness among their customers. As the population in northeast Colorado of Spanish-speaking individuals increases, there is an increasing number of employees in food service establishments who speak Spanish as their only or primarly language. There area also more new food service establishments being licensed where owners, managers, and employees speak only Spanish.

What Was Done:

Cooperative Extension in collaboration with the Northeast Colorado Health Department provided food safety training using the National Restaurant Association ServSafe Curriculum. A bilingual presenter taught a series of trainings for foodservice handlers and managers in Spanish.

Impact:

Evaluations from the more than 100 individuals who were each responsible for serving an average of 950 meals daily, completed the trainings and showed a significant increase in scores from pre to post-test--73% learned the importance of proper temperatures on food safety; 73% will keep temperature logs on foods heated and cooled; 83% will teach others about cleaning, sanitizing and hand-washing. When asked what food safety practice they learned, 70% reported why personal hygiene is important; 60% will improve use of thermometers and proper temperatures while 50% reported better cleaning, disinfecting and storage of cleaning chemicals.

Impact Nugget:

Evaluations from the more than 100 Spanish-speaking individuals who were each responsible for serving an average of 950 meals daily, completed food safety trainings and showed a significant increase in knowledge gained including the importance of proper temperatures on food safety (73%) and teaching others about cleaning, sanitizing and hand-washing (83%).

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GOAL III: A healthy, well-nourished population

Colorado Food Stamp Nutrition Education

Themes:

Health Issues: Obesity, Food Safety, Functional Foods, Health Education

Issue:

The population of Colorado in 1999 was 4,056,133 persons and has been estimated to be growing by between 2.2 and 2.5% yearly. The number of Coloradans living below the federally designated poverty line increased by almost a third from 1980 to a high of 392,938 in 1996. This was substantially above the 14.0 percent increase for the total population nationwide. The poverty rate for Colorado now stands at an estimated 11.7 percent compared with 10.1 percent in 1980. Poverty rates vary by age and living arrangements. Female single parent families have especially high poverty rates. According to the Bureau of Census' Consumer Expenditure Study, 81 percent of female single parent families receive public assistance, mostly in the form of food stamps. For the elderly population, 15 percent of people over the age of 60 are considered low income. The proportion of families below poverty also increased from 1980 to 1998 from 7.4 percent to 10.0 percent. One of the many consequences of poverty is the lack of money for food. Food resource management is an important tool to learn in order to stretch food dollars, so that families not only have enough food until the next paycheck but healthful food choices too.

What Was Done:

The Colorado Food Stamp Nutrition Education Program (FSNEP) is funded by the U.S. Department of Agriculture (USDA) through the Colorado Department of Human Services, Food Stamps Program, and administered through Cooperative Extension. The primary focus of FSNEP is to address the problem of food security in its broad sense, among limited resource Coloradoans. The Colorado FSNEP Program is committed to providing this audience with nutrition, food safety and food resource management education aimed at promoting food security and overall health. During the 2003-04 program year Colorado Adult Food Stamp Nutrition education provided comprehensive nutrition, food safety and food resource management education to limited resource audiences in 22 Colorado counties. The primary method of education for adults is through direct education provided in a small group setting (6-12 participants/class). Strategies to enhance learning include hands-on activities, individual goal setting, recipe tasting and cooking, and interactive discussions. The small group dynamics, experiential learning and scheduling the lessons over a period of time all serve to enhance the educational experience and as substantiated by research, are more likely to result in participant behavior change. Classes are provided through class series and mini-lessons/single-events. Core curricula include *Eat Well For Less* and *La Cocina Saludable—the Healthy Kitchen.* During the program year, 9,810 direct contacts were made through the program's in-depth class series. Additionally, more than 12,000 direct contacts were made through *La Cocina Saludable* kiosks that were placed at various sites by FSNE Extension agents.

Impact:

The strongest evaluative data are from adult in-depth class series, which measure behavior change as a result of the program. Most of the 1,485 program graduates improved their eating habits and nutritional intake while extending their limited food dollars--92% reported a positive change in their eating habits; 78% showed improvement in one or more food resource management practice (planning meals, comparing prices, not running out of food, shopping with a list); 86% showed improvement in one or more nutrition practice (reading nutrition labels, eating breakfast, making healthy food choices, planning meals); 66% improved in one or more food safety practice (thawing or storing foods properly). In addition, program graduates reported an average savings of $67.48 on their monthly food bill. Participants' eating patterns shifted from too-few to more-adequate numbers of servings for three critical food groups given particular emphasis in the lessons--vegetables, fruits and calcium.

Additionally, data from 24-hour food-recalls indicate that program graduates decreased consumption of fat and sugar and upon the completion of classes, 34% of participants reported increased physical activity levels.

Impact Nugget:

Most of the1,485 program graduates improved their eating habits and nutritional intake while extending their limited food dollars--92% reported a positive change in their eating habits; 78% showed improvement in one or more food resource management practice; 86% showed improvement in one or more nutrition practices; 66% improved in one or more food safety practice.

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Eating Well for Less for Pregnant and Post-Partum Teens

Themes:

Health Education
Functional Foods

Issue:

Female students who are pregnant and/or parenting need additional services to reduce their risk for dropping out of school. Cooperative Extension in the Boulder County School District provided education to Fairview High School students through a program that provides on-site child care, parenting and life skill education for these students.

What Was Done:

Extension staff conducted ten lessons that included a food preparation experience and a trip to the grocery store to shop for one class experience for the girls participating; 60 percent were Hispanic. The lessons included infant and child feeding as well as pregnancy and post-partum nutrition education. By collaborating closely with the program director, Extension staff correlated the learning objectives of Eat Well for Less with the program's own learning objectives.

Impact:

Evaluation showed that 80 percent of participants showed positive change in food group recalls at exit; there was 40 percent or greater improvement in using a grocery list, selecting healthy foods, reading labels and eating breakfast; 100 percent of participants showed improvement in one or more nutrition practices.

Impact Nugget:

Evaluation of a Colorado Cooperative Extension program that reached pregnant or parenting teens showed that there was a 40 percent or greater improvement in selecting healthy foods, reading labels and eating breakfast and 100 percent of participants showed improvement in one or more nutrition practices.

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GOAL IV: Greater harmony between agriculture and the environment

Clinic Impact Study – Master Gardener Program
Themes:
Environmental and Natural Resource Issues
Adult Life Skills and Leadership
Issue:
Since the 1970s, the Colorado Master Gardener Program in Boulder County has had volunteer opportunities at various green industry locations through clinics. Volunteers staff these locations Friday through Sunday, April through mid-July to answer questions for the public. Due to the length of time this program had been in place, the staff time and resources committed to it, and budget cutbacks, need for a study of impact and effectiveness of this program was identified.
What Was Done:
A three-year study was conducted to determine efficacy, pertinence and value of the Master Gardener Clinic program. The first year, the general public was polled to determine behavioral change as a result of receiving information (such as a diagnosis & pesticide use), timeliness of information, satisfaction level, and desire to continue the program; the second year, active MGs in were surveyed about participation satisfaction, clientele activity and success rate, ability to assist clients, and perception of "clinic value"; third year surveys were of Green Industry collaborators to gauge satisfaction with service, timeliness of schedule, clinic value to business, and overall benefits to staff. Retail garden centers are important to the $6 billion-dollar-per-year horticulture industry in Colorado in part because of their role in linking to consumers.
Impact:
Reported results indicated 96% of clients received a timely response, 91% were satisfied with information received, 98% indicated high customer satisfaction, 44% changed gardening or irrigation methods as a result of assistance, 21% used less pesticide as a result of the information, 44% changed cultural practices or do not use pesticides.
Impact Nugget:
A Colorado Master Gardener Clinic study reported that 44% of clients changed gardening or irrigation methods as a result of Extension assistance, 44% changed cultural practices and 21% used less pesticide.
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Pinyon Mortality Education for Small Acreage Owners
Themes:
Environmental & Natural Resource Issues: Invasive Species
Enhanced Economic Opportunities for Agricultural Producers
Issue:
A pinyon Ips beetle infestation is killing pinyon forests throughout southwestern Colorado. Many homeowners want to take action to protect trees on their land, but are unsure of what management tactics to take. There have been hundreds of phone calls to the Tri River Area Cooperative Extension office requesting information.

What Was Done:
Three pinyon Ips beetle educational workshops were held throughout the area in early in 2004 to discuss the problem and answer questions. The workshops were organized by the Tri River Cooperative Extension office in collaboration with the Colorado State Forest Service and U.S. Forest Service.

Impact:
Four hundred people attended the workshops and were surveyed about what they learned –95 percent increased their knowledge regarding pinyon mortality, and of these, most were able to set realistic goals for managing the bark beetles. More than half of the participants interviewed will use the new knowledge to protect trees from mortality. Most will use increased cultural control options combined with insecticide sprays to maximize the effectiveness of treatments.

Impact Nugget:
A Colorado State University Cooperative Extension program on control of Ips beetles in pinyon trees in the state's Tri River Area attracted interest from more than 400 landowners—95 percent of whom reported increased knowledge of the problem to assist in management decisions.

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Dealing with Drought, Fire and Insects in Southwestern Colorado

Themes:
Environmental & Natural Resource Issues: Invasive Species
Rural Community and Economic Development

Issue:
A collaborative program effort involving Cooperative Extension agents in agriculture, 4-H/youth, consumer and family, horticulture, and economic development focused on a regional crisis. Since 1996, southwest Colorado has suffered through a series of noteworthy droughts—with 2002 being the worst in 50 years affecting the area. Native
vegetation throughout southwest Colorado has suffered, with pinon pine the most affected. The Ips beetle, a major nemesis of pinon pine, has always existed in this area but successive years of drought and moisture-stressed pinon trees have created an unprecedented explosion of the Ips beetle--the result is a major die-off of pinon pine trees. Mother Nature's wrath has quickly become a stark reality to many landowners. Pinon trees have died at an alarming rate and with remarkable speed. It is estimated that the beetle infestation is killing between 60 to 90 percent of the pinon trees, some of which have been standing for hundreds of years. People were desperate for information as was evidenced by the hundreds of people who turned out for the initial Ips beetle meetings.

What Was Done:
Cooperative Extension in southwest Colorado created a Healthy Forest Initiative Grant Team and secured $5,000 through grants for educational efforts. They offered programs to provide information on management of Ips beetle infestations including cultural and chemical controls, and conveyed and stressed the importance to landowners of long-term management options of stand densities in the pinon pine vegetation zone. They educated landowners and professionals on the most efficient methods of tree removal including timing, available resources, financing, incentive programs, and using logging

companies. Through these Extension educational efforts, 115 professionals attended a Bark Beetle In-Service Program and 82 homeowners attended "Changing Landscapes Workshops" held in three locations throughout the area.

Impact:

Surveys showed 95% of participants reported they increased their understanding of management options to protect against Ips beetle infestations including cultural and chemical controls; 82% of landowners increased understanding of the importance of long-term management options of stand densities in the pinon vegetation zone; 100% of the landowners and professionals learned about the most efficient methods of tree removal including timing, available resources, financing, incentive programs, logging companies, and tree-care professionals; 35% of the in-service participants indicated they would change their management practices for removal and treatment of pinon pine; 52% of all program participants said they would be willing to pay $10 to $20 for the information provided, and 30% said they would pay more than that.

Impact Nugget:

Cooperative Extension conducted educational sessions for homeowners and professionals in southwestern Colorado on managing the Ips beetle infestation that is killing between 60 to 90 percent of the area's drought-stressed pinon pine trees--95% of the participants increased understanding of cultural and chemical controls to manage and protect their trees.

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High Plains Landscapes Get Improvements

Themes:

Environmental & Natural Resource Issues

Issue:

Given Colorado's semi-arid environment and low natural moisture levels, it is important to educate homeowners on the need and methods for conserving water and maintaining landscapes efficiently. Colorado is located in an arid and semi/arid environment receiving an average of only 12 inches of natural moisture per year. Another factor fueling the emphasis on urban water conservation and management of landscapes in an arid environment is the growth that Larimer County and other Front Range counties are experiencing. Between 1959 to 1992, Larimer County lost one third of its agricultural land to residential development. Fort Collins--Larimer County's largest urban area--has increased its size from 19 squares miles in the mid-'70s to almost 45 square miles in the late '90s (an increase of 135 percent). This shift from agricultural to urban also results in a reallocation of water needs and usage from agricultural production to urban landscapes creating a need for education among landscape professionals and homeowners on the importance and methods of efficient landscape maintenance.

What Was Done:

The High Plains Landscape Workshop is an annual event for homeowners and professionals in northern Colorado to help teach sustainable landscaping techniques. The workshop was initiated in 2004 by the Larimer County Cooperative Extension office, the City of Fort Collins, the Northern Colorado Water Conservancy District and a number of green industry organizations who taught concepts relating to water conservation, plant selection, proper watering and many other water-wise topics. Of the participants in the 2004 workshops 115

completed an evaluation form--85% said that they were likely or most likely to change their current landscape practices as a result of what they learned at the workshop. In addition, the average self-rating of xeriscape knowledge before and after the workshop rose from 3.0 (out of 5) before the event to 3.9 after attending the classes. At the end of the 2004 growing season, a follow-up survey was conducted to determine if the information gained at the workshop was actually used and if changes were made during the growing season that reflected this new information. Approximately 25% (37 of 135) attendees responded to the follow-up survey.

Impact:

A follow-up survey of participants in the Landscape Workshop reported that 89% of respondents used the information from the workshop during the 2004 growing season. The most used information came from the class on drought-tolerant plant selection including perennial and woody plants: 73% reported that they made changes to their landscape with the drought information gained at the workshop. The most common changes made by respondents were changes in plant material (23%), watering techniques (23%) and mulching (21%).

Impact Nugget:

The High Plains Landscape Workshop was initiated in 2004 by Larimer County Cooperative Extension to assist homeowners and professionals in northern Colorado with sustainable landscaping techniques--73% of those attending reported that they made changes to their landscape using drought and gardening information from the program.

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GOAL V: Enhanced economic opportunity and quality of life for Americans

Colorado on the Move

Themes:

Health Issues: Obesity, Health Education

Issue:

Three diseases are among the top ten leading causes of death of Americans and are all directly associated with diet and exercise. Intertwined among these diseases is the occurrence of being overweight or obese. The percentage of Americans who are considered obese has soared to one in five, and one in three adults is considered overweight. Americans' eating and exercise habits are largely to blame for this phenomenon--high calorie, unbalanced diets and lack of exercise. Between a quarter and one third of adults report no physical activity. Many others get very little. Obesity increases the risk of developing serious health complications such as heart disease, cancer, stroke and diabetes. Diabetes is the seventh leading cause of death in Colorado, with much of northeast Colorado having significantly higher rates then the state average. Heart disease is the number-one cause of death in Colorado. It accounts for 25 percent of all deaths in the state. Heart disease in northeast Colorado accounts for 36% of all deaths--well above the state average. Cancer accounts for 22 percent of all deaths in Colorado and is responsible for 20 percent of deaths in the northeast counties. Although this is slightly below the state average, it continues to be at a high rate.

What Was Done:

"Colorado on the Move" is a statewide initiative to prevent obesity and improve health by increasing lifestyle physical activity. The program was developed in response to the U.S. Surgeon General's national Call to Action to address obesity as a public health issue. The 14-week program uses electronic stepcounters to help participants monitor and increase physical activity. The goal is to increase walking by 2500 steps/day (equivalent to walking about one mile) per person. The program is a joint effort with the Center for Human Nutrition, University of Colorado Health Sciences Center. FCS agents in Northeastern Colorado joined as a team to conduct this program in their area. 243 participants were enrolled in the program during spring 2004.

Impact:

With slight variation between counties, 47% to 82% of the participants increased their walking steps through the program logging a total of 50,000 miles. Though not a goal of the program since weight reduction requires consistent 10,000 steps per day, 18 people reported weight loss through the program. Those who did not report weight loss typically either maintained weight and/or lost inches/firmed up or toned up. Participants in the post surveys reported increased knowledge about inactivity and health risks, motivation to be active, and increased feelings of well-being.

Impact Nugget:

With slight variation between counties, 47% to 82% of the participants increased their walking steps through the program logging a total of 50,000 miles, and though weight reduction requires consistent 10,000 steps per day, 18 people reported weight loss.

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Growing Produce and People: Boulder County Jail Project

Themes:

Sustainable Communities, Asset Mapping & Enhancement
Adult Life Skills, Character Development

Issue:

In the mid 90s, the Boulder County Jail staff contacted the Cooperative Extension office for assistance from the Master Gardener program for a jail garden. The rationale for this project was based on multiple needs, including giving inmates an opportunity to give back to their community and reduce sentence time, and providing fresh produce to the jail kitchen at a time when produce costs were rising with budget constraints.

What Was Done:

Boulder County Master Gardeners grabbed this project and gave more than 500 hours to development of the garden. Working with the volunteers, Extension provided educational and technical assistance, implementing a series of horticultural-related techniques to the garden. At the start, production was approximately 6,300 pounds (mainly corn), and by implementing crop rotation, harvest jumped to 11,753 pounds. Rotation was a key to success as well as a long growing season and plenty of moisture. Education was provided to inmates on pesticide safety and management, and use of organic techniques and soil tests were encouraged. New cultivars were introduced to the garden, and despite limited acceptance by inmates, excess produce is sent to Community Food Share, a key reason why the Board of County Commissioners recognized the project in 2001. Three jail employees have completed the Master Gardener program, which helps mitigate the challenge of staff turnover and early release of inmates. Inmates took more ownership. A small orchard was installed and fertigation and plasticulture were added. Caring for the crops--and for rabbits attracted to the garden--were indications of favorable changes to inmates' self-esteem. The jail will soon be expanded with the main construction occurring on top of the present garden, but plans include removing the soil and permanent structures to north of the present location. Staff, inmates and a core of Extension volunteers will continue to be at the center of the new jail garden.

Impact:

Volunteers and inmates develop together, while production continues to increase with excess produce going to Community Food Share--last year's total harvest of 19,136 pounds of produce saved taxpayers more than $22,700.

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Small Changes Make a Big Difference: Diabetes Awareness and Prevention

Themes:

Obesity
Health Education
Adult Life Skills

Issue:

According to the Centers for Disease Control and Prevention, one in three U. S. adults is considered to be obese; the annual cost of obesity in the United States is more than $117 billion; poor nutrition and physical inactivity account for some 300,000 premature deaths in the United States each year;

overweight adults are at increased risk for heart disease, high blood pressure, stroke, certain kinds of cancer and diabetes; diabetes is the sixth leading cause of death by disease in Colorado; 250,000 Coloradans have diabetes and more than one third are not diagnosed; minority ethnicities are at higher risk (two times) for Diabetes. The population of Denver County is a relevant, target population.

What Was Done:

A one-hour educational, visual presentation was developed by Denver metropolitan Cooperative Extension faculty in collaboration with the Colorado Department of Public Health and Environment, Diabetes Prevention and Control Program, in response to the need for type-2-diabetes-prevention education materials. "Small Changes Make a Big Difference" materials are available in English and Spanish to health educators.

Impact:

More than 500 individuals participated in SCBD educational presentations statewide in 2004. Of those completing follow-up surveys, 92% plan to make changes as a result of attending the program. Among those who plan to make changes, 63% plan to lose weight;
67% plan to increase physical activity; 54% plan to make changes in food choices; 67% plan to see their health care providers; 46% plan to share information they learned today with a family member or a friend.

Impact Nugget:

Of the more than 500 individuals who participated in Colorado Cooperative Extension's Small Changes Make a Big Difference diabetes awareness program, 92% plan to make changes as a result of attending the program, including 67% who plan to increase physical activity and 63% who plan to lose weight.

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Catch Up Strategies for Retirement

Themes:

Adult Life Skills

Issue:

Larimer County, Colorado, employees reported to department heads their concern about their retirement programs. The Employee Benefit Research Institute reports that almost 3 of 10 people who receive retirement education through the workplace change their retirement planning. This is important since few workers have any idea of how much money it takes to live comfortably in retirement and only 4 in 10 know how much money they will need to save. Four in 10 workers say they are not currently saving for retirement.

What Was Done:

Cooperative Extension offered a series of classes on "Catch-Up Strategies" for county employees advertised through the Larimer County professional development catalog. Ten-month follow-up surveys were sent via county email to those employees who attended. Responses were returned by email to an anonymous address and the results came to the Extension family and consumer science agent without names attached.

Impact:

Participants reported the most common action they took as a result of the workshop was—reviewing Social Security benefit estimate statement (78%); determining the amount needed to save each month for retirement (71%); increasing contributions to an IRA and/or employer-sponsored retirement account (57%); taking steps to decrease debt (50%). Five participants reported having increased savings for retirement after attending the class, with typical responses of $60 to $200 per month additional. One person said they were going to get an additional part-time job and would save those wages toward their retirement.

Impact Nugget:

County employees who attended a Cooperative Extension retirement planning workshop learned and did what it took to "Catch-Up" their retirement savings—78 percent reviewed Social Security benefits, 71 percent determined the amount needed to save each month for retirement, and 57 percent increased contributions to a retirement account.

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"**DARE to be You-CARE to Wait" Program for Families with Middle School Youth**

Themes:

Health Education
4-H Youth Development
Adult and Youth Life Skills, Character Development
Youth Resiliency

Issue:

The goal of the DARE to be You program is to promote abstinence in teens by enhancing individual resiliency factors--particularly self-efficacy, decision making and peer refusal skills--and by strengthening their families-- notably communication about intimacy and sex, nurturant relationships and monitoring. Youth 12 to 14 years old and their families were recruited in Denver and Montezuma County, Colorado, and then were randomly assigned to the DARE to be You (DTBY) intervention or a control group. The DTBY participants (parents and their 12-14-year-old children) complete 20-24 hours of workshops that involve hands-on activities, discussion, role plays, and homework. Portions of each workshop are devoted to joint parent-child activities, but much of the curriculum is delivered to separate groups of youth and family members. The urban site, which was Denver, focused on an African American population. Denver is the largest urban area in Colorado comprised of five counties totaling over 2 million population. The target population for this urban site was predominately located in Denver and Adams counties (combined census of 905,000, African-American population over 250,000 in these two counties). In Denver County, more than half the population of people over 25 have not completed high school. The Colorado Dept of Health reports that there were 31 live births to 10-14-year-old girls and 1,574 births to 15-19-year-old girls (1,605 out of 64,018 girls), 26.6% of the children are classified as below poverty. The director of the youth program through Denver County Cooperative Extension, an African American man, has developed strong connections with multiple groups who work with African American youth and also has developed strong relationships with the Metro Denver Black Church Initiative. The rural site--Montezuma County--has an ethnically mixed rural population and is located in the southwestern corner of Colorado. It is geographically large (2,037 square miles) but with a population of only 22,672. It is isolated by two mountain ranges with the

nearest large city being Albuquerque, New Mexico, 250 miles away. It lies about 400 miles from Denver, Colorado. It contains the Ute Mountain Ute tribe with a population of about 1,800. The rest of the population is White (85%) and Hispanic (15%). It also is adjacent to the Navajo reservation and serves a large number of Navajo families. The Colorado Department of Health does not have data on births for 10-14-year-old youth in Montezuma County. However, the DARE to be You teen parent program has youth in that age group who are currently pregnant or parents. The statistics they report show 44 15-19-year-old parents (out of 1,763 in
that age group). However, there are more than that number enrolled in the DARE teen parent program so there is likely significant under-reporting of this statistic. The U.S.
Census Bureau reports that 24.7% of children live below poverty in Montezuma County. The unemployment rate has averaged just over 6% for the last year, slightly higher
than the state average.

What Was Done:

The program goals include: to directly encourage and sustain the role of the family
in dealing with adolescent sexual activity and to promote the involvement of parents with their adolescent children, to promote the support of family members and other groups
in the private sector to families with adolescent children, to increase the knowledge and commitment and skills to enable positive decisions about sexual abstinence. The DARE to be You Curriculum has shown to be effective in building the resiliency factors for other problem behaviors such as substance abuse. It is built on a model that emphasizes family strengths. Both parents and youth initially work through information and activities designed to enhance efficacy through identifying personal strengths and gaining skills. The second stage of the curriculum works to develop self-responsibility through internalizing locus of control, stress and anger management, family and personal management skills, appropriate attributions. The third and forth sections focus on the development of communication and problem solving skills. The abstinence component is integrated into these with one session being entirely on sex education and abstinence issues. In this session, parents and youth participate together. The Dare to be You program has a developmental perspective, which has two implications--first, sexual development is an inherent part of adolescence, so it is important that programs normalize biological changes, increased interest in sex, dating, and intimacy; second, adolescence is a period when cognitive changes and behavioral skills can be out of synchrony. The implication is that transmitting information is not enough; teens need practice with skills. A defining feature of DARE to be You is that facilitators keep lectures to a minimum. Instead, there are opportunities to practice behaviors, experience managing difficult situations and problem solve. Thus, participants should learn how to convey their attitudes and values to peers and partners, recognize when a high-risk situation is developing, and have the communication skills to extricate themselves from such situations. Preliminary analyses of first youth and family cohorts were conducted with results justifying emphasis on the processes in the impact model. That is, the various family, risk and resiliency processes that in theory predispose youth to risky behavior are empirically related to the outcomes the DTBY program intends to change, and are the focus of the DTBY curriculum. As yet, program effects are relatively small but several outcomes that are central in the impact model do show significant changes in one group compared to the other. In general, what the data show is that DTBY families talk more often about intimacy and sex (as reported by parents but not by teens); DTBY teens are less likely to affiliate with peers who might get them into trouble (as reported by parents but not teens); DTBY parents have more permissive attitudes toward sex, as do their teens, but teens in the control group report substantial changes toward more permissive attitudes; and DTBY teens show trends toward more abstinence behavior. The data on sexual activity are quite site dependent. Data have so far been collected from 116 family members and 101 youth at baseline; 95 family members and 72 youth at the 6-month follow-up; and 24 adults and 22 youth at the 12-month follow-up. Analyses have focused on whether the various measures are correlated in ways that are consistent with the impact model, and on changes

in the intervention and control groups. Several key measures of intermediate outcomes are correlated with social desirability, which may make interpretation of intervention effects problematic. Regarding tests of our impact model, a strong peer orientation is significantly related to a number of other risk factors and negatively to many of the resiliency factors in our model, indicating that peer refusal skills may be a key mechanism of change. On the other hand, self-efficacy, future orientation, and especially strong family relationships are inversely related to sexual risk taking as indicated by attitudes about sex and intentions about sexual behavior. Again, these data support an emphasis on resiliency and family factors in the DTBY curriculum.

Impact:

In terms of program impact, parents in the DTBY group, compared to controls, reported their teens to be less peer oriented after six months and to have friends who engaged in less delinquent activity; that they talked to their teens more often about intimacy and sex; and that were more likely to monitor their teens' activities. Changes in mastery orientation and family cohesion favored the control group. Program effects were observed for teen self-reports--although youth in the intervention group reported somewhat more permissive sexual attitudes at posttest and that they would be less likely to stay abstinent, control teens were much more likely to hold sexually permissive attitudes and the increase in rates of intercourse was greater in the control group.

Impact Nugget:

Parents of 12- to 14-year-old youth who participate in the Dare to be You- Care to Wait program reported that their teens are less peer-oriented and have friends that engage in less delinquent activity; their experience with the program provided skills that enable them to monitor their teens' activities and talk to their teens more often about intimacy and sex.

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DARE to be You-"Bridges Project" in Montezuma County and the Navajo Nation

Themes:

Health Education
4-H Youth Development
Adult and Youth Life Skills, Character Development
Youth Resiliency

Issue:

A high level of "disengagement" from school of many families and youth in Montezuma County and Navajo Nation sites and the resulting high rates of educational "incompletion" and substance abuse created a crisis situation. Concerned family and agency members in both sites initiated this project as a result of this crisis. The sites include a tri-ethnic rural area in southwestern Colorado and the northern division of the Navajo Nation in New Mexico, Arizona and Utah. The DARE to be You-"Bridges Project" focuses on creating a bridge between families and school systems, enhancing family and classroom management skills, and enhancing the developmental level of the child through a series of workshops (20 hours over 11 to 13 weeks that bring together families and teachers. The "bridge" focuses on families with children entering kindergarten and first grade and who are at risk for not making a successful transition into school. When they exist, poor relationships and lack of trust between families and schools create barriers that have long-term effects on the well being and development of children. These effects can include poor educational outcomes, stress, depression,

alcohol and drug abuse and other problem behaviors. These barriers are pronounced in areas where cultural and/or socio-economic differences between families and schools exacerbate the break down in relationships. Research on two previous models from the DARE to be You program has shown them to be effective with families and with teachers. This project combines this previous work, and uses incentives to encourage parents, children and teachers to attend a shared workshop experience to enhance individual skills and to build communication, understanding and trust between families and schools. The ultimate outcome is that children will increase their educational success as an intermediate resiliency factor to multiple problem behaviors.

What Was Done:

In years one and two the feedback from the local steering committee in Montezuma County and the Navajo site, especially participating teachers, instituted several changes including more sessions (including makeup hours in regular sessions) and in the Montezuma county to have experimental and control classrooms. Our initial worry was that it would be difficult to recruit teachers. We have found that not to be true in our first two years involving eight cohorts. We have actually had more teachers who wished to participate than the number of original designated slots--more than 30 teachers have been involved. Participating teachers have been the key referral source. Families seem to be excited to be invited by teachers to participate in the program. Community Training sessions were held both years in Montezuma County but included invitations and representation from the Navajo site. In year one 28 participants representing 8 formal agencies plus several key parents participated; in year two 14 participants from 10 agencies participated.

Impact:

To date, 142 baseline and 81 six-month parent posttests have been entered into the evaluation database. Statistically significant intervention effects were observed on eight of the outcome measures--children's social skills increased, children's aggression decreased, parents limit setting increased, parents harsh punishment decreased, child-centered rearing practices increased, parental self efficacy increased, parental view of family-school-community communication increased, and parents belief that parents should be involved in school increased. Teacher surveys that have been analyzed to date are from 34 baseline and 33 six-month follow-up. Teachers showed significant improvements in three areas: they were more likely to endorse parental involvement, they believed both parents and teachers should encourage children’s success and they were more satisfied with being a teacher. Both family and teacher participation and the statistical analysis shows that families and teachers believe the program is important and are statistically changed in positive ways by the program.

Impact Nugget:

The DARE to be You-“Bridges Project” conducted on the Navajo Nation and nearby Montezuma County, Colorado, to create a bridge between families and school systems has outcomes showing that children's aggression decreased, parents limit-setting increased, parental self efficacy increased, and teachers were more likely to endorse parental involvement, believe that parents and teachers should both encourage children’s success and be more satisfied with being a teacher.

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Pueblo County Parenting and Anger Management

Themes:

Adult and Youth Life Skills, Character Development

Youth Resiliency

Issue:

The decline of the two-parent family, increase of unwed mothers, low socio-economic conditions, grandparents raising grandchildren, and the increase of drug abuse are problems that effect the children in Pueblo County. Many parents do not have significant education for better-paying jobs so parents are working more than the traditional eight-hour day to meet financial needs of their families. Children are left without proper supervision or nurturing and many are given the responsibility of being caretaker for younger siblings. The financial and other stresses found in families, combined with the lack of parenting skills, leads to an increase of severe punishment, neglect, poor communication, unrealistic ideas of child development, and inappropriate methods of expressing anger. Parenting and anger management classes are necessary to provide parents and other caregivers skills and information needed to raise healthy children. **What Was Done:**

Eight public service announcements publicizing parenting and anger management classes were provided to seven newspapers in the Pueblo area. Brochures were mailed to each of 55 pubic schools, seven private schools, 39 pre-school, head start programs and childcare facilities. Information was also provided to the Department of Social Services, probation officers, churches, hospitals and private counseling centers. Parenting and anger management classes were scheduled during the day and evening hours to accommodate participants' schedules. Classes were held for parents of toddlers to pre-teens, parents of teens, and for participants in REThink Anger Management. A total of 348 individuals were refereed or called in to attend class with 184 (52.8%) who actually attended.

Impact:

Evaluation for the parenting classes showed that 100% improved their knowledge about parenting (66/66); 97% improved their anger-management skills (62/66); 90% have more realistic expectations of their child(ren) (61/66); 93% get along better with their child(ren) (57/66); 97% improved communication skills with their child(ren) (64/66); 94% feel more confident in their parenting abilities (62/66); 100% improved communication skills with their teen (19/19); 100% feel more confident in their parenting abilities (19/19). Evaluation results for the ReThink anger-management classes showed that 98% increased anger management skills; 91% used ReThink to control their anger; 90% feel more confident in their abilities to control anger.

Impact Nugget:

Cooperative Extension parenting and anger management classes provided to voluntary participants and referrals in Pueblo County, Colorado, showed that education helps—100 percent improved their knowledge about parenting, 97 percent improved their anger-management skills and communication with their children; 100 percent feel more confident in their parenting abilities.

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Pueblo County Budgeting Programs

Themes:

Adult and Youth Life Skills

Issue:

Pueblo County residents are faced with many economic challenges. Unemployment is higher than the national average and continues to grow; the county welfare and poverty rates are high--17.8 percent of

the population had incomes below the poverty level; almost one-half of female heads of household are poor, and young female-headed households (with children under 5) are at an even greater economic disadvantage.

What Was Done:

In order to meet the growing needs of the working poor and those who are at poverty or below, Cooperative Extension in Pueblo County provided budgeting classes to targeted audiences of individuals who have been recommended by TANF workers. This program was a collaborative effort between Colorado State University Cooperative Extension and the Pueblo County Department of Social Services--approximately 48 classes were offered during 2004.

Impact:

A total of 72 budgeting classes were held with 1,432 individuals referred or called in, 804 or 56% of those completed class. Evaluations from participants indicated that 85% said they learned how to balance their income and expenses, 84% were able to set goals and make plans for reaching those goals, 75% indicated they learned methods to reach their goals sooner, and 87% increased knowledge about how spending money is based on personal needs, wants and values.

Impact Nugget:

Cooperative Extension in Pueblo County offered budgeting classes targeted at individuals recommended by the Department of Social Services—more than 800 people attended with 85 percent of them learning how to balance income and expenses and 84 percent learning to set goals and make plans for reaching those goals.

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4-H Life Skills & Asset Development in Boulder County

Theme:

4-H Youth Development; Youth Resiliency
Youth Life Skills & Character Development

Issue:

The Colorado 4-H Youth Development Program provides developmentally appropriate opportunities for young people ages 5 to18 to experience life skills, to practice them until they are learned, and be able to use them as necessary throughout a lifetime in order to reach their fullest potential and to become confident, capable, caring and responsible citizens. The Boulder County 4-H Youth Development Program builds capacity and strengthens youth, families and communities in order to assist young people in developing knowledge, life skills, assets and attitudes in a safe learning environment through participation in multiple programs, projects and activities and quality interaction with adults. Youth face many challenges in relating to each other, understanding themselves, learning to make healthy decisions and learning skills necessary for today's workforce. Increased population growth, outside community influences, and changes in family structure have impacted the values and attitudes of youth.

What Was Done:

A Search Institute "Assets Checklist" was completed by 9th graders in Boulder County's St. Vrain Valley School District, and of the youth surveyed, data showed that only 30% felt they had positive family communication, only 29% reported that they resided in a caring neighborhood, only 16% felt

that their community valued youth, and only 24% reported having a positive, adult role model. The Boulder County Extension Advisory Committee identified the need for significant family involvement, and the lack of direction and goal setting for youth as priority issues for the youth development program.
Life skills targeted by 4-H were identified by the Boulder County 4-H Leaders' Council and the Boulder County 4-H Council as leadership development, teamwork, self-esteem, keeping records and social skills. Strengthening the life skills and asset development in youth, while increasing the knowledge and ability of 4-H volunteers to teach those life skills through Extension programs, is necessary for youth to become productive citizens.
Impact:
A baseline survey was administered during the 2003 4-H year to gauge the impact of life skills development on 4-Hers. Results showed that because of 4-H involvement, 58% felt comfortable talking to family and friends; 64% could make decisions about their project; 58% were able to resolve problems; 46% made a plan to do a project and followed it; 52% set goals for a project; 46% helped out in their community; 54% worked as part of a team; 61% learned to be responsible; 56% learned to care about and respect others.
Impact Nugget:
In Boulder County, Colorado, developmentally appropriate surveys were used to determine life-skill development in 4-H youth and results showed that 64% could make decisions about their project, 58% were able to resolve problems, and 56% learned to care about and respect others.
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Youth Engagement Team
Theme:
4-H Youth Development
Youth Life Skills: Leadership & Character Development
Issue:
Young people are systematically left out of decision making bodies of youth-serving organizations. In Colorado, there is even a law that states that youth younger than 18 are not allowed to serve on boards of non-profit organizations. Researchers Zeldin, McDaniel, Topitzes and Lorens from the University of Wisconsin, Madison, have evidence that when young people serve on boards, the adults benefit, the youth benefit and even more importantly there is great benefit to the organization. Training is needed to change a paradigm in youth-serving organizations for both young people and adults to work together as equal partners.
What Was Done:
In Larimer County, Colorado, Cooperative Extension developed a Youth Engagement Committee whose goals were to advocate for greater youth involvement in the community and in local decision-making activities, build the capacity of community boards to recruit youth and to use youth perspectives and insight in their process, train youth to join community boards and actively participate, communicate to youth the variety of opportunities available to them to become involved in their communities,

including participation in activities of interest and on key decision-making bodies and build the capacity of grassroots organizations (e.g. neighborhood associations) to engage youth in their neighborhoods and to foster more adult-youth interaction. The Committee worked with a state elected official to change the law to allow youth to serve on non-profit boards. An Agency Readiness Survey was sent to eleven youth-serving agencies to determine their readiness to receive training and accept youth participation on their boards. The youth and adult training team conducted a board training for Healthier Communities Coalition and the TEAM Fort Collins boards of directors and a second training opportunity was offered to youth to increase understanding of the role of a board member. The team conducted a phone survey of all 44 youth who participated in the training to determine their interest in serving on a board and a specific area of their interest. In addition, they awarded $100 scholarships to two of the youth trainers, both graduating seniors, who have been involved as trainers for more than a year.

Impact:

Because of the actions of the Youth Engagement Team, House Bill 1224 was passed in April, 2004 allowing young people under the age of 18 to serve on board of directors of non profit agencies. Two agencies the team worked with now have youth serving as board members-- Healthier Communities Coalition has three youth and TEAM Fort Collins has two youth serving on their boards.

Impact Nugget:

Concerted efforts by Cooperative Extension youth development staff in Larimer County, Colorado, developed a Youth Engagement Team to advocate for greater youth involvement in the community and in local decision-making activities with the resulting passage of a state law allowing young people under the age of 18 to serve on boards of directors of nonprofit organizations.

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Colorado State University
Cooperative Extension
FY 2003-4
Formula Funds and FTE Distribution

Federal Goal Area	Formula Dollars	FTE
Goal 1	**$670,006.30**	**6.357**
Goal 2	**127,705.74**	**1.055**
Goal 3	**213,103.54**	**2.198**
Goal 4	**532,881.17**	**4.909**
Goal 5	**1,154,437.49**	**12.879**
Total	**$2,698,134.24**	**27.398**